FCC RF Test Report

APPLICANT	:	Quectel Wireless Solutions Co., Ltd.
EQUIPMENT	:	Smart Module
BRAND NAME	:	QUECTEL
MODEL NAME	:	SC686A-NA
FCC ID	:	XMR2022SC686ANA
STANDARD	:	47 CFR Part 2, and 90(S)
CLASSIFICATION	:	PCS Licensed Transmitter (PCB)
TEST DATE(S)	:	Jan. 14, 2023 ~ Jan. 28, 2023

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26-2015 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.

Jason Jia

Approved by: Jason Jia

ACCREDITED
Cert #5145.02

Sporton International Inc. (Kunshan)
No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China

TABLE OF CONTENTS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG310409C	Rev. 01	Initial issue of report	Mar. 09, 2023

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	§2.1046	Conducted Output Power	—	Report only	-
3.2	§2.1049 §90.209	Occupied Bandwidth and 26dB Bandwidth	—	Report only	-
3.3	§2.1051 §90.691	Emission masks – In-band emissions	< $50+10\log_{10}$(P[Watts])	PASS	-
3.4	§2.1051 §90.691	Emission masks – Out of band emissions	< $43+10\log_{10}$(P[Watts])	PASS	-
3.5	§2.1053 §90.691	Field Strength of Spurious Radiation	< $43+10\log_{10}$(P[Watts])	PASS	Under limit 37.17 dB at 2440.000 MHz
3.6	§2.1055 §90.213	Frequency Stability for Temperature & Voltage	< 2.5 ppm	PASS	-

Note: This is the change FCC ID report. Since no changes have been made to this device, all test cases were leveraged from original report (FCC ID: XMR2022SC680ANA, report number FG2D2302C).

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1 General Description

1.1 Applicant

Quectel Wireless Solutions Co., Ltd.
Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, 200233,China

1.2 Manufacturer

Quectel Wireless Solutions Co., Ltd.
Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, 200233,China

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	Smart Module
Brand Name	QUECTEL
Model Name	SC686A-NA
FCC ID	XMR2022SC686ANA
IMEI Code	Conducted: 862160060004446/862160060004453 Radiation: 862160060006342/862160060006359
HW Version	R1.0
SW Version	SC686ANAPAR60A02
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx Frequency	814 ~ 824 MHz
Rx Frequency	859 ~ 869 MHz
Bandwidth	1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz
Maximum Output Power to Antenna	23.29 dBm
Antenna Gain	3.19 dBi
Type of Modulation	QPSK / 16QAM

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Maximum Conducted Power and Emission Designator

LTE Band 26		QPSK		16QAM	
BW (MHz)	Frequency Range (MHz)	Maximum Conducted power(W)	Emission Designator (99%OBW)	Maximum Conducted power(W)	Emission Designator (99%OBW)
1.4	814.7 ~ 823.3	0.1954	1M09G7D	0.1919	1M10W7D
3	815.5 ~ 822.5	0.1941	2M73G7D	0.1862	2M72W7D
5	816.5 ~ 821.5	0.2046	4M48G7D	0.1954	4M47W7D
10	819.0	0.2070	9M03G7D	0.2056	8M97W7D
15	824	0.2133	13M4G7D	0.2051	13M5W7D

1.7 Testing Site

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH04-KS TH01-KS	CN1257	314309

1.8 Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH04-KS	AUDIX	E3	6.2009-8-24a

1.9 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 2, 90(S)
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- FCC KDB 971168 D02 Misc Rev Approv License Devices v02r01

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

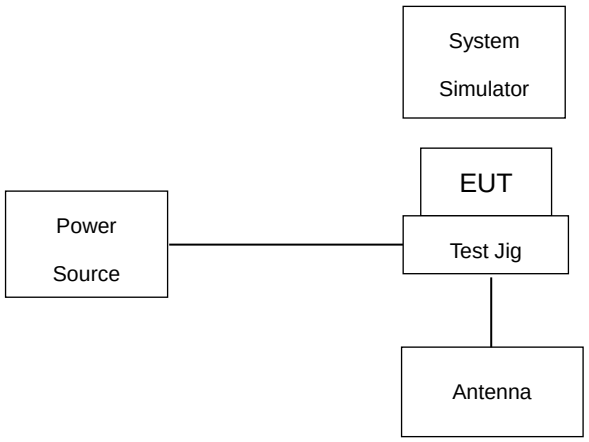
2.1 Test Mode

During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on three test planes to find out the worst emission. (Y-Plane)

Frequency range investigated for radiated emission is 30 MHz to 9000 MHz.

Test Items	Band	Bandwidth (MHz)						Modulation				RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	256QAM	1	Half	Full	L	M	H
Max. Output Power	26	v	v	v	v	v	-	v	v			v		v	v	v	v
26dB and 99% Bandwidth	26	v	v	v	v	v	-	v	v					v	V	v	
Emission masks In-band emissions	26	v	v	v	v	v	-	v	v			v		v	v		v
Emission masks – Out of band emissions	26	v	v	v	v	v	-	v				v			v	v	v
Frequency Stability	26				v		-	v						v		v	
Radiated Spurious Emission	26	Worst Case														v	
Note	1. The mark "**v** " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. LTE Band26 transmit frequency for part22 rule is 824MHz-849MHz, for part90 rule is 814MHz-824MHz. ERP over 15MHz bandwidth complies the ERP limit line of part22 rule, therefore ERP of the partial frequency spectrum which falls within part 22 also complies.																

2.2 Connection Diagram of Test System



This example is connection diagram of EUT test configurations.

. For detail, please refer to test mode configuration and setup photographs for each test item.

2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	Power Supply	GWINSTEK	PSS-2002	N/A	N/A	Unshielded, 1.8 m
2.	Base Station	Anritsu	MT8820/8821	N/A	N/A	Unshielded, 1.8 m
3.	Test jig	N/A	N/A	N/A	N/A	N/A
4.	Antenna	N/A	N/A	N/A	N/A	N/A
5.	Adapter	N/A	N/A	N/A	N/A	N/A

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level.

The spectrum analyzer offset is derived from RF cable loss

Offset = RF cable loss

The following shows an offset computation example with RF cable loss 4.80 dB

Example :

Offset(dB) = RF cable loss(dB)

= 4.80 (dB)

2.5 Frequency List of Low/Middle/High Channels

LTE Band 26 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
10	Channel	-	26740	-
	Frequency	-	819	-
5	Channel	26715	26740	26765
	Frequency	816.5	819	821.5
3	Channel	26705	26740	26775
	Frequency	815.5	819	822.5
1.4	Channel	26697	26740	26783
	Frequency	814.7	819	823.3

LTE Band 26 Cross-rule Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**-**	**Lowest**	**-**
15	Channel	-	26790	-
	Frequency	-	824	-
10	Channel	-	26790	-
	Frequency	-	824	-
5	Channel	-	26790	-
	Frequency	-	824	-
3	Channel	-	26790	-
	Frequency	-	824	-
1.4	Channel	-	26790	-
	Frequency	-	824	-

3 Test Result

3.1 Conducted Output Power Measurement

3.1.1 Description of the Conducted Output Power Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to enforce EUT transmitting at the maximum power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

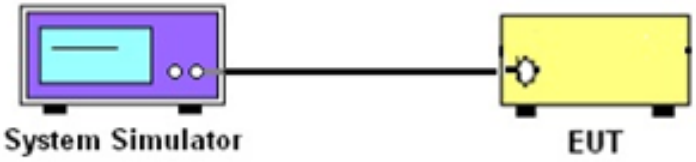
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through the system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the system simulator.

3.1.4 Test Setup



3.1.5 Test Result of Conducted Output Power

Please refer to Appendix A.

3.2 99% Occupied Bandwidth and 26dB Bandwidth Measurement

3.2.1 Description of (Occupied) Bandwidth Limitations Measurement

The 99% occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

The emission bandwidth is defined as the width of the signal between two points, located at the 2 sides of the carrier frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

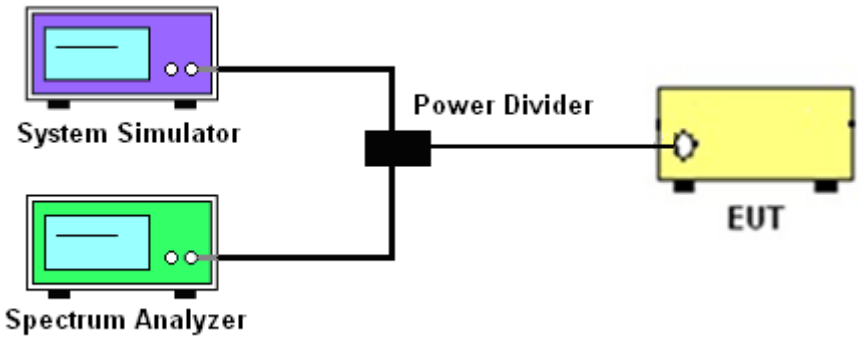
3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.2.3 Test Procedures

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The 26dB and 99% occupied bandwidth (BW) of the middle channel for the highest RF power with full RB sizes were measured.

3.2.4 Test Setup



3.2.5 Test Result of 99% Occupied Bandwidth and 26dB Bandwidth

Please refer to Appendix A.

3.3 Emissions Mask Measurement

3.3.1 Description of Emissions Mask Measurement

Equipment used in this licensed to EA or non-EA systems shall comply with the emission mask provisions of FCC Part 90.691.(a):

(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 $Log_{10}(f/6.1)$ decibels or 50 + 10 $Log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(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 + $10Log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

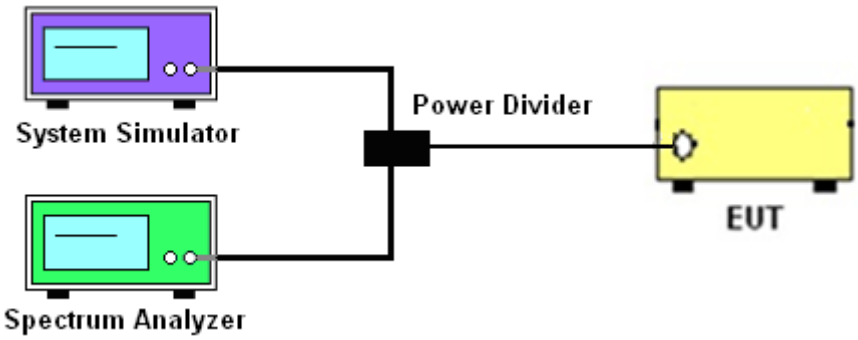
3.3.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.3.3 Test Procedures

1. The EUT was connected to spectrum analyzer and base station via power divider.
2. The emissions mask of low and high channels for the highest RF powers were measured.
3. The measured RBW and the VBW set 3 times of RBW are then set in spectrum analyzer, and the RBW correction factor 10log (1% of OBW/measured RBW)(dB) was compensated, if required.
4. The test results were shown below plots with a correction offset factor including cable loss, insertion loss of power divider.

3.3.4 Test Setup



3.3.5 Test Result (Plots) of Conducted Emissions Mask

Please refer to Appendix A.

3.4 Emissions Mask – Out Of Band Emissions Measurement

3.4.1 Description of Conducted Emissions Out of band emissions measurement

The power of any emission FCC Part 90.691 (a)(2) on any frequency removed from the assigned frequency by out of the authorized bandwidth at least 43 + 10 log (P) dB. It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

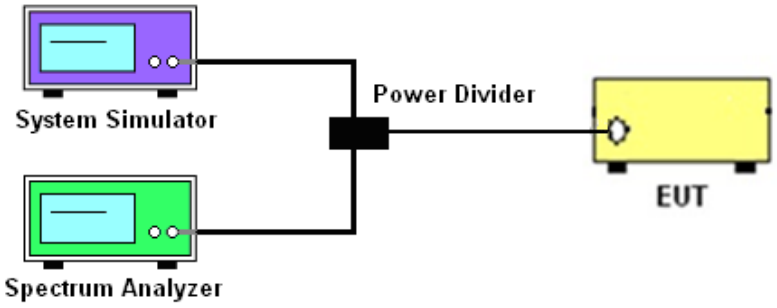
3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.4.3 Test Procedures

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. The middle channel for the highest RF power within the transmitting frequency was measured.
4. The conducted spurious emission for the whole frequency range was taken.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
7. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

3.4.4 Test Setup



3.4.5 Test Result (Plots) of Conducted Emission

Please refer to Appendix A.

3.5 Field Strength of Spurious Radiation Measurement

3.5.1 Description of Field Strength of Spurious Radiated Measurement

The radiated spurious emission was measured by substitution method according to ANSI/TIA-603-E. The power of any emission FCC Part 90.691 on any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth at least 43 + 10 log (P) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

3.5.2 Measuring Instruments

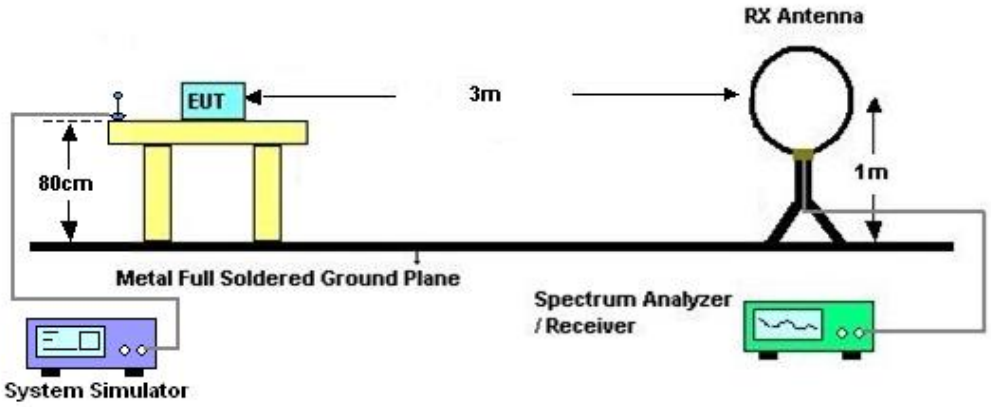
The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

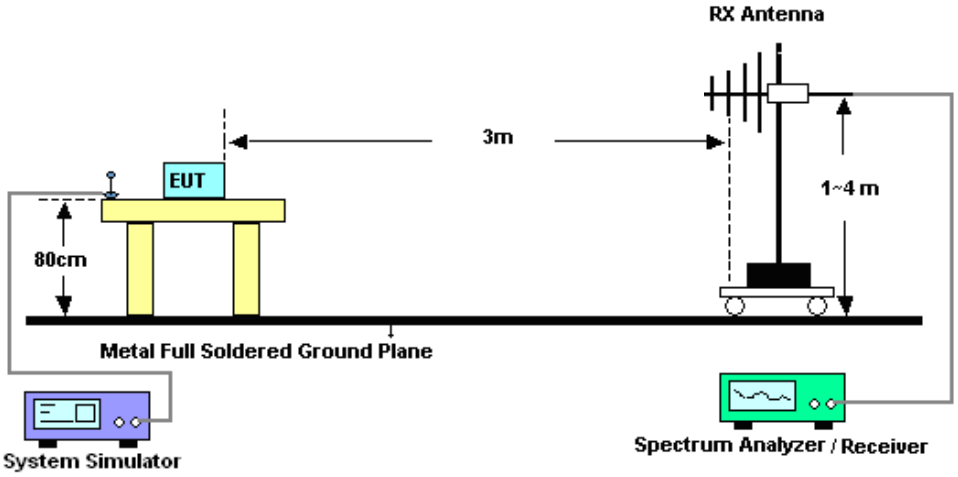
1. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, Sweep = 500ms, Taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
11. ERP (dBm) = EIRP - 2.15
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
13. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

3.5.4 Test Setup

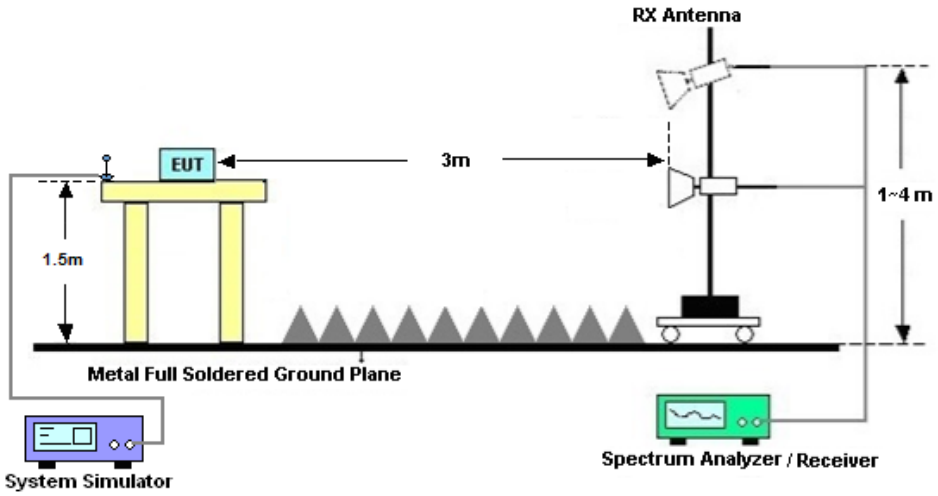
For radiated test from 30MHz



For radiated test from 30MHz to 1GHz



For radiated test above 1GHz



3.5.5 Test Result of Field Strength of Spurious Radiated

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

Please refer to Appendix B.

