FCC RADIO TEST REPORT

FCC ID	:	**PKRISGFX31001**
Equipment	:	**indoor router**
Brand Name	:	**Inseego**
Model Name	:	**FX3100-1, FX3100-1G**
Marketing Name	:	**FX3100**
Applicant	:	**Inseego Corp.** **9710 Scranton Road Suite 200, San Diego,CA 92121**
Manufacturer	:	**Inseego Corp.** **9710 Scranton Road Suite 200, San Diego,CA 92121**
Standard	:	**FCC 47 CFR Part 2, 22(H), 24(E), 27, Part 90(S)**

The product was received on Apr. 02, 2024 and testing was performed from Apr. 02, 2024 to Apr. 23, 2024. We, Sporton International Inc. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E and has been in compliance with the applicable technical standards.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval from Sporton International Inc. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

Sporton International Inc. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issue Date
FG290606-01	01	Initial issue of report	Apr. 26, 2024

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046	Conducted Output Power	Reporting only	-
	§22.913 (a)(5) §90.635	Effective Radiated Power (Band 5) (Band 26)	Pass	
	§27.50 (b)(10) §27.50 (c)(10)	Effective Radiated Power (Band 12) (Band 13) (Band 17) (Band 71)		
	§24.232 (c) §27.50 (h)(2)	Equivalent Isotropic Radiated Power (Band 2) (Band 25) (Band 7) (Band 38) (Band 41)		
	§27.50 (d)(4)	Equivalent Isotropic Radiated Power (Band 4) (Band 66)		
3.3	§24.232 (d) §27.50 (d)(5)	Peak-to-Average Ratio	Pass	-
3.4	§2.1049	Occupied Bandwidth	Reporting only	-
3.5	§2.1051 §22.917 (a) §24.238 (a) §27.53 (c)(2)(4) §27.53 (g) §27.53 (h)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 17) (Band 25) (Band 26) (Band 66) (Band 71)	Pass	-
	§2.1051 §27.53 (m)(4)	Conducted Band Edge Measurement (Band 7) (Band 38) (Band 41)		
-	§2.1051 §90.691	Emission masks (Band 26)	Not Required	-
3.6	§2.1051 §22.917 (a) §24.238 (a) §27.53 (c)(2) §27.53 (g) §27.53 (h) §90.691	Conducted Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 17) (Band 25) (Band 26) (Band 66) (Band 71)	Pass	-
	§2.1051 §27.53 (m)(4)	Conducted Spurious Emission (Band 7) (Band 38) (Band 41)		
3.7	§2.1055 §22.355 §24.235 §27.54 §90.213	Frequency Stability Temperature & Voltage	Pass	-

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
4.2	§2.1053 §22.917 (a) §24.238 (a) §27.53 (c)(2) §27.53 (f) §27.53 (g) §27.53 (h) §90.691	Radiated Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 17) (Band 25) (Band 26) (Band 66) (Band 71)	Pass	26.96 dB under the limit at 5186.00 MHz
	§2.1053 §27.53 (m)(4)	Radiated Spurious Emission (Band 7) (Band 38) (Band 41)		

Remark:

1. This is a variant report by adding model name. All the test cases were performed on original report which can be referred to Sporton Report Number FG290606A. Based on the original report, the test cases were verified.
2. Not required means after assessing, test items are not necessary to carry out.

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:

1. 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.
2. The purpose of different model name is for marketing segmentation.

Reviewed by: Lewis Ho

Report Producer: Rebecca Wu

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature
General Specs 4G-LTE, 5G-FR1, Wi-Fi 2.4GHz 802.11 b/g/n/ax, Wi-Fi 5GHz 802.11 a/n/ac/ax, and GNSS. **Antenna Type** WWAN: Fixed Internal Antenna WLAN: Fixed Internal Antenna GPS / Glonass / BDS / Galileo: Fixed Internal Antenna

Antenna information							
Band	**Ant0**	**Ant1**	**Ant2**	**Ant5**	**Ant6**	**Main Ant. #**	**Sub Ant. #**
B17	**-0.1**						
CA 5B	**0.8**						
CA 66B	**1.8**						
CA 66C	**1.8**						

Remark: The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.

FDD band Power Class		
	PC3	**PC2**
B17	V	-
CA 5B	V	-
CA 66B	V	-
CA 66C	V	-

Support band and evaluated information	
Supported band	B17,CA 5B, CA 66B,CA 66C
Evaluated and Tested band	B17,CA 5B, CA 66B,CA 66C
Band covered information	Wider operating frequency band range covers narrower one when the power is worse as follows: ■ B12 cover B17 (Part 27)

1.2 Modification of EUT

No modifications made to the EUT during the testing.

