FCC RF Test Report

APPLICANT	:	Guangdong OPPO Mobile Telecommunications Corp., Ltd.
EQUIPMENT	:	Mobile Phone
BRAND NAME	:	OPPO
MODEL NAME	:	CPH2689
FCC ID	:	R9C-OP24222
STANDARD	:	47 CFR Part 90(S)
CLASSIFICATION	:	PCS Licensed Transmitter Held to Ear (PCE)
TEST DATE(S)	:	Sep. 23, 2024 ~ Sep. 29, 2024

We, Sporton International Inc. (Shenzhen), 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. (Shenzhen), the test report shall not be reproduced except in full.

Jason Jia

Approved by: Jason Jia

ACCREDITED
Cert #5145.01

Sporton International Inc. (ShenZhen)
1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055
People's Republic of China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FW491807A	Rev. 01	Initial issue of report	Nov. 12, 2024

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 50.55 dB at 3258.00 MHz
3.6	§2.1055 §90.213	Frequency Stability for Temperature & Voltage	< 2.5 ppm	PASS	-

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the section “Measurement Uncertainty”

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

1 General Description

1.1 Applicant

Guangdong OPPO Mobile Telecommunications Corp., Ltd.
NO.18 HaiBin Road, Wusha Village, Chang'an Town, DongGuan City, Guangdong Province, P.R. China

1.2 Manufacturer

Guangdong OPPO Mobile Telecommunications Corp., Ltd.
NO.18 HaiBin Road, Wusha Village, Chang'an Town, DongGuan City, Guangdong Province, P.R. China

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	OPPO
Model Name	CPH2689
FCC ID	R9C-OP24222
IMEI Code	Conducted: 863233070025799/863233070025781 Radiation: 863233070022457/863233070022440
HW Version	11
SW Version	ColorOS 15.0
EUT Stage	Production Unit

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	LTE Band 18 : 815 MHz ~ 824 MHz LTE Band 26 : 814 MHz ~ 824 MHz
Rx Frequency	LTE Band 18 : 860 MHz ~ 869 MHz LTE Band 26 : 859 MHz ~ 869 MHz
Bandwidth	LTE Band 18 : 5MHz / 10MHz / 15MHz LTE Band 26 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz
Maximum Output Power to Antenna	**<Ant. 0>** LTE Band 18 : 24.38 dBm LTE Band 26 : 24.39 dBm **<Ant. 1>** LTE Band 18 : 24.78 dBm LTE Band 26 : 24.79 dBm
Antenna Gain	LTE Band 18/26: -5.2 dBi for Ant.0 LTE Band 18/26: -3.2 dBi for Ant.1
Type of Modulation	QPSK / 16QAM / 64QAM / 256QAM

Note: Only maximum conducted Power of Ant.1 is shown in the report.

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 18		QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum Conducted power (W)	Emission Designator (99%OBW)	Maximum Conducted power (W)	Emission Designator (99%OBW)
5	817.5 ~ 821.5	0.2944	4M49G7D	0.2793	4M48W7D
10	820.0	0.2944	9M01G7D	0.2754	8M99W7D
15	822.5	0.3006	13M4G7D	0.2805	13M5W7D

LTE Band 26		QPSK		16QAM/64QAM/256QAM	
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	0.2661	1M10G7D	0.2588	1M10W7D
3	815.5 ~ 822.5	0.2685	2M72G7D	0.2588	2M70W7D
5	816.5 ~ 821.5	0.2642	4M49G7D	0.2600	4M48W7D
10	819.0	0.2692	9M01G7D	0.2624	8M99W7D
15	824	0.3013	13M4G7D	0.2382	13M5W7D

Note:

1. LTE Band 26 overlaps the entire frequency range of LTE Band 18. Therefore, the test results provided in this report covers Band 18 and the portion of Band 26 subject to Part 90S.

2. All modulations have been tested, only the worst modulation of PSK/QAM is shown in the report.

1.7 Testing Site

Sporton International Inc. (ShenZhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	TH01-SZ	CN1256	421272

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City, Guangdong Province 518103 People's Republic of China TEL: +86-755-86066985		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH03-SZ	CN1256	421272

1.8 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH03-SZ	AUDIX	E3	6.2009-8-24

1.9 Applied Standards

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

- 47 CFR 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

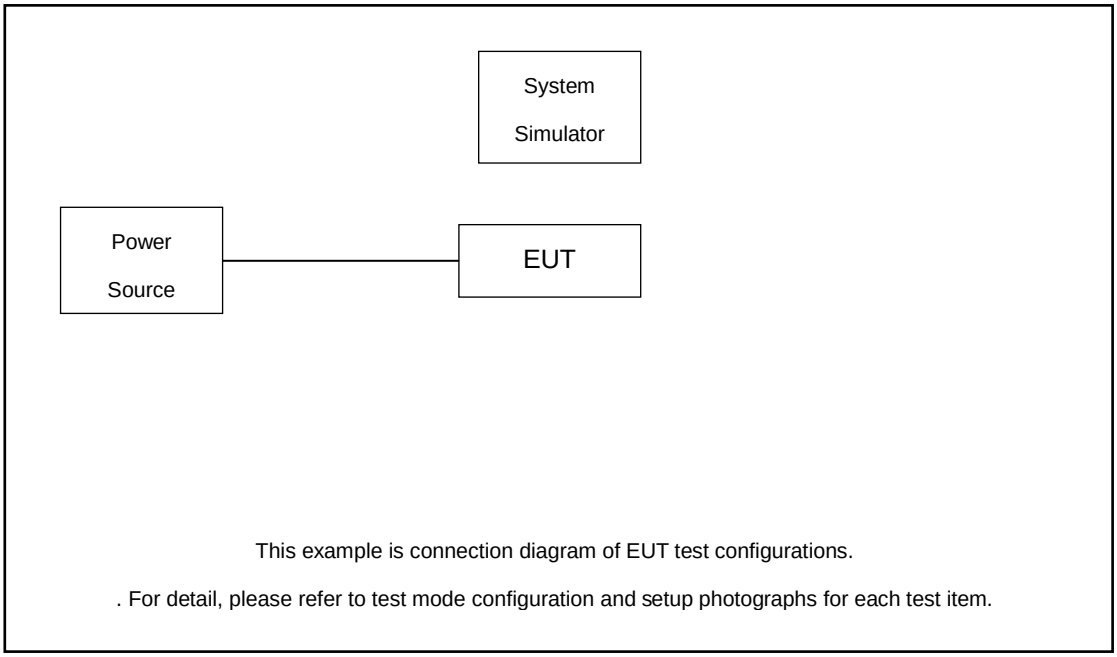
2.1 Test Mode

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	16 QAM	64 QAM	256 QAM	1	Half	Full	L	M	H
Max. Output Power	18	-	-	v	v	v	-	v	v	v	v	v		v	v	v	v
	26	v	v	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		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			v	v	v	-	v				v				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. 4. For QAM modulation mode, the whole testing has assessed 16QAM&64QAM&256QAM mode by referring to the higher conducted power.																

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m

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 and attenuator factor 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 and attenuator factor.

Offset = RF cable loss + attenuator factor.

The following shows an offset computation example with RF cable loss 4.0 dB and a 10dB attenuator.

Example :

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 4.0 + 10 = 14.0 (dB)

2.5 Frequency List of Low/Middle/High Channels

LTE Band 18 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
15	Channel	23925	-	-
	Frequency	822.5	-	-
10	Channel	23900	-	-
	Frequency	820	-	-
5	Channel	23875	23895	23915
	Frequency	817.5	819.5	821.5

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)**	**-**	**Middle**	**-**
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.

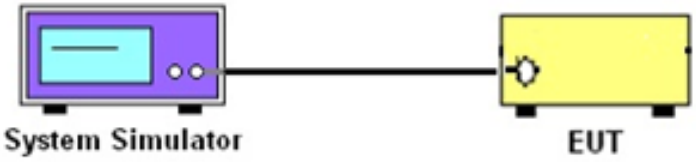
3.1.2 Measuring Instruments

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.

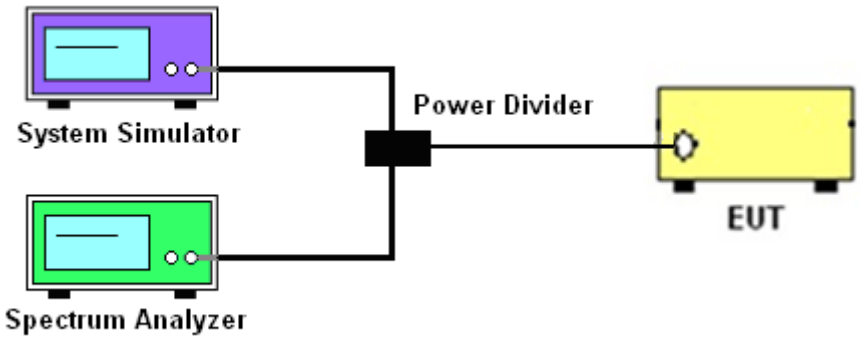
3.2.2 Measuring Instruments

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.

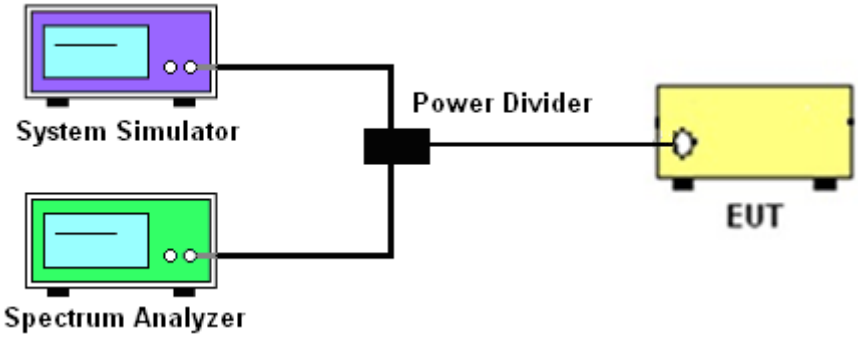
3.3.2 Measuring Instruments

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.

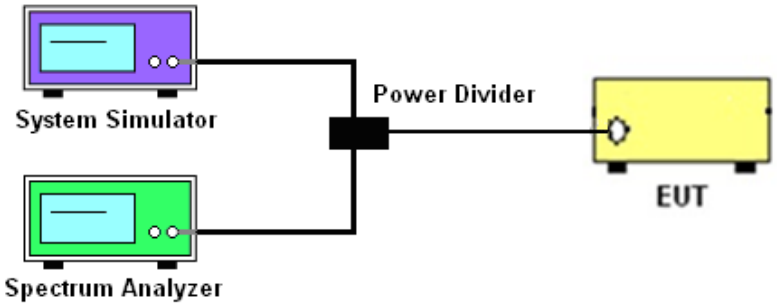
3.4.2 Measuring Instruments

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 C63.26. 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.

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43+10\log_{10}(P[Watts])$ dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

3.5.2 Measuring Instruments

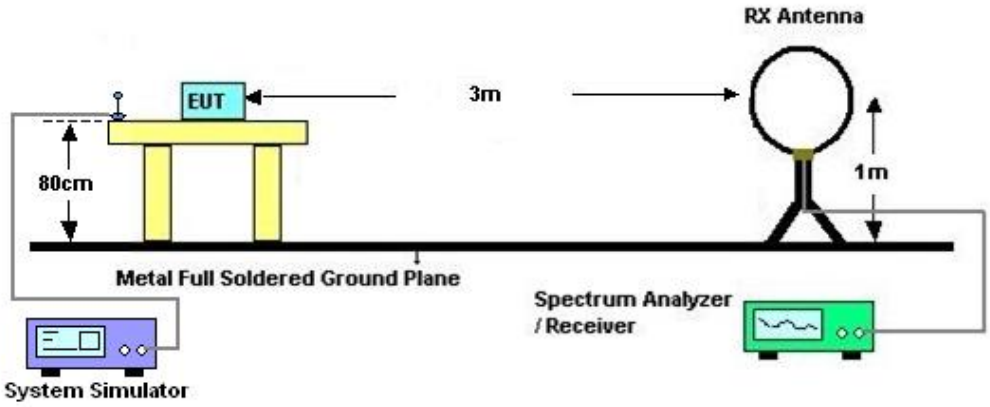
The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

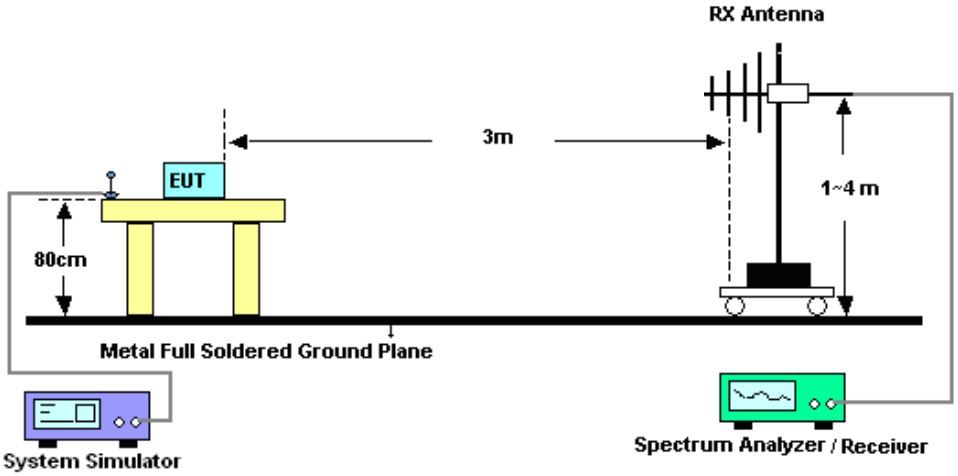
1. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position 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

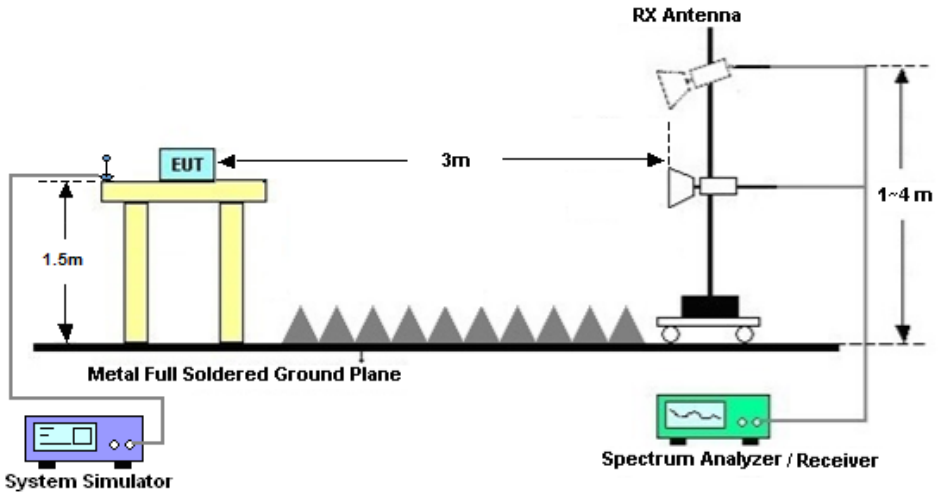
For radiated test from 30MHz



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.

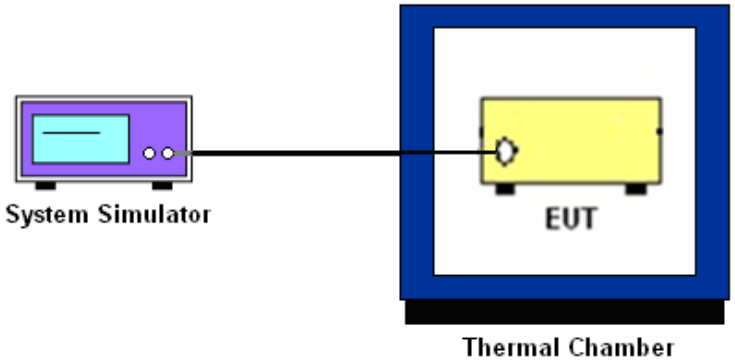
3.6.3 Test Procedures for Temperature Variation

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	101078	10Hz~40GHz	Apr. 09, 2024	Sep. 23, 2024~ Sep. 25, 2024	Apr. 08, 2025	Conducted (TH01-SZ)
DC Power Supply	TTI	PL330P	290070	Max 32V，3A	Oct. 16, 2023	Sep. 23, 2024~ Sep. 25, 2024	Oct. 15, 2024	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04265	60.06.020.0077	0.4GHz~26.5GHz	Dec. 25, 2023	Sep. 23, 2024~ Sep. 25, 2024	Dec. 24, 2024	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 03, 2024	Sep. 23, 2024~ Sep. 25, 2024	Jul. 02, 2025	Conducted (TH01-SZ)
EMI Test Receiver&SA	KEYSIGHT	N9038A	MY54450083	20Hz~8.4GHz	Apr. 09, 2024	Sep. 29, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
Loop Antenna	R&S	HFH2-Z2E	101141	9kHz~30MHz	Dec. 29, 2023	Sep. 29, 2024	Dec. 28, 2024	Radiation (03CH03-SZ)
EXA Spectrum Anaiyzer	KEYSIGHT	N9010A	MY55150246	10Hz~44GHz;	Apr. 09, 2024	Sep. 29, 2024	Apr. 08, 2025	Radiation (03CH03-SZ
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz-2GHz	Aug. 20, 2023	Sep. 29, 2024	Aug. 19, 2025	Radiation (03CH03-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1355	1GHz~18GHz	Apr. 09, 2024	Sep. 29, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
Amplifier	Burgeon	BPA-530	102211	0.01Hz ~3000MHz	Oct. 18, 2023	Sep. 29, 2024	Oct. 17, 2024	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 03, 2024	Sep. 29, 2024	Jul. 02, 2025	Radiation (03CH03-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Apr. 09, 2024	Sep. 29, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
Amplifier	Agilent Technologies	83017A	MY39501302	500MHz~26.5GHz	Dec. 27, 2023	Sep. 29, 2024	Dec. 26, 2024	Radiation (03CH03-SZ)
AC Power Source	Chroma	61601	616010002729	N/A	Oct. 18, 2023	Sep. 29, 2024	Oct. 17, 2024	Radiation (03CH03-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Sep. 29, 2024	NCR	Radiation (03CH03-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Sep. 29, 2024	NCR	Radiation (03CH03-SZ)
EMI Test Receiver&SA	KEYSIGHT	N9038A	MY54450083	20Hz~8.4GHz	Apr. 09, 2024	Sep. 29, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
Loop Antenna	R&S	HFH2-Z2E	101141	9kHz~30MHz	Dec. 29, 2023	Sep. 29, 2024	Dec. 28, 2024	Radiation (03CH03-SZ)

NCR: No Calibration Required

5 Measurement Uncertainty

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 Spurious Emission & Bandedge	±1.34 dB
Occupied Channel Bandwidth	±0.012 MHz
Conducted Power	±1.34 dB
Peak to Average Ratio	±1.34 dB
Frequency Stability	±1.3 Hz

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.0 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.6 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.8 dB

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

Appendix A. Test Results of Conducted Test

Test Engineer :	Sky	**Temperature :**	24~26℃
		Relative Humidity :	50~53%

Conducted Output Power (Average power)

LTE Band 18_Ant.1:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel					23925	
Frequency (MHz)					822.5	
15	QPSK	1	0		24.78	
15	QPSK	1	37		24.75	
15	QPSK	1	74		24.69	
15	QPSK	36	0		24.57	
15	QPSK	36	20		24.50	
15	QPSK	36	39		24.49	
15	QPSK	75	0		24.41	
15	16QAM	1	0		24.48	
15	64QAM	1	0		23.36	
15	256QAM	1	0		19.91	
Channel				23900	23925	23950
Frequency (MHz)				820	822.5	825
10	QPSK	1	0	24.64	24.69	24.64
10	16QAM	1	0	24.40	24.33	24.38
Channel				23875	23925	23975
Frequency (MHz)				817.5	822.5	827.5
5	QPSK	1	0	24.69	24.61	24.65
5	16QAM	1	0	24.46	24.37	24.37