3.6 Frequency Stability Measurement

3.6.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency according to FCC Part 90.213.

3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

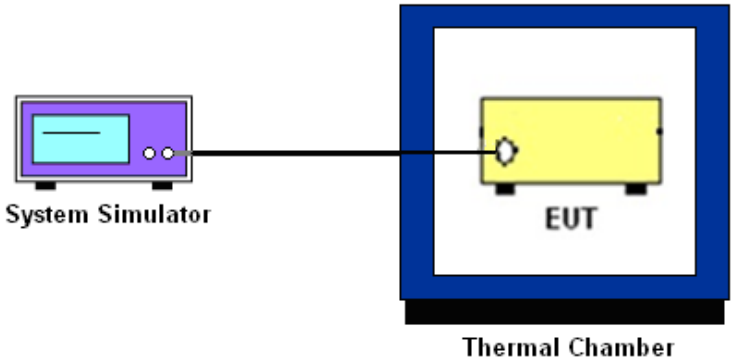
3.6.3 Test Procedures for Temperature Variation

1. The EUT was set up in the thermal chamber and connected with the base station.
2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized for three hours. Power was applied and the maximum change in frequency was recorded within one minute.
3. With power OFF, the temperature was raised in 10°C step up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.6.4 Test Procedures for Voltage Variation

1. The EUT was placed in a temperature chamber at 20±5°C and connected with the system simulator.
2. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value for other than hand carried battery equipment.
3. For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the
4. battery operating end point, which shall be specified by the manufacturer.
5. The variation in frequency was measured for the worst case.

3.6.5 Test Setup



3.6.6 Test Result of Temperature Variation

Please refer to Appendix A.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 12, 2022	Jan. 14, 2023	Oct. 11, 2023	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	NCR	Jan. 14, 2023	NCR	Conducted (TH01-KS)
Temperature & humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 15, 2022	Jan. 14, 2023	Jul. 14, 2023	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 12, 2022	Jan. 28, 2023	Oct. 11, 2023	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 16, 2022	Jan. 28, 2023	Oct. 15, 2023	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	May 24, 2022	Jan. 28, 2023	May 23, 2023	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1284	1GHz~18GHz	Jan. 04, 2023	Jan. 28, 2023	Jan. 03, 2024	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Jan. 04, 2023	Jan. 28, 2023	Jan. 03, 2024	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18GA	060840	1Ghz-18Ghz	Oct. 12, 2022	Jan. 28, 2023	Oct. 11, 2023	Radiation (03CH04-KS)
Amplifier	Agilent	8449B	3008A02370	1Ghz-18Ghz	Oct. 12, 2022	Jan. 28, 2023	Oct. 11, 2023	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jan. 28, 2023	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jan. 28, 2023	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jan. 28, 2023	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

5 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.26-2015. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Conducted Measurement

Test Item	Uncertainty
Conducted Power	±0.46 dB
Conducted Emissions	±0.48 dB
Occupied Channel Bandwidth	±0.1 %

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.3dB

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.8dB

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.8dB

---------- THE END ----------

Appendix A. Test Results of Conducted Test

Test Engineer :	Simle Wang	Temperature :	22~23℃
		Relative Humidity :	40~42%

Conducted Output Power (Average power)

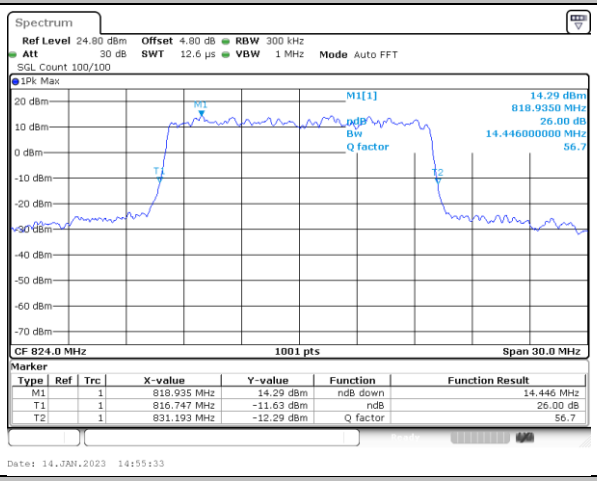
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				26790		
Frequency (MHz)				824		
15	QPSK	1	0	23.29		
15	QPSK	1	74	22.95		
15	QPSK	75	0	21.91		
15	16QAM	1	0	23.12		
Channel					26740	
Frequency (MHz)					819	
10	QPSK	1	0		23.16	
10	16QAM	1	0		23.13	
Channel				26715	26740	26765
Frequency (MHz)				816.5	819	821.5
5	QPSK	1	0	23.04	23.11	23.00
5	16QAM	1	0	22.74	22.91	22.71
Channel				26705	26740	26775
Frequency (MHz)				815.5	819	822.5
3	QPSK	1	0	22.88	22.83	22.71
3	16QAM	1	0	22.68	22.70	22.41
Channel				26697	26740	26783
Frequency (MHz)				814.7	819	823.3
1.4	QPSK	1	0	22.91	22.69	22.80
1.4	16QAM	1	0	22.73	22.83	22.59

26dB Bandwidth

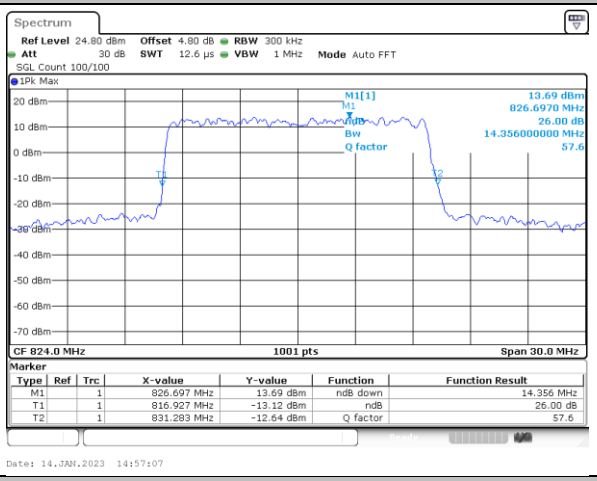
Mode	LTE Band 26 : 26dB BW(MHz)	
BW	15MHz	
Mod.	QPSK	16QAM
Low CH	14.45	14.36
BW	10MHz	
Mod.	QPSK	16QAM
Mid CH	9.71	9.89
BW	5MHz	
Mod.	QPSK	16QAM
Mid CH	4.94	4.94
BW	3MHz	
Mod.	QPSK	16QAM
Mid CH	3.01	3.04
BW	1.4MHz	
Mod.	QPSK	16QAM
Mid CH	1.28	1.27

LTE Band 26

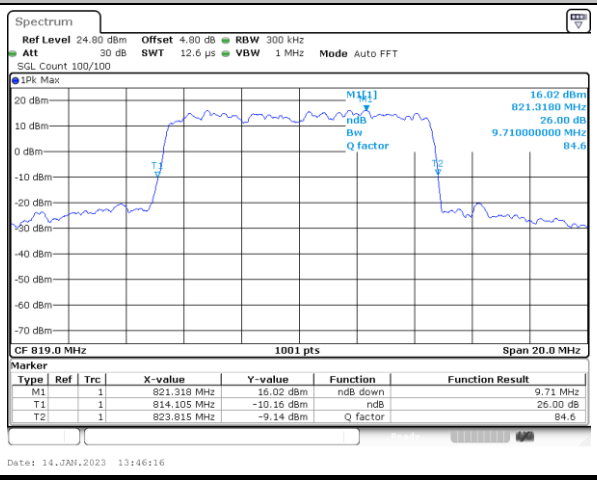
Lowest Channel / 15MHz / QPSK



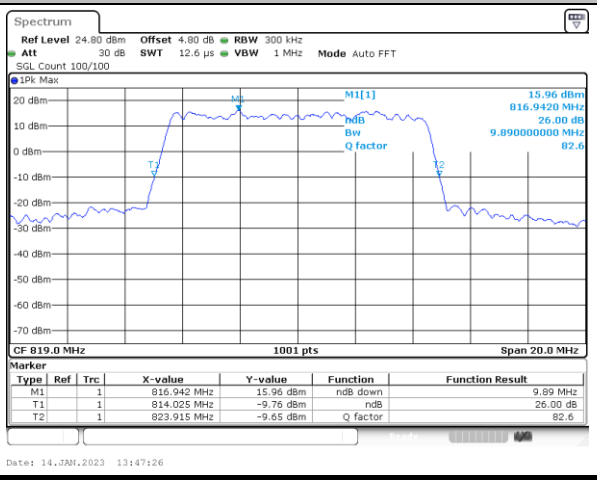
Lowest Channel / 15MHz / 16QAM



Middle Channel / 10MHz / QPSK

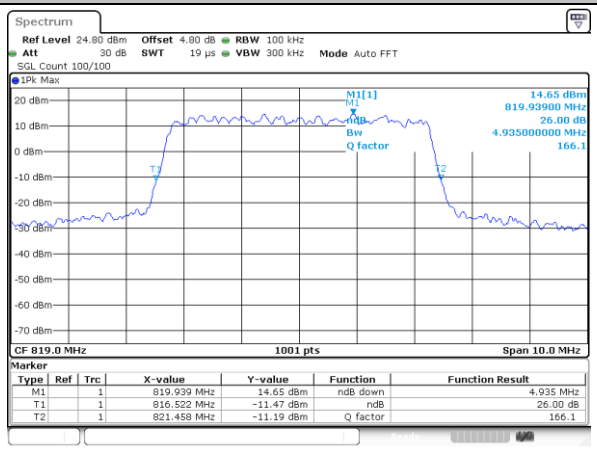


Middle Channel / 10MHz / 16QAM

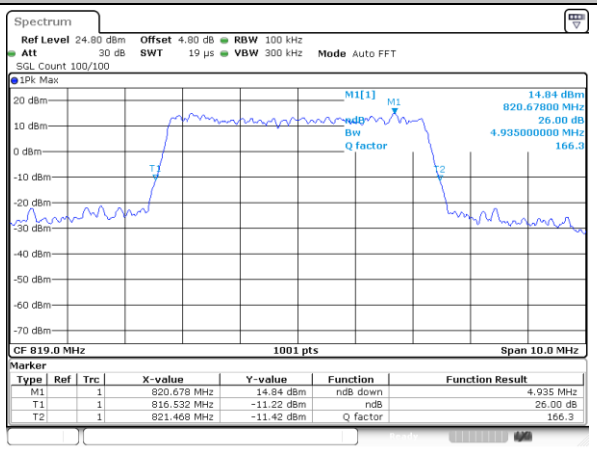


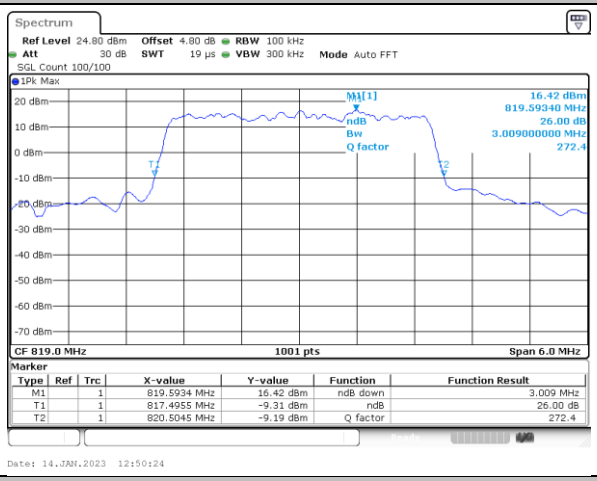
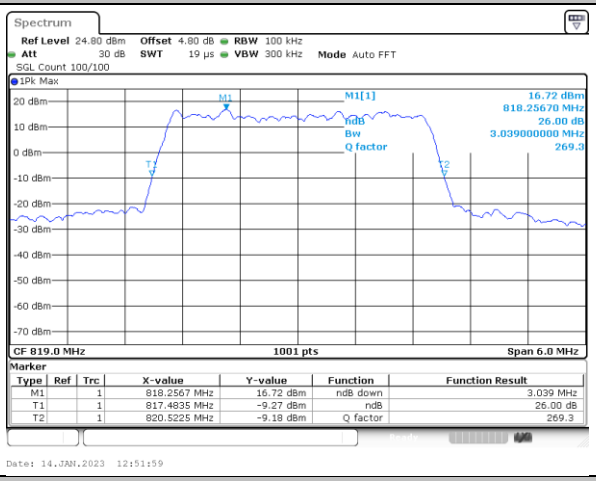
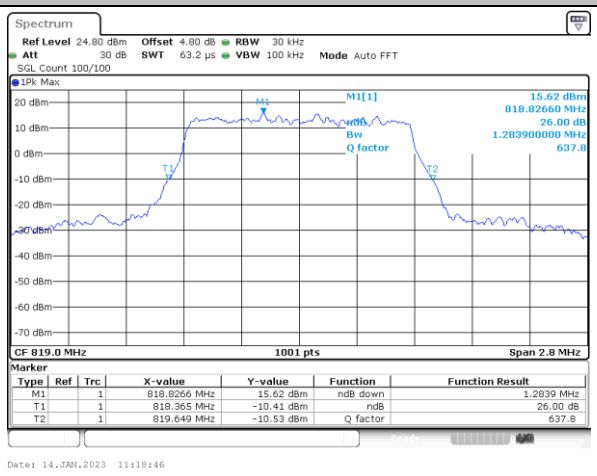
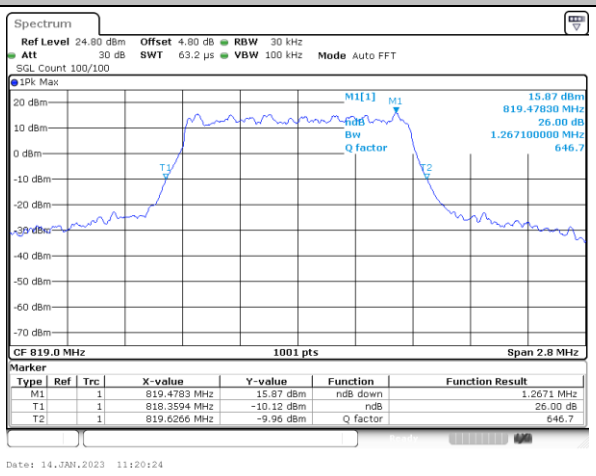
LTE Band 26

Middle Channel / 5MHz / QPSK



Middle Channel / 5MHz / 16QAM



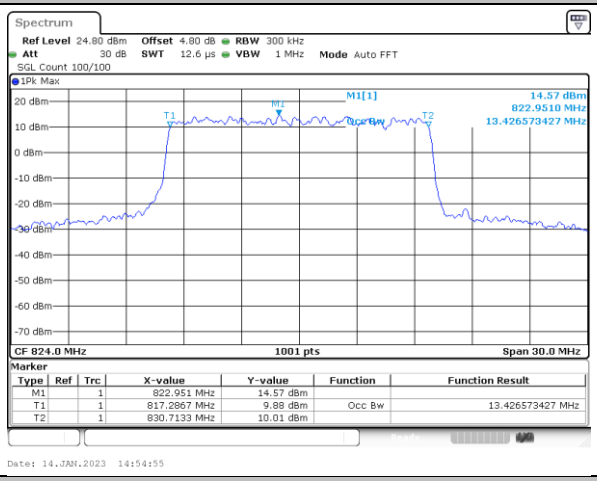
LTE Band 26	
Middle Channel / 3MHz / QPSK	**Middle Channel / 3MHz / 16QAM**
	
LTE Band 26	
Middle Channel / 1.4MHz / QPSK	**Middle Channel / 1.4MHz / 16QAM**
	

Occupied Bandwidth

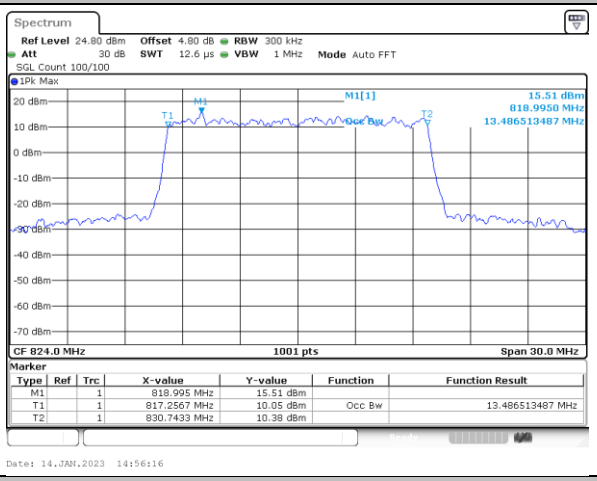
Mode	LTE Band 26 : 99%OBW(MHz)	
BW	15MHz	
Mod.	QPSK	16QAM
Low CH	13.43	13.49
BW	10MHz	
Mod.	QPSK	16QAM
Mid CH	9.03	8.97
BW	5MHz	
Mod.	QPSK	16QAM
Mid CH	4.48	4.47
BW	3MHz	
Mod.	QPSK	16QAM
Mid CH	2.73	2.72
BW	1.4MHz	
Mod.	QPSK	16QAM
Mid CH	1.09	1.10