1.3 Testing Location

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	**Sporton Site No.**
	TH03-HY
Test Engineer	HaoEn Zhang
Temperature (℃)	21.1~23.5 ℃
Relative Humidity (%)	52.2~55.6 %

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	**Sporton Site No.**
	03CH15-HY (TAF Code: 3786)
Test Engineer	Daniel Lee, Quentin Liu, and Bigshow Wang
Temperature (℃)	21.0~22.9 ℃
Relative Humidity (%)	52~59 %
Remark	The Radiated Spurious Emission test item subcontracted to Sporton International Inc. Wensan Laboratory.

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC Designation No.: TW1190 and TW3786

1.4 Applicable Standards

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

- ANSI C63.26-2015
- ANSI / TIA-603-E
- FCC 47 CFR Part 2, 22(H), 24(E), 27, Part 90(S)
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01
- FCC KDB 414788 D01 Radiated Test Site v01r01.

Remark:

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. The TAF code is not including all the FCC KDB listed without accreditation.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

For radiated measurement, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.26 exploratory test procedures and only the worst case emissions were reported in this report..

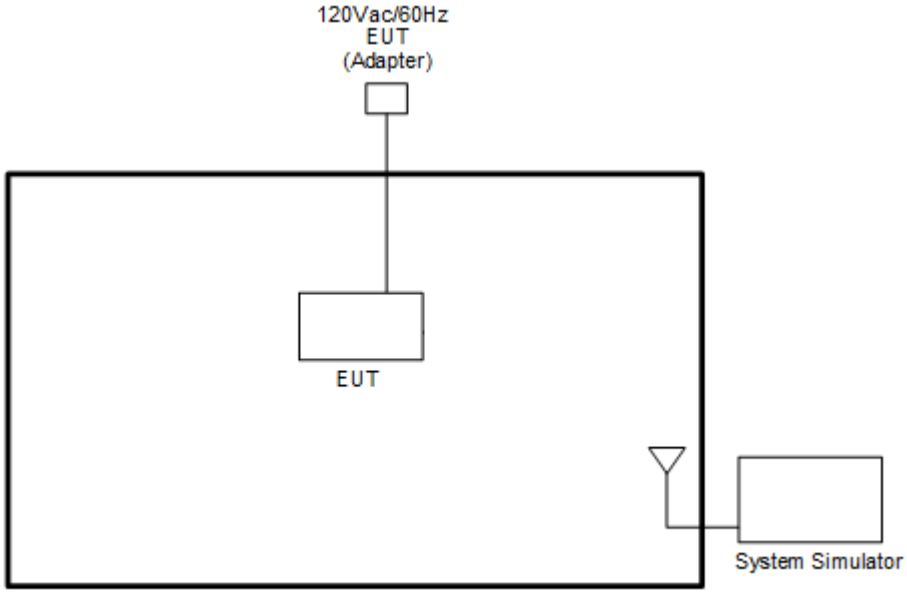
Modulation Type	Modulation
A	QPSK
B	16QAM
C	64QAM
D	256QAM

Test Item	Modulation Type	Bandwidth	RB Size	Channel
Conducted Power	A, B, C, D	All	1, Half, Full	L, M, H
EIRP	A, B, C, D	All	1, Half, Full	L, M, H
PAR	A, B, C, D	10 MHz or less	Full	M
Bandwidth	A, B, C, D	All	Full	M
CBE, Mask	A, B, C, D	All	1RB Full	L, H
CSE	A	Minimum	1RB	L, M, H
Frequency Stability	A	10 MHz or less	Full	M
RSE	A	10 MHz or less	1RB	L, M, H

Remark:

1. Evaluated all the transmitter signal and reporting worst-case configuration among all modulation types.
2. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst-case emissions are reported.
3. Interband ULCA modes 2A-13A, 4A-13A, 13A-66A are covered by each rule part of LTE single carrier mode with higher power.

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8821C	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 EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Example :

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

= 4.2 + 10 = 14.2 (dB)

2.5 Frequency List of Low/Middle/High Channels

LTE Band 17 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	23780	23790	23800
	Frequency	709	710	711
5	Channel	23755	23790	23825
	Frequency	706.5	710	713.5

LTE Band 5B Channel and Frequency List_CA					
BW [MHz]	Channel/Frequency(MHz)		Lowest	Middle	Highest
3 + 5	PCC	Channel	20416	20501	20586
		Frequency	825.6	834.1	842.6
	SCC	Channel	20455	20540	20575
		Frequency	829.5	838.0	841.5
5 + 3	PCC	Channel	20425	20510	20595
		Frequency	826.5	835.0	843.5
	SCC	Channel	20464	20549	20634
		Frequency	830.4	838.9	847.4
5 + 10	PCC	Channel	20428	20478	20528
		Frequency	826.8	831.8	836.8
	SCC	Channel	20500	20550	20600
		Frequency	834.0	839.0	844.0
10 + 5	PCC	Channel	20450	20500	20550
		Frequency	829.0	834.0	839.0
	SCC	Channel	20522	20572	20622
		Frequency	836.2	841.2	846.2
10 + 10	PCC	Channel	20450	20476	20501
		Frequency	829.0	831.6	834.1
	SCC	Channel	20549	20575	20600
		Frequency	838.9	841.5	844.0