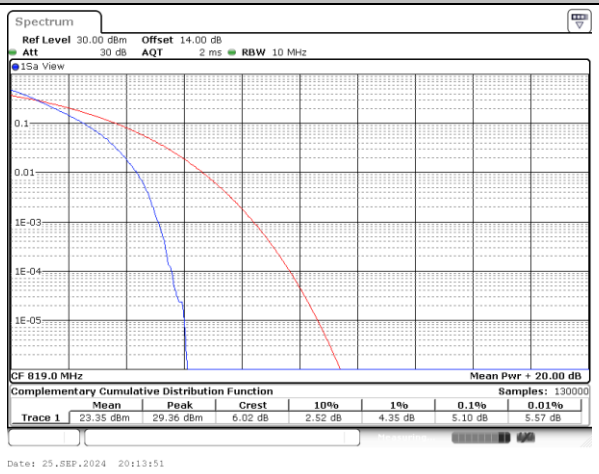
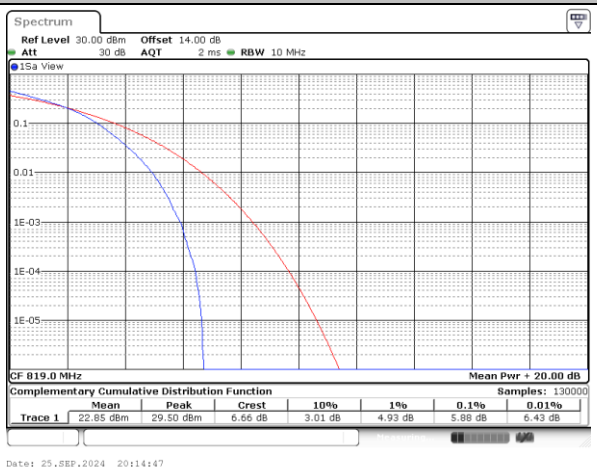
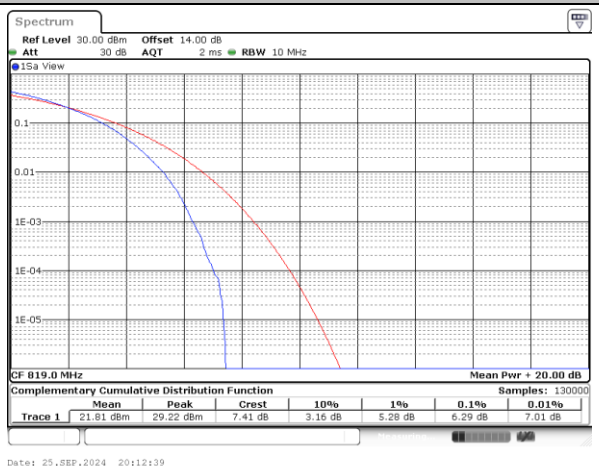
LTE Band 26_Ant.1:

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	24.79		
15	QPSK	1	37	24.21		
15	QPSK	1	74	24.29		
15	QPSK	36	0	24.16		
15	QPSK	36	20	23.88		
15	QPSK	36	39	23.88		
15	QPSK	75	0	24.04		
15	16QAM	1	0	24.25		
15	64QAM	1	0	23.03		
15	256QAM	1	0	19.39		
Channel					26740	
Frequency (MHz)					819	
10	QPSK	1	0		24.30	
10	QPSK	1	25		24.17	
10	QPSK	1	49		24.26	
10	QPSK	25	0		24.04	
10	QPSK	25	12		23.73	
10	QPSK	25	25		23.80	
10	QPSK	50	0		23.90	
10	16QAM	1	0		24.19	
10	64QAM	1	0		22.95	
10	256QAM	1	0		19.38	
Channel				26715	26740	26765
Frequency (MHz)				816.5	819	821.5
5	QPSK	1	0	24.16	24.22	24.22
5	16QAM	1	0	24.11	24.10	24.15
Channel				26705	26740	26775
Frequency (MHz)				815.5	819	822.5
3	QPSK	1	0	24.29	24.16	24.15
3	16QAM	1	0	24.13	24.10	24.08
Channel				26697	26740	26783
Frequency (MHz)				814.7	819	823.3
1.4	QPSK	1	0	24.25	24.23	24.25
1.4	16QAM	1	0	24.13	24.11	24.11

LTE Band 26_Part 90S

Peak-to-Average Ratio

Mode	LTE Band 26 / 10MHz			
Mod.	QPSK	16QAM	64QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Result
Middle CH	5.10	5.88	6.29	PASS

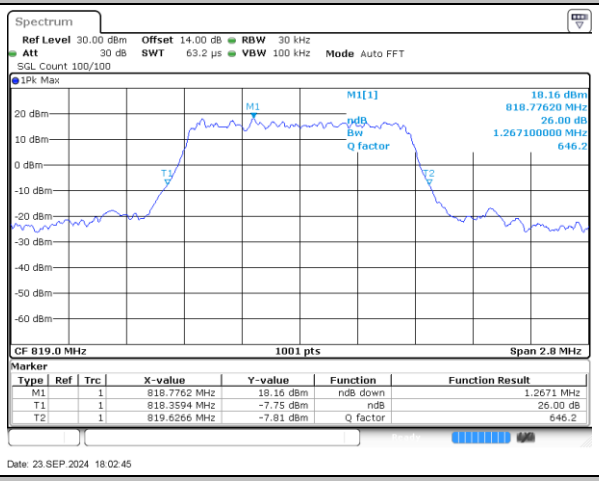
LTE Band 26 / 10MHz / QPSK	LTE Band 26 / 10MHz / 16QAM
Middle Channel / Full RB	Middle Channel / Full RB
	
LTE Band 26 / 10MHz / 64QAM	
Middle Channel / Full RB	
	

26dB Bandwidth

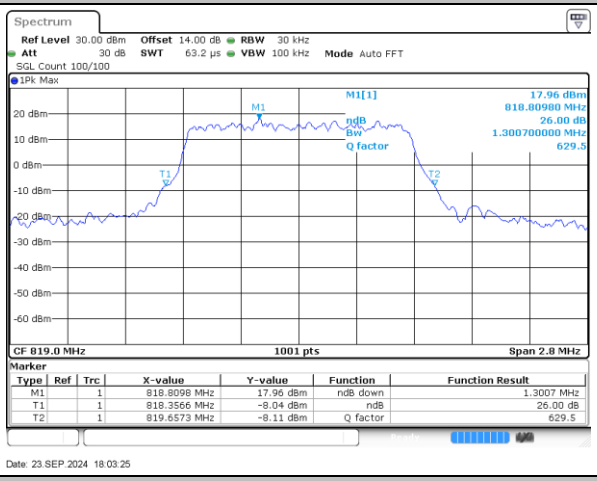
Mode	LTE Band 26 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	1.27	1.30	2.96	2.97	4.95	4.91	9.71	9.71	-	-	-	-
High CH	-	-	-	-	-	-	-	-	14.36	14.42	-	-

LTE Band 26

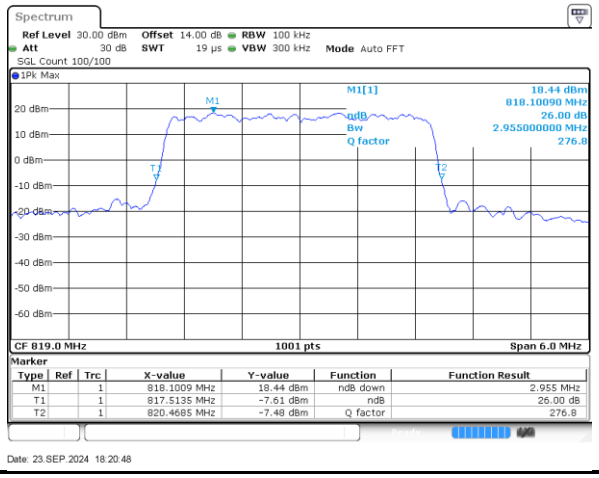
Middle Channel / 1.4MHz / QPSK



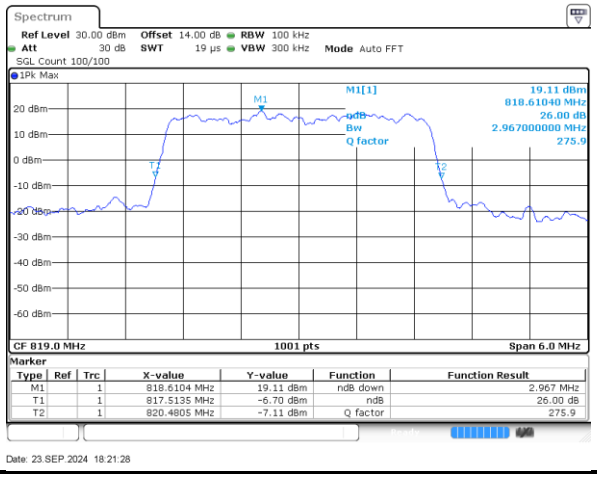
Middle Channel / 1.4MHz / 16QAM

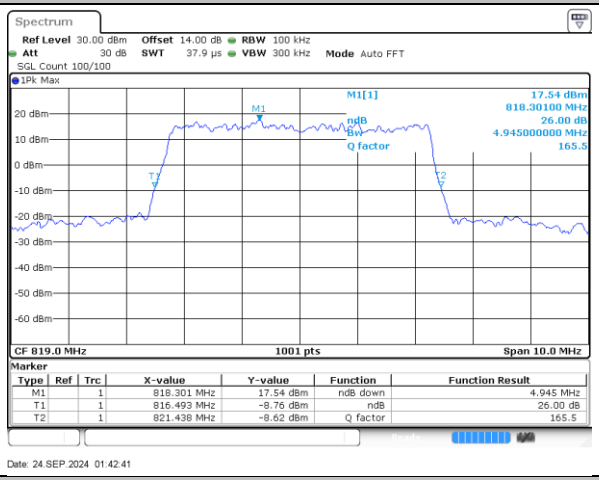
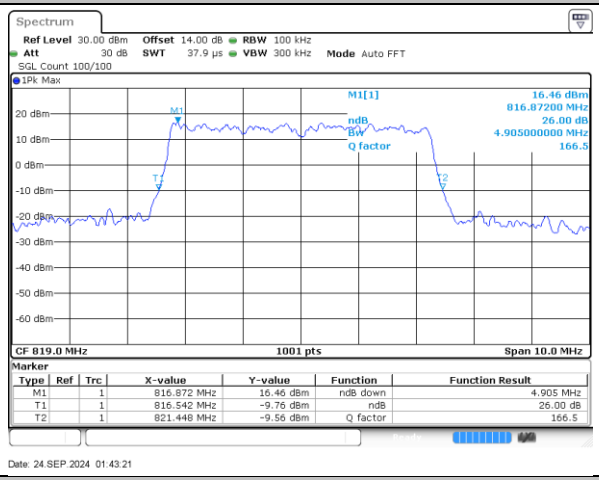


Middle Channel / 3MHz / QPSK

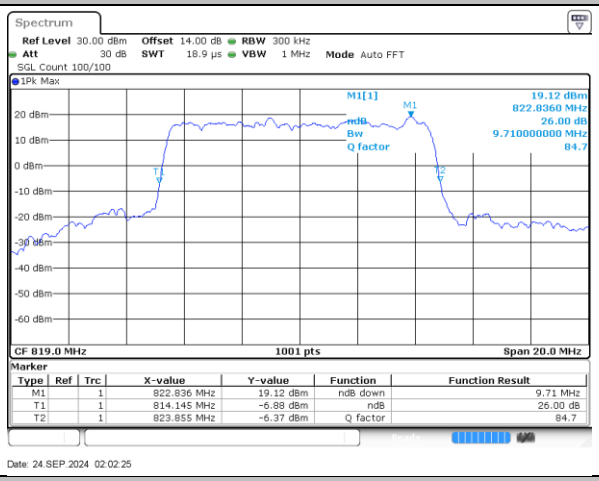
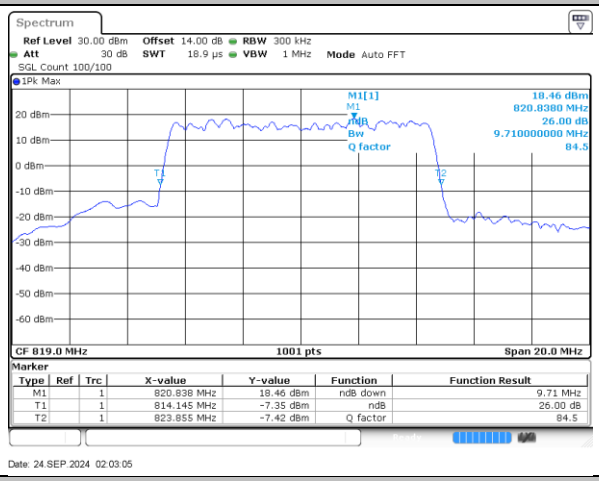
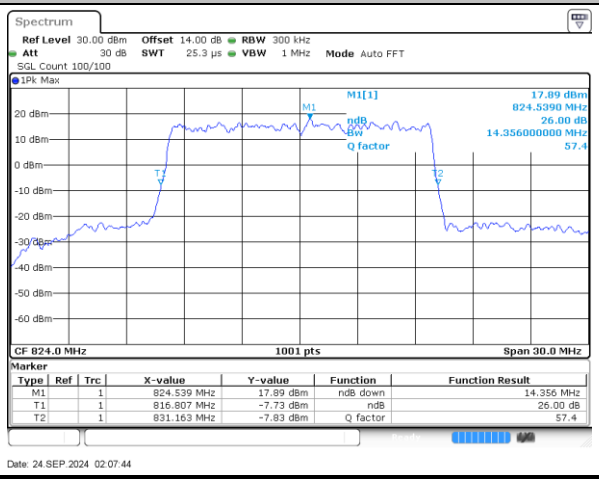
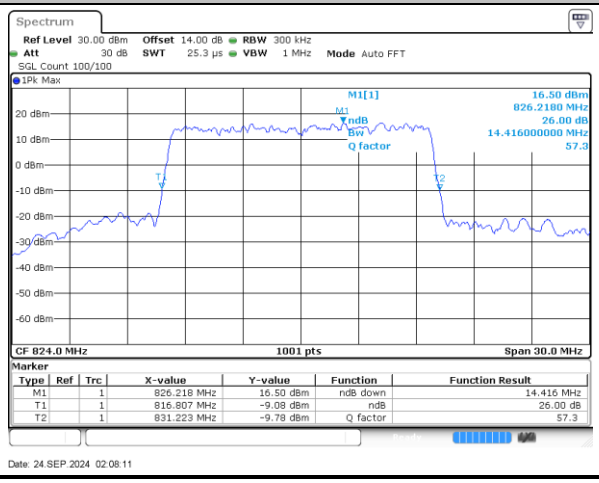


Middle Channel / 3MHz / 16QAM



Middle Channel / 5MHz / QPSK	Middle Channel / 5MHz / 16QAM
	

LTE Band 26

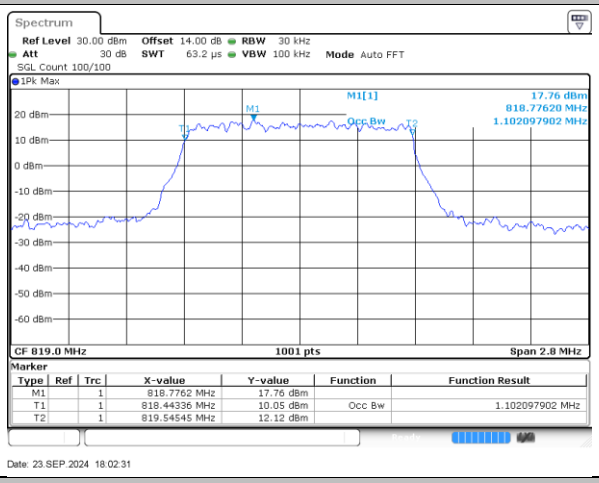
Middle Channel / 10MHz / QPSK	Middle Channel / 10MHz / 16QAM
	
High Channel / 15MHz / QPSK	**High Channel / 15MHz / 16QAM**
	

Occupied Bandwidth

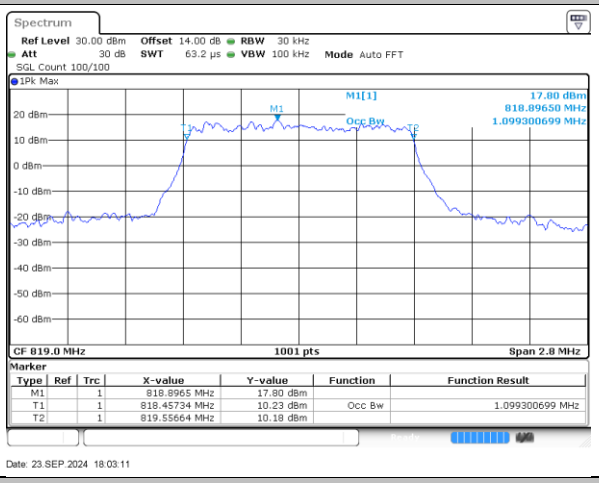
Mode	LTE Band 26 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	1.10	1.10	2.72	2.70	4.49	4.48	9.01	8.99	-	-	-	-
High CH	-	-	-	-	-	-	-	-	13.40	13.52	-	-

LTE Band 26

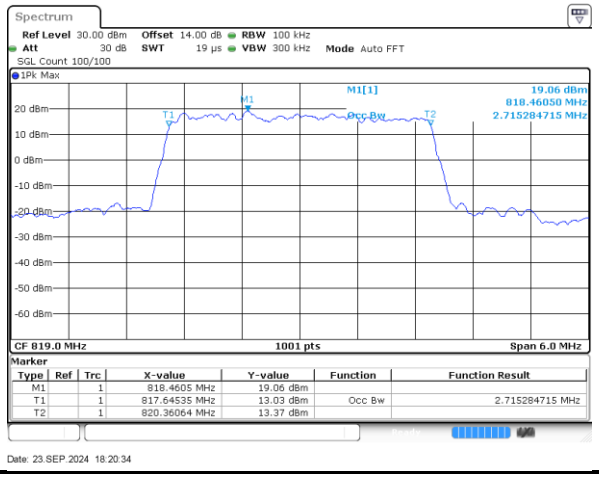
Middle Channel / 1.4MHz / QPSK



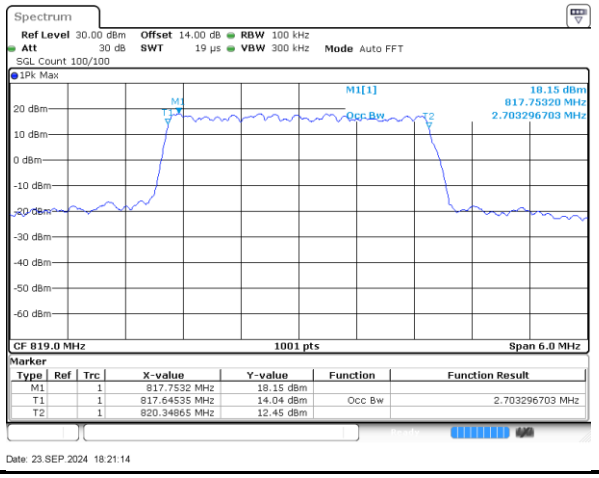
Middle Channel / 1.4MHz / 16QAM

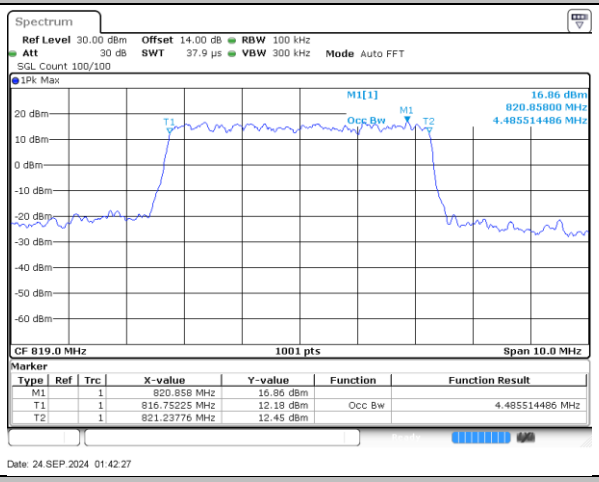
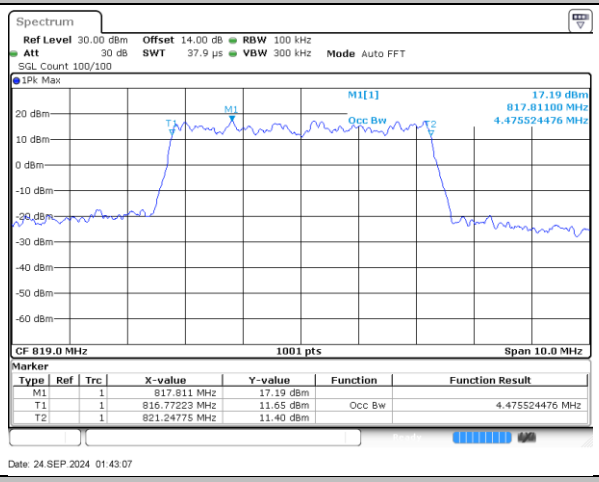