LTE Band 26

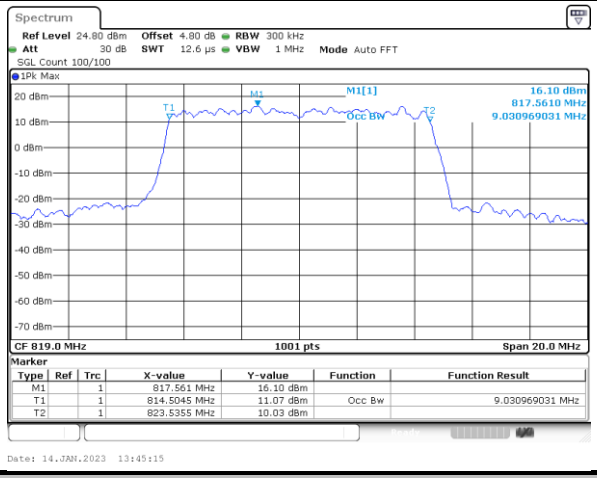
Lowest Channel / 15MHz / QPSK



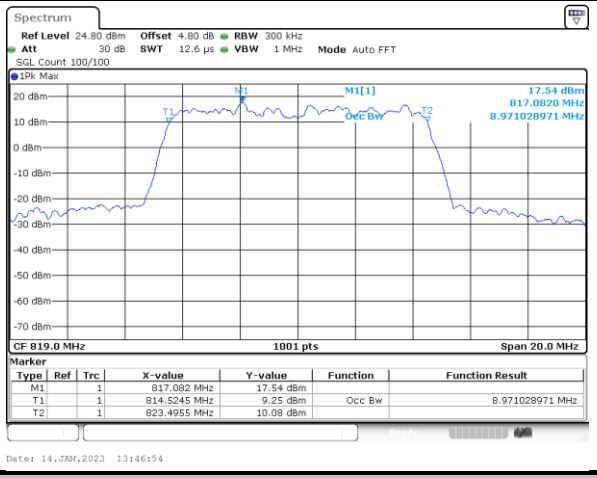
Lowest Channel / 15MHz / 16QAM



Middle Channel / 10MHz / QPSK

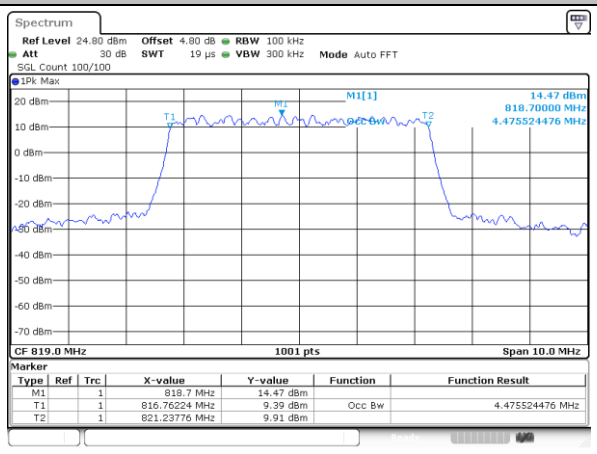


Middle Channel / 10MHz / 16QAM

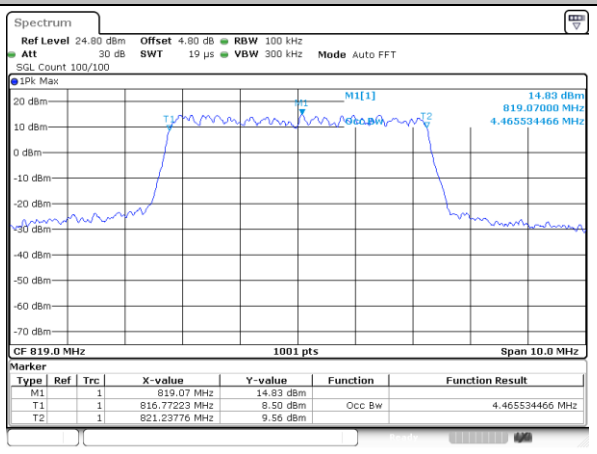


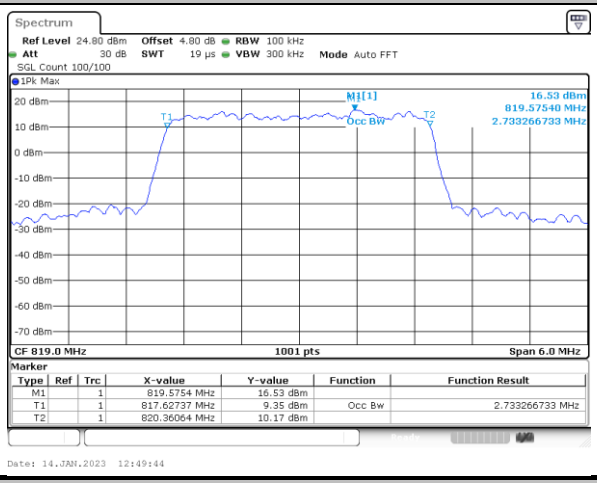
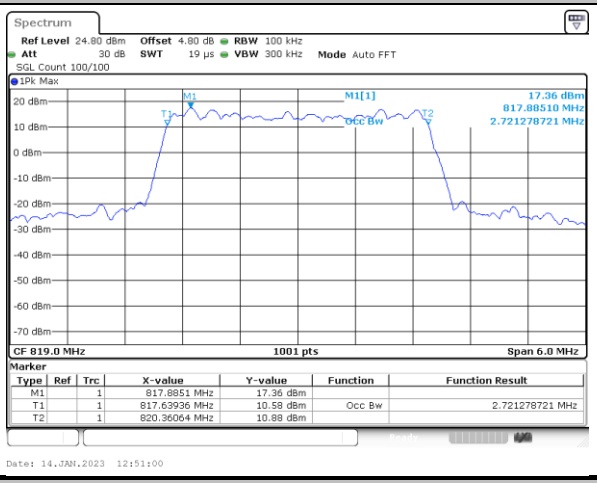
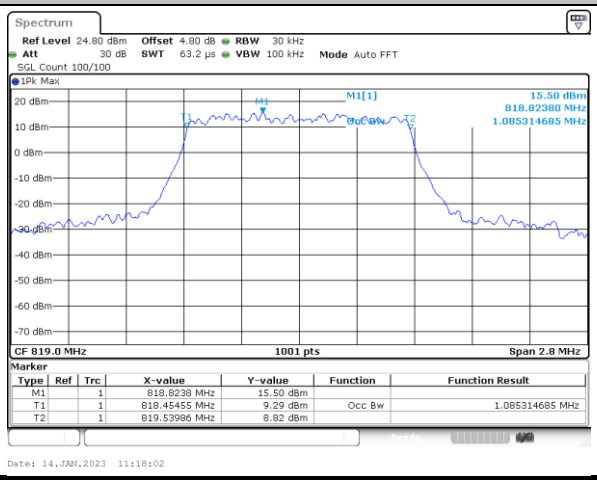
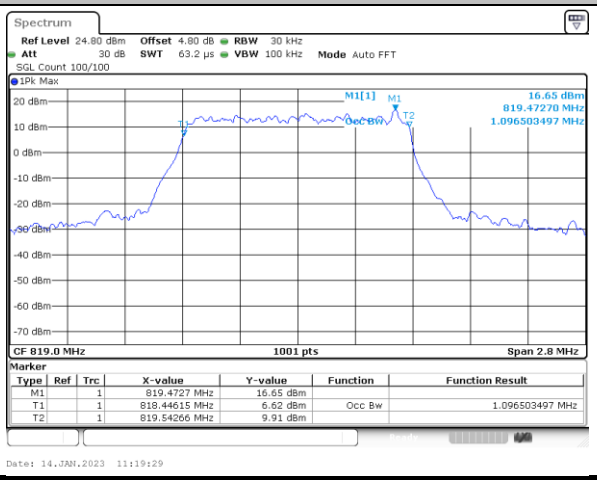
LTE Band 26

Middle Channel / 5MHz / QPSK



Middle Channel / 5MHz / 16QAM

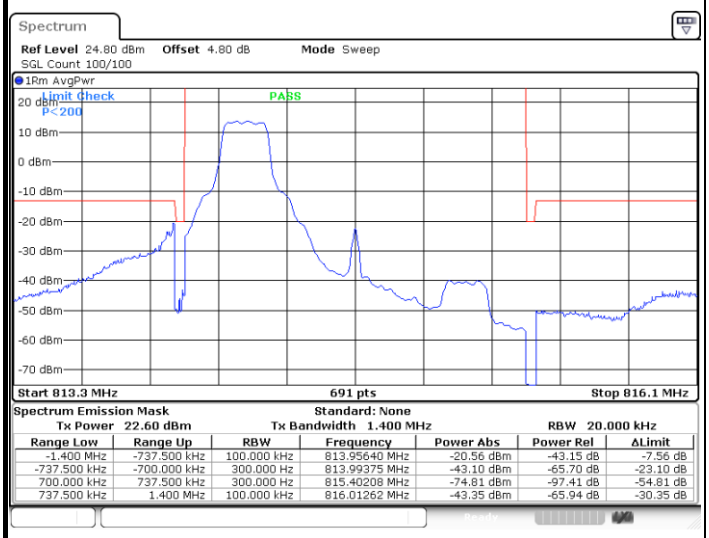


LTE Band 26	
Middle Channel / 3MHz / QPSK	**Middle Channel / 3MHz / 16QAM**
	
LTE Band 26	
Middle Channel / 1.4MHz / QPSK	**Middle Channel / 1.4MHz / 16QAM**
	

Conducted Band Edge

LTE Band 26 / 1.4MHz / QPSK

Lowest Band Edge / 1RB

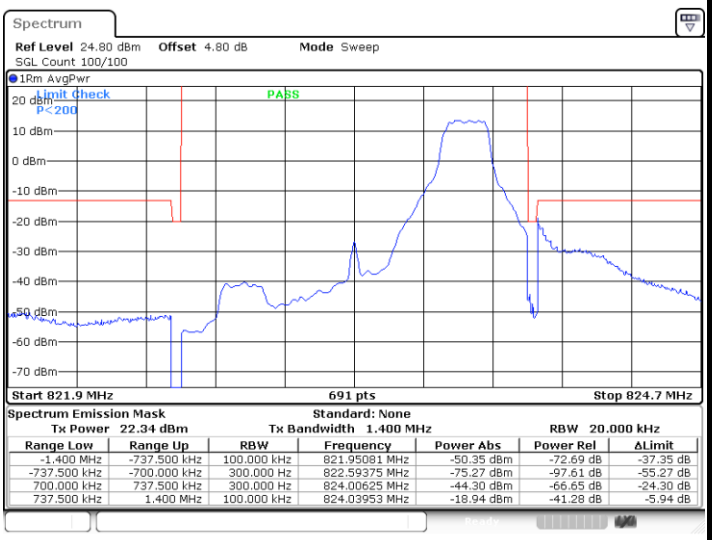


Spectrum Emission Mask Standard: None
Tx Power 22.60 dBm Tx Bandwidth 1.400 MHz RBW 20.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-1.400 MHz	-737.500 kHz	100.000 kHz	813.95640 MHz	-20.56 dBm	-43.15 dB	-7.56 dB
-737.500 kHz	-700.000 kHz	300.000 Hz	813.99375 MHz	-43.10 dBm	-65.70 dB	-23.10 dB
700.000 kHz	737.500 kHz	300.000 Hz	815.40208 MHz	-74.81 dBm	-97.41 dB	-54.81 dB
737.500 kHz	1.400 MHz	100.000 kHz	816.01262 MHz	-43.35 dBm	-65.94 dB	-30.35 dB

Date: 14.JAN.2023 10:58:02

Highest Band Edge / 1RB

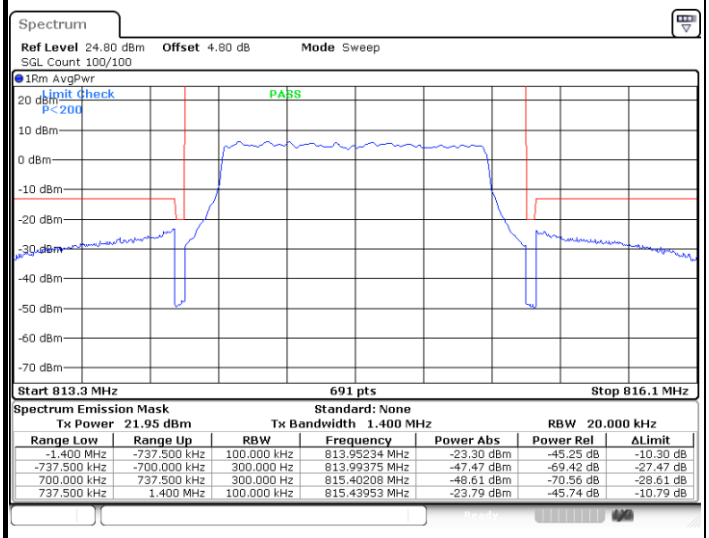


Spectrum Emission Mask Standard: None
Tx Power 22.34 dBm Tx Bandwidth 1.400 MHz RBW 20.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-1.400 MHz	-737.500 kHz	100.000 kHz	821.95081 MHz	-50.35 dBm	-72.69 dB	-37.35 dB
-737.500 kHz	-700.000 kHz	300.000 Hz	822.59375 MHz	-75.27 dBm	-97.61 dB	-55.27 dB
700.000 kHz	737.500 kHz	300.000 Hz	824.00625 MHz	-44.30 dBm	-66.65 dB	-24.30 dB
737.500 kHz	1.400 MHz	100.000 kHz	824.03953 MHz	-18.94 dBm	-41.28 dB	-5.94 dB

Date: 14.JAN.2023 11:16:42

Lowest Band Edge / Full RB

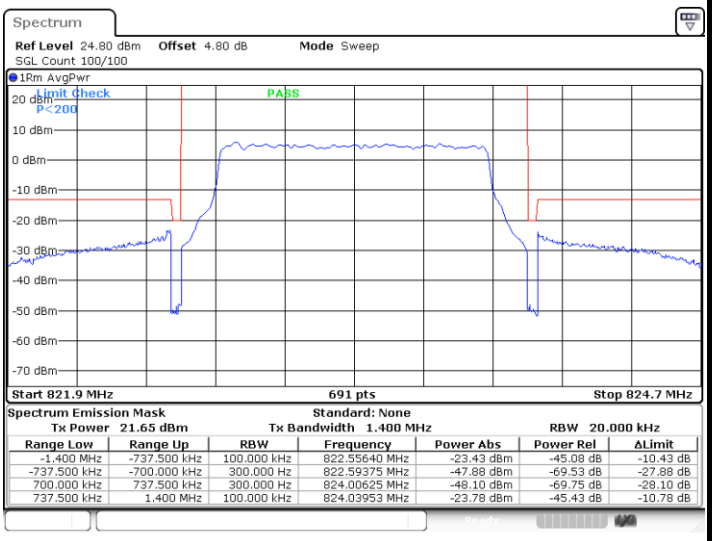


Spectrum Emission Mask Standard: None
Tx Power 21.95 dBm Tx Bandwidth 1.400 MHz RBW 20.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-1.400 MHz	-737.500 kHz	100.000 kHz	813.95234 MHz	-23.30 dBm	-45.25 dB	-10.30 dB
-737.500 kHz	-700.000 kHz	300.000 Hz	813.99375 MHz	-47.47 dBm	-69.42 dB	-27.47 dB
700.000 kHz	737.500 kHz	300.000 Hz	815.40208 MHz	-48.61 dBm	-70.56 dB	-28.61 dB
737.500 kHz	1.400 MHz	100.000 kHz	815.43953 MHz	-23.79 dBm	-45.74 dB	-10.79 dB

Date: 14.JAN.2023 10:41:45

Highest Band Edge / Full RB



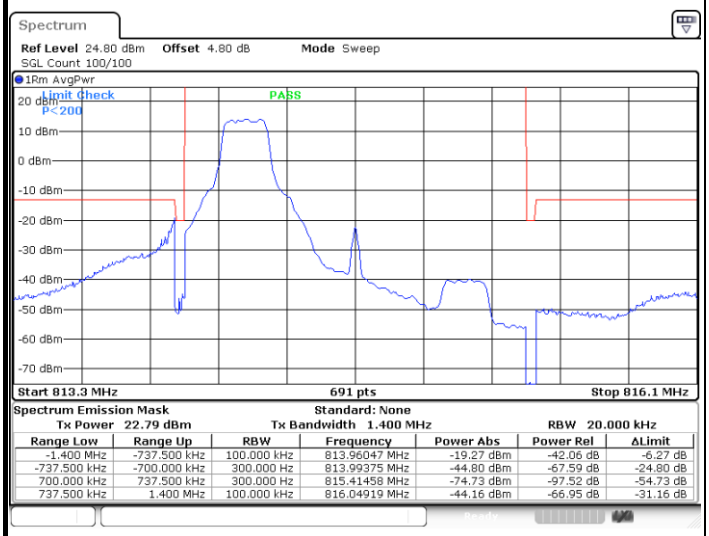
Spectrum Emission Mask Standard: None
Tx Power 21.65 dBm Tx Bandwidth 1.400 MHz RBW 20.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-1.400 MHz	-737.500 kHz	100.000 kHz	822.55640 MHz	-23.43 dBm	-45.08 dB	-10.43 dB
-737.500 kHz	-700.000 kHz	300.000 Hz	822.59375 MHz	-47.88 dBm	-69.53 dB	-27.88 dB
700.000 kHz	737.500 kHz	300.000 Hz	824.00625 MHz	-48.10 dBm	-69.75 dB	-28.10 dB
737.500 kHz	1.400 MHz	100.000 kHz	824.03953 MHz	-23.78 dBm	-45.43 dB	-10.78 dB