LTE Band 66B Channel and Frequency List_CA					
BW [MHz]	Channel/Frequency(MHz)		Lowest	Middle	Highest
5 + 5	PCC	Channel	131997	132398	132599
		Frequency	1712.5	1752.6	1772.7
	SCC	Channel	132045	133346	132647
		Frequency	1717.3	1757.4	1777.5
5 + 10	PCC	Channel	132000	132375	132550
		Frequency	1712.8	1750.3	1767.8
	SCC	Channel	132072	133347	132622
		Frequency	1720.0	1757.5	1775.0
10 + 5	PCC	Channel	132022	132397	132572
		Frequency	1715.0	1752.5	1770.0
	SCC	Channel	132094	133369	132644
		Frequency	1722.2	1759.7	1777.2
5 + 15	PCC	Channel	132002	132353	132504
		Frequency	1713.0	1748.1	1763.2
	SCC	Channel	132095	133346	132597
		Frequency	1722.3	1757.4	1772.5
15 + 5	PCC	Channel	132047	132398	132549
		Frequency	1717.5	1752.6	1767.7
	SCC	Channel	132140	133391	132642
		Frequency	1726.8	1761.9	1777.0
10 + 10	PCC	Channel	132022	132373	135523
		Frequency	1715.0	1750.1	1765.1
	SCC	Channel	132121	133372	132622
		Frequency	1724.9	1760.0	1775.0

LTE Band 66C Channel and Frequency List_CA					
BW [MHz]	Channel/Frequency(MHz)		Lowest	Middle	Highest
10 + 15	PCC	Channel	132025	132351	132477
		Frequency	1715.3	1747.9	1760.5
	SCC	Channel	132145	133371	132597
		Frequency	1727.3	1759.9	1772.5
15 + 10	PCC	Channel	132047	132373	132499
		Frequency	1717.5	1750.1	1762.7
	SCC	Channel	132167	132493	132619
		Frequency	1729.5	1762.1	1774.7
10 + 20	PCC	Channel	132027	132328	132428
		Frequency	1715.5	1745.6	1755.6
	SCC	Channel	131171	133372	132572
		Frequency	1729.9	1760.0	1770.0
20 + 10	PCC	Channel	132072	132373	132473
		Frequency	1720.0	1750.1	1760.1
	SCC	Channel	132216	133417	132617
		Frequency	1734.4	1764.5	1774.5
15 + 15	PCC	Channel	132047	132347	132447
		Frequency	1717.5	1747.5	1757.5
	SCC	Channel	132197	133397	132597
		Frequency	1732.5	1762.5	1772.5
15 + 20	PCC	Channel	132050	132325	132401
		Frequency	1717.8	1745.3	1752.9
	SCC	Channel	132221	133396	132572
		Frequency	1734.9	1762.4	1770.0
20 + 15	PCC	Channel	132072	132348	132423
		Frequency	1720.0	1747.6	1755.1
	SCC	Channel	132243	133419	132594
		Frequency	1737.1	1764.7	1772.2
20 + 5	PCC	Channel	132072	132397	132522
		Frequency	1720.0	1752.5	1765.0
	SCC	Channel	132189	133414	132639
		Frequency	1731.7	1764.2	1776.7

LTE Band 66C Channel and Frequency List_CA					
5 + 20	PCC	Channel	132005	132330	132455
		Frequency	1713.3	1745.8	1758.3
	SCC	Channel	132122	132447	132572
		Frequency	1725.0	1757.5	1770.0
20 + 20	PCC	Channel	132072	132323	132374
		Frequency	1720.0	1745.1	1750.2
	SCC	Channel	132270	133421	132572
		Frequency	1739.8	1764.9	1770.0

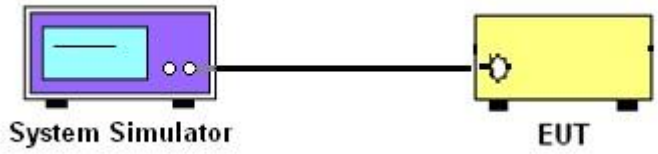
3 Conducted Test Items

3.1 Measuring Instruments

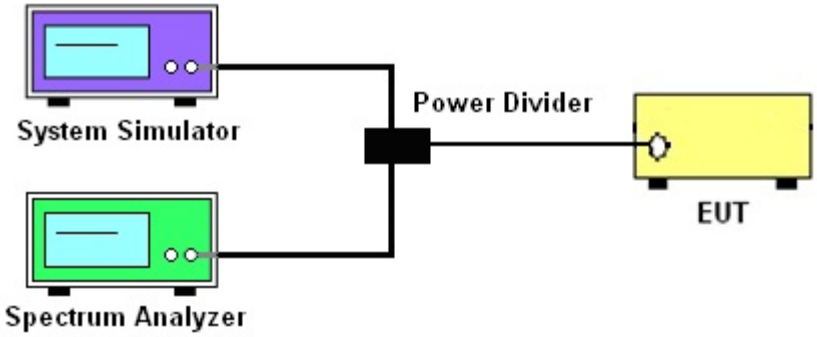
See list of measuring instruments of this test report.