Middle Channel / 3MHz / QPSK

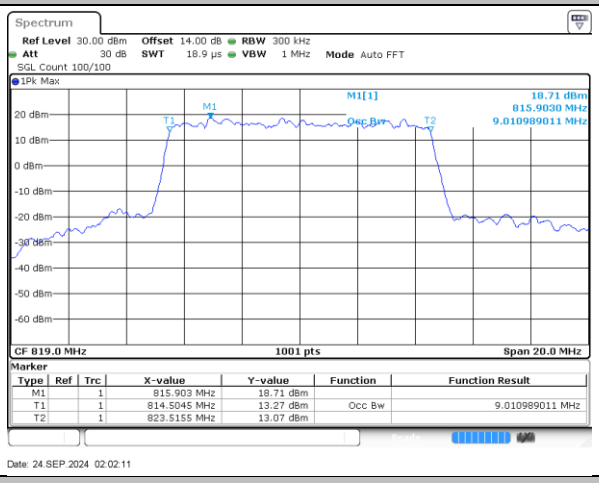
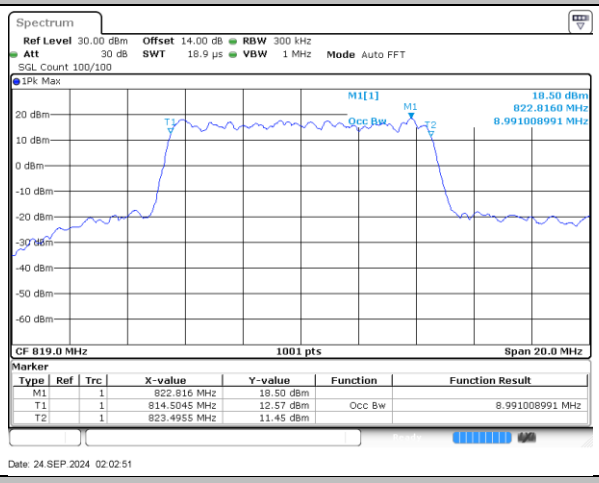
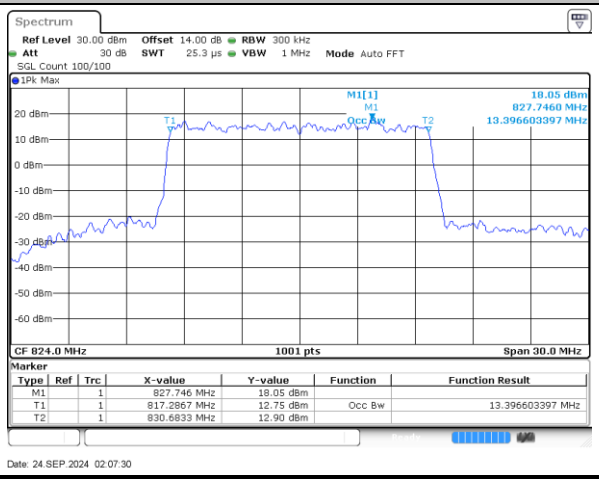
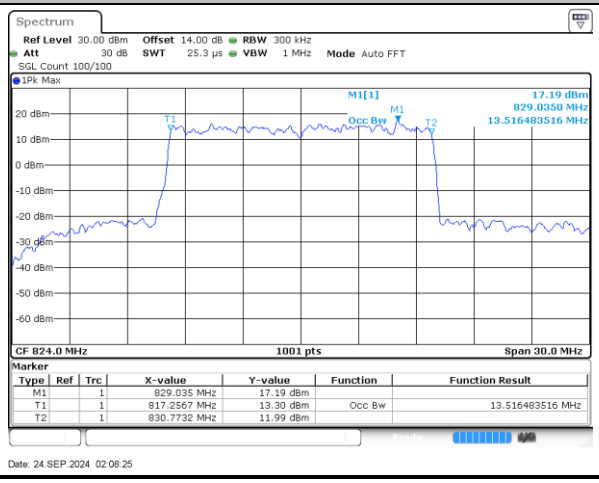


Middle Channel / 3MHz / 16QAM



Middle Channel / 5MHz / QPSK	Middle Channel / 5MHz / 16QAM
	

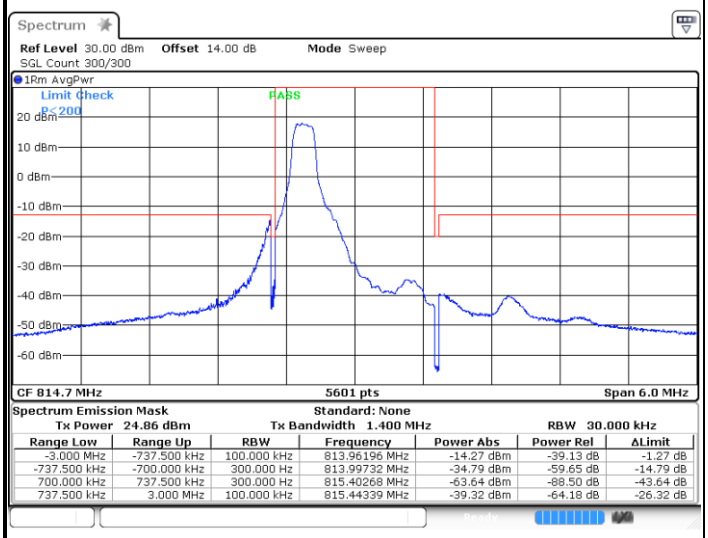
LTE Band 26

Middle Channel / 10MHz / QPSK	Middle Channel / 10MHz / 16QAM
	
High Channel / 15MHz / QPSK	**High Channel / 15MHz / 16QAM**
	

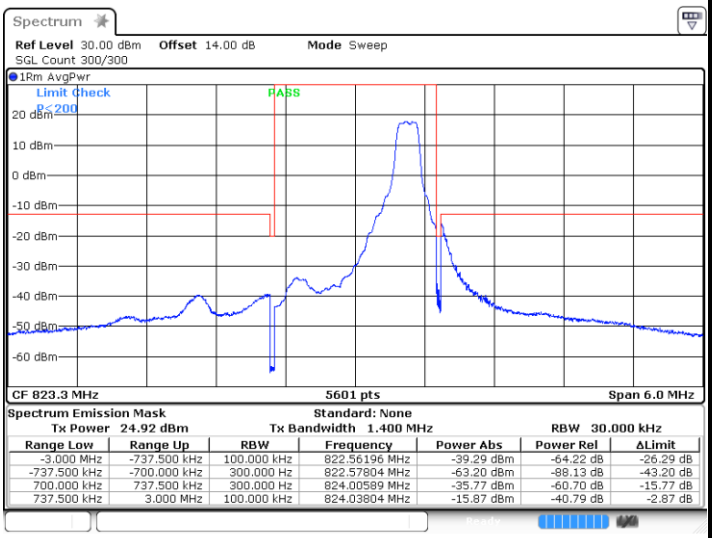
Emission masks – In-band emissions

LTE Band 26 / 1.4MHz / QPSK

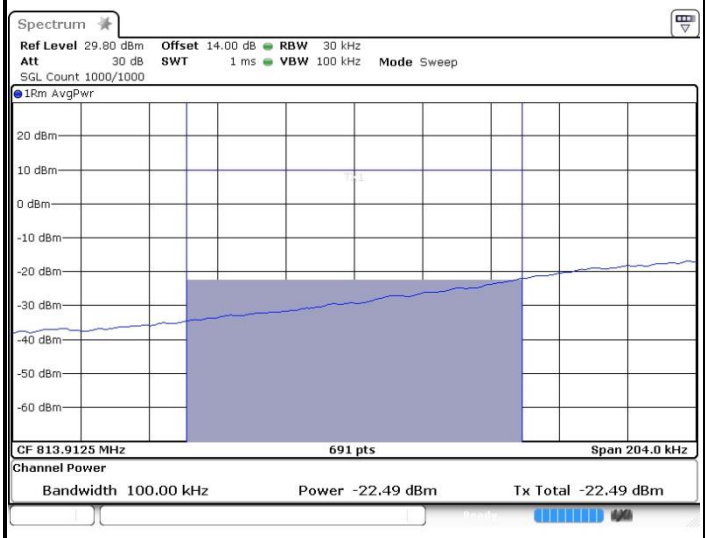
Lowest Band Edge / 1RB



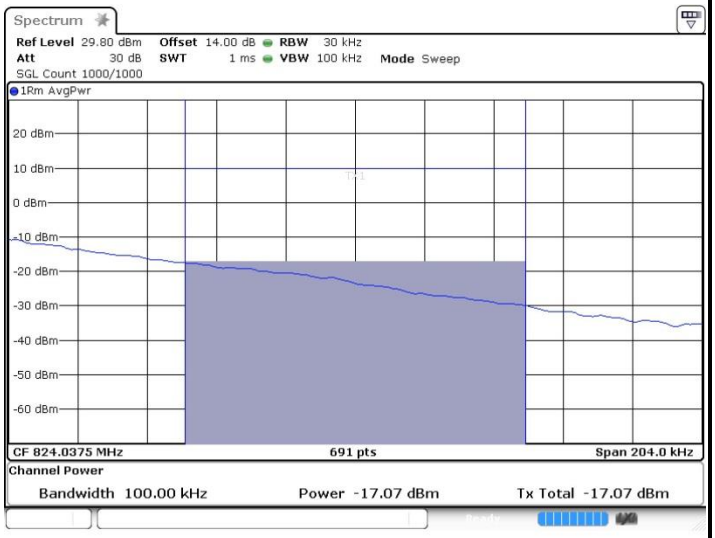
Highest Band Edge / 1RB



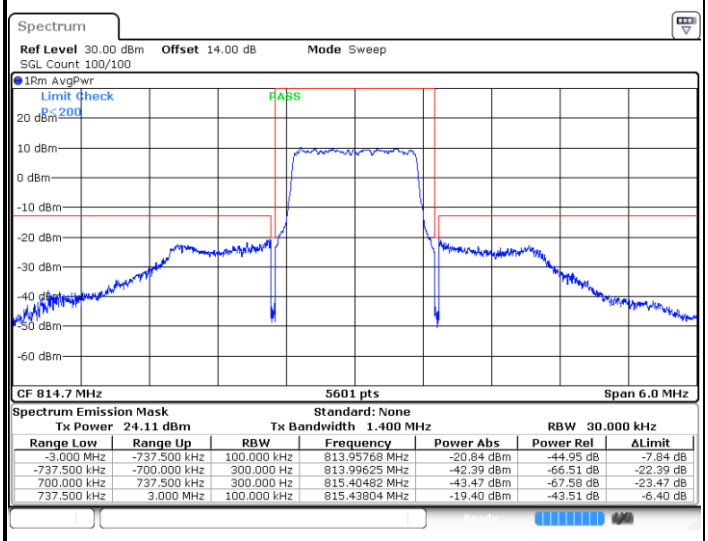
Lowest Band Edge / 1RB-CP

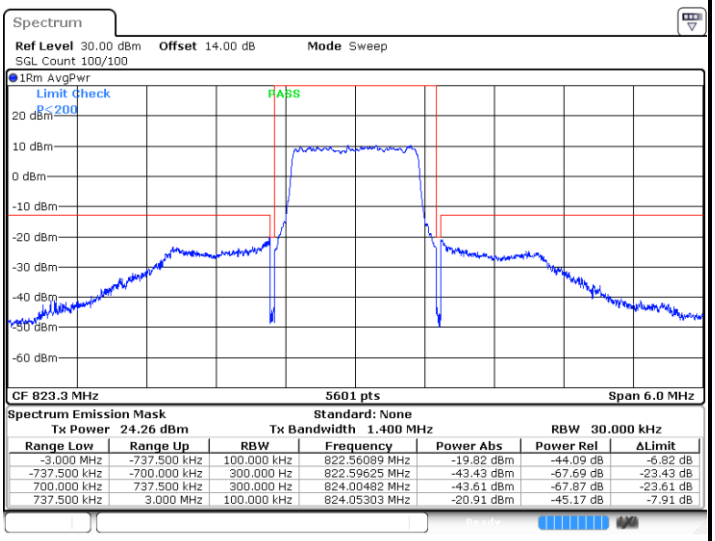


Highest Band Edge / 1RB-CP



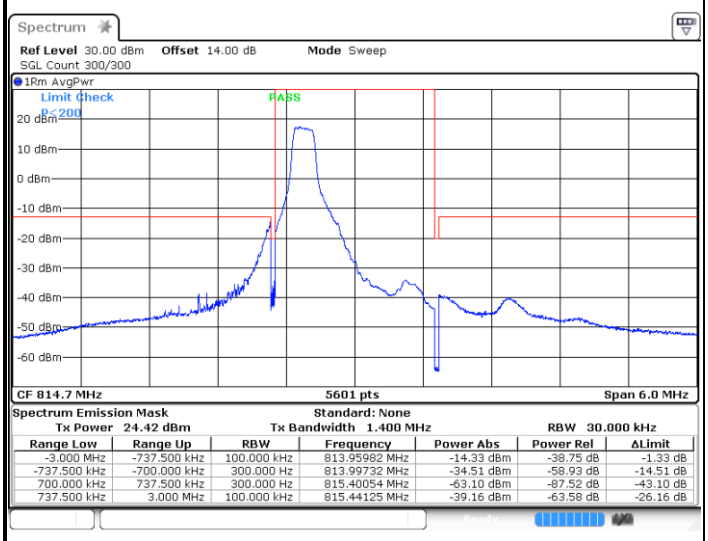
Lowest Band Edge / Full RB	Highest Band Edge / Full RB



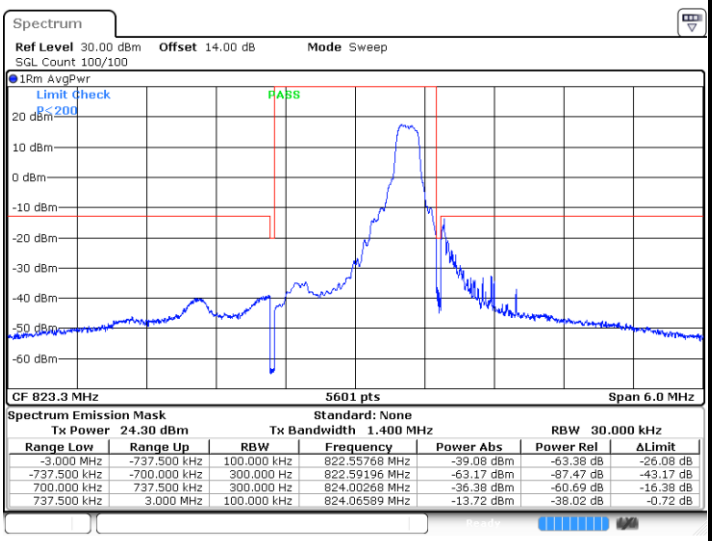


LTE Band 26 / 1.4MHz / 16QAM

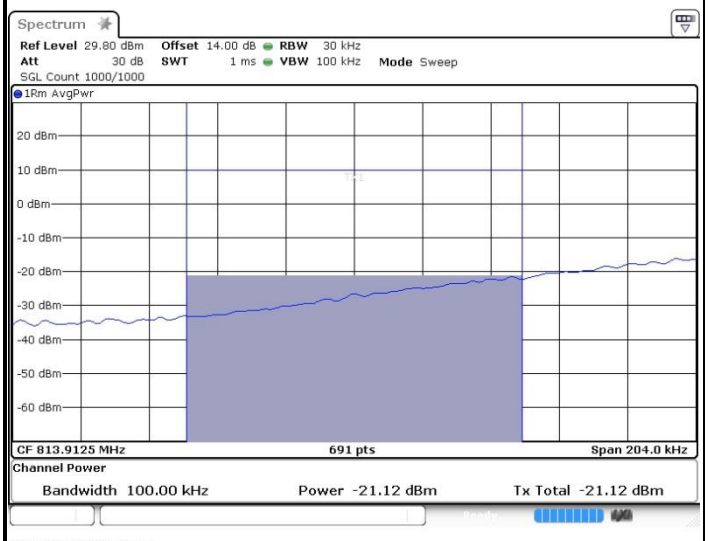
Lowest Band Edge / 1 RB



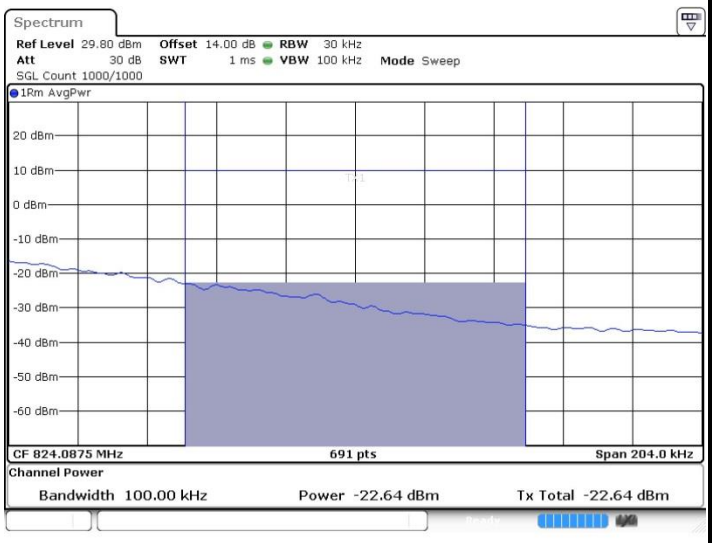
Highest Band Edge / 1 RB



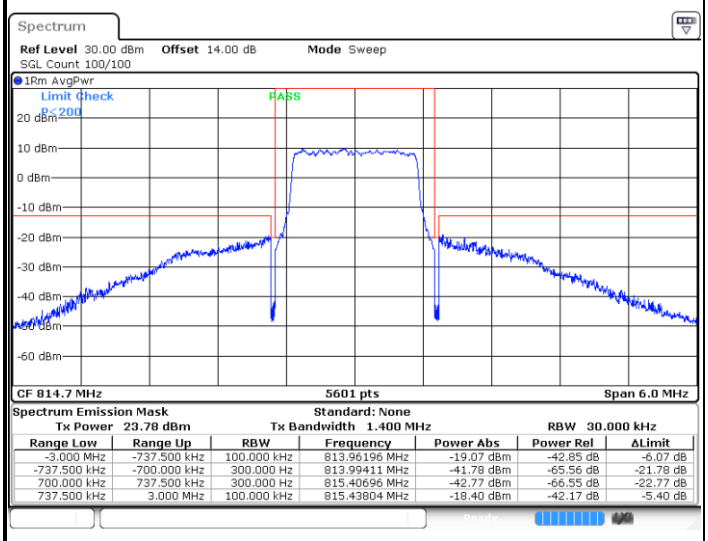
Lowest Band Edge / 1RB-CP

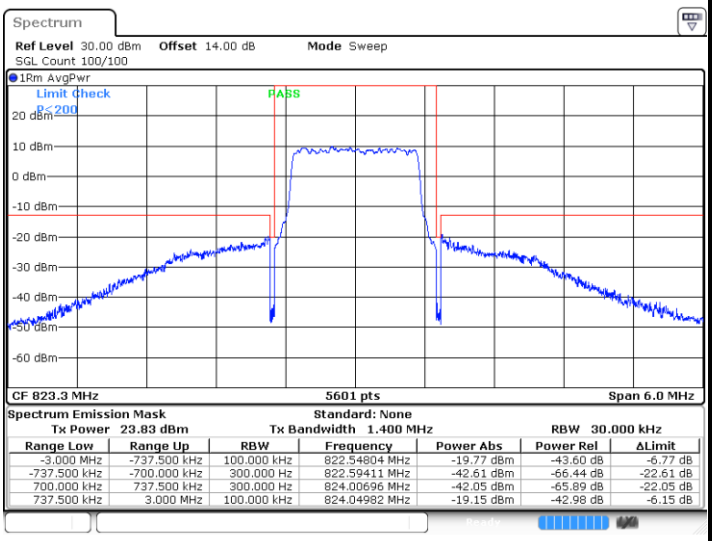


Highest Band Edge / 1RB-CP



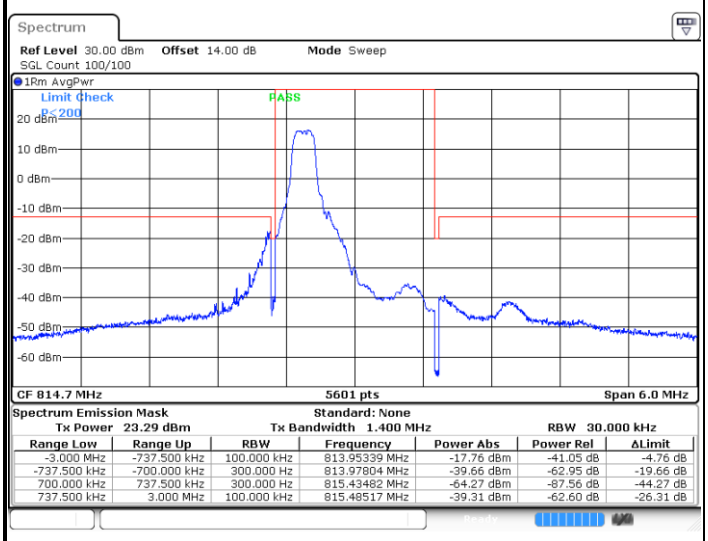
Lowest Band Edge / Full RB	Highest Band Edge / Full RB