Date: 14.JAN.2023 11:01:01

LTE Band 26 / 1.4MHz / 16QAM

Lowest Band Edge / 1 RB

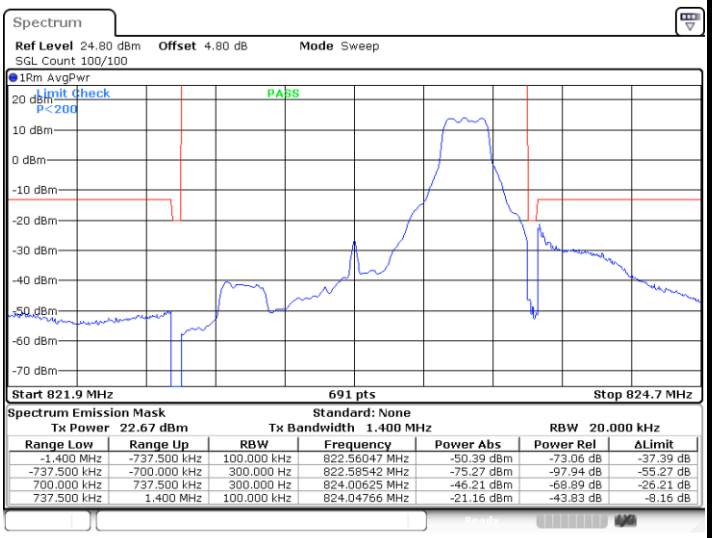


Spectrum Emission Mask Standard: None
Tx Power 22.79 dBm Tx Bandwidth 1.400 MHz RBW 20.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-1.400 MHz	-737.500 kHz	100.000 kHz	813.96047 MHz	-19.27 dBm	-42.06 dB	-6.27 dB
-737.500 kHz	-700.000 kHz	300.000 Hz	813.99375 MHz	-44.80 dBm	-67.59 dB	-24.80 dB
700.000 kHz	737.500 kHz	300.000 Hz	815.41458 MHz	-74.73 dBm	-97.52 dB	-54.73 dB
737.500 kHz	1.400 MHz	100.000 kHz	816.04919 MHz	-44.16 dBm	-66.95 dB	-31.16 dB

Date: 14.JAN.2023 10:56:29

Highest Band Edge / 1 RB

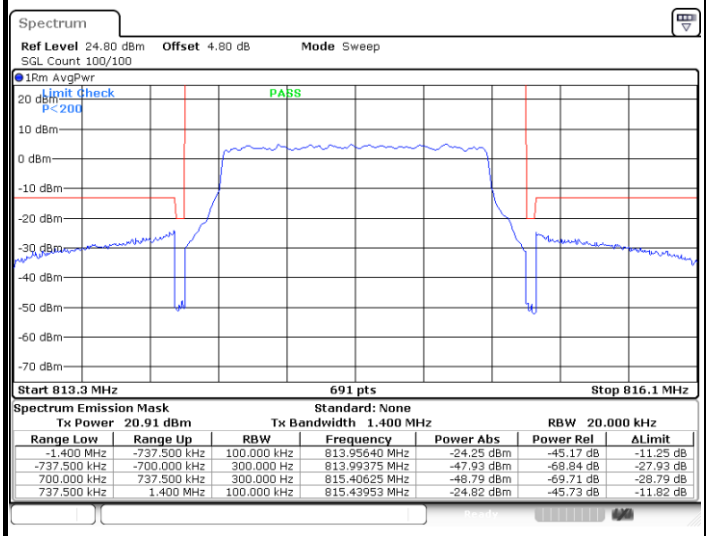


Spectrum Emission Mask Standard: None
Tx Power 22.67 dBm Tx Bandwidth 1.400 MHz RBW 20.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-1.400 MHz	-737.500 kHz	100.000 kHz	822.56047 MHz	-50.39 dBm	-73.06 dB	-37.39 dB
-737.500 kHz	-700.000 kHz	300.000 Hz	822.58542 MHz	-75.27 dBm	-97.94 dB	-55.27 dB
700.000 kHz	737.500 kHz	300.000 Hz	824.00625 MHz	-46.21 dBm	-68.89 dB	-26.21 dB
737.500 kHz	1.400 MHz	100.000 kHz	824.04766 MHz	-21.16 dBm	-43.83 dB	-8.16 dB

Date: 14.JAN.2023 11:15:52

Lowest Band Edge / Full RB

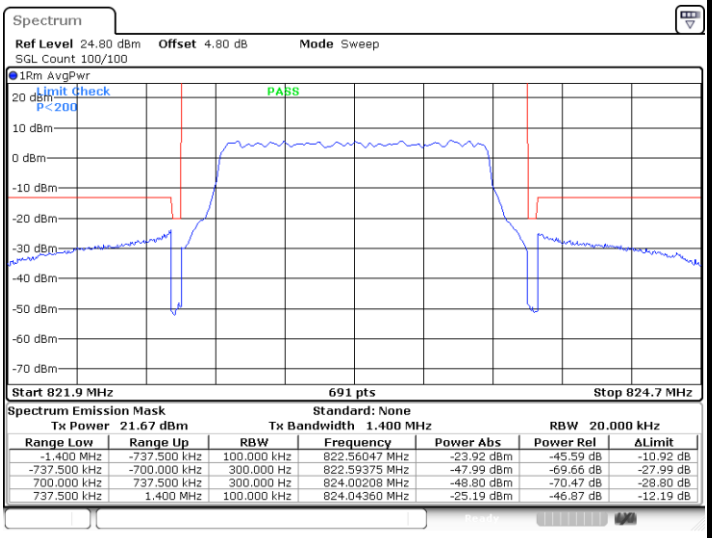


Spectrum Emission Mask Standard: None
Tx Power 20.91 dBm Tx Bandwidth 1.400 MHz RBW 20.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-1.400 MHz	-737.500 kHz	100.000 kHz	813.95640 MHz	-24.25 dBm	-45.17 dB	-11.25 dB
-737.500 kHz	-700.000 kHz	300.000 Hz	813.99375 MHz	-47.93 dBm	-68.84 dB	-27.93 dB
700.000 kHz	737.500 kHz	300.000 Hz	815.40625 MHz	-48.79 dBm	-69.71 dB	-28.79 dB
737.500 kHz	1.400 MHz	100.000 kHz	815.43953 MHz	-24.82 dBm	-45.73 dB	-11.82 dB

Date: 14.JAN.2023 10:50:58

Highest Band Edge / Full RB



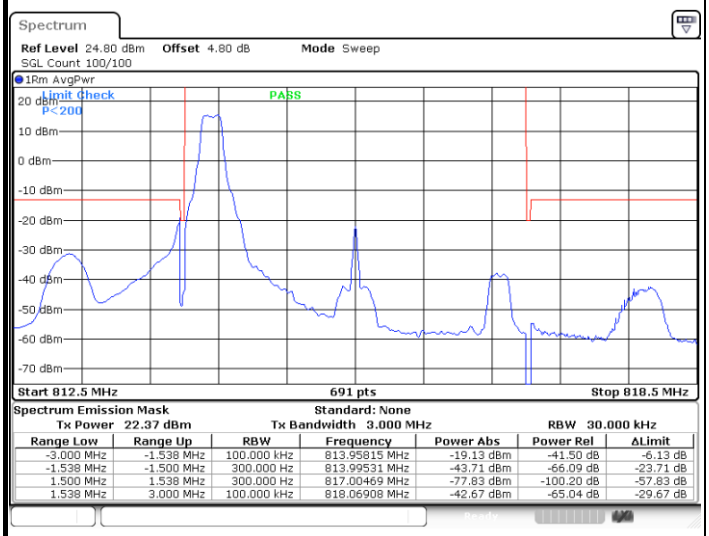
Spectrum Emission Mask Standard: None
Tx Power 21.67 dBm Tx Bandwidth 1.400 MHz RBW 20.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-1.400 MHz	-737.500 kHz	100.000 kHz	822.56047 MHz	-23.92 dBm	-45.59 dB	-10.92 dB
-737.500 kHz	-700.000 kHz	300.000 Hz	822.59375 MHz	-47.99 dBm	-69.66 dB	-27.99 dB
700.000 kHz	737.500 kHz	300.000 Hz	824.00208 MHz	-48.80 dBm	-70.47 dB	-28.80 dB
737.500 kHz	1.400 MHz	100.000 kHz	824.04360 MHz	-25.19 dBm	-46.87 dB	-12.19 dB

Date: 14.JAN.2023 11:01:52

LTE Band 26 / 3MHz / QPSK

Lowest Band Edge / 1RB

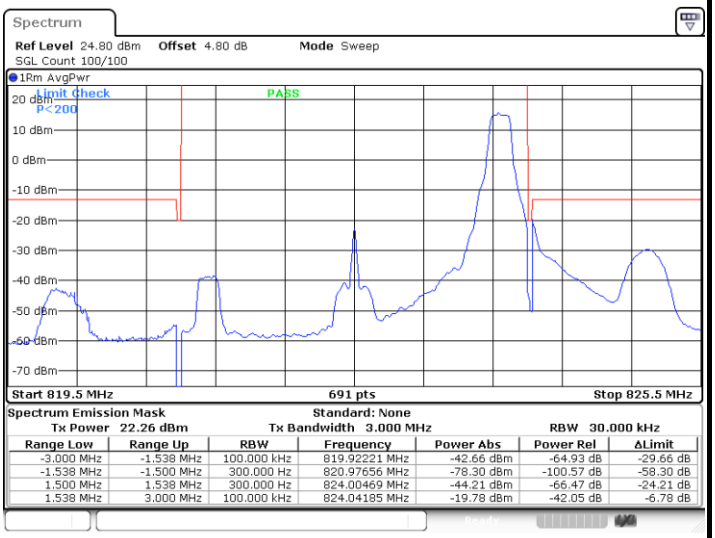


Spectrum Emission Mask Standard: None
Tx Power 22.37 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-3.000 MHz	-1.538 MHz	100.000 kHz	813.95815 MHz	-19.13 dBm	-41.50 dB	-6.13 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	813.99531 MHz	-43.71 dBm	-66.09 dB	-23.71 dB
1.500 MHz	1.538 MHz	300.000 Hz	817.00469 MHz	-77.83 dBm	-100.20 dB	-57.83 dB
1.538 MHz	3.000 MHz	100.000 kHz	818.06908 MHz	-42.67 dBm	-65.04 dB	-29.67 dB

Date: 14.JAN.2023 12:36:40

Highest Band Edge / 1 RB

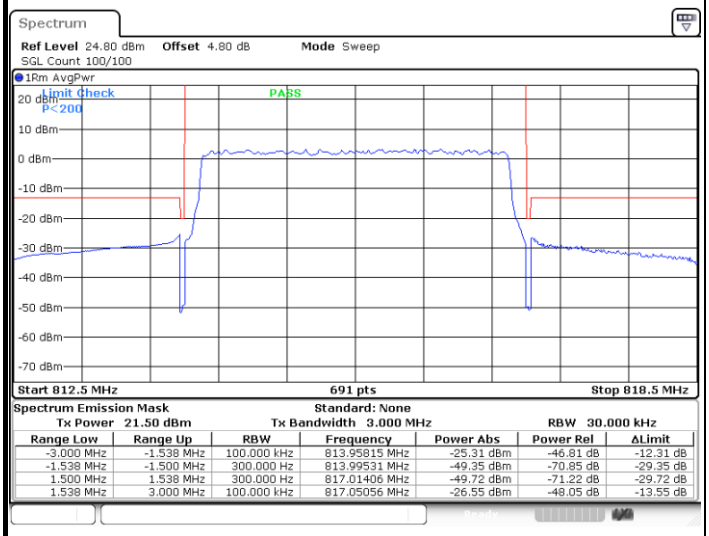


Spectrum Emission Mask Standard: None
Tx Power 22.26 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-3.000 MHz	-1.538 MHz	100.000 kHz	819.92221 MHz	-42.66 dBm	-64.93 dB	-29.66 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	820.97656 MHz	-78.30 dBm	-100.57 dB	-58.30 dB
1.500 MHz	1.538 MHz	300.000 Hz	824.00469 MHz	-44.21 dBm	-66.47 dB	-24.21 dB
1.538 MHz	3.000 MHz	100.000 kHz	824.04185 MHz	-19.78 dBm	-42.05 dB	-6.78 dB

Date: 14.JAN.2023 12:48:38

Lowest Band Edge / Full RB

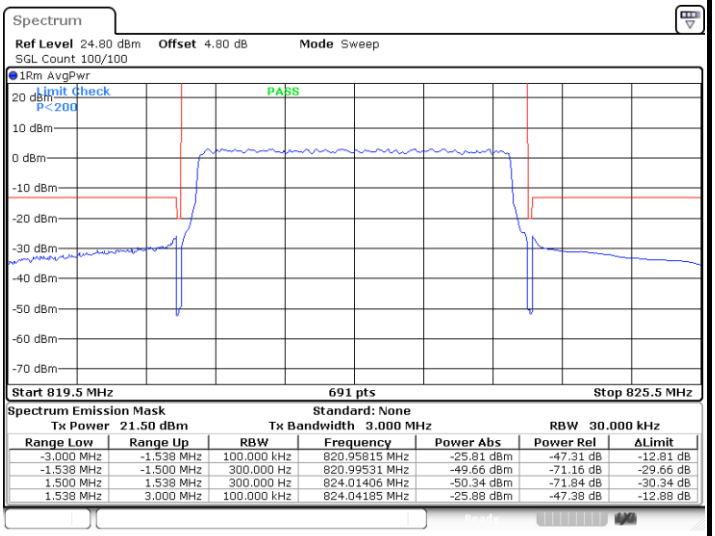


Spectrum Emission Mask Standard: None
Tx Power 21.50 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-3.000 MHz	-1.538 MHz	100.000 kHz	813.95815 MHz	-25.31 dBm	-46.81 dB	-12.31 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	813.99531 MHz	-49.35 dBm	-70.85 dB	-29.35 dB
1.500 MHz	1.538 MHz	300.000 Hz	817.01406 MHz	-49.72 dBm	-71.22 dB	-29.72 dB
1.538 MHz	3.000 MHz	100.000 kHz	817.05056 MHz	-26.55 dBm	-48.05 dB	-13.55 dB

Date: 14.JAN.2023 12:23:23

Highest Band Edge / Full RB



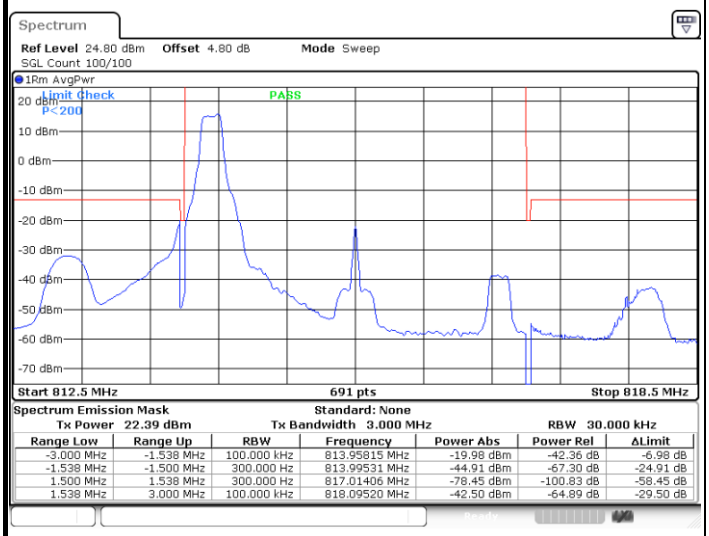
Spectrum Emission Mask Standard: None
Tx Power 21.50 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-3.000 MHz	-1.538 MHz	100.000 kHz	820.95815 MHz	-25.81 dBm	-47.31 dB	-12.81 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	820.99531 MHz	-49.66 dBm	-71.16 dB	-29.66 dB
1.500 MHz	1.538 MHz	300.000 Hz	824.01406 MHz	-50.34 dBm	-71.84 dB	-30.34 dB
1.538 MHz	3.000 MHz	100.000 kHz	824.04185 MHz	-25.88 dBm	-47.38 dB	-12.88 dB