3.1.1 Test Setup

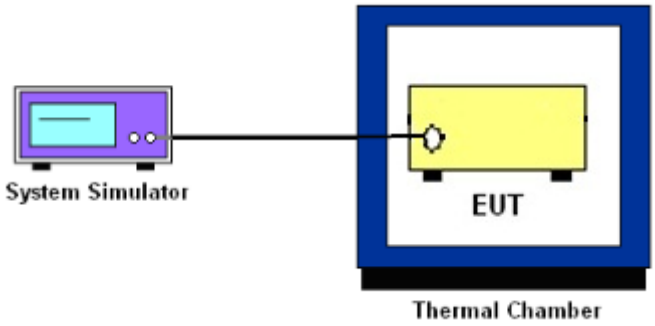
3.1.2 Conducted Output Power



3.1.3 Peak-to-Average Ratio, Occupied Bandwidth ,Conducted Band-Edge, Emission Mask and Conducted Spurious Emission



3.1.4 Frequency Stability



3.1.5 Test Result of Conducted Test

Please refer to Appendix A.

3.2 Conducted Output Power and ERP/EIRP

3.2.1 Description of the Conducted Output Power Measurement and ERP/EIRP Measurement

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

The ERP of mobile transmitters must not exceed 7 Watts for LTE Band 5

The ERP of mobile transmitters must not exceed 3 Watts for LTE Band 17

The EIRP of mobile transmitters must not exceed 1 Watts for LTE Band 66

According to KDB 412172 D01 Power Approach,

EIRP = $P_T + G_T – L_C$, ERP = EIRP -2.15, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

3.2.2 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.

3.3 Peak-to-Average Ratio

3.3.1 Description of the PAR Measurement

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

3.3.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.2.6

1. The EUT was connected to spectrum and system simulator via a power divider.
2. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
3. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
4. Record the deviation as Peak to Average Ratio.

3.4 Occupied Bandwidth

3.4.1 Description of Occupied Bandwidth Measurement

The 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 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

3.4.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.4.3 (26dB) and Section 5.4.4 (99OB)

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
3. The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
4. Set the detection mode to peak, and the trace mode to max hold.
5. Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace.
   (this is the reference value)
6. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
7. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “–X dB down amplitude” determined in step 6. If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
8. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

3.5 Conducted Band Edge

3.5.1 Description of Conducted Band Edge Measurement

22.917(a)

For operations in the 824 – 849 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 100kHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

27.53 (g)

For operations in the 600MHz band and 698-746 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 100 kHz bandwidth. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

27.53 (h)

For operations in the 1710 – 1755 MHz band, 1755-1780 MHz, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 1 MHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

3.5.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The band edges of low and high channels for the highest RF powers were measured.
3. Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
4. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
5. Set spectrum analyzer with RMS detector.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
7. Checked that all the results comply with the emission limit line.
   The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

3.6 Conducted Spurious Emission

3.6.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

3.6.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

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 conducted spurious emission for the whole frequency range was taken.
4. Make the measurement with the spectrum analyzer's RBW = 100 kHz if the authorized frequency band/block is at or below 1 GHz and 1 MHz if the authorized frequency band/block is above 1 GH, VBW = 3 * RBW.
5. Set spectrum analyzer with RMS detector.
6. Taking the record of maximum spurious emission.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

3.7 Frequency Stability

3.7.1 Description of Frequency Stability Measurement

22.355

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.

27.54

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

3.7.2 Test Procedures for Temperature Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

1. The EUT was set up in the thermal chamber and connected with the system simulator.
2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. 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.