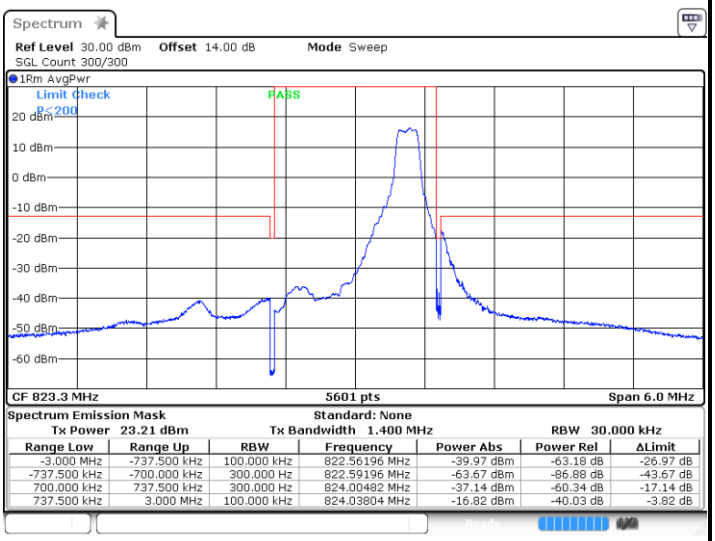


LTE Band 26 / 1.4MHz / 64QAM

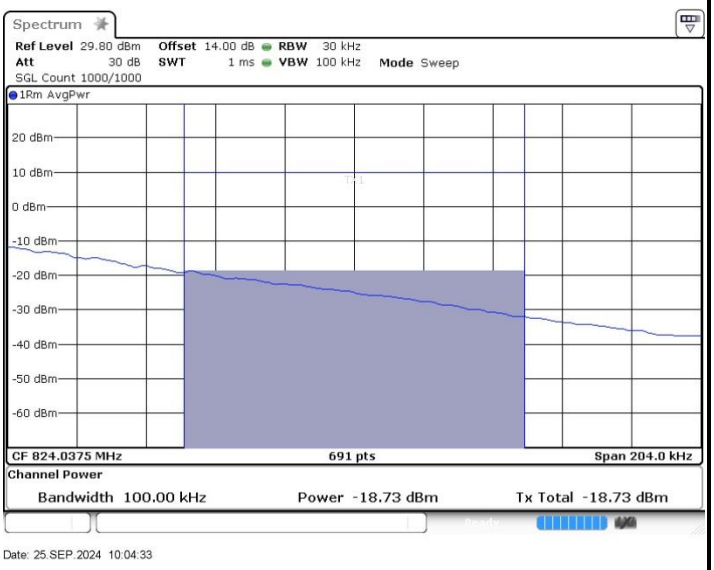
Lowest Band Edge / 1 RB



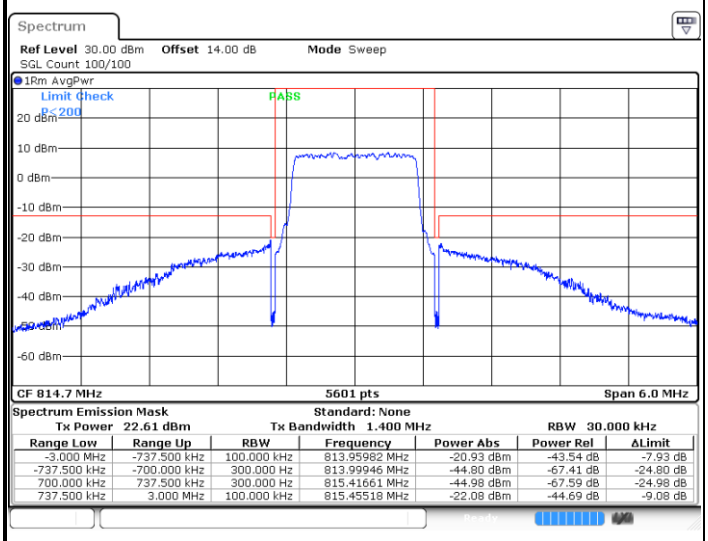
Highest Band Edge / 1 RB

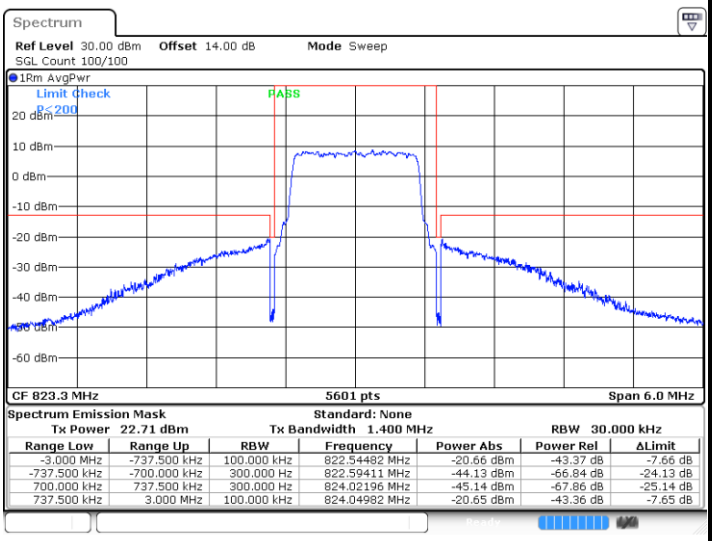


Highest Band Edge / 1 RB-CP



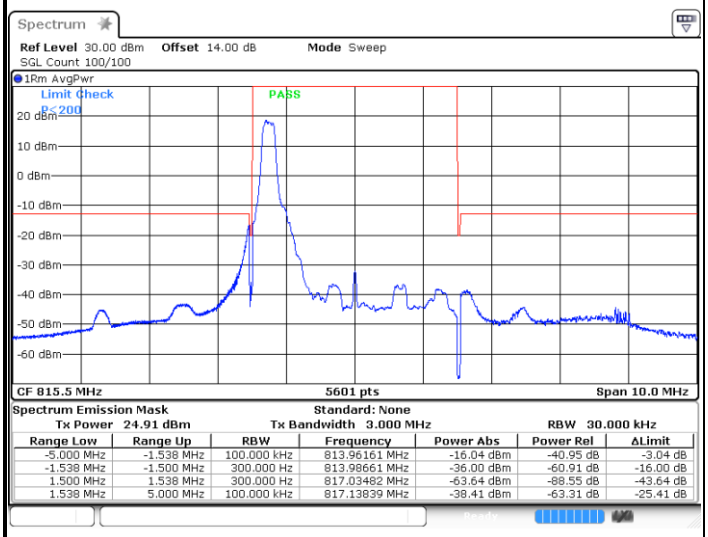
Lowest Band Edge / Full RB	Highest Band Edge / Full RB





LTE Band 26 / 3MHz / QPSK

Lowest Band Edge / 1RB

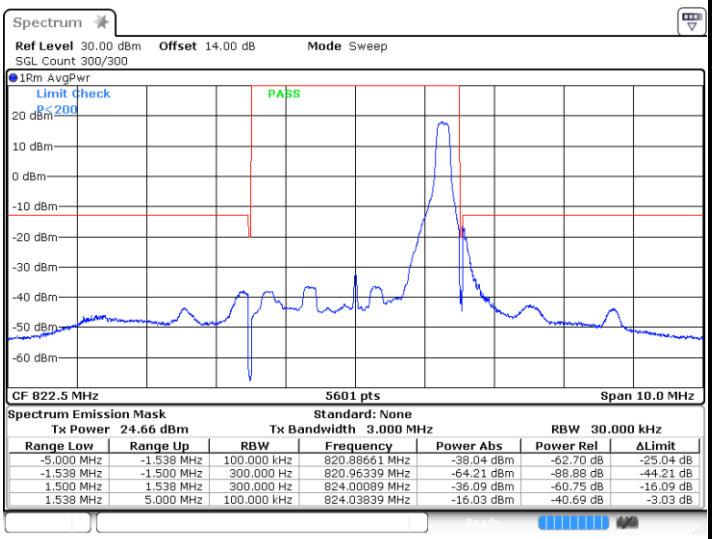


Spectrum Emission Mask Standard: None
Tx Power 24.91 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-1.538 MHz	100.000 kHz	813.96161 MHz	-16.04 dBm	-40.95 dB	-3.04 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	813.98661 MHz	-36.00 dBm	-60.91 dB	-16.00 dB
1.500 MHz	1.538 MHz	300.000 Hz	817.03482 MHz	-63.64 dBm	-88.55 dB	-43.64 dB
1.538 MHz	5.000 MHz	100.000 kHz	817.13839 MHz	-38.41 dBm	-63.31 dB	-25.41 dB

Date: 25.SEP.2024 11:35:47

Highest Band Edge / 1RB

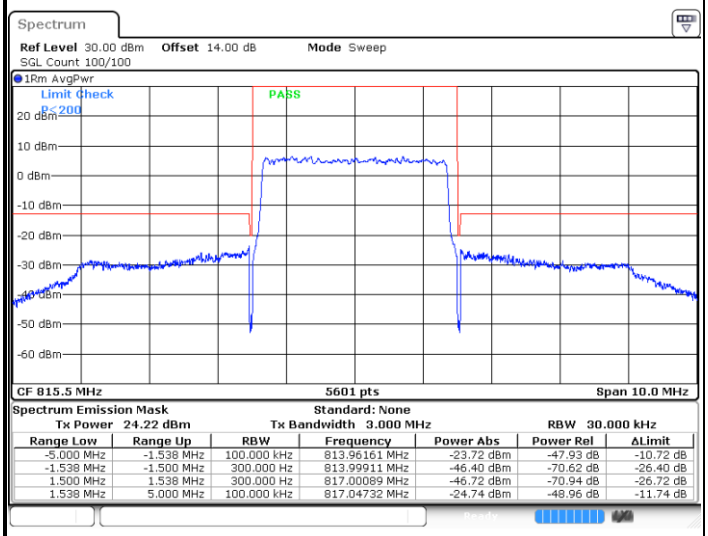


Spectrum Emission Mask Standard: None
Tx Power 24.66 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-1.538 MHz	100.000 kHz	820.88661 MHz	-38.04 dBm	-62.70 dB	-25.04 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	820.96339 MHz	-64.21 dBm	-88.88 dB	-44.21 dB
1.500 MHz	1.538 MHz	300.000 Hz	824.00089 MHz	-36.09 dBm	-60.75 dB	-16.09 dB
1.538 MHz	5.000 MHz	100.000 kHz	824.03839 MHz	-16.03 dBm	-40.69 dB	-3.03 dB

Date: 25.SEP.2024 10:39:22

Lowest Band Edge / Full RB

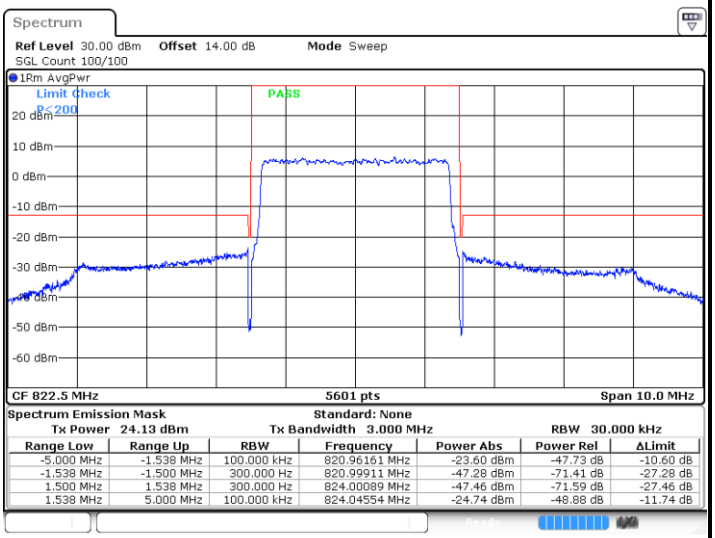


Spectrum Emission Mask Standard: None
Tx Power 24.22 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-1.538 MHz	100.000 kHz	813.96161 MHz	-23.72 dBm	-47.93 dB	-10.72 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	813.99911 MHz	-46.40 dBm	-70.62 dB	-26.40 dB
1.500 MHz	1.538 MHz	300.000 Hz	817.00089 MHz	-46.72 dBm	-70.94 dB	-26.72 dB
1.538 MHz	5.000 MHz	100.000 kHz	817.04732 MHz	-24.74 dBm	-48.96 dB	-11.74 dB

Date: 23.SEP.2024 18:17:33

Highest Band Edge / Full RB



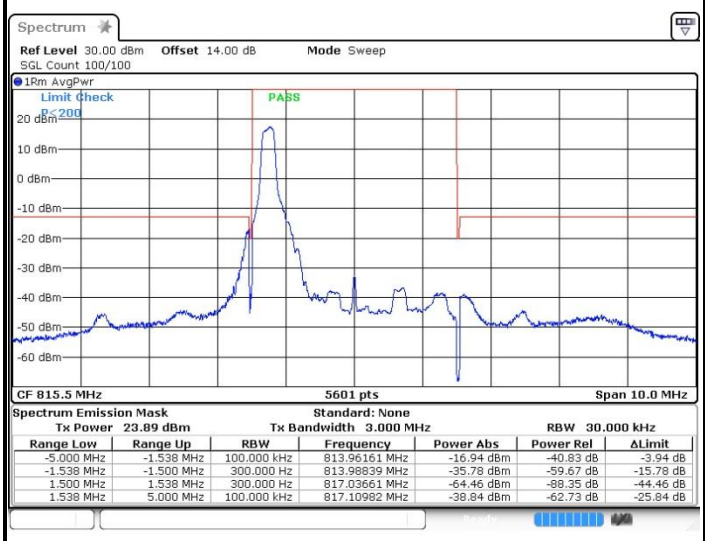
Spectrum Emission Mask Standard: None
Tx Power 24.13 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-1.538 MHz	100.000 kHz	820.96161 MHz	-23.60 dBm	-47.73 dB	-10.60 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	820.99911 MHz	-47.28 dBm	-71.41 dB	-27.28 dB
1.500 MHz	1.538 MHz	300.000 Hz	824.00089 MHz	-47.46 dBm	-71.59 dB	-27.46 dB
1.538 MHz	5.000 MHz	100.000 kHz	824.04554 MHz	-24.74 dBm	-48.88 dB	-11.74 dB

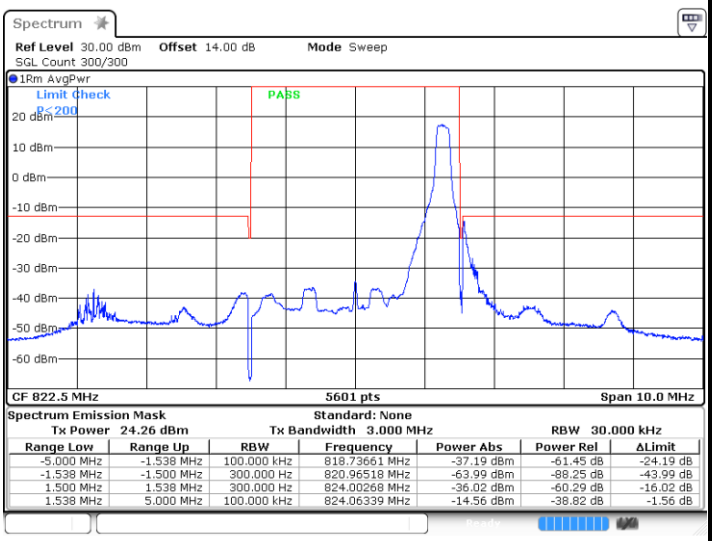
Date: 23.SEP.2024 18:27:31

LTE Band 26 / 3MHz / 16QAM

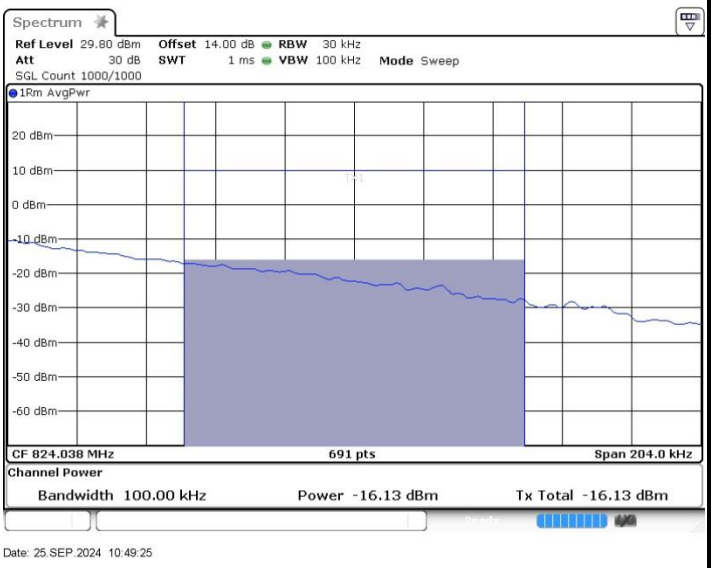
Lowest Band Edge / 1 RB



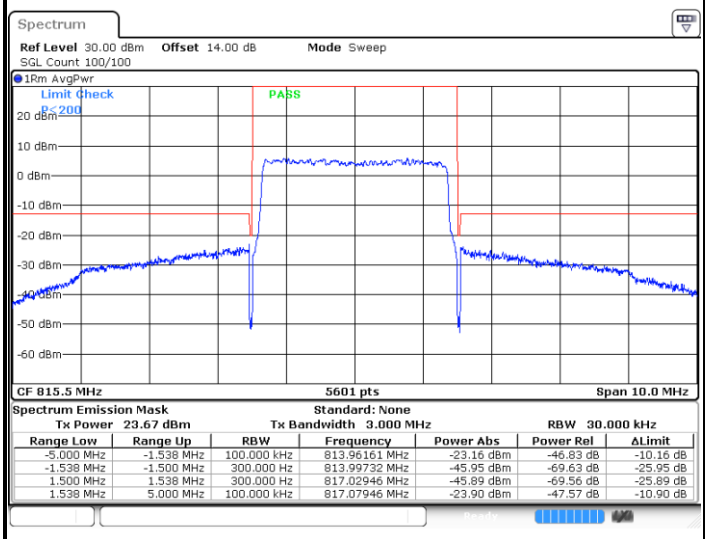
Highest Band Edge / 1 RB

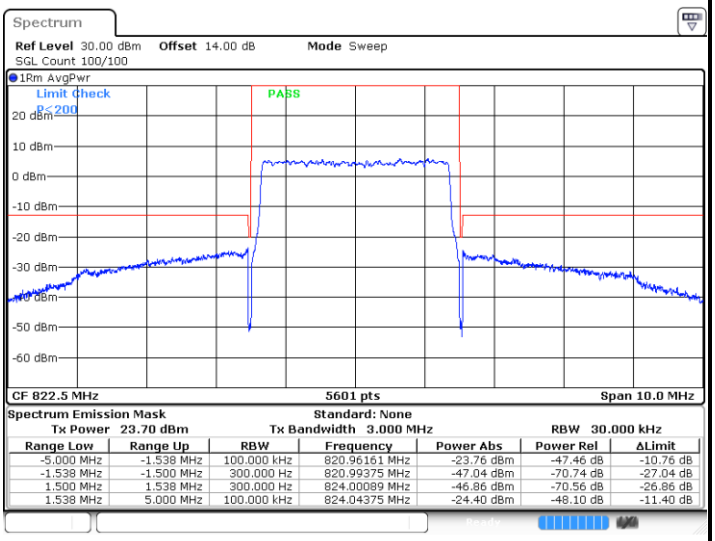


Highest Band Edge / 1 RB-CP



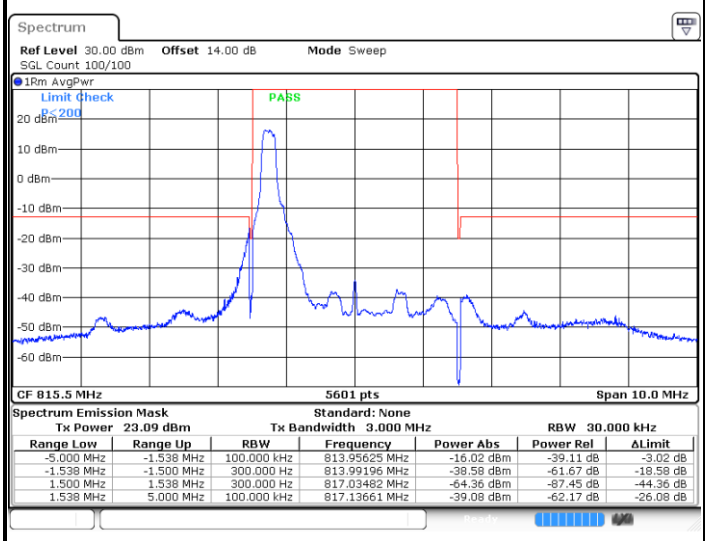
Lowest Band Edge / Full RB	Highest Band Edge / Full RB