Date: 14.JAN.2023 12:38:35

LTE Band 26 / 3MHz / 16QAM

Lowest Band Edge / 1 RB

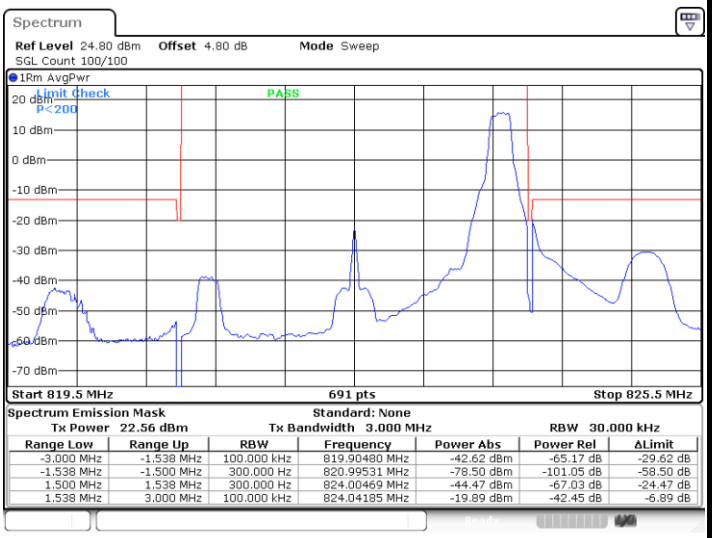


Spectrum Emission Mask Standard: None
Tx Power 22.39 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-3.000 MHz	-1.538 MHz	100.000 kHz	813.95815 MHz	-19.98 dBm	-42.36 dB	-6.98 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	813.99531 MHz	-44.91 dBm	-67.30 dB	-24.91 dB
1.500 MHz	1.538 MHz	300.000 Hz	817.01406 MHz	-78.45 dBm	-100.83 dB	-58.45 dB
1.538 MHz	3.000 MHz	100.000 kHz	818.09520 MHz	-42.50 dBm	-64.89 dB	-29.50 dB

Date: 14.JAN.2023 12:34:43

Highest Band Edge /1 RB

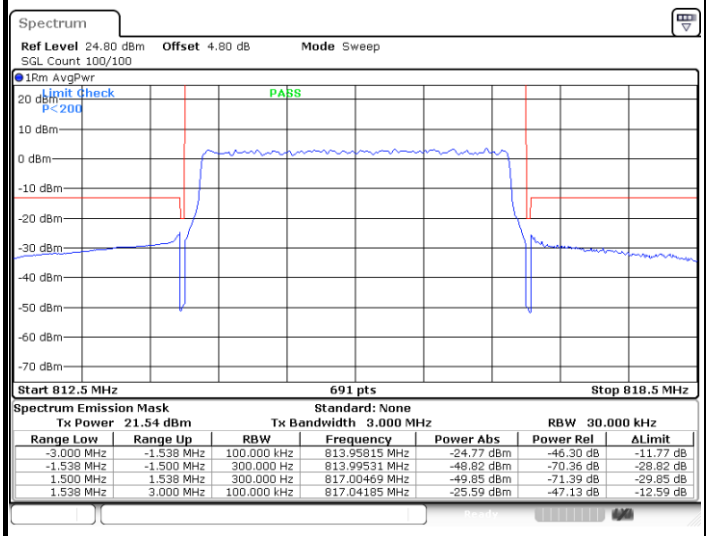


Spectrum Emission Mask Standard: None
Tx Power 22.56 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-3.000 MHz	-1.538 MHz	100.000 kHz	819.90480 MHz	-42.62 dBm	-65.17 dB	-29.62 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	820.99531 MHz	-78.50 dBm	-101.05 dB	-58.50 dB
1.500 MHz	1.538 MHz	300.000 Hz	824.00469 MHz	-44.47 dBm	-67.03 dB	-24.47 dB
1.538 MHz	3.000 MHz	100.000 kHz	824.04185 MHz	-19.89 dBm	-42.45 dB	-6.89 dB

Date: 14.JAN.2023 12:47:35

Lowest Band Edge / Full RB

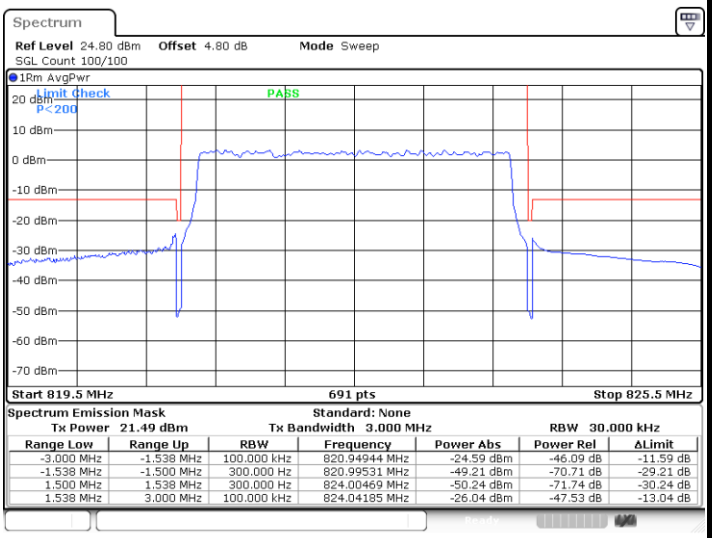


Spectrum Emission Mask Standard: None
Tx Power 21.54 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-3.000 MHz	-1.538 MHz	100.000 kHz	813.95815 MHz	-24.77 dBm	-46.30 dB	-11.77 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	813.99531 MHz	-48.82 dBm	-70.36 dB	-28.82 dB
1.500 MHz	1.538 MHz	300.000 Hz	817.00469 MHz	-49.85 dBm	-71.39 dB	-29.85 dB
1.538 MHz	3.000 MHz	100.000 kHz	817.04185 MHz	-25.59 dBm	-47.13 dB	-12.59 dB

Date: 14.JAN.2023 12:25:49

Highest Band Edge / Full RB



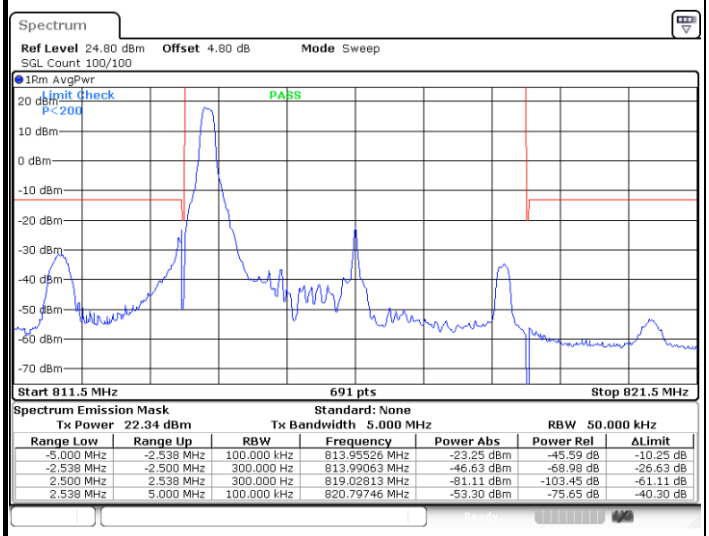
Spectrum Emission Mask Standard: None
Tx Power 21.49 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-3.000 MHz	-1.538 MHz	100.000 kHz	820.94944 MHz	-24.59 dBm	-46.09 dB	-11.59 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	820.99531 MHz	-49.21 dBm	-70.71 dB	-29.21 dB
1.500 MHz	1.538 MHz	300.000 Hz	824.00469 MHz	-50.24 dBm	-71.74 dB	-30.24 dB
1.538 MHz	3.000 MHz	100.000 kHz	824.04185 MHz	-26.04 dBm	-47.53 dB	-13.04 dB

Date: 14.JAN.2023 12:39:52

LTE Band 26 / 5MHz / QPSK

Lowest Band Edge / 1 RB

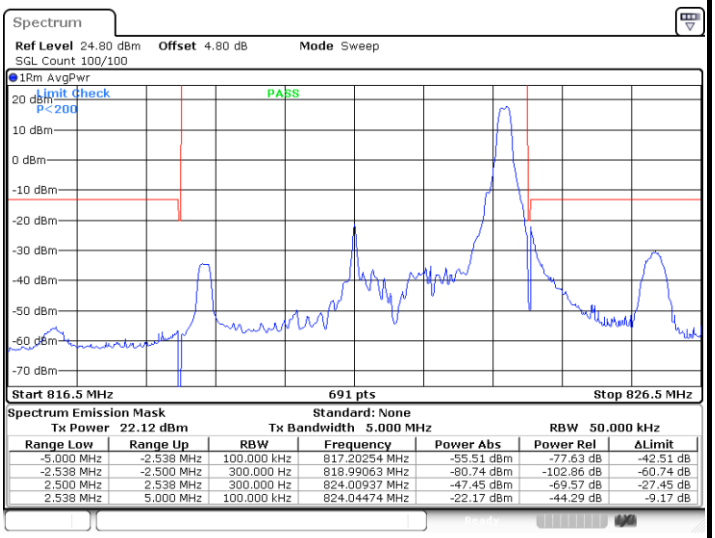


Spectrum Emission Mask Standard: None
Tx Power 22.34 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-2.538 MHz	100.000 kHz	813.95526 MHz	-23.25 dBm	-45.59 dB	-10.25 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	813.99063 MHz	-46.63 dBm	-68.98 dB	-26.63 dB
2.500 MHz	2.538 MHz	300.000 Hz	819.02813 MHz	-81.11 dBm	-103.45 dB	-61.11 dB
2.538 MHz	5.000 MHz	100.000 kHz	820.79746 MHz	-53.30 dBm	-75.65 dB	-40.30 dB

Date: 14.JAN.2023 13:06:14

Highest Band Edge / 1 RB

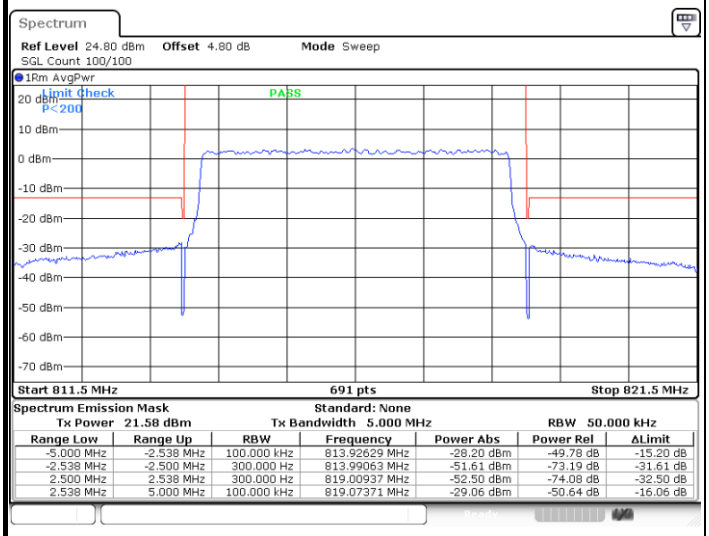


Spectrum Emission Mask Standard: None
Tx Power 22.12 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-2.538 MHz	100.000 kHz	817.20254 MHz	-55.51 dBm	-77.63 dB	-42.51 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	818.99063 MHz	-80.74 dBm	-102.86 dB	-60.74 dB
2.500 MHz	2.538 MHz	300.000 Hz	824.00937 MHz	-47.45 dBm	-69.57 dB	-27.45 dB
2.538 MHz	5.000 MHz	100.000 kHz	824.04474 MHz	-22.17 dBm	-44.29 dB	-9.17 dB

Date: 14.JAN.2023 13:14:44

Lowest Band Edge / Full RB

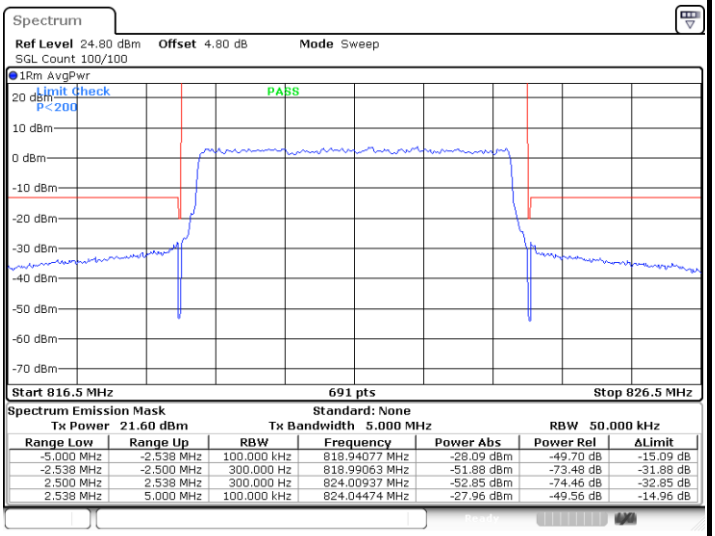


Spectrum Emission Mask Standard: None
Tx Power 21.58 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-2.538 MHz	100.000 kHz	813.92629 MHz	-28.20 dBm	-49.78 dB	-15.20 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	813.99063 MHz	-51.61 dBm	-73.19 dB	-31.61 dB
2.500 MHz	2.538 MHz	300.000 Hz	819.00937 MHz	-52.50 dBm	-74.08 dB	-32.50 dB
2.538 MHz	5.000 MHz	100.000 kHz	819.07371 MHz	-29.06 dBm	-50.64 dB	-16.06 dB

Date: 14.JAN.2023 12:59:27

Highest Band Edge / Full RB



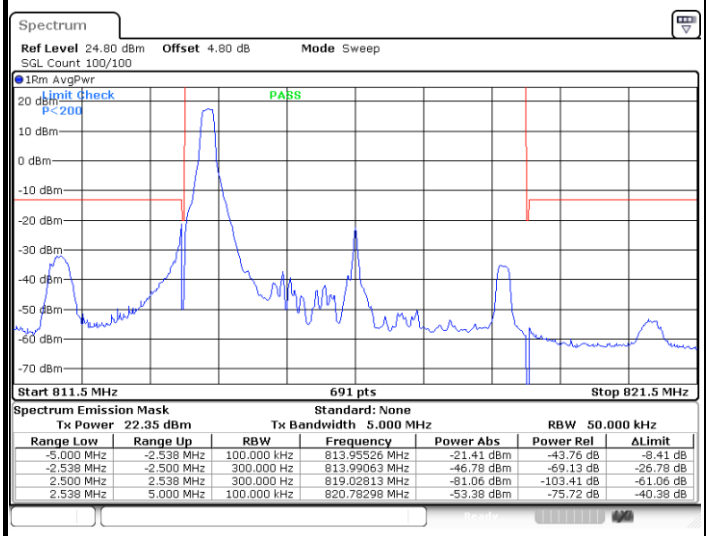
Spectrum Emission Mask Standard: None
Tx Power 21.60 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-2.538 MHz	100.000 kHz	818.94077 MHz	-28.09 dBm	-49.70 dB	-15.09 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	818.99063 MHz	-51.88 dBm	-73.48 dB	-31.88 dB
2.500 MHz	2.538 MHz	300.000 Hz	824.00937 MHz	-52.85 dBm	-74.46 dB	-32.85 dB
2.538 MHz	5.000 MHz	100.000 kHz	824.04474 MHz	-27.96 dBm	-49.56 dB	-14.96 dB

Date: 14.JAN.2023 13:07:15

LTE Band 26 / 5MHz / 16QAM

Lowest Band Edge / 1RB

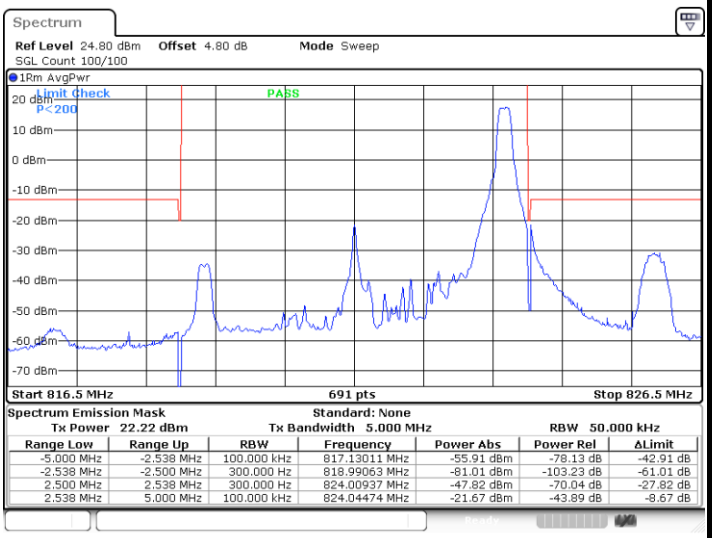


Spectrum Emission Mask Standard: None
Tx Power 22.35 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-2.538 MHz	100.000 kHz	813.95526 MHz	-21.41 dBm	-43.76 dB	-8.41 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	813.99063 MHz	-46.78 dBm	-69.13 dB	-26.78 dB
2.500 MHz	2.538 MHz	300.000 Hz	819.02813 MHz	-81.06 dBm	-103.41 dB	-61.06 dB
2.538 MHz	5.000 MHz	100.000 kHz	820.78298 MHz	-53.38 dBm	-75.72 dB	-40.38 dB