3.7.3 Test Procedures for Voltage Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

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 measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

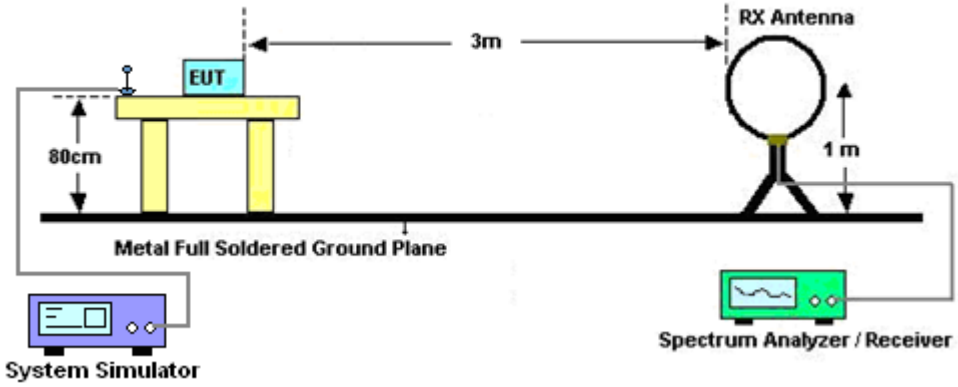
4 Radiated Test Items

4.1 Measuring Instruments

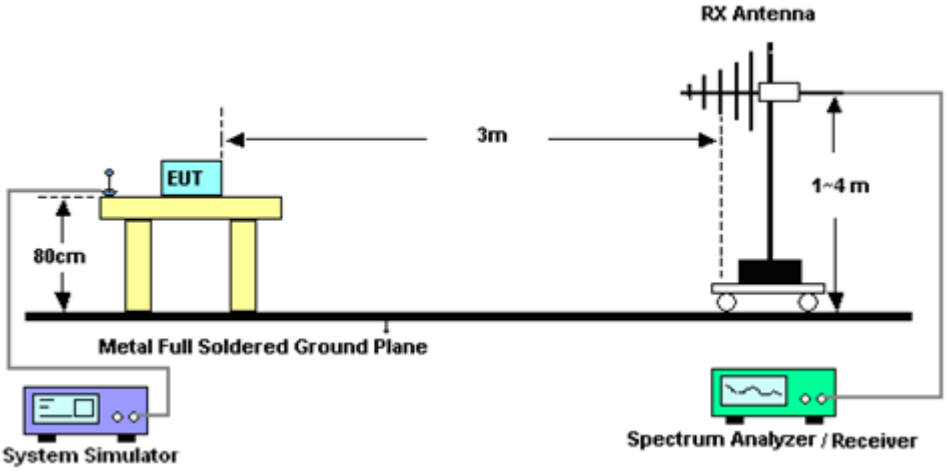
See list of measuring instruments of this test report.

4.1.1 Test Setup

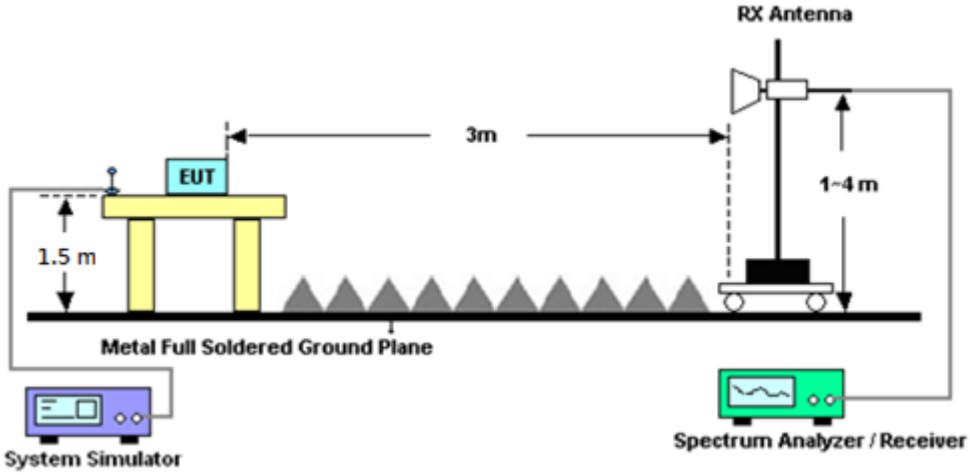
For radiated test below 30MHz



For radiated test from 30MHz to 1GHz



For radiated test above 1GHz



4.1.2 Test Result of Radiated Test

Please refer to Appendix B.

Note:

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.

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

4.2 Radiated Spurious Emission Measurement

4.2.1 Description of Radiated Spurious Emission Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA-603-E. 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 (P) dB.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.2.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 7 and ANSI C63.26-2015 section 5.5.4 Radiated measurement using the field strength method.