LTE Band 26 / 3MHz / 64QAM

Lowest Band Edge / 1 RB

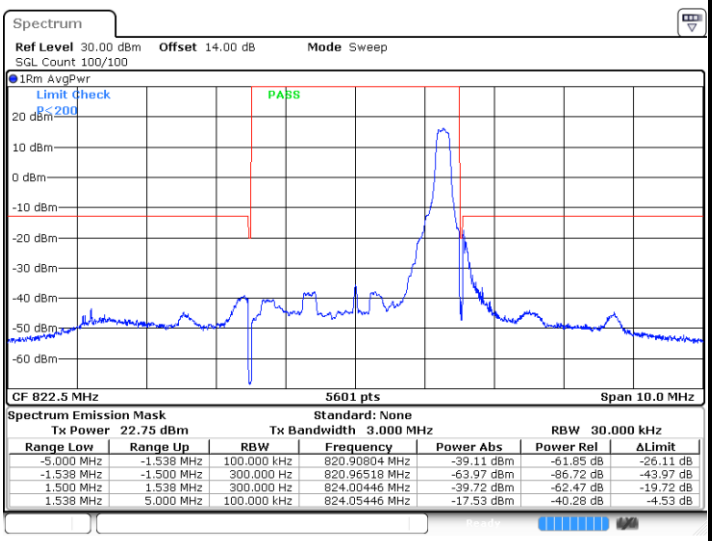


Spectrum Emission Mask Standard: None
Tx Power 23.09 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-1.538 MHz	100.000 kHz	813.95625 MHz	-16.02 dBm	-39.11 dB	-3.02 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	813.99196 MHz	-38.58 dBm	-61.67 dB	-18.58 dB
1.500 MHz	1.538 MHz	300.000 Hz	817.03482 MHz	-64.36 dBm	-87.45 dB	-44.36 dB
1.538 MHz	5.000 MHz	100.000 kHz	817.13661 MHz	-39.08 dBm	-62.17 dB	-26.08 dB

Date: 23.SEP.2024 18:14:31

Highest Band Edge / 1 RB

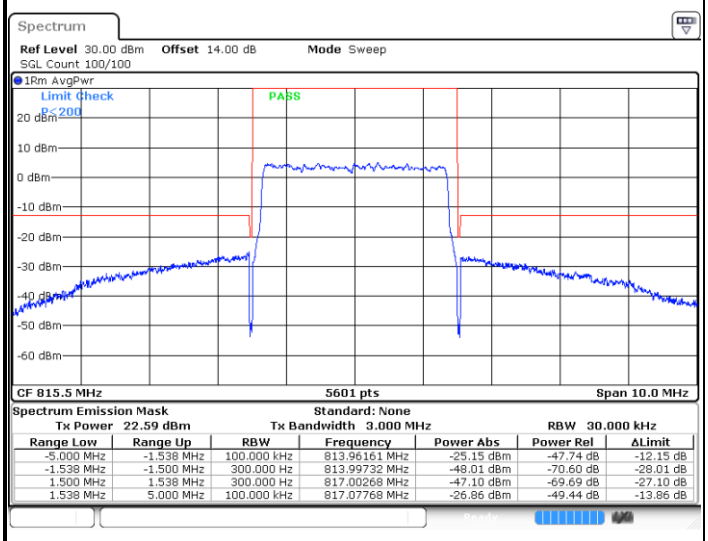


Spectrum Emission Mask Standard: None
Tx Power 22.75 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-1.538 MHz	100.000 kHz	820.90804 MHz	-39.11 dBm	-61.85 dB	-26.11 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	820.96518 MHz	-63.97 dBm	-86.72 dB	-43.97 dB
1.500 MHz	1.538 MHz	300.000 Hz	824.00446 MHz	-39.72 dBm	-62.47 dB	-19.72 dB
1.538 MHz	5.000 MHz	100.000 kHz	824.05446 MHz	-17.53 dBm	-40.28 dB	-4.53 dB

Date: 25.SEP.2024 11:03:29

Lowest Band Edge / Full RB

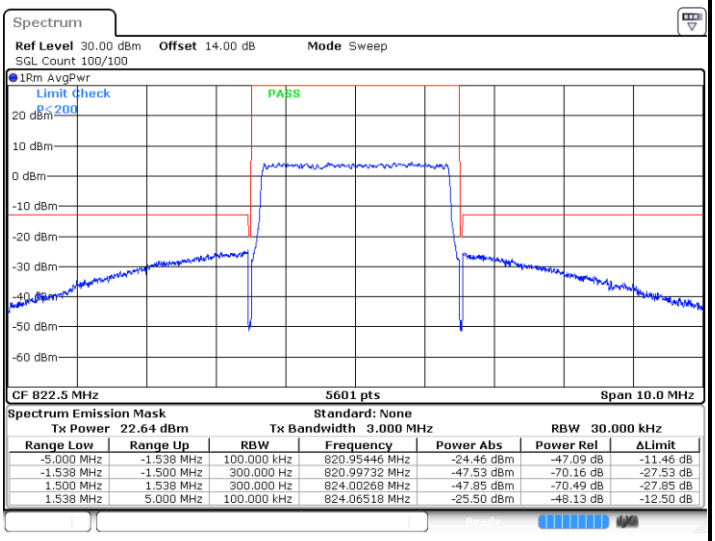


Spectrum Emission Mask Standard: None
Tx Power 22.59 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-1.538 MHz	100.000 kHz	813.96161 MHz	-25.15 dBm	-47.74 dB	-12.15 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	813.99732 MHz	-48.01 dBm	-70.60 dB	-28.01 dB
1.500 MHz	1.538 MHz	300.000 Hz	817.00268 MHz	-47.10 dBm	-69.69 dB	-27.10 dB
1.538 MHz	5.000 MHz	100.000 kHz	817.07768 MHz	-26.86 dBm	-49.44 dB	-13.86 dB

Date: 23.SEP.2024 18:15:32

Highest Band Edge / Full RB



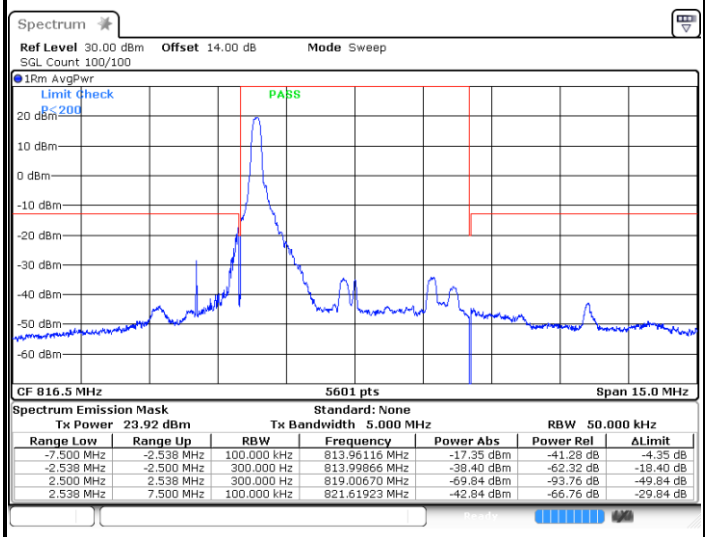
Spectrum Emission Mask Standard: None
Tx Power 22.64 dBm Tx Bandwidth 3.000 MHz RBW 30.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-5.000 MHz	-1.538 MHz	100.000 kHz	820.95446 MHz	-24.46 dBm	-47.09 dB	-11.46 dB
-1.538 MHz	-1.500 MHz	300.000 Hz	820.99732 MHz	-47.53 dBm	-70.16 dB	-27.53 dB
1.500 MHz	1.538 MHz	300.000 Hz	824.00268 MHz	-47.85 dBm	-70.49 dB	-27.85 dB
1.538 MHz	5.000 MHz	100.000 kHz	824.06518 MHz	-25.50 dBm	-48.13 dB	-12.50 dB

Date: 23.SEP.2024 18:25:30

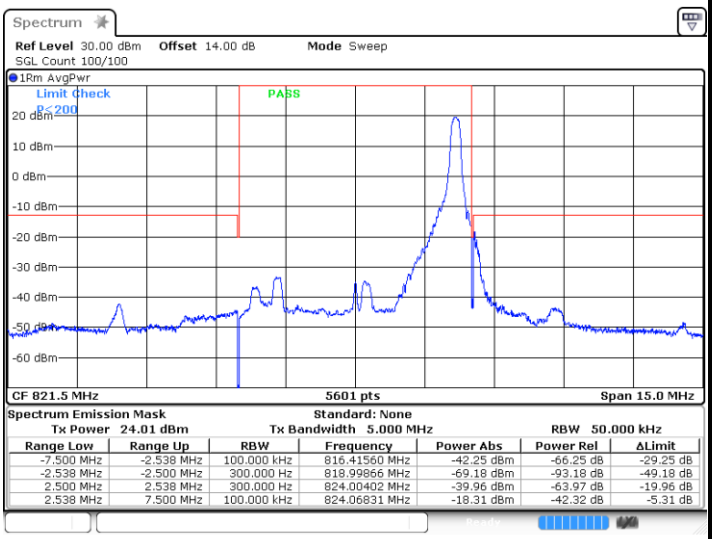
LTE Band 26 / 5MHz / QPSK

Lowest Band Edge / 1RB



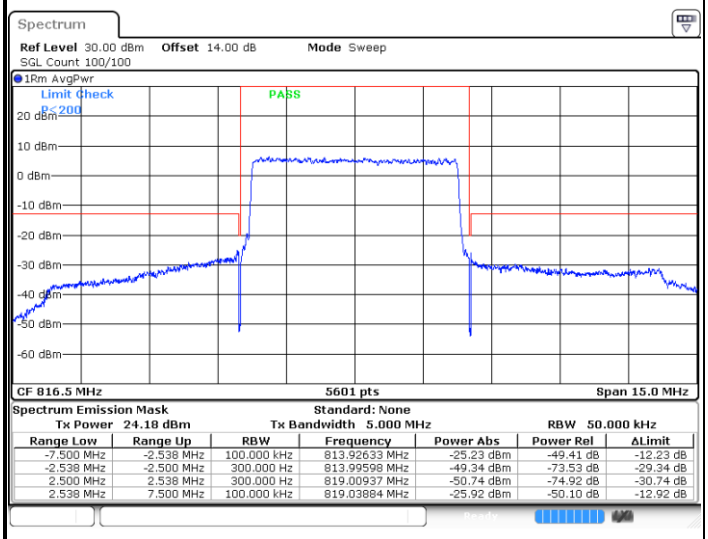
Date: 25.SEP.2024 11:13:48

Highest Band Edge / 1RB



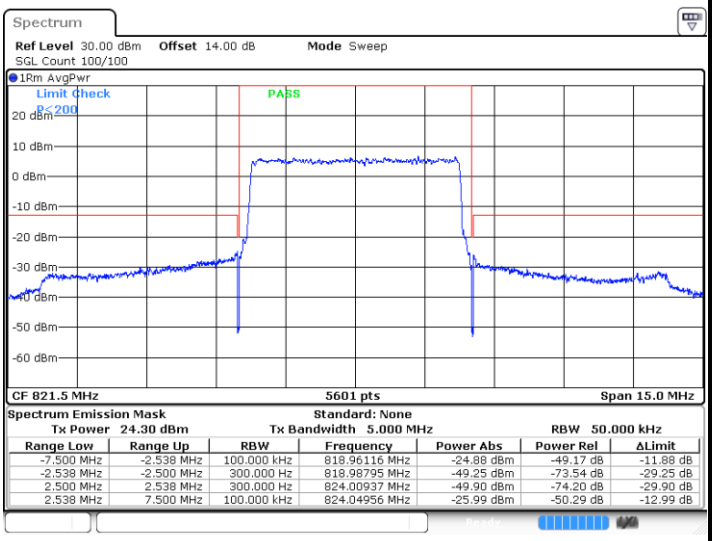
Date: 25.SEP.2024 11:17:10

Lowest Band Edge / Full RB



Date: 24.SEP.2024 01:39:26

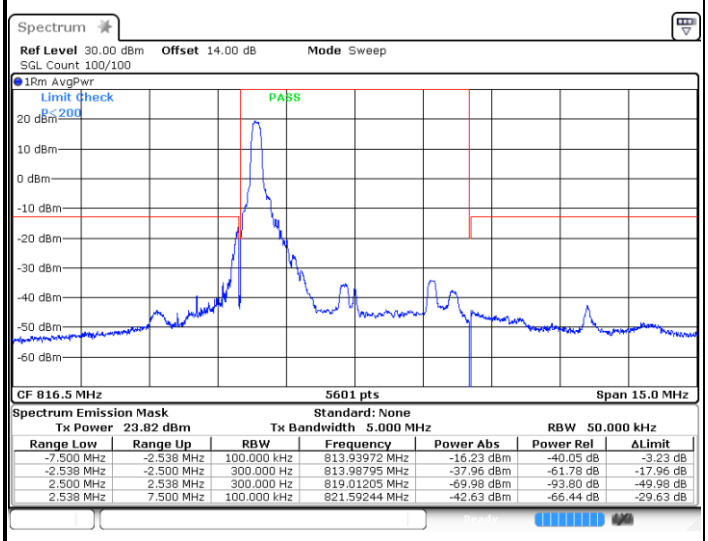
Highest Band Edge / Full RB



Date: 24.SEP.2024 01:49:52

LTE Band 26 / 5MHz / 16QAM

Lowest Band Edge / 1 RB

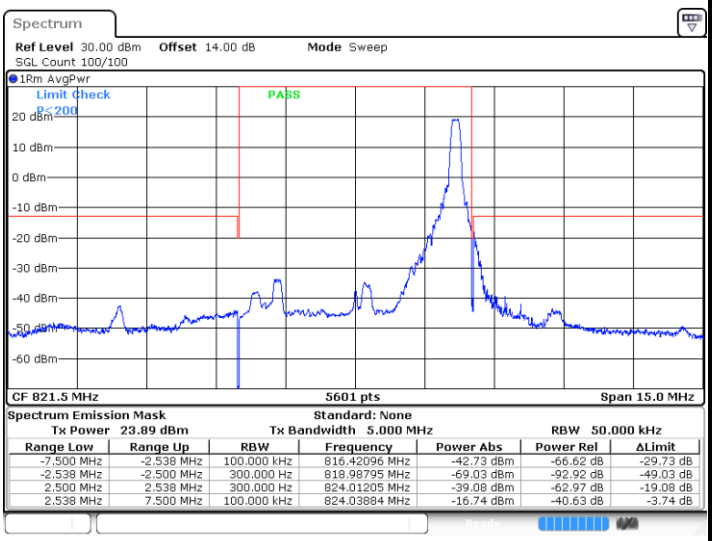


Spectrum Emission Mask Standard: None
Tx Power 23.82 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-7.500 MHz	-2.538 MHz	100.000 kHz	813.93972 MHz	-16.23 dBm	-40.05 dB	-3.23 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	813.98795 MHz	-37.96 dBm	-61.78 dB	-17.96 dB
2.500 MHz	2.538 MHz	300.000 Hz	819.01205 MHz	-69.98 dBm	-93.80 dB	-49.98 dB
2.538 MHz	7.500 MHz	100.000 kHz	821.59244 MHz	-42.63 dBm	-66.44 dB	-29.63 dB

Date: 25.SEP.2024 11:06:23

Highest Band Edge / 1 RB

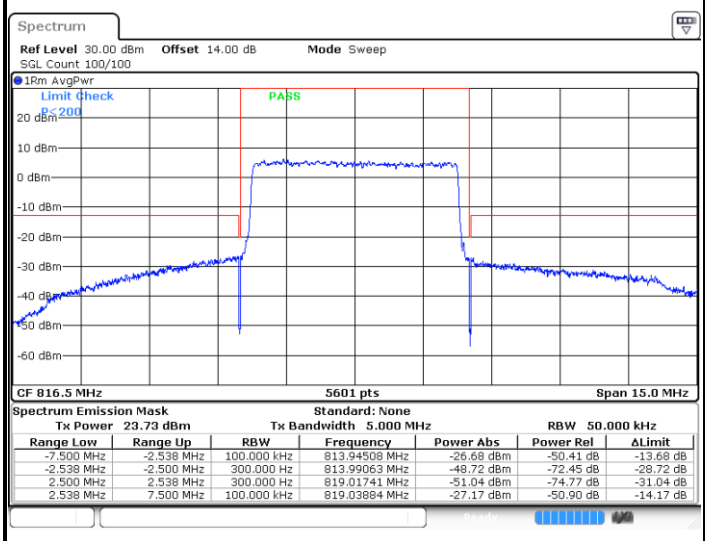


Spectrum Emission Mask Standard: None
Tx Power 23.89 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-7.500 MHz	-2.538 MHz	100.000 kHz	816.42096 MHz	-42.73 dBm	-66.62 dB	-29.73 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	818.98795 MHz	-69.03 dBm	-92.92 dB	-49.03 dB
2.500 MHz	2.538 MHz	300.000 Hz	824.01205 MHz	-39.08 dBm	-62.97 dB	-19.08 dB
2.538 MHz	7.500 MHz	100.000 kHz	824.03884 MHz	-16.74 dBm	-40.63 dB	-3.74 dB

Date: 25.SEP.2024 11:15:19

Lowest Band Edge / Full RB

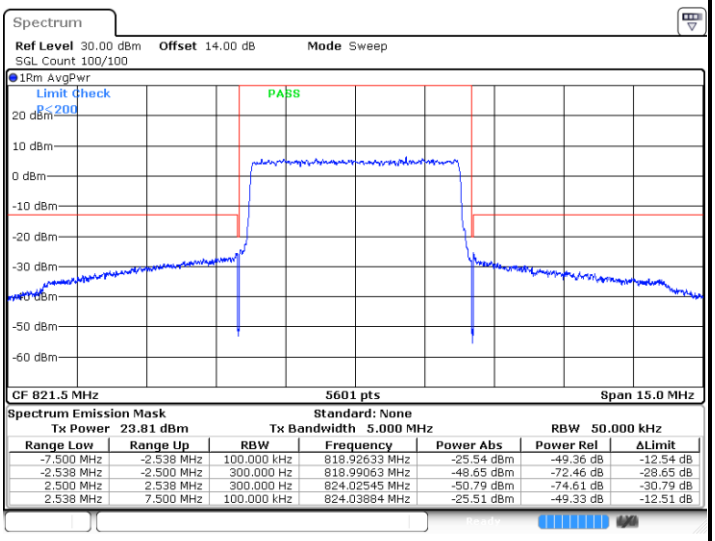


Spectrum Emission Mask Standard: None
Tx Power 23.73 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-7.500 MHz	-2.538 MHz	100.000 kHz	813.94508 MHz	-26.68 dBm	-50.41 dB	-13.68 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	813.99063 MHz	-48.72 dBm	-72.45 dB	-28.72 dB
2.500 MHz	2.538 MHz	300.000 Hz	819.01741 MHz	-51.04 dBm	-74.77 dB	-31.04 dB
2.538 MHz	7.500 MHz	100.000 kHz	819.03884 MHz	-27.17 dBm	-50.90 dB	-14.17 dB