Date: 14.JAN.2023 13:05:17

Highest Band Edge / 1 RB

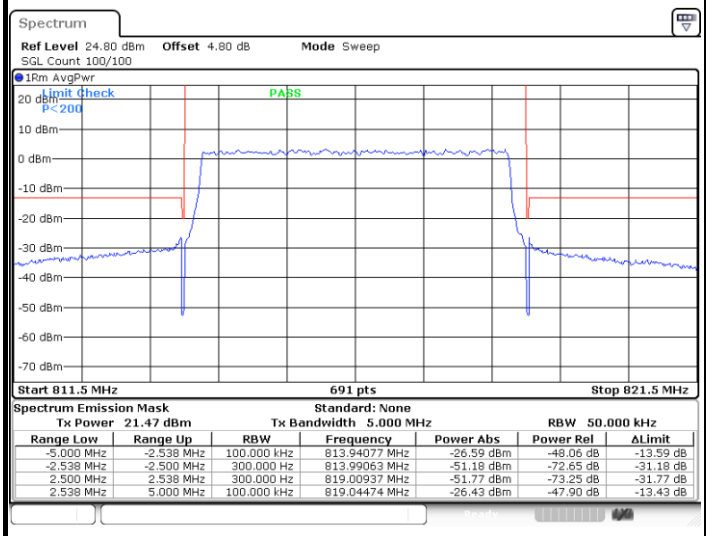


Spectrum Emission Mask Standard: None
Tx Power 22.22 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-2.538 MHz	100.000 kHz	817.13011 MHz	-55.91 dBm	-78.13 dB	-42.91 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	818.99063 MHz	-81.01 dBm	-103.23 dB	-61.01 dB
2.500 MHz	2.538 MHz	300.000 Hz	824.00937 MHz	-47.82 dBm	-70.04 dB	-27.82 dB
2.538 MHz	5.000 MHz	100.000 kHz	824.04474 MHz	-21.67 dBm	-43.89 dB	-8.67 dB

Date: 14.JAN.2023 13:13:41

Lowest Band Edge / Full RB

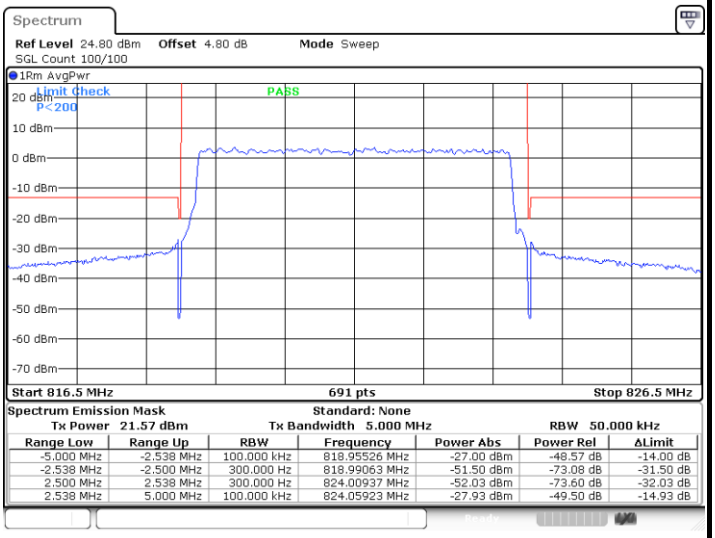


Spectrum Emission Mask Standard: None
Tx Power 21.47 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-2.538 MHz	100.000 kHz	813.94077 MHz	-26.59 dBm	-48.06 dB	-13.59 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	813.99063 MHz	-51.18 dBm	-72.65 dB	-31.18 dB
2.500 MHz	2.538 MHz	300.000 Hz	819.00937 MHz	-51.77 dBm	-73.25 dB	-31.77 dB
2.538 MHz	5.000 MHz	100.000 kHz	819.04474 MHz	-26.43 dBm	-47.90 dB	-13.43 dB

Date: 14.JAN.2023 13:00:15

Highest Band Edge / Full RB



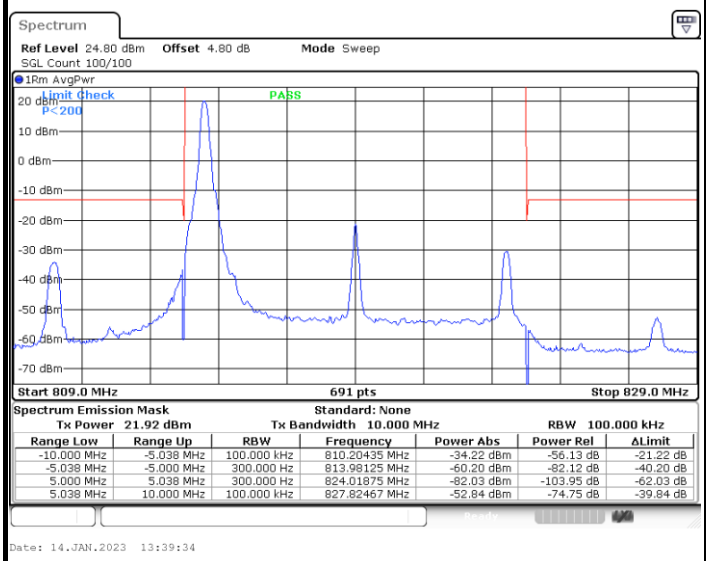
Spectrum Emission Mask Standard: None
Tx Power 21.57 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-2.538 MHz	100.000 kHz	818.95526 MHz	-27.00 dBm	-48.57 dB	-14.00 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	818.99063 MHz	-51.50 dBm	-73.08 dB	-31.50 dB
2.500 MHz	2.538 MHz	300.000 Hz	824.00937 MHz	-52.03 dBm	-73.60 dB	-32.03 dB
2.538 MHz	5.000 MHz	100.000 kHz	824.05923 MHz	-27.93 dBm	-49.50 dB	-14.93 dB

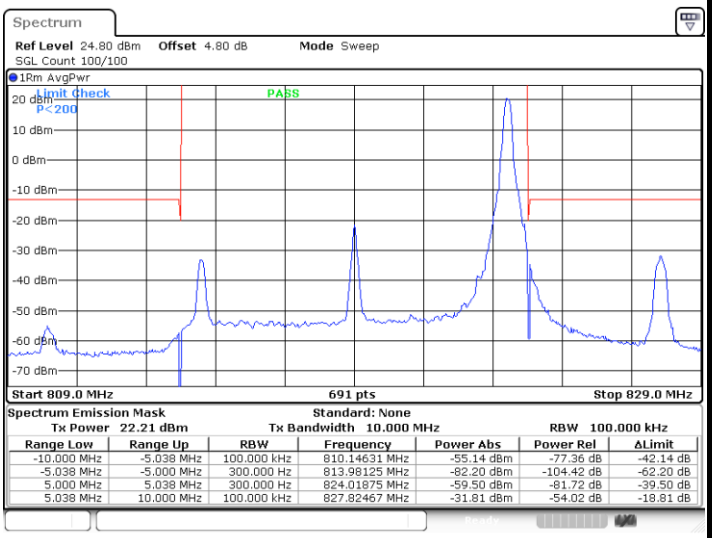
Date: 14.JAN.2023 13:08:12

LTE Band 26 / 10MHz / QPSK

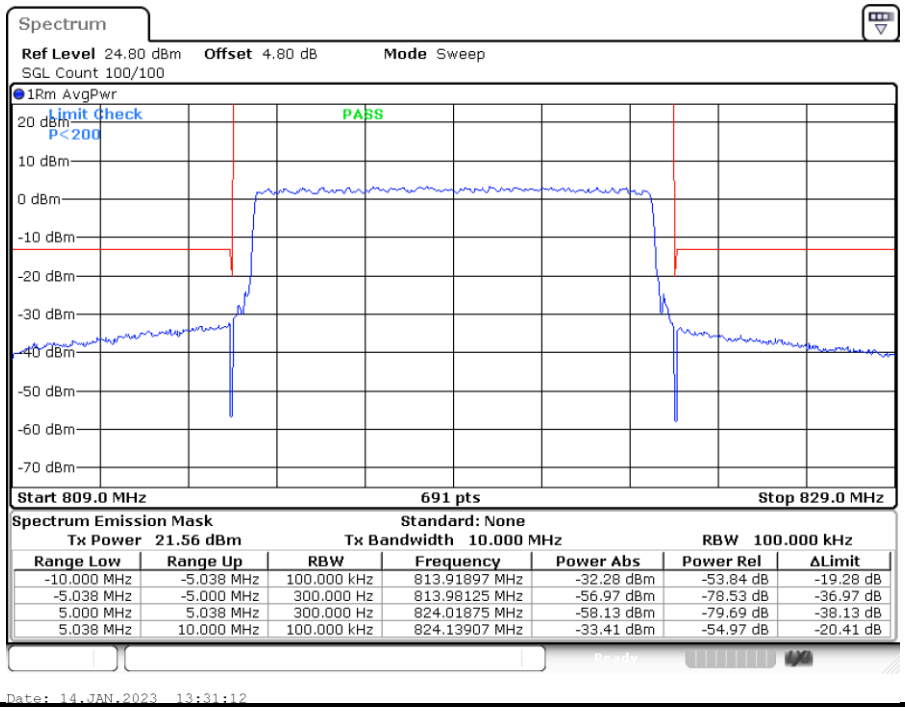
Middle Band Edge / 1 RB



Middle Band Edge / 1 RB max

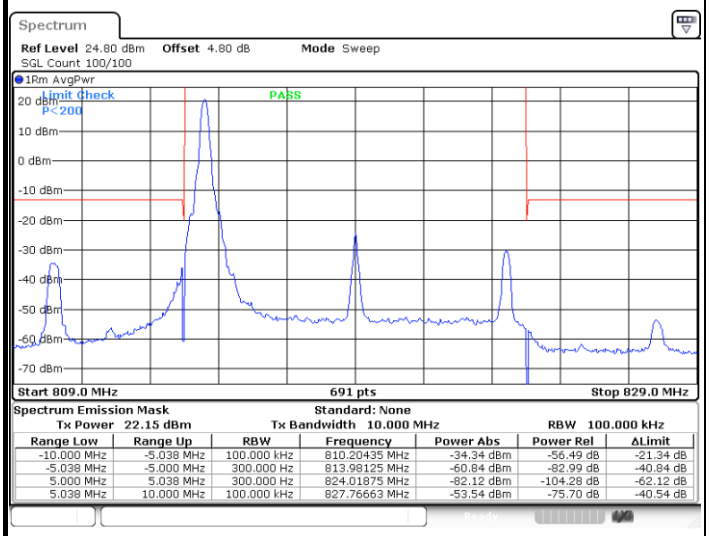


Band Edge / Full RB



LTE Band 26 / 10MHz / 16QAM

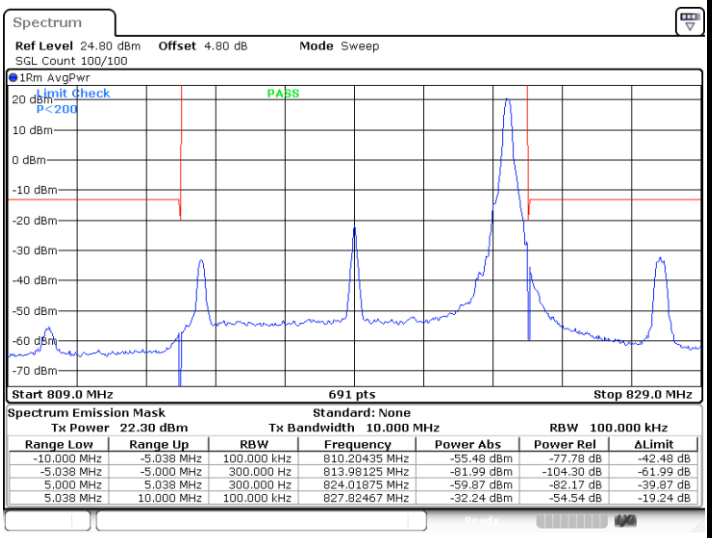
Middle Band Edge / 1 RB



Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-10.000 MHz	-5.038 MHz	100.000 kHz	810.20435 MHz	-34.34 dBm	-56.49 dB	-21.34 dB
-5.038 MHz	-5.000 MHz	300.000 Hz	813.98125 MHz	-60.84 dBm	-82.99 dB	-40.84 dB
5.000 MHz	5.038 MHz	300.000 Hz	824.01875 MHz	-82.12 dBm	-104.28 dB	-62.12 dB
5.038 MHz	10.000 MHz	100.000 kHz	827.76663 MHz	-53.54 dBm	-75.70 dB	-40.54 dB

Date: 14.JAN.2023 13:38:19

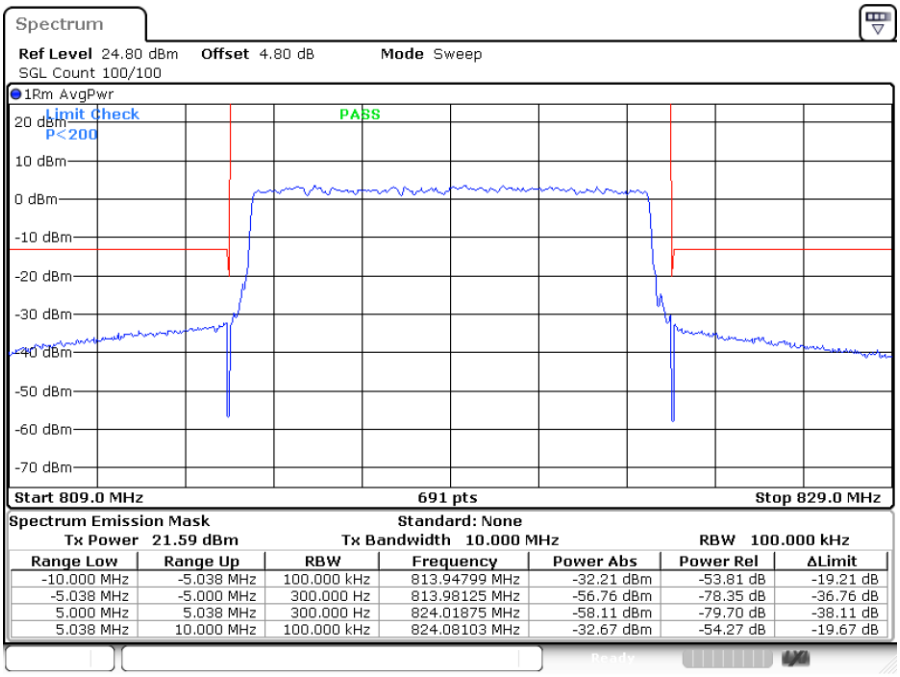
Middle Band Edge / 1 RB max



Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-10.000 MHz	-5.038 MHz	100.000 kHz	810.20435 MHz	-55.48 dBm	-77.78 dB	-42.48 dB
-5.038 MHz	-5.000 MHz	300.000 Hz	813.98125 MHz	-81.99 dBm	-104.30 dB	-61.99 dB
5.000 MHz	5.038 MHz	300.000 Hz	824.01875 MHz	-59.87 dBm	-82.17 dB	-39.87 dB
5.038 MHz	10.000 MHz	100.000 kHz	827.82467 MHz	-32.24 dBm	-54.54 dB	-19.24 dB

Date: 14.JAN.2023 13:41:55

Band Edge / Full RB

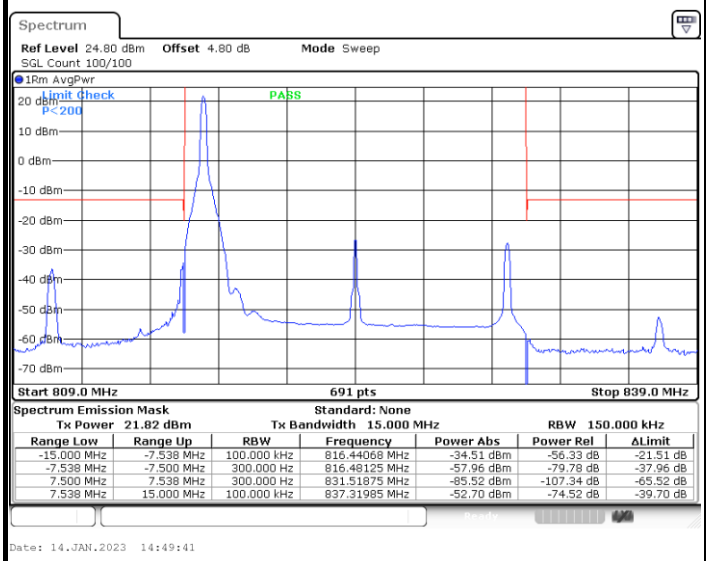


Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-10.000 MHz	-5.038 MHz	100.000 kHz	813.94799 MHz	-32.21 dBm	-53.81 dB	-19.21 dB
-5.038 MHz	-5.000 MHz	300.000 Hz	813.98125 MHz	-56.76 dBm	-78.35 dB	-36.76 dB
5.000 MHz	5.038 MHz	300.000 Hz	824.01875 MHz	-58.11 dBm	-79.70 dB	-38.11 dB
5.038 MHz	10.000 MHz	100.000 kHz	824.08103 MHz	-32.67 dBm	-54.27 dB	-19.67 dB