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, taking the record of maximum spurious emission.
6. To convert spectrum reading E(dBuV/m) to EIRP(dBm)

   EIRP(dBm) = Level (dBuV/m) + 20log(d) -104.77,

   where d is the distance at which filed strength limit is specified in the rules
7. Field Strength Level (dBm) = Spectrum Reading (dBm) + Antenna Factor + Cable Loss + Read Level - Preamp Factor.
8. ERP (dBm) = EIRP (dBm) - 2.15
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

   The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

5 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Base Station (Measure)	Anritsu	MT8821C	6201664755	LTE FDD/TDD(with44), LTE-4CC DLCA/2CC ULCA, CatM1/NB1/NB2	Jul. 18, 2023	Apr. 02, 2024~ Apr. 23, 2024	Jul. 17, 2024	Conducted (TH03-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101908	10Hz~40GHz	Sep. 11, 2023	Apr. 02, 2024~ Apr. 23, 2024	Sep. 10, 2024	Conducted (TH03-HY)
Thermal Chamber	ESPEC	SH-241	92003713	-30℃ ~95℃	May 17, 2023	Apr. 02, 2024~ Apr. 23, 2024	May 16, 2024	Conducted (TH03-HY)
DC Power Supply	GW Instek	GPP-2323	GES906037	0V~64V ; 0A~6A	Dec. 28, 2023	Apr. 02, 2024~ Apr. 23, 2024	Dec. 27 2024	Conducted (TH03-HY)
Coupler	Warison	20dB 25W SMA Directional Coupler	#B	1-18GHz	Jan. 08, 2024	Apr. 02, 2024~ Apr. 23, 2024	Jan. 07, 2025	Conducted (TH03-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Sep. 12, 2023	Apr. 15, 2024~ Apr. 16, 2024	Sep. 11, 2024	Radiation (03CH15-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N-06	41912 & 05	30MHz~1GHz	Feb. 04, 2024	Apr. 15, 2024~ Apr. 16, 2024	Feb. 03, 2025	Radiation (03CH15-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-02294	1GHz~18GHz	Jun. 30, 2023	Apr. 15, 2024~ Apr. 16, 2024	Jun. 29, 2024	Radiation (03CH15-HY)
Preamplifier	EMEC	EM01G18G	060837	1GHz~18GHz	Feb. 15, 2024	Apr. 15, 2024~ Apr. 16, 2024	Feb. 14, 2025	Radiation (03CH15-HY)
Preamplifier	EM Electronics	EM01G18G	060802	1GHz~18GHz	Feb. 29, 2024	Apr. 15, 2024~ Apr. 16, 2024	Feb. 28, 2025	Radiation (03CH15-HY)
Spectrum Analyzer	Keysight	N9010B	MY60241058	10Hz~44GHz	Jul. 06, 2023	Apr. 15, 2024~ Apr. 16, 2024	Jul. 05, 2024	Radiation (03CH15-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Apr. 15, 2024~ Apr. 16, 2024	N/A	Radiation (03CH15-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Apr. 15, 2024~ Apr. 16, 2024	N/A	Radiation (03CH15-HY)
Software	Audix	E3 6.2009-8-24 (k5)	RK-000451	N/A	N/A	Apr. 15, 2024~ Apr. 16, 2024	N/A	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104, 102E	MY582185/4, 519228/2,80 3950/2	N/A	Jun. 13, 2023	Apr. 15, 2024~ Apr. 16, 2024	Jun. 12, 2024	Radiation (03CH15-HY)
Filter	Wainwright	WHKX12-1080-1200-15000-60 ST	SN5	1.2GHz High Pass Filter	Jun. 14, 2023	Apr. 15, 2024~ Apr. 16, 2024	Jun. 13, 2024	Radiation (03CH15-HY)
Filter	Wainwright	WHKX12-2700-3000-18000-60 ST	SN4	3GHz High Pass Filter	Jun. 14, 2023	Apr. 15, 2024~ Apr. 16, 2024	Jun. 13, 2024	Radiation (03CH15-HY)
Hygrometer	TECPEL	DTM-302	SN4	N/A	Jul. 26, 2023	Apr. 15, 2024~ Apr. 16, 2024	Jul. 25, 2024	Radiation (03CH15-HY)

6 Measurement Uncertainty

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.02 dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.57 dB**

Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power & ERP/EIRP)

LTE Band 17 Maximum Average Power [dBm] (GT - LC = -0.1 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
10	1	0	QPSK	23.70	23.74	23.72	21.49	0.1409
10	1	25		23.63	23.67	23.64		
10	1	49		23.65	23.72	23.65		
10	25	0		23.22	23.22	23.29		
10	25	12		23.23	23.28	23.31		
10	25	25		23.31	23.36	23.26		
10	50	0		23.26	23.24	23.21		
10	1	0	16-QAM	23.71	23.53	23.62	21.46	0.1400
10	1	25		23.56	23.44	23.65		
10	1	49		23.43	23.56	23.40		
10	25	0		22.26	22.26	22.35		
10	25	12		22.32	22.30	22.29		
10	25	25		22.30	22.36	22.29		
10	50	0		22.27	22.25	22.18		
10	1	0	64-QAM	22.42	22.44	22.45	20.44	0.1107
10	1	25		22.41	22.61	22.69		
10	1	49		22.46	22.42	22.33		
10	25	0		21.26	21.27	21.31		
10	25	12		21.26	21.29	21.26		
10	25	25		21.23	21.32	21.26		
10	50	0		21.22	21.24	21.25		
10	1	0	256-QAM	19.37	19.24	19.19	17.28	0.0535
10	1	25		19.17	19.42	19.53		
10	1	49		19.15	19.16	19.39		
10	25	0		19.24	19.27	19.29		
10	25	12		19.30	19.30	19.31		
10	25	25		19.30	19.29	19.33		
10	50	0		19.32	19.21	19.25		
Limit	ERP < 30W			Result			Pass	