Date: 24.SEP.2024 01:38:21

Highest Band Edge / Full RB



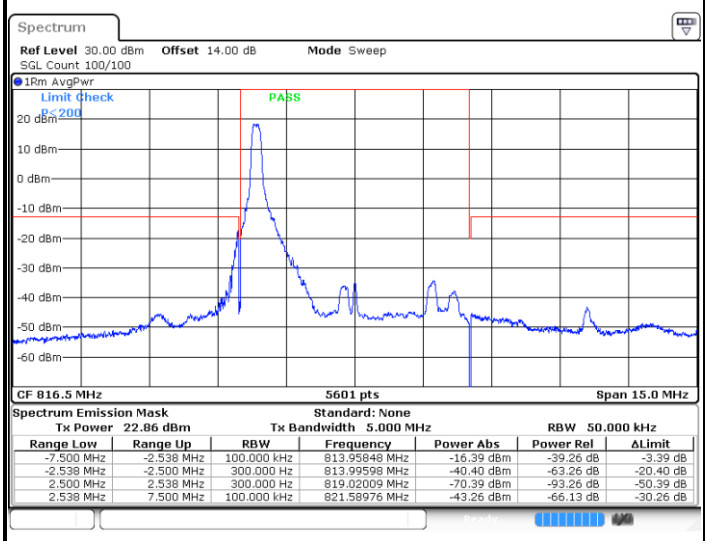
Spectrum Emission Mask Standard: None
Tx Power 23.81 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-7.500 MHz	-2.538 MHz	100.000 kHz	818.92633 MHz	-25.54 dBm	-49.36 dB	-12.54 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	818.99063 MHz	-48.65 dBm	-72.46 dB	-28.65 dB
2.500 MHz	2.538 MHz	300.000 Hz	824.02545 MHz	-50.79 dBm	-74.61 dB	-30.79 dB
2.538 MHz	7.500 MHz	100.000 kHz	824.03884 MHz	-25.51 dBm	-49.33 dB	-12.51 dB

Date: 24.SEP.2024 01:48:47

LTE Band 26 / 5MHz / 64QAM

Lowest Band Edge / 1 RB

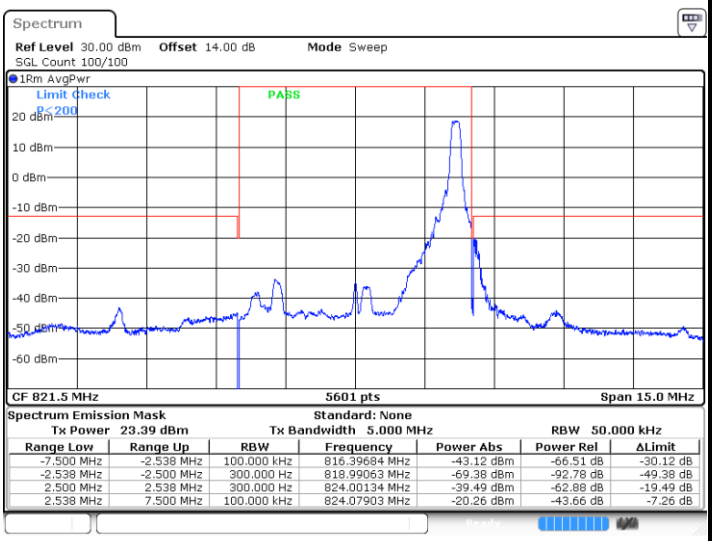


Spectrum Emission Mask Standard: None
Tx Power 22.86 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-7.500 MHz	-2.538 MHz	100.000 kHz	813.95848 MHz	-16.39 dBm	-39.26 dB	-3.39 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	813.99598 MHz	-40.40 dBm	-63.26 dB	-20.40 dB
2.500 MHz	2.538 MHz	300.000 Hz	819.02009 MHz	-70.39 dBm	-93.26 dB	-50.39 dB
2.538 MHz	7.500 MHz	100.000 kHz	821.58976 MHz	-43.26 dBm	-66.13 dB	-30.26 dB

Date: 24.SEP.2024 01:36:10

Highest Band Edge / 1 RB

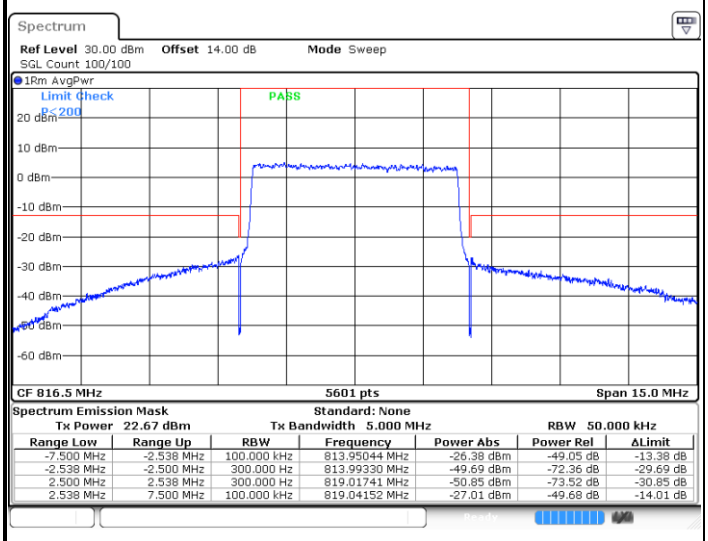


Spectrum Emission Mask Standard: None
Tx Power 23.39 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-7.500 MHz	-2.538 MHz	100.000 kHz	816.39684 MHz	-43.12 dBm	-66.51 dB	-30.12 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	818.99063 MHz	-69.38 dBm	-92.78 dB	-49.38 dB
2.500 MHz	2.538 MHz	300.000 Hz	824.00134 MHz	-39.49 dBm	-62.88 dB	-19.49 dB
2.538 MHz	7.500 MHz	100.000 kHz	824.07903 MHz	-20.26 dBm	-43.66 dB	-7.26 dB

Date: 24.SEP.2024 01:46:36

Lowest Band Edge / Full RB

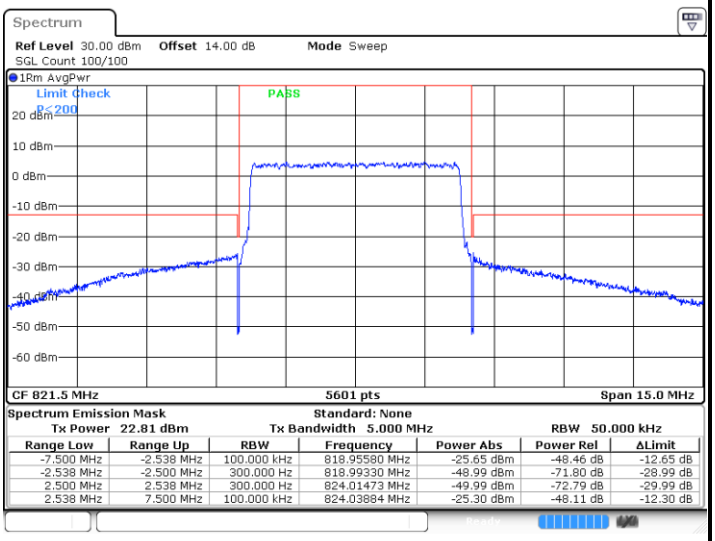


Spectrum Emission Mask Standard: None
Tx Power 22.67 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-7.500 MHz	-2.538 MHz	100.000 kHz	813.95044 MHz	-26.38 dBm	-49.05 dB	-13.38 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	813.99330 MHz	-49.69 dBm	-72.36 dB	-29.69 dB
2.500 MHz	2.538 MHz	300.000 Hz	819.01741 MHz	-50.85 dBm	-73.52 dB	-30.85 dB
2.538 MHz	7.500 MHz	100.000 kHz	819.04152 MHz	-27.01 dBm	-49.68 dB	-14.01 dB

Date: 24.SEP.2024 01:37:15

Highest Band Edge / Full RB



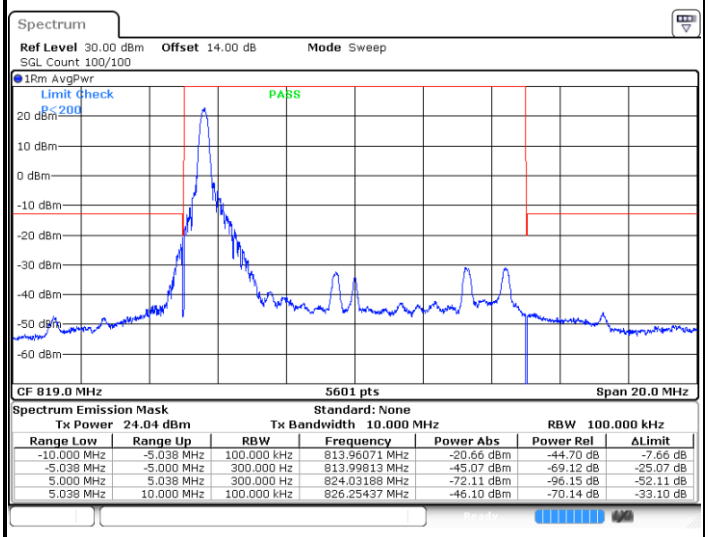
Spectrum Emission Mask Standard: None
Tx Power 22.81 dBm Tx Bandwidth 5.000 MHz RBW 50.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-7.500 MHz	-2.538 MHz	100.000 kHz	818.95580 MHz	-25.65 dBm	-48.46 dB	-12.65 dB
-2.538 MHz	-2.500 MHz	300.000 Hz	818.99330 MHz	-48.99 dBm	-71.80 dB	-28.99 dB
2.500 MHz	2.538 MHz	300.000 Hz	824.01473 MHz	-49.99 dBm	-72.79 dB	-29.99 dB
2.538 MHz	7.500 MHz	100.000 kHz	824.03884 MHz	-25.30 dBm	-48.11 dB	-12.30 dB

Date: 24.SEP.2024 01:47:42

LTE Band 26 / 10MHz / QPSK

Lowest Band Edge / 1RB

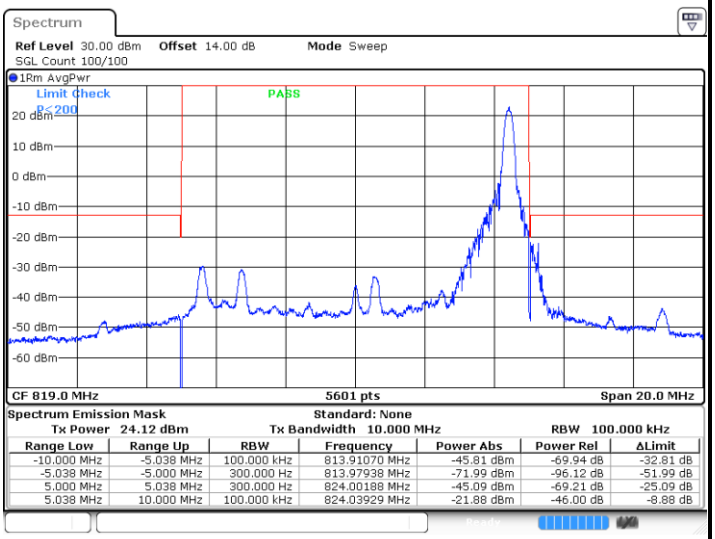


Spectrum Emission Mask Standard: None
Tx Power 24.04 dBm Tx Bandwidth 10.000 MHz RBW 100.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-10.000 MHz	-5.038 MHz	100.000 kHz	813.96071 MHz	-20.66 dBm	-44.70 dB	-7.66 dB
-5.038 MHz	-5.000 MHz	300.000 Hz	813.99813 MHz	-45.07 dBm	-69.12 dB	-25.07 dB
5.000 MHz	5.038 MHz	300.000 Hz	824.03188 MHz	-72.11 dBm	-96.15 dB	-52.11 dB
5.038 MHz	10.000 MHz	100.000 kHz	826.25437 MHz	-46.10 dBm	-70.14 dB	-33.10 dB

Date: 24.SEP.2024 01:53:01

Lowest Band Edge / 1RB

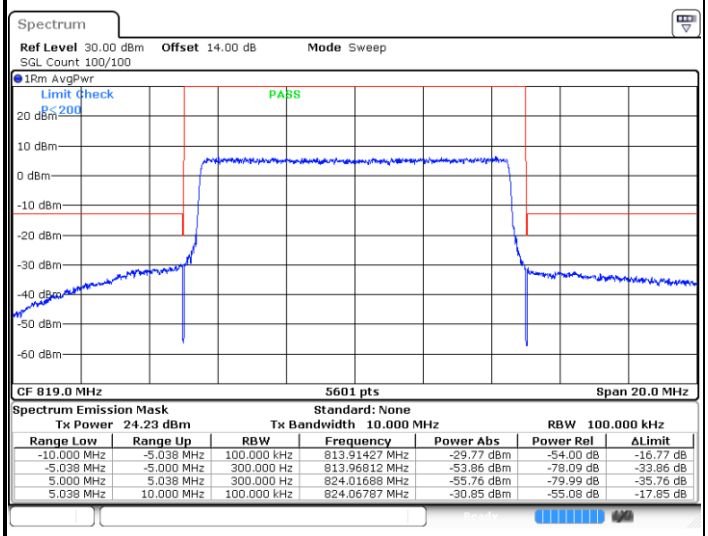


Spectrum Emission Mask Standard: None
Tx Power 24.12 dBm Tx Bandwidth 10.000 MHz RBW 100.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-10.000 MHz	-5.038 MHz	100.000 kHz	813.91070 MHz	-45.81 dBm	-69.94 dB	-32.81 dB
-5.038 MHz	-5.000 MHz	300.000 Hz	813.97938 MHz	-71.99 dBm	-96.12 dB	-51.99 dB
5.000 MHz	5.038 MHz	300.000 Hz	824.00188 MHz	-45.09 dBm	-69.21 dB	-25.09 dB
5.038 MHz	10.000 MHz	100.000 kHz	824.03929 MHz	-21.88 dBm	-46.00 dB	-8.88 dB

Date: 24.SEP.2024 01:58:27

Lowest Band Edge / Full RB



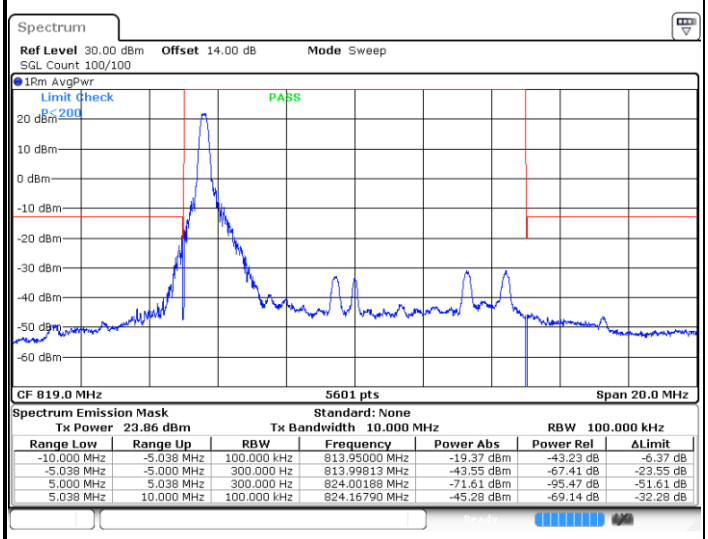
Spectrum Emission Mask Standard: None
Tx Power 24.23 dBm Tx Bandwidth 10.000 MHz RBW 100.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-10.000 MHz	-5.038 MHz	100.000 kHz	813.91427 MHz	-29.77 dBm	-54.00 dB	-16.77 dB
-5.038 MHz	-5.000 MHz	300.000 Hz	813.96812 MHz	-53.86 dBm	-78.09 dB	-33.86 dB
5.000 MHz	5.038 MHz	300.000 Hz	824.01688 MHz	-55.76 dBm	-79.99 dB	-35.76 dB
5.038 MHz	10.000 MHz	100.000 kHz	824.06787 MHz	-30.85 dBm	-55.08 dB	-17.85 dB

Date: 24.SEP.2024 01:59:33

LTE Band 26 / 10MHz / 16QAM

Lowest Band Edge / 1 RB

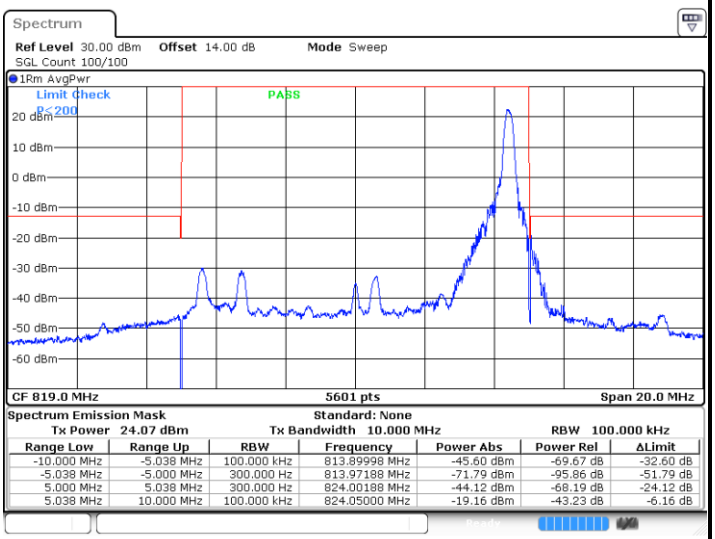


Spectrum Emission Mask Standard: None
Tx Power 23.86 dBm Tx Bandwidth 10.000 MHz RBW 100.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-10.000 MHz	-5.038 MHz	100.000 kHz	813.95000 MHz	-19.37 dBm	-43.23 dB	-6.37 dB
-5.038 MHz	-5.000 MHz	300.000 Hz	813.99813 MHz	-43.55 dBm	-67.41 dB	-23.55 dB
5.000 MHz	5.038 MHz	300.000 Hz	824.00188 MHz	-71.61 dBm	-95.47 dB	-51.61 dB
5.038 MHz	10.000 MHz	100.000 kHz	824.16790 MHz	-45.28 dBm	-69.14 dB	-32.28 dB

Date: 24.SEP.2024 01:54:06

Lowest Band Edge / 1 RB

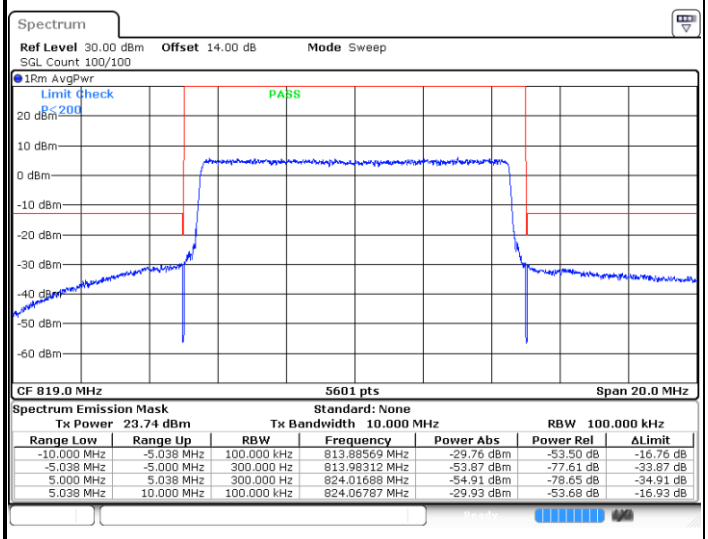


Spectrum Emission Mask Standard: None
Tx Power 24.07 dBm Tx Bandwidth 10.000 MHz RBW 100.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-10.000 MHz	-5.038 MHz	100.000 kHz	813.89998 MHz	-45.60 dBm	-69.67 dB	-32.60 dB
-5.038 MHz	-5.000 MHz	300.000 Hz	813.97188 MHz	-71.79 dBm	-95.86 dB	-51.79 dB
5.000 MHz	5.038 MHz	300.000 Hz	824.00188 MHz	-44.12 dBm	-68.19 dB	-24.12 dB
5.038 MHz	10.000 MHz	100.000 kHz	824.05000 MHz	-19.16 dBm	-43.23 dB	-6.16 dB