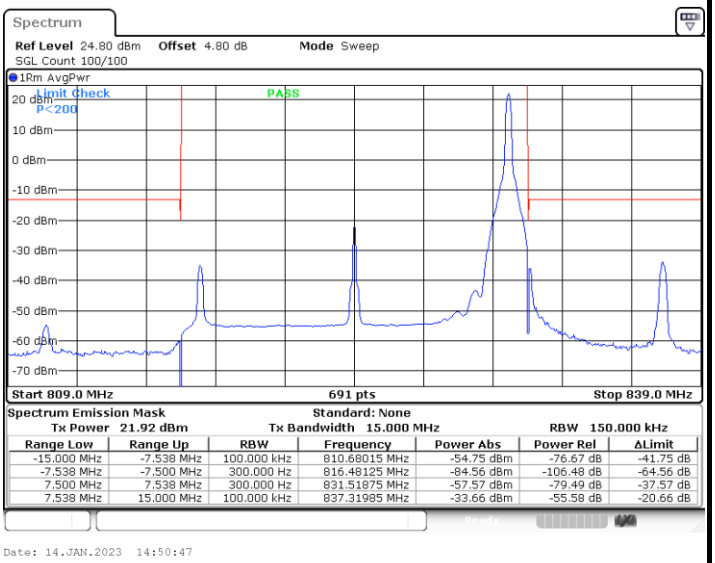
Date: 14.JAN.2023 13:32:04

LTE Band 26 / 15MHz / QPSK

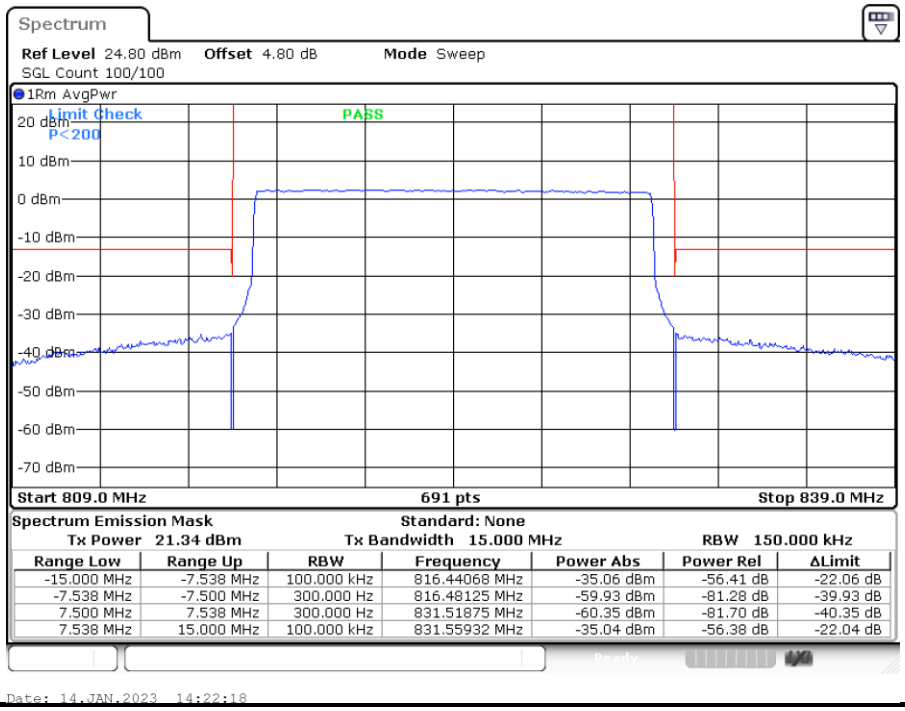
Lowest Band Edge / 1 RB



Lowest Band Edge / 1 RB max

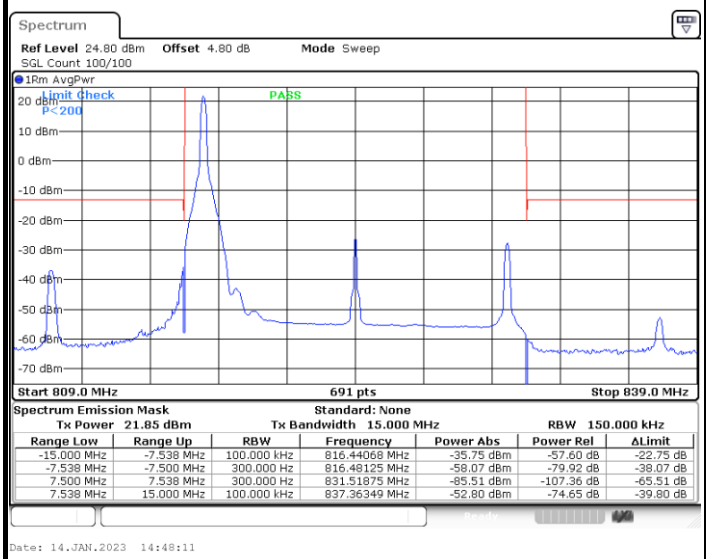


Band Edge / Full RB



LTE Band 26 / 15MHz / 16QAM

Lowest Band Edge / 1 RB

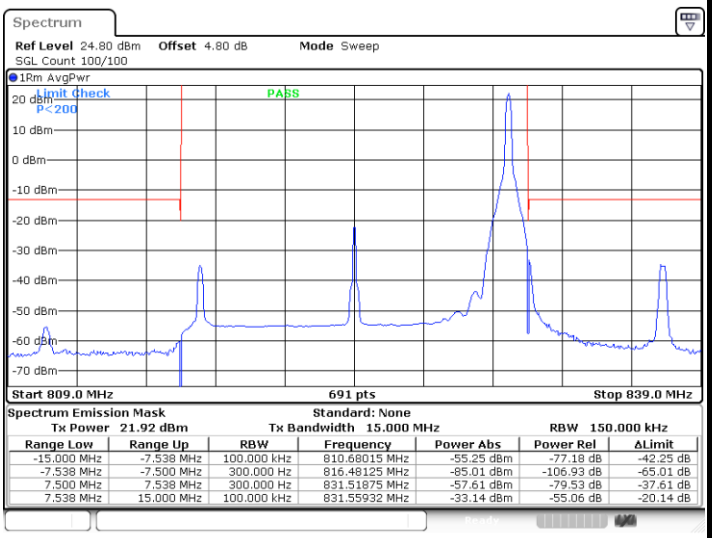


Spectrum Emission Mask — Standard: None
Tx Power 21.85 dBm | Tx Bandwidth 15.000 MHz | RBW 150.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-15.000 MHz	-7.538 MHz	100.000 kHz	816.44068 MHz	-35.75 dBm	-57.60 dB	-22.75 dB
-7.538 MHz	-7.500 MHz	300.000 Hz	816.48125 MHz	-58.07 dBm	-79.92 dB	-38.07 dB
7.500 MHz	7.538 MHz	300.000 Hz	831.51875 MHz	-85.51 dBm	-107.36 dB	-65.51 dB
7.538 MHz	15.000 MHz	100.000 kHz	837.36349 MHz	-52.80 dBm	-74.65 dB	-39.80 dB

Date: 14.JAN.2023 14:48:11

Lowest Band Edge / 1 RB max

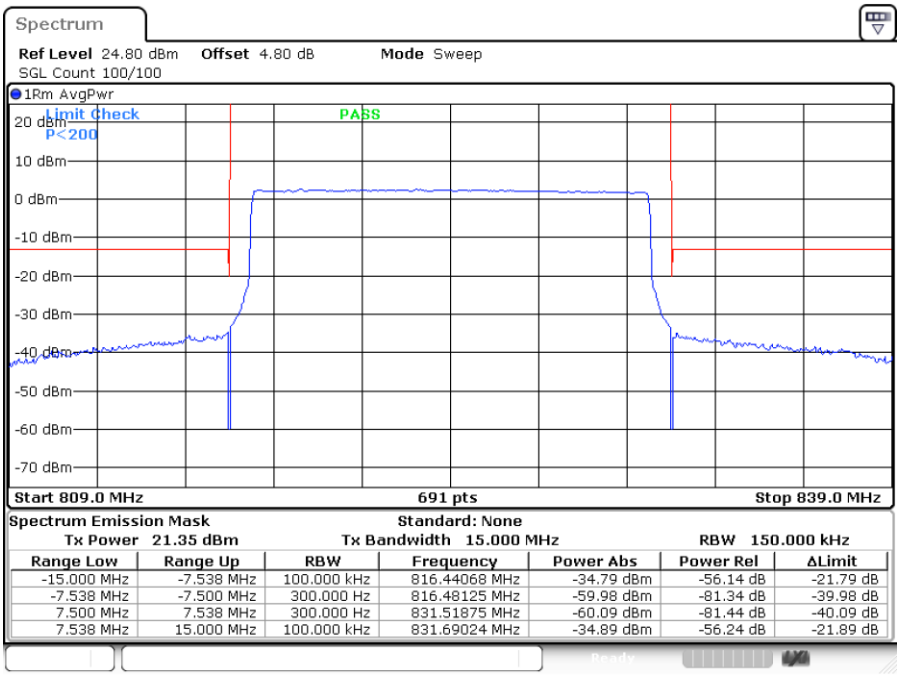


Spectrum Emission Mask — Standard: None
Tx Power 21.92 dBm | Tx Bandwidth 15.000 MHz | RBW 150.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-15.000 MHz	-7.538 MHz	100.000 kHz	810.68015 MHz	-55.25 dBm	-77.18 dB	-42.25 dB
-7.538 MHz	-7.500 MHz	300.000 Hz	816.48125 MHz	-85.01 dBm	-106.93 dB	-65.01 dB
7.500 MHz	7.538 MHz	300.000 Hz	831.51875 MHz	-57.61 dBm	-79.53 dB	-37.61 dB
7.538 MHz	15.000 MHz	100.000 kHz	831.55932 MHz	-33.14 dBm	-55.06 dB	-20.14 dB

Date: 14.JAN.2023 14:51:50

Band Edge / Full RB



Spectrum Emission Mask — Standard: None
Tx Power 21.35 dBm | Tx Bandwidth 15.000 MHz | RBW 150.000 kHz

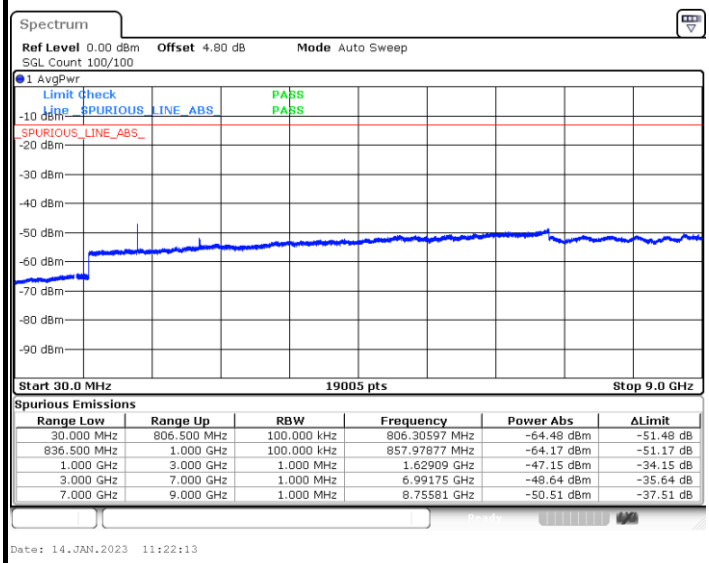
Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-15.000 MHz	-7.538 MHz	100.000 kHz	816.44068 MHz	-34.79 dBm	-56.14 dB	-21.79 dB
-7.538 MHz	-7.500 MHz	300.000 Hz	816.48125 MHz	-59.98 dBm	-81.34 dB	-39.98 dB
7.500 MHz	7.538 MHz	300.000 Hz	831.51875 MHz	-60.09 dBm	-81.44 dB	-40.09 dB
7.538 MHz	15.000 MHz	100.000 kHz	831.69024 MHz	-34.89 dBm	-56.24 dB	-21.89 dB

Date: 14.JAN.2023 14:23:39

Conducted Spurious Emission

LTE Band 26 / 1.4MHz

Lowest Channel / QPSK

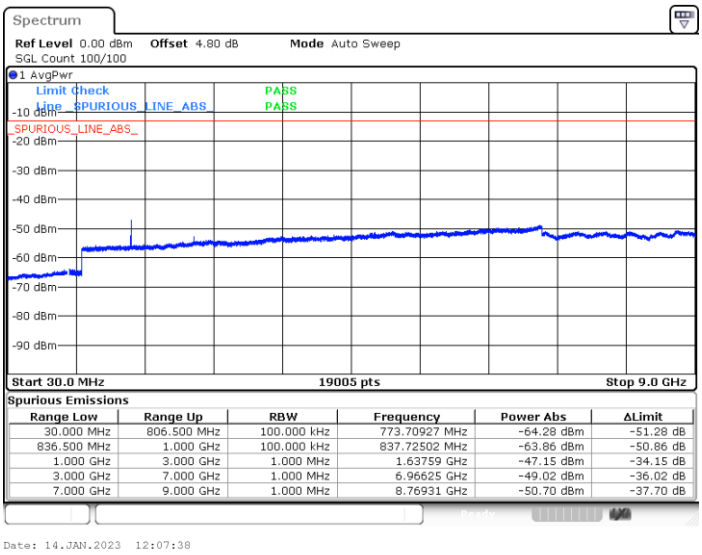


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	806.30597 MHz	-64.48 dBm	-51.48 dB
836.500 MHz	1.000 GHz	100.000 kHz	857.97877 MHz	-64.17 dBm	-51.17 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.62909 GHz	-47.15 dBm	-34.15 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99175 GHz	-48.64 dBm	-35.64 dB
7.000 GHz	9.000 GHz	1.000 MHz	8.75581 GHz	-50.51 dBm	-37.51 dB

Date: 14.JAN.2023 11:22:13

Middle Channel / QPSK

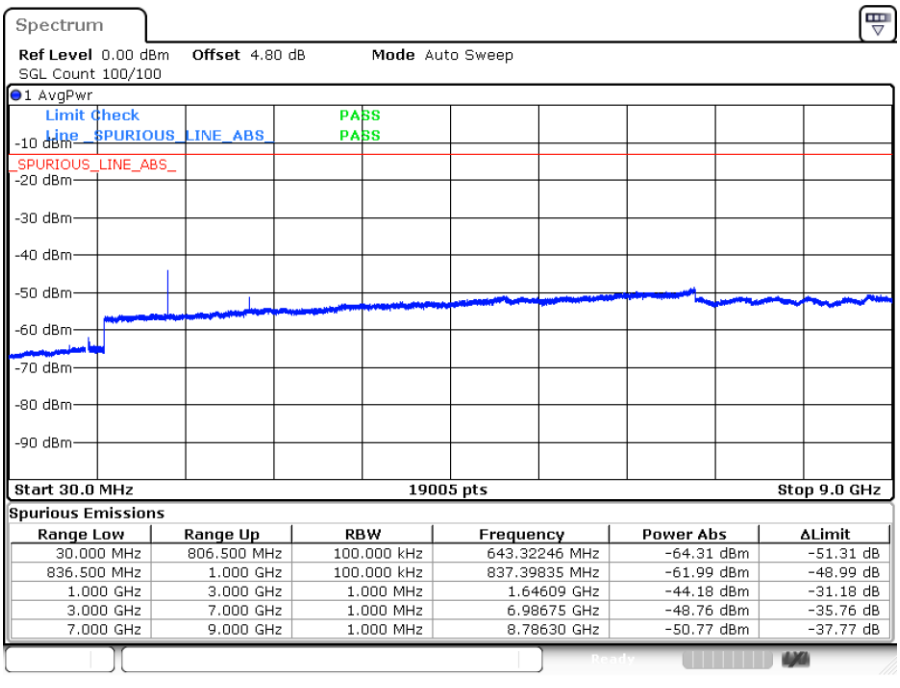


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	773.70927 MHz	-64.28 dBm	-51.28 dB
836.500 MHz	1.000 GHz	100.000 kHz	837.72502 MHz	-63.86 dBm	-50.86 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.63759 GHz	-47.15 dBm	-34.15 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.96625 GHz	-49.02 dBm	-36.02 dB
7.000 GHz	9.000 GHz	1.000 MHz	8.76931 GHz	-50.70 dBm	-37.70 dB

Date: 14.JAN.2023 12:07:38

Highest Channel / QPSK



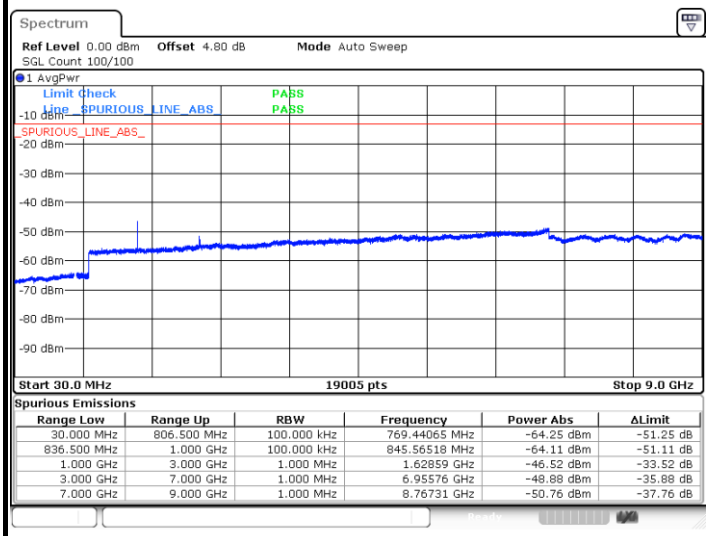
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	643.32246 MHz	-64.31 dBm	-51.31 dB
836.500 MHz	1.000 GHz	100.000 kHz	837.39835 MHz	-61.99 dBm	-48.99 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.64609 GHz	-44.18 dBm	-31.18 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.98675 GHz	-48.76 dBm	-35.76 dB
7.000 GHz	9.000 GHz	1.000 MHz	8.78630 GHz	-50.77 dBm	-37.77 dB