LTE Band 17 Maximum Average Power [dBm] (GT - LC = -0.1 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
5	1	0	QPSK	23.68	23.66	23.71	21.47	0.1403
5	1	12		23.70	23.72	23.70		
5	1	24		23.69	23.71	23.68		
5	12	0		23.21	23.24	23.21		
5	12	7		23.23	23.26	23.30		
5	12	13		23.27	23.28	23.28		
5	25	0		23.26	23.24	23.27		
5	1	0	16-QAM	23.52	23.50	23.50	21.34	0.1361
5	1	12		23.59	23.54	23.53		
5	1	24		23.52	23.53	23.51		
5	12	0		22.22	22.30	22.26		
5	12	7		22.35	22.30	22.33		
5	12	13		22.28	22.32	22.33		
5	25	0		22.23	22.27	22.27		
5	1	0	64-QAM	22.36	22.59	22.50	20.37	0.1089
5	1	12		22.50	22.62	22.58		
5	1	24		22.35	22.49	22.31		
5	12	0		21.07	21.22	21.27		
5	12	7		21.27	21.23	21.21		
5	12	13		21.24	21.21	21.33		
5	25	0		21.26	21.25	21.17		
5	1	0	256-QAM	19.20	19.33	19.34	17.21	0.0526
5	1	12		19.17	19.43	19.46		
5	1	24		19.26	19.25	19.21		
5	12	0		19.16	19.18	19.25		
5	12	7		19.27	19.27	19.21		
5	12	13		19.20	19.25	19.29		
5	25	0		19.22	19.28	19.19		
Limit	ERP < 30W			Result			Pass	

LTE Band 5B_CA Maximum Average Power [dBm] (GT - LC = 0.8 dB)										
BW [MHz]	PCC		SCC		Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
	RB Size	RB Offset	RB Size	RB Offset						
10+10	50	0	50	0	QPSK	22.66	22.70	22.62	23.14	0.2061
10+10	1	0	1	49		14.05	14.17	14.10		
10+10	1	49	1	0		24.49	24.49	24.45		
10+10	50	0	50	0	16-QAM	21.65	21.68	21.71	22.47	0.1766
10+10	1	0	1	49		14.43	14.44	14.42		
10+10	1	49	1	0		23.81	23.81	23.82		
10+10	50	0	50	0	64-QAM	21.62	21.66	21.64	21.49	0.1409
10+10	1	0	1	49		14.37	14.39	14.45		
10+10	1	49	1	0		22.76	22.74	22.84		
10+10	50	0	50	0	256-QAM	19.69	19.67	19.66	18.44	0.0698
10+10	1	0	1	49		14.38	14.46	14.39		
10+10	1	49	1	0		19.77	19.79	19.71		
10+5	50	0	25	0	QPSK	22.64	22.65	22.63	23.13	0.2056
10+5	1	0	1	24		14.61	14.62	14.64		
10+5	1	49	1	0		24.45	24.48	24.46		
10+5	50	0	25	0	16-QAM	21.68	21.69	21.63	22.51	0.1782
10+5	1	0	1	24		15.00	14.96	14.98		
10+5	1	49	1	0		23.79	23.86	23.67		
10+5	50	0	25	0	64-QAM	21.65	21.70	21.64	21.48	0.1406
10+5	1	0	1	24		14.96	14.90	14.86		
10+5	1	49	1	0		22.83	22.78	21.72		
10+5	50	0	25	0	256-QAM	19.66	19.60	19.64	18.52	0.0711
10+5	1	0	1	24		14.78	14.82	14.71		
10+5	1	49	1	0		19.87	19.81	19.73		
5+10	25	0	50	0	QPSK	22.69	22.65	22.69	23.13	0.2056
5+10	1	0	1	49		14.62	14.66	14.59		
5+10	1	24	1	0		24.44	24.48	24.42		
5+10	25	0	50	0	16-QAM	21.70	21.76	21.70	22.63	0.1832
5+10	1	0	1	49		14.98	14.95	14.96		
5+10	1	24	1	0		23.98	23.90	23.90		
5+10	25	0	50	0	64-QAM	21.64	21.65	21.66	21.50	0.1413
5+10	1	0	1	49		14.87	14.82	14.85		
5+10	1	24	1	0		22.79	22.85	22.75		
5+10	25	0	50	0	256-QAM	19.70	19.70	19.66	18.44	0.0698
5+10	1	0	1	49		14.86	14.79	14.87		
5+10	1	24	1	0		19.79	19.73	19.75		
Limit	ERP < 7W					Result			Pass	