Date: 24.SEP.2024 01:57:22

Lowest Band Edge / Full RB



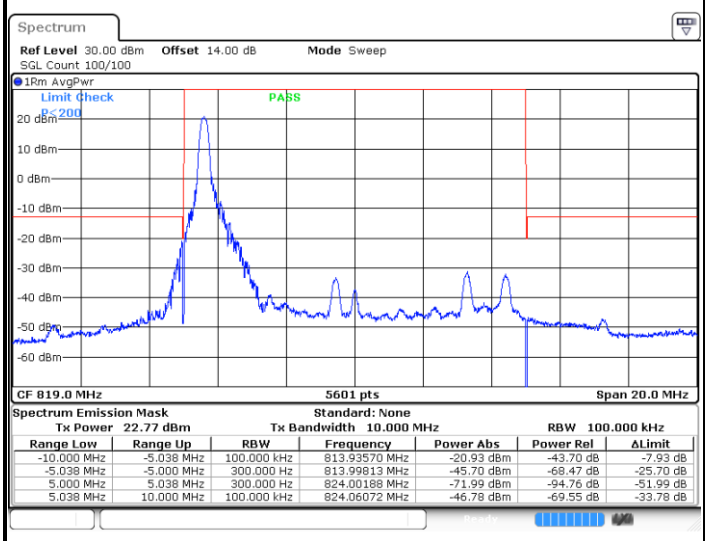
Spectrum Emission Mask Standard: None
Tx Power 23.74 dBm Tx Bandwidth 10.000 MHz RBW 100.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-10.000 MHz	-5.038 MHz	100.000 kHz	813.88569 MHz	-29.76 dBm	-53.50 dB	-16.76 dB
-5.038 MHz	-5.000 MHz	300.000 Hz	813.98312 MHz	-53.87 dBm	-77.61 dB	-33.87 dB
5.000 MHz	5.038 MHz	300.000 Hz	824.01688 MHz	-54.91 dBm	-78.65 dB	-34.91 dB
5.038 MHz	10.000 MHz	100.000 kHz	824.06787 MHz	-29.93 dBm	-53.68 dB	-16.93 dB

Date: 24.SEP.2024 02:00:38

LTE Band 26 / 10MHz / 64QAM

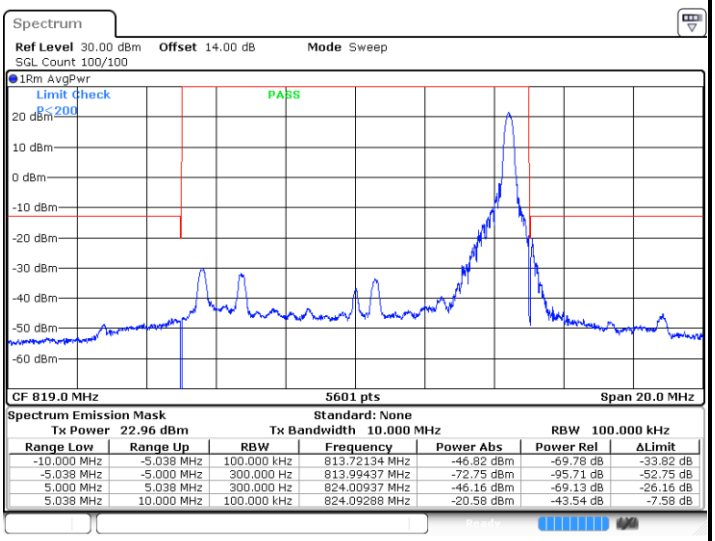
Lowest Band Edge / 1 RB



Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-10.000 MHz	-5.038 MHz	100.000 kHz	813.93570 MHz	-20.93 dBm	-43.70 dB	-7.93 dB
-5.038 MHz	-5.000 MHz	300.000 Hz	813.99813 MHz	-45.70 dBm	-68.47 dB	-25.70 dB
5.000 MHz	5.038 MHz	300.000 Hz	824.00188 MHz	-71.99 dBm	-94.76 dB	-51.99 dB
5.038 MHz	10.000 MHz	100.000 kHz	824.06072 MHz	-46.78 dBm	-69.55 dB	-33.78 dB

Date: 24.SEP.2024 01:55:11

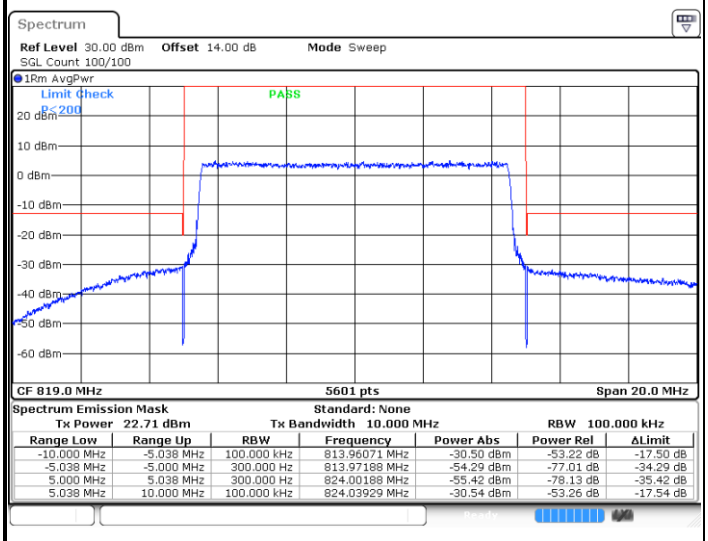
Lowest Band Edge / 1 RB



Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-10.000 MHz	-5.038 MHz	100.000 kHz	813.72134 MHz	-46.82 dBm	-69.78 dB	-33.82 dB
-5.038 MHz	-5.000 MHz	300.000 Hz	813.99437 MHz	-72.75 dBm	-95.71 dB	-52.75 dB
5.000 MHz	5.038 MHz	300.000 Hz	824.00937 MHz	-46.16 dBm	-69.13 dB	-26.16 dB
5.038 MHz	10.000 MHz	100.000 kHz	824.09288 MHz	-20.58 dBm	-43.54 dB	-7.58 dB

Date: 24.SEP.2024 01:56:17

Lowest Band Edge / Full RB

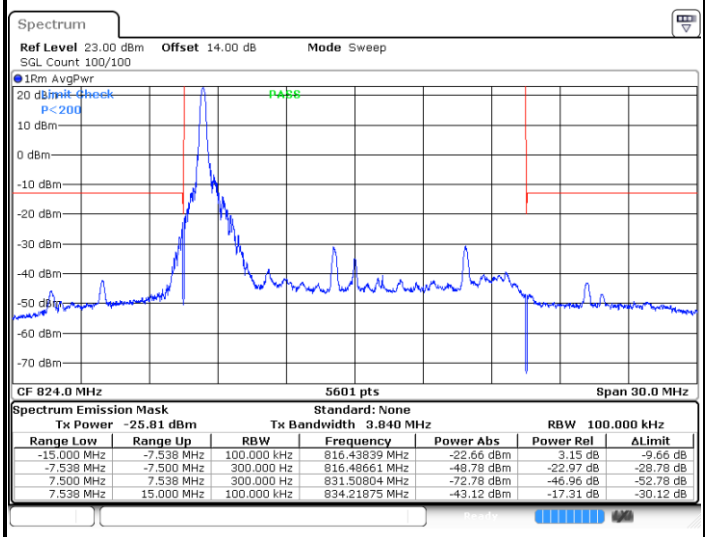


Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-10.000 MHz	-5.038 MHz	100.000 kHz	813.96071 MHz	-30.50 dBm	-53.22 dB	-17.50 dB
-5.038 MHz	-5.000 MHz	300.000 Hz	813.97188 MHz	-54.29 dBm	-77.01 dB	-34.29 dB
5.000 MHz	5.038 MHz	300.000 Hz	824.00188 MHz	-55.42 dBm	-78.13 dB	-35.42 dB
5.038 MHz	10.000 MHz	100.000 kHz	824.03929 MHz	-30.54 dBm	-53.26 dB	-17.54 dB

Date: 24.SEP.2024 02:01:43

LTE Band 26 / 15MHz

Highest Band Edge / 1RB QPSK

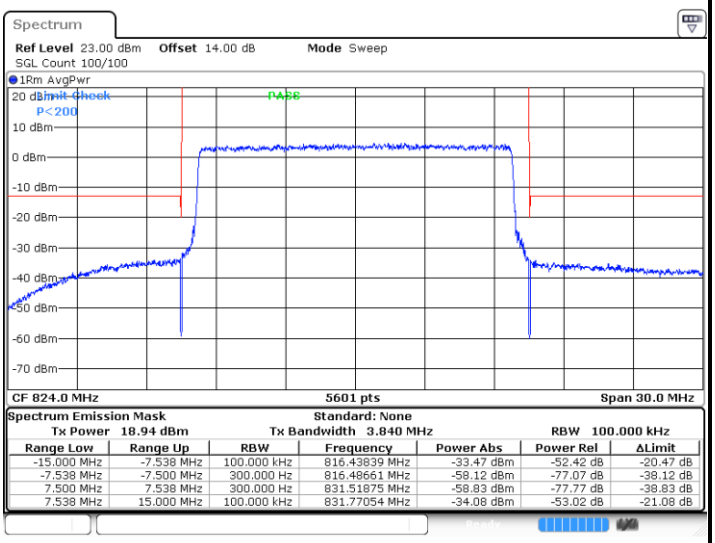


Spectrum Emission Mask Standard: None
Tx Power -25.81 dBm Tx Bandwidth 3.840 MHz RBW 100.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-15.000 MHz	-7.538 MHz	100.000 kHz	816.43839 MHz	-22.66 dBm	3.15 dB	-9.66 dB
-7.538 MHz	-7.500 MHz	300.000 Hz	816.48661 MHz	-48.78 dBm	-22.97 dB	-28.78 dB
7.500 MHz	7.538 MHz	300.000 Hz	831.50804 MHz	-72.78 dBm	-46.96 dB	-52.78 dB
7.538 MHz	15.000 MHz	100.000 kHz	834.21875 MHz	-43.12 dBm	-17.31 dB	-30.12 dB

Date: 24.SEP.2024 02:14:53

Highest Band Edge / Full RB QPSK

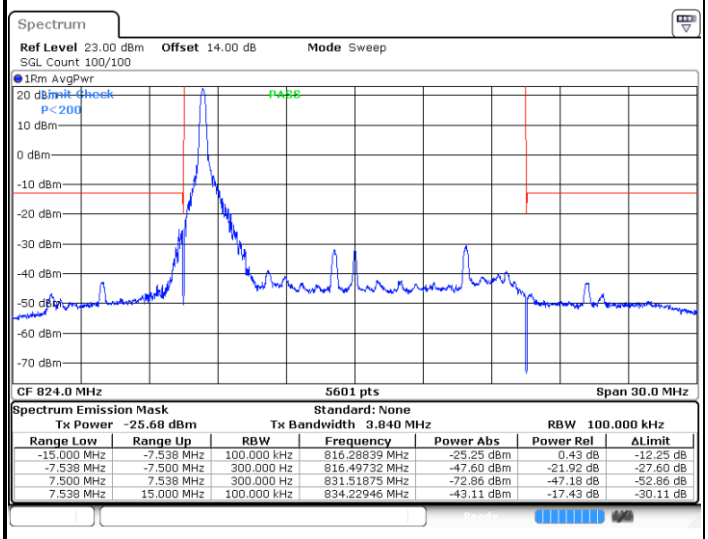


Spectrum Emission Mask Standard: None
Tx Power 18.94 dBm Tx Bandwidth 3.840 MHz RBW 100.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-15.000 MHz	-7.538 MHz	100.000 kHz	816.43839 MHz	-33.47 dBm	-52.42 dB	-20.47 dB
-7.538 MHz	-7.500 MHz	300.000 Hz	816.48661 MHz	-58.12 dBm	-77.07 dB	-38.12 dB
7.500 MHz	7.538 MHz	300.000 Hz	831.51875 MHz	-58.83 dBm	-77.77 dB	-38.83 dB
7.538 MHz	15.000 MHz	100.000 kHz	831.77054 MHz	-34.08 dBm	-53.02 dB	-21.08 dB

Date: 24.SEP.2024 02:09:29

Highest Band Edge / 1 RB 16QAM

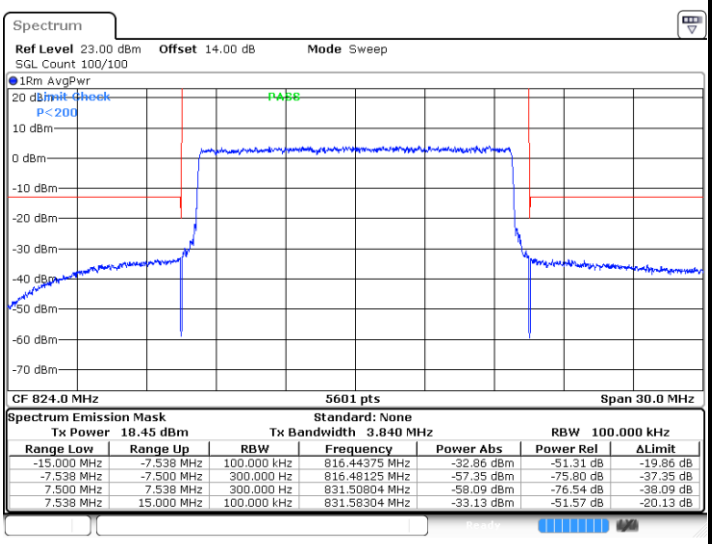


Spectrum Emission Mask Standard: None
Tx Power -25.68 dBm Tx Bandwidth 3.840 MHz RBW 100.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-15.000 MHz	-7.538 MHz	100.000 kHz	816.28839 MHz	-25.25 dBm	0.43 dB	-12.25 dB
-7.538 MHz	-7.500 MHz	300.000 Hz	816.49732 MHz	-47.60 dBm	-21.92 dB	-27.60 dB
7.500 MHz	7.538 MHz	300.000 Hz	831.51875 MHz	-72.86 dBm	-47.18 dB	-52.86 dB
7.538 MHz	15.000 MHz	100.000 kHz	834.22946 MHz	-43.11 dBm	-17.43 dB	-30.11 dB

Date: 24.SEP.2024 02:13:48

Highest Band Edge / Full RB 16QAM

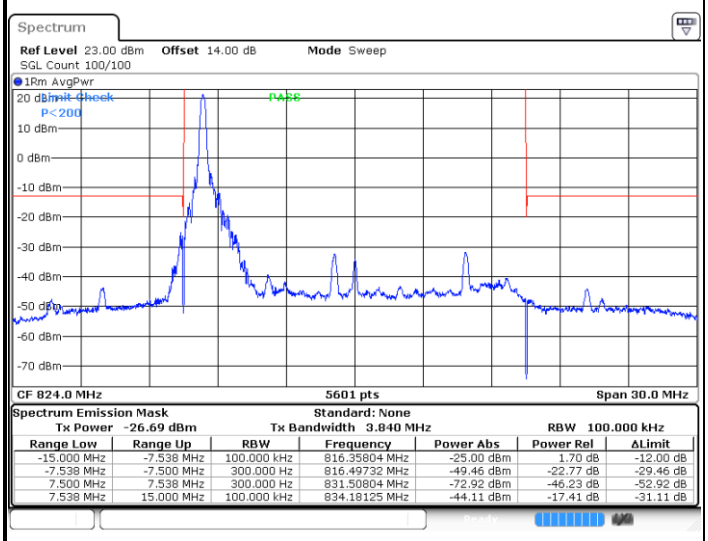


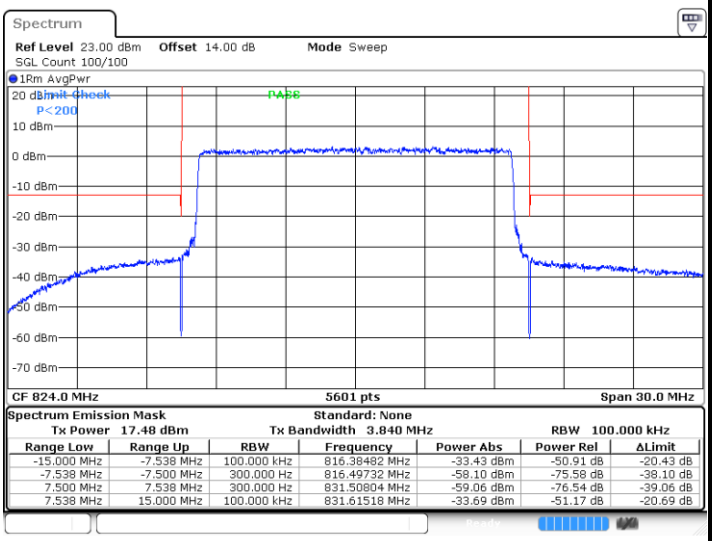
Spectrum Emission Mask Standard: None
Tx Power 18.45 dBm Tx Bandwidth 3.840 MHz RBW 100.000 kHz

Range Low	Range Up	RBW	Frequency	Power Abs	Power Rel	ΔLimit
-15.000 MHz	-7.538 MHz	100.000 kHz	816.44375 MHz	-32.86 dBm	-51.31 dB	-19.86 dB
-7.538 MHz	-7.500 MHz	300.000 Hz	816.48125 MHz	-57.35 dBm	-75.80 dB	-37.35 dB
7.500 MHz	7.538 MHz	300.000 Hz	831.50804 MHz	-58.09 dBm	-76.54 dB	-38.09 dB
7.538 MHz	15.000 MHz	100.000 kHz	831.58304 MHz	-33.13 dBm	-51.57 dB	-20.13 dB

Date: 24.SEP.2024 02:10:34

LTE Band 26 / 15MHz	
Highest Band Edge / 1 RB 64QAM	**Highest Band Edge / Full RB 64QAM**

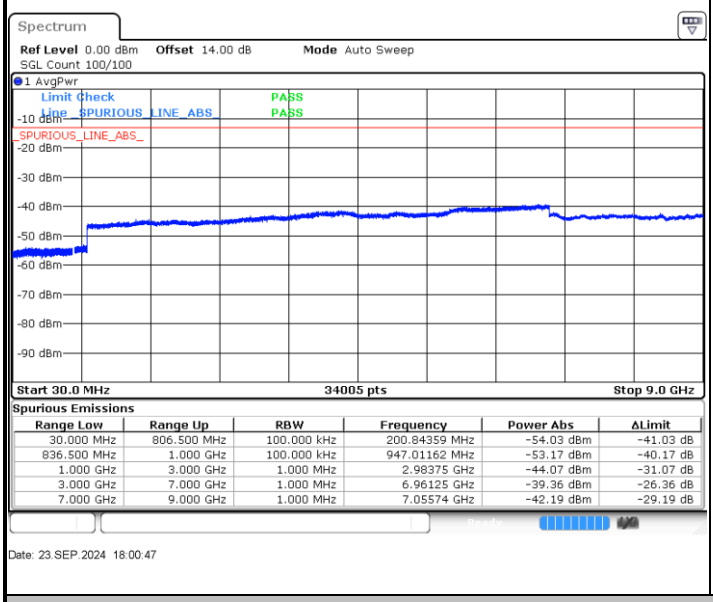




Emission masks – Out of band emissions

LTE Band 26 / 1.4MHz

Lowest Channel / QPSK

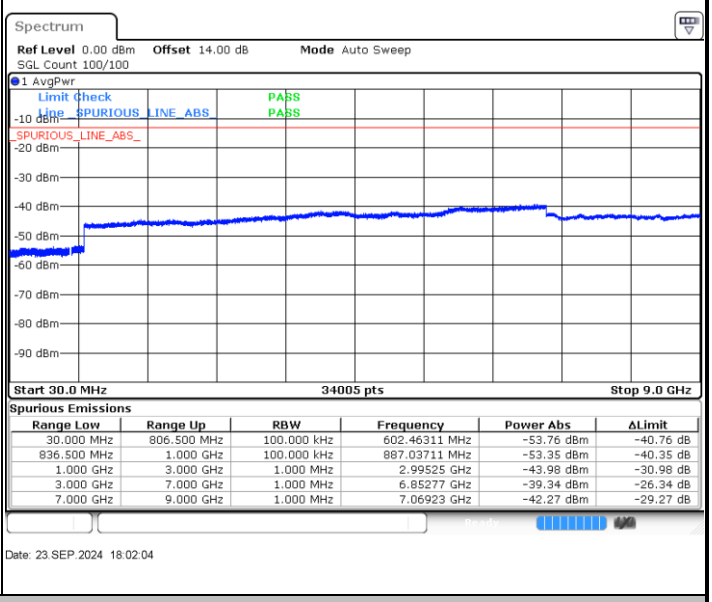


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	200.84359 MHz	-54.03 dBm	-41.03 dB
836.500 MHz	1.000 GHz	100.000 kHz	947.01162 MHz	-53.17 dBm	-40.17 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.98375 GHz	-44.07 dBm	-31.07 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.96125 GHz	-39.36 dBm	-26.36 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.05574 GHz	-42.19 dBm	-29.19 dB