Date: 14.JAN.2023 12:09:25

LTE Band 26 / 3MHz

Lowest Channel / QPSK

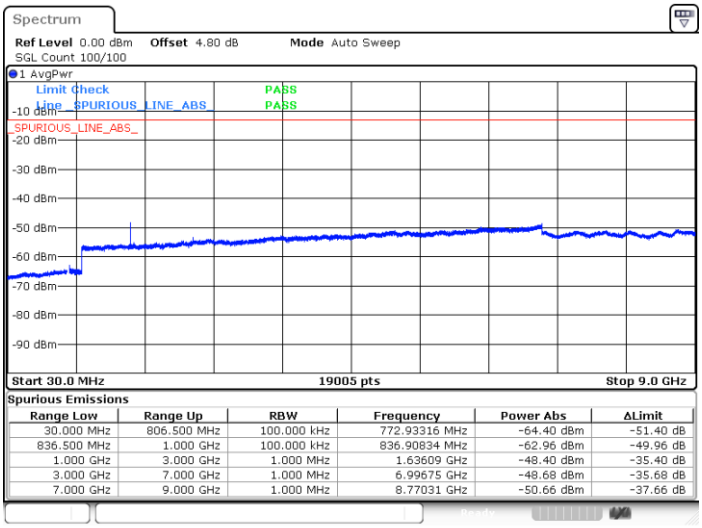


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	769.44065 MHz	-64.25 dBm	-51.25 dB
836.500 MHz	1.000 GHz	100.000 kHz	845.56518 MHz	-64.11 dBm	-51.11 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.62859 GHz	-46.52 dBm	-33.52 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.95576 GHz	-48.88 dBm	-35.88 dB
7.000 GHz	9.000 GHz	1.000 MHz	8.76731 GHz	-50.76 dBm	-37.76 dB

Date: 14.JAN.2023 12:53:45

Middle Channel / QPSK

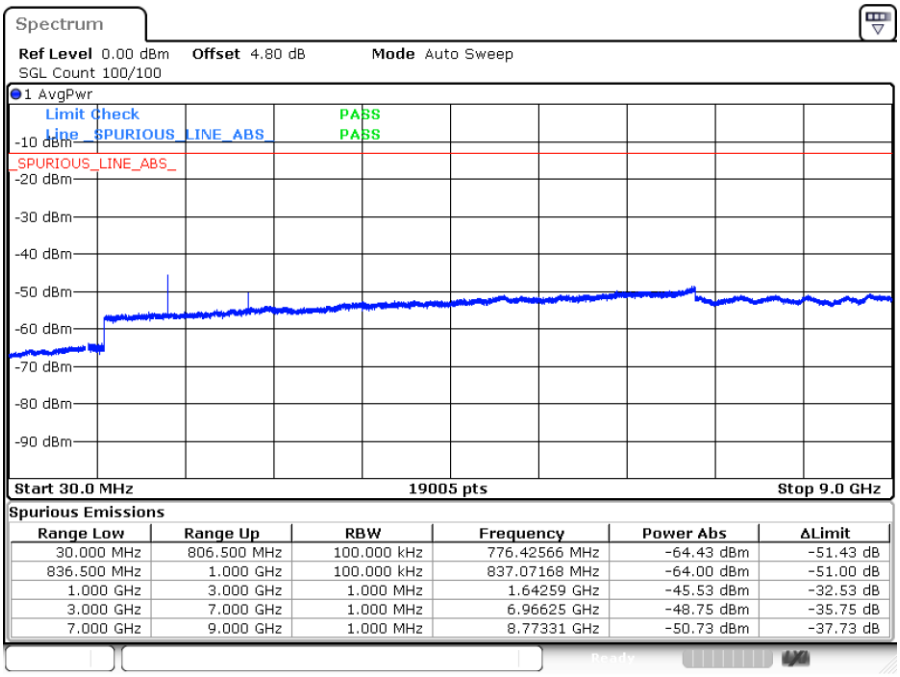


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	772.93316 MHz	-64.40 dBm	-51.40 dB
836.500 MHz	1.000 GHz	100.000 kHz	836.90834 MHz	-62.96 dBm	-49.96 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.63609 GHz	-48.40 dBm	-35.40 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99675 GHz	-48.68 dBm	-35.68 dB
7.000 GHz	9.000 GHz	1.000 MHz	8.77031 GHz	-50.66 dBm	-37.66 dB

Date: 14.JAN.2023 12:55:28

Highest Channel / QPSK



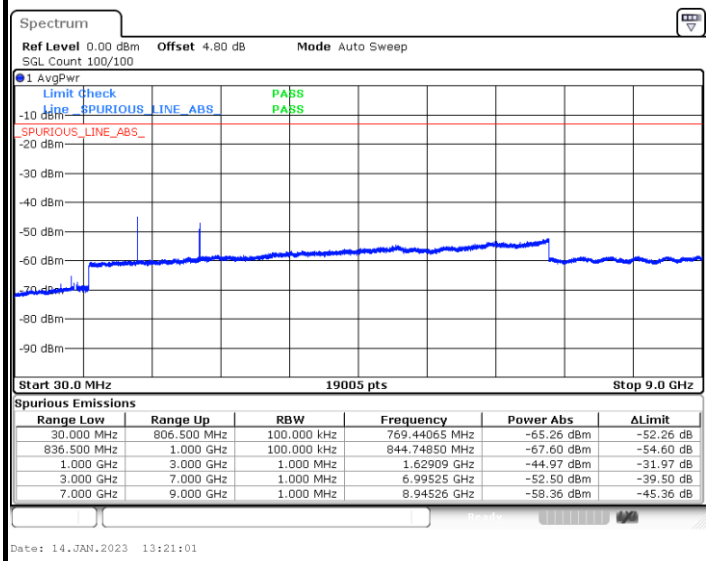
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	776.42566 MHz	-64.43 dBm	-51.43 dB
836.500 MHz	1.000 GHz	100.000 kHz	837.07168 MHz	-64.00 dBm	-51.00 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.64259 GHz	-45.53 dBm	-32.53 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.96625 GHz	-48.75 dBm	-35.75 dB
7.000 GHz	9.000 GHz	1.000 MHz	8.77331 GHz	-50.73 dBm	-37.73 dB

Date: 14.JAN.2023 12:57:05

LTE Band 26 / 5MHz

Lowest Channel / QPSK

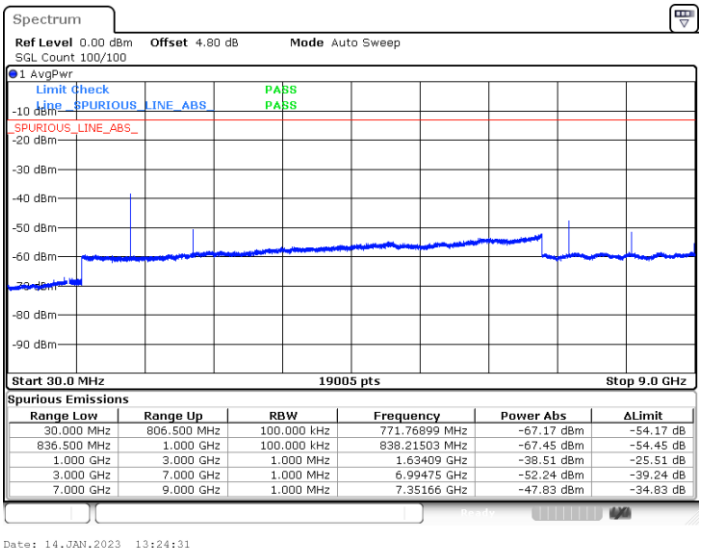


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	769.44065 MHz	-65.26 dBm	-52.26 dB
836.500 MHz	1.000 GHz	100.000 kHz	844.74850 MHz	-67.60 dBm	-54.60 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.62909 GHz	-44.97 dBm	-31.97 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99525 GHz	-52.50 dBm	-39.50 dB
7.000 GHz	9.000 GHz	1.000 MHz	8.94526 GHz	-58.36 dBm	-45.36 dB

Date: 14.JAN.2023 13:21:01

Middle Channel / QPSK

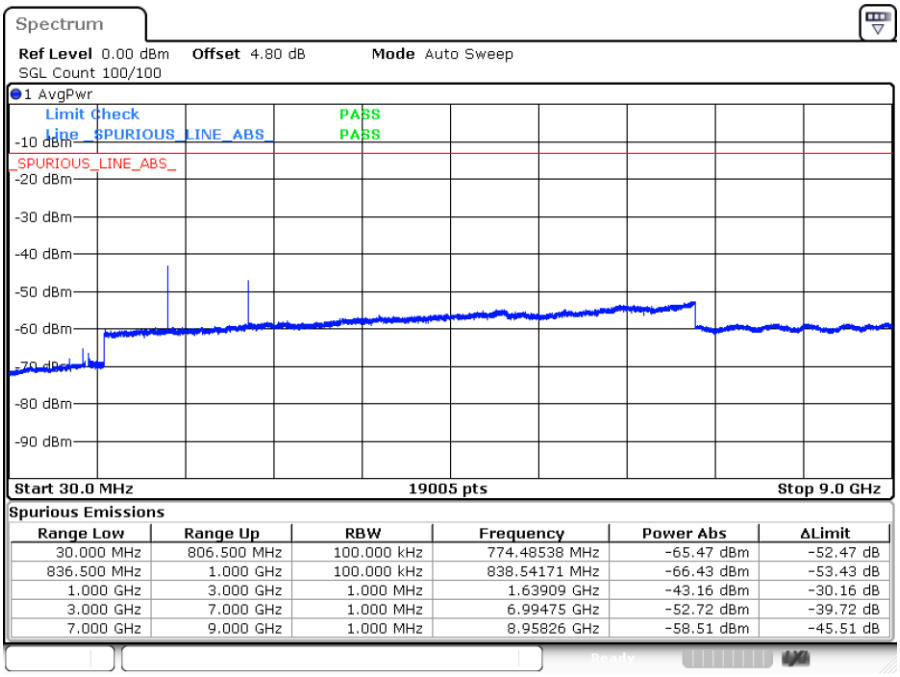


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	771.76899 MHz	-67.17 dBm	-54.17 dB
836.500 MHz	1.000 GHz	100.000 kHz	838.21503 MHz	-67.45 dBm	-54.45 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.63409 GHz	-38.51 dBm	-25.51 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99475 GHz	-52.24 dBm	-39.24 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.35166 GHz	-47.83 dBm	-34.83 dB

Date: 14.JAN.2023 13:24:31

Highest Channel / QPSK



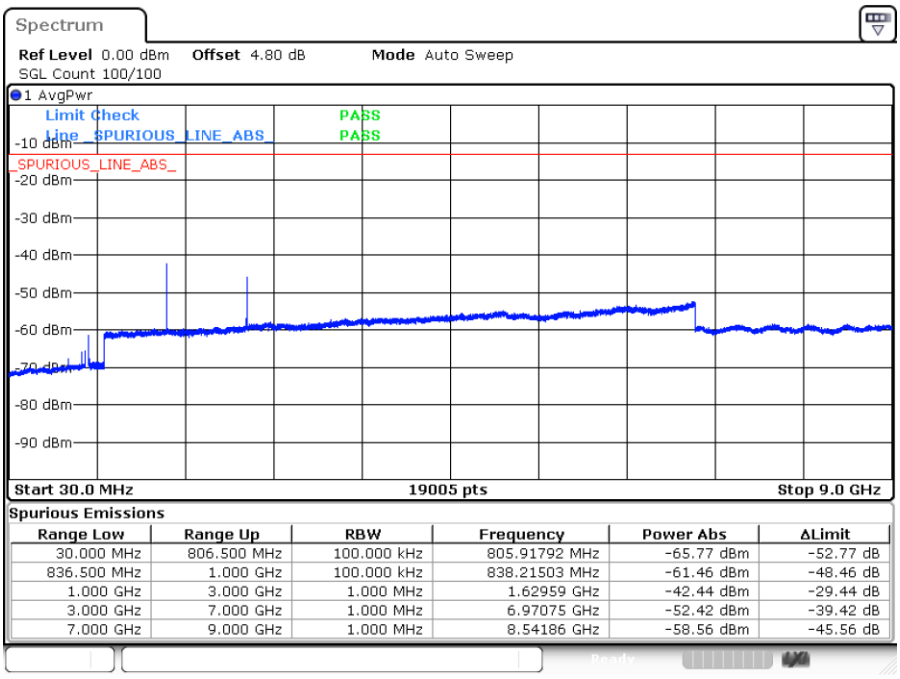
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	774.48538 MHz	-65.47 dBm	-52.47 dB
836.500 MHz	1.000 GHz	100.000 kHz	838.54171 MHz	-66.43 dBm	-53.43 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.63909 GHz	-43.16 dBm	-30.16 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99475 GHz	-52.72 dBm	-39.72 dB
7.000 GHz	9.000 GHz	1.000 MHz	8.95826 GHz	-58.51 dBm	-45.51 dB

Date: 14.JAN.2023 13:28:29

LTE Band 26 / 10MHz

Middle Channel / QPSK



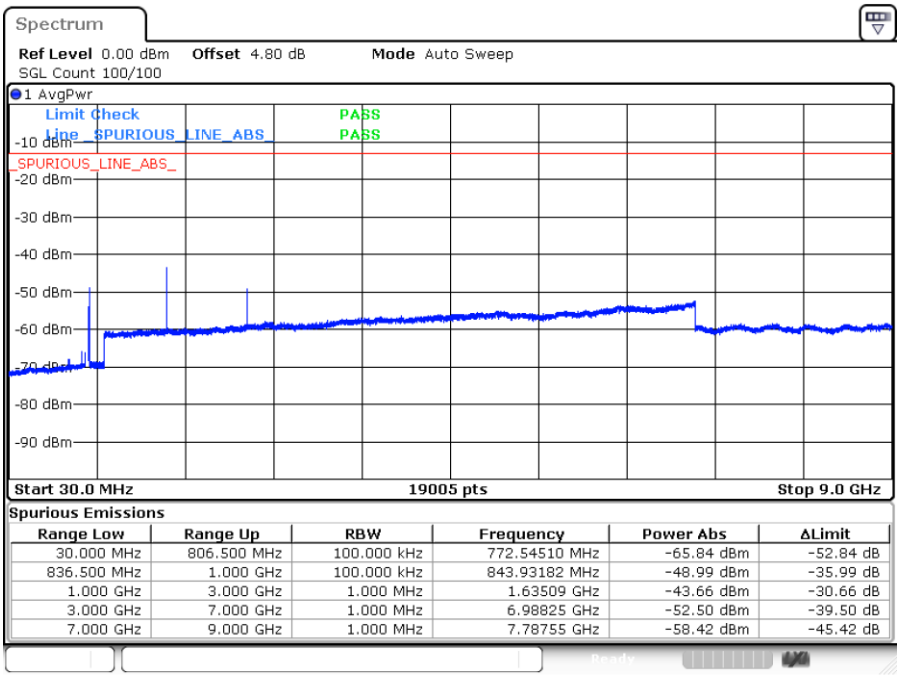
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	805.91792 MHz	-65.77 dBm	-52.77 dB
836.500 MHz	1.000 GHz	100.000 kHz	838.21503 MHz	-61.46 dBm	-48.46 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.62959 GHz	-42.44 dBm	-29.44 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.97075 GHz	-52.42 dBm	-39.42 dB
7.000 GHz	9.000 GHz	1.000 MHz	8.54186 GHz	-58.56 dBm	-45.56 dB

Date: 14.JAN.2023 13:49:29

LTE Band 26 / 15MHz

Lowest Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	772.54510 MHz	-65.84 dBm	-52.84 dB
836.500 MHz	1.000 GHz	100.000 kHz	843.93182 MHz	-48.99 dBm	-35.99 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.63509 GHz	-43.66 dBm	-30.66 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.98825 GHz	-52.50 dBm	-39.50 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.78755 GHz	-58.42 dBm	-45.42 dB

Date: 14.JAN.2023 14:58:58

Frequency Stability

Test Conditions		LTE Band 26 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	2.5ppm.
		Deviation (ppm)	Result
50	Normal Voltage	0.0023	PASS
40	Normal Voltage	0.0016	
30	Normal Voltage	0.0012	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0004	
0	Normal Voltage	0.0017	
-10	Normal Voltage	0.0013	
-20	Normal Voltage	0.0024	
-30	Normal Voltage	0.0031	
20	Maximum Voltage	0.0015	
20	Normal Voltage	0.0000	
20	End Point	0.0011	

Note: Normal Voltage =3.80V. ; End Point (BEP) =3.55 V. ; Maximum Voltage =4.40 V.

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

Test Engineer :	Carry Xu	Temperature :	23~25℃
		Relative Humidity :	41~42%

LTE Band 26 / 10MHz / QPSK								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1632	-55.05	-13	-42.05	-62.02	1.58	10.70	H
	2440	-54.26	-13	-41.26	-62.51	2.102	12.50	H
	3256	-60.41	-13	-47.41	-69.30	2.856	13.90	H
	1632	-53.08	-13	-40.08	-60.05	1.58	10.70	V
	2440	-50.17	-13	-37.17	-58.42	2.10	12.50	V
	3256	-59.37	-13	-46.37	-68.26	2.86	13.90	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.