Date: 23.SEP.2024 18:00:47

Middle Channel / QPSK

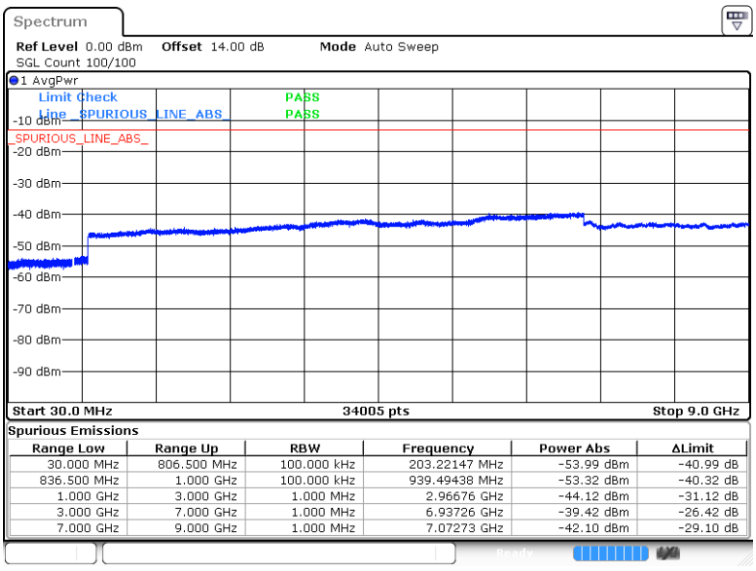


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	602.46311 MHz	-53.76 dBm	-40.76 dB
836.500 MHz	1.000 GHz	100.000 kHz	887.03711 MHz	-53.35 dBm	-40.35 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.99525 GHz	-43.98 dBm	-30.98 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.85277 GHz	-39.34 dBm	-26.34 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.06923 GHz	-42.27 dBm	-29.27 dB

Date: 23.SEP.2024 18:02:04

Highest Channel / QPSK



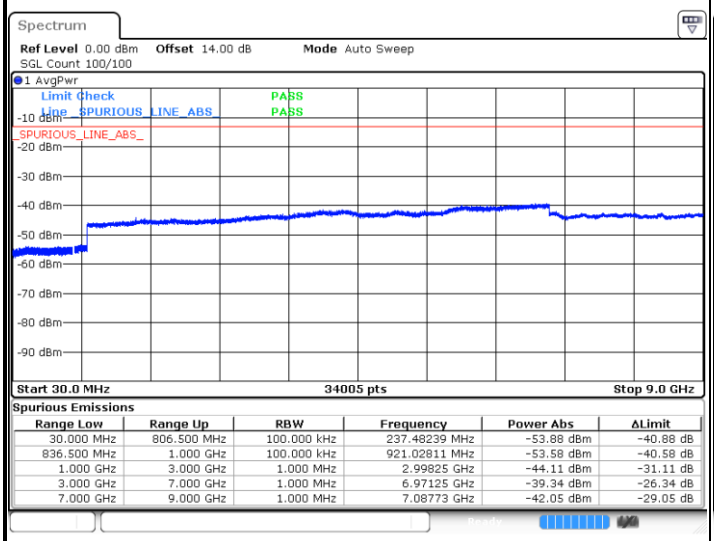
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	203.22147 MHz	-53.99 dBm	-40.99 dB
836.500 MHz	1.000 GHz	100.000 kHz	939.49438 MHz	-53.32 dBm	-40.32 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.96676 GHz	-44.12 dBm	-31.12 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.93726 GHz	-39.42 dBm	-26.42 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.07273 GHz	-42.10 dBm	-29.10 dB

Date: 23.SEP.2024 18:10:44

LTE Band 26 / 3MHz

Lowest Channel / QPSK

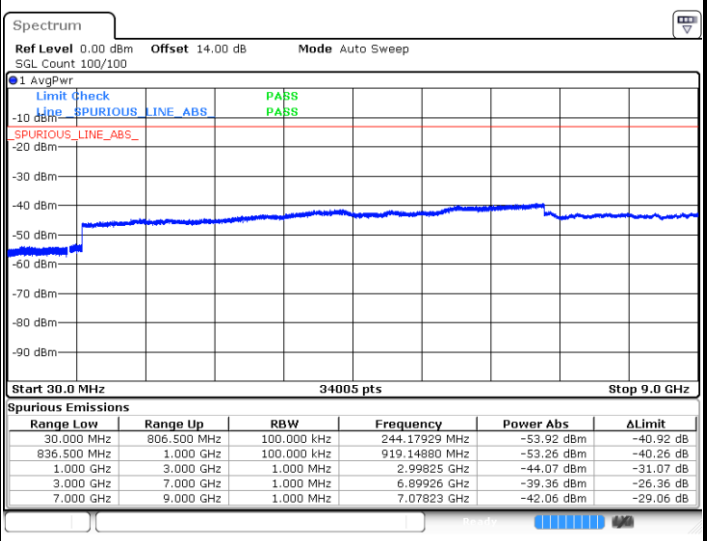


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	237.48239 MHz	-53.88 dBm	-40.88 dB
836.500 MHz	1.000 GHz	100.000 kHz	921.02811 MHz	-53.58 dBm	-40.58 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.99825 GHz	-44.11 dBm	-31.11 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.97125 GHz	-39.34 dBm	-26.34 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.08773 GHz	-42.05 dBm	-29.05 dB

Date: 23.SEP.2024 18:18:50

Middle Channel / QPSK

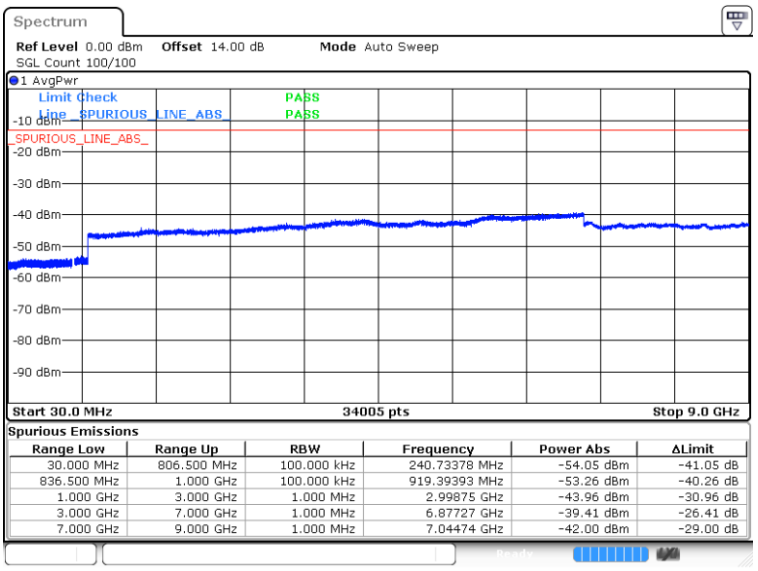


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	244.17929 MHz	-53.92 dBm	-40.92 dB
836.500 MHz	1.000 GHz	100.000 kHz	919.14880 MHz	-53.26 dBm	-40.26 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.99825 GHz	-44.07 dBm	-31.07 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.89926 GHz	-39.36 dBm	-26.36 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.07823 GHz	-42.06 dBm	-29.06 dB

Date: 23.SEP.2024 18:20:07

Highest Channel / QPSK



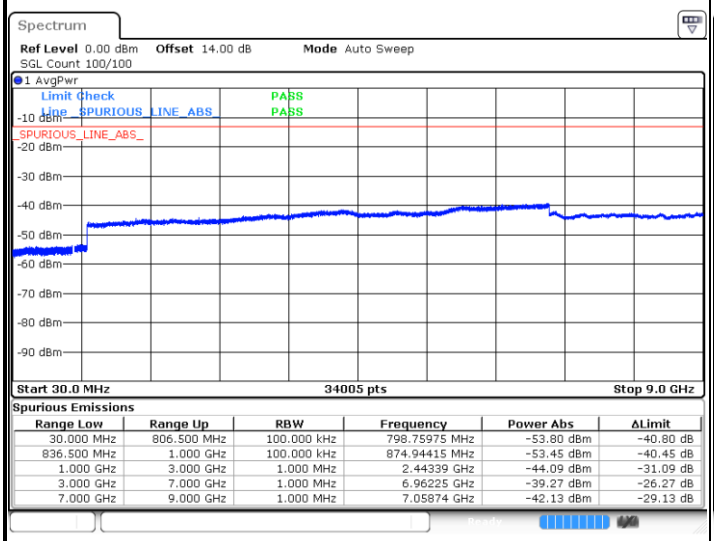
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	240.73378 MHz	-54.05 dBm	-41.05 dB
836.500 MHz	1.000 GHz	100.000 kHz	919.39393 MHz	-53.26 dBm	-40.26 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.99875 GHz	-43.96 dBm	-30.96 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.87727 GHz	-39.41 dBm	-26.41 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.04474 GHz	-42.00 dBm	-29.00 dB

Date: 23.SEP.2024 18:28:48

LTE Band 26 / 5MHz

Lowest Channel / QPSK

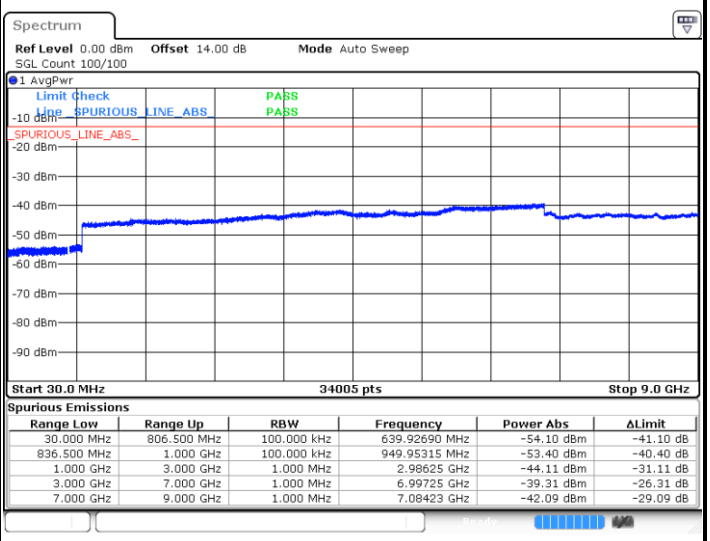


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	798.75975 MHz	-53.80 dBm	-40.80 dB
836.500 MHz	1.000 GHz	100.000 kHz	874.94415 MHz	-53.45 dBm	-40.45 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.44339 GHz	-44.09 dBm	-31.09 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.96225 GHz	-39.27 dBm	-26.27 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.05874 GHz	-42.13 dBm	-29.13 dB

Date: 24.SEP.2024 01:40:43

Middle Channel / QPSK

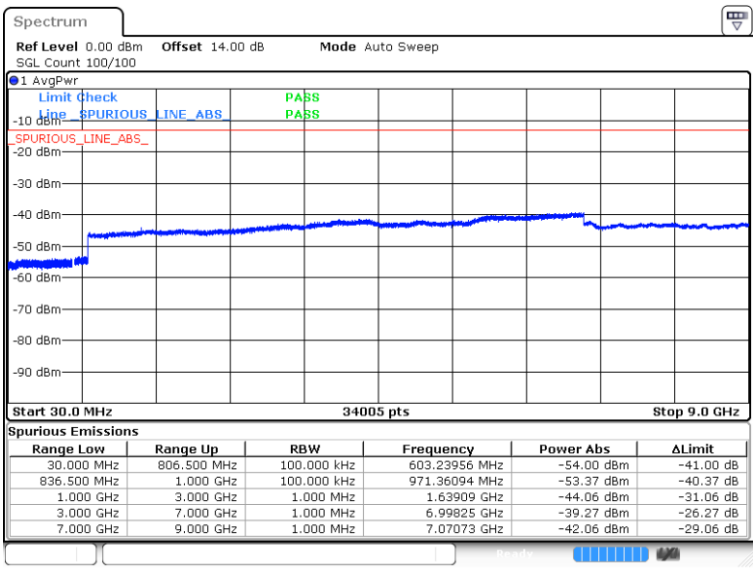


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	639.92690 MHz	-54.10 dBm	-41.10 dB
836.500 MHz	1.000 GHz	100.000 kHz	949.95315 MHz	-53.40 dBm	-40.40 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.98625 GHz	-44.11 dBm	-31.11 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99725 GHz	-39.31 dBm	-26.31 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.08423 GHz	-42.09 dBm	-29.09 dB

Date: 24.SEP.2024 01:42:00

Highest Channel / QPSK

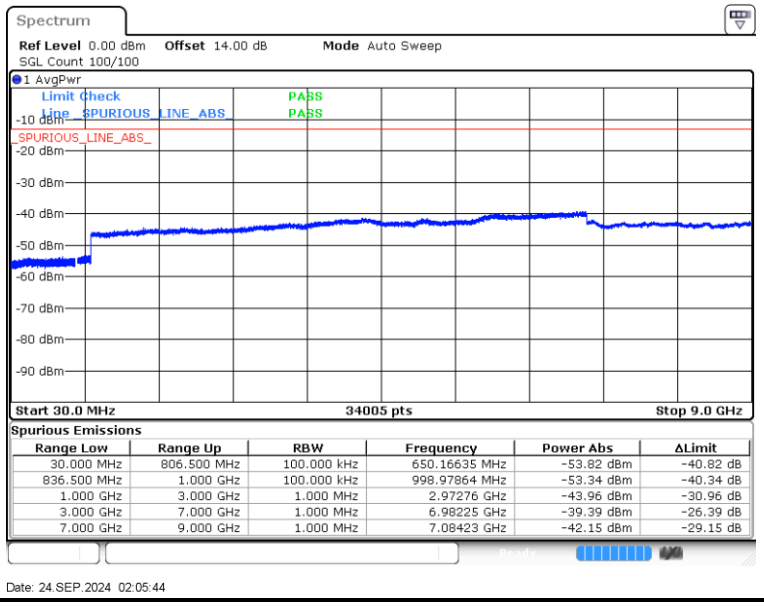


Spurious Emissions

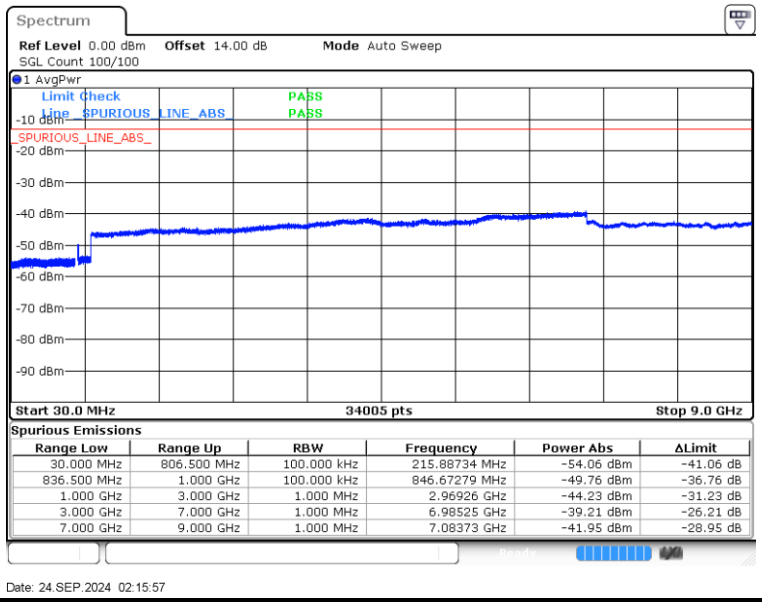
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	806.500 MHz	100.000 kHz	603.23956 MHz	-54.00 dBm	-41.00 dB
836.500 MHz	1.000 GHz	100.000 kHz	971.36094 MHz	-53.37 dBm	-40.37 dB
1.000 GHz	3.000 GHz	1.000 MHz	1.63909 GHz	-44.06 dBm	-31.06 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.99825 GHz	-39.27 dBm	-26.27 dB
7.000 GHz	9.000 GHz	1.000 MHz	7.07073 GHz	-42.06 dBm	-29.06 dB

Date: 24.SEP.2024 01:51:10

LTE Band 26 / 10MHz
Middle Channel / QPSK



LTE Band 26 / 15MHz
Highest Channel / QPSK



Frequency Stability

Test Conditions		LTE Band 26 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0035	PASS
40	Normal Voltage	0.0027	
30	Normal Voltage	0.0024	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0001	
0	Normal Voltage	0.0006	
-10	Normal Voltage	0.0020	
-20	Normal Voltage	0.0034	
-30	Normal Voltage	0.0004	
20	Maximum Voltage	0.0010	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0001	

Note:

1. Normal Voltage = 4V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage = 4.53V.
2. The frequency fundamental emissions stay within the authorized frequency block.

Test Conditions		LTE Band 26 (QPSK) / Low Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 15MHz	2.5ppm
		Deviation (ppm)	Result
50	Normal Voltage	0.0005	PASS
40	Normal Voltage	0.0011	
30	Normal Voltage	0.0013	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0001	
0	Normal Voltage	0.0005	
-10	Normal Voltage	0.0007	
-20	Normal Voltage	0.0002	
-30	Normal Voltage	0.0011	
20	Maximum Voltage	0.0016	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0007	

Note:

1. Normal Voltage = 4 V. ; Battery End Point (BEP) = 3.6 V. ; Maximum Voltage = 4.53 V.
2. The frequency fundamental emissions stay within the authorized frequency block.

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

Test Engineer :	LiangPing Zhou	Temperature :	22~25℃
		Relative Humidity :	48~52%

RSE pre-scanned harmonic for different antennas, choose the worst antenna perform final test and record in the report.

LTE Band 26 / 5MHz / QPSK / Ant. 1									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1633.5	-66.82	-13	-53.82	-73.13	-70.07	4.00	9.40	H
	2450.25	-65.78	-13	-52.78	-76.18	-69.35	4.88	10.60	H
	3267	-64.32	-13	-51.32	-76.98	-69.25	5.52	12.60	H
	1633.5	-64.91	-13	-51.91	-71.22	-68.16	4.00	9.40	V
	2450.25	-65.53	-13	-52.53	-76.31	-69.10	4.88	10.60	V
	3267	-63.57	-13	-50.57	-76.73	-68.50	5.52	12.60	V

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

LTE Band 26 / 10MHz / QPSK / Ant. 1									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1629	-67.91	-13	-54.91	-74.23	-71.16	4.00	9.40	H
	2443.5	-65.95	-13	-52.95	-76.37	-69.52	4.88	10.60	H
	3258	-64.27	-13	-51.27	-77.00	-69.20	5.52	12.60	H
	1629	-67.95	-13	-54.95	-74.31	-71.20	4.00	9.40	V
	2443.5	-65.40	-13	-52.40	-76.20	-68.97	4.88	10.60	V
	3258	-63.55	-13	-50.55	-76.80	-68.48	5.52	12.60	V

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

LTE Band 26 / 15MHz / QPSK / Ant. 1									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Highest	1634.4	-67.55	-13	-54.55	-73.86	-70.72	4.10	9.42	H
	2451.74	-65.80	-13	-52.80	-76.19	-69.38	4.90	10.63	H
	3269	-64.23	-13	-51.23	-76.87	-69.15	5.55	12.62	H
	1634.4	-64.86	-13	-51.86	-71.16	-68.03	4.10	9.42	V
	2451.74	-65.55	-13	-52.55	-76.32	-69.13	4.90	10.63	V
	3269	-63.75	-13	-50.75	-76.89	-68.67	5.55	12.62	V

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