LTE Band 5B_CA Maximum Average Power [dBm] (GT - LC = 0.8 dB)										
BW [MHz]	PCC		SCC		Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
	RB Size	RB Offset	RB Size	RB Offset						
5+3	25	0	15	0	QPSK	24.43	24.48	24.09	23.13	0.2056
5+3	1	0	1	14		14.75	14.85	14.68		
5+3	1	24	1	0		24.40	24.47	23.52		
5+3	25	0	15	0	16-QAM	23.63	24.28	23.25	22.96	0.1977
5+3	1	0	1	14		15.05	15.07	15.06		
5+3	1	24	1	0		23.67	24.31	22.86		
5+3	25	0	15	0	64-QAM	22.60	23.25	22.29	21.90	0.1549
5+3	1	0	1	14		15.04	15.15	14.89		
5+3	1	24	1	0		22.52	23.18	21.79		
5+3	25	0	15	0	256-QAM	21.61	22.29	21.28	21.06	0.1276
5+3	1	0	1	14		15.06	14.96	14.93		
5+3	1	24	1	0		21.69	22.41	21.14		
3+5	15	0	25	0	QPSK	24.49	24.41	24.10	23.14	0.2061
3+5	1	0	1	24		13.27	14.71	14.71		
3+5	1	14	1	0		24.45	24.47	23.85		
3+5	15	0	25	0	16-QAM	23.70	24.38	23.30	23.11	0.2046
3+5	1	0	1	24		15.11	15.02	15.04		
3+5	1	14	1	0		23.87	24.46	23.16		
3+5	15	0	25	0	64-QAM	22.64	23.31	22.32	21.98	0.1578
3+5	1	0	1	24		14.99	15.12	14.90		
3+5	1	14	1	0		22.77	23.33	22.03		
3+5	15	0	25	0	256-QAM	21.66	22.33	21.24	21.02	0.1265
3+5	1	0	1	24		14.95	15.05	14.84		
3+5	1	14	1	0		21.78	22.37	21.25		
Limit	ERP < 7W					Result			Pass	

LTE Band 66B_CA Maximum Average Power [dBm] (GT - LC = 1.8 dB)										
BW [MHz]	PCC		SCC		Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
	RB Size	RB Offset	RB Size	RB Offset						
10+10	50	0	50	0	QPSK	22.64	22.81	22.64	26.47	0.4436
10+10	1	0	1	49		14.08	14.37	14.11		
10+10	1	49	1	0		24.45	24.67	24.57		
10+10	50	0	50	0	16-QAM	21.65	21.79	21.65	25.87	0.3864
10+10	1	0	1	49		14.52	14.58	14.29		
10+10	1	49	1	0		23.77	23.96	24.07		
10+10	50	0	50	0	64-QAM	21.63	21.83	21.66	24.77	0.2999
10+10	1	0	1	49		14.46	14.58	14.41		
10+10	1	49	1	0		22.69	22.97	22.79		
10+10	50	0	50	0	256-QAM	19.71	19.85	19.68	21.71	0.1483
10+10	1	0	1	49		14.17	14.43	14.30		
10+10	1	49	1	0		19.76	19.91	19.67		
15+5	75	0	25	0	QPSK	22.68	22.85	22.67	26.57	0.4539
15+5	1	0	1	24		19.54	24.01	23.52		
15+5	1	74	1	0		24.52	24.77	24.62		
15+5	75	0	25	0	16-QAM	21.67	21.79	21.63	25.94	0.3926
15+5	1	0	1	24		19.89	24.14	23.78		
15+5	1	74	1	0		23.90	24.08	23.69		
15+5	75	0	25	0	64-QAM	21.69	21.79	21.65	25.70	0.3715
15+5	1	0	1	24		19.83	23.90	23.72		
15+5	1	74	1	0		22.98	23.00	22.83		
15+5	75	0	25	0	256-QAM	19.70	19.78	19.67	25.11	0.3243
15+5	1	0	1	24		19.80	23.31	22.80		
15+5	1	74	1	0		19.93	19.92	19.82		
5+15	25	0	75	0	QPSK	22.64	22.84	22.74	26.57	0.4539
5+15	1	0	1	74		19.54	24.10	23.56		
5+15	1	24	1	0		24.66	24.77	24.74		
5+15	25	0	75	0	16-QAM	21.68	21.80	21.67	26.09	0.4064
5+15	1	0	1	74		19.96	24.29	23.70		
5+15	1	24	1	0		24.09	24.10	24.08		
5+15	25	0	75	0	64-QAM	21.61	21.76	21.62	26.02	0.3999
5+15	1	0	1	74		19.71	24.22	23.73		
5+15	1	24	1	0		22.72	23.09	22.92		
5+15	25	0	75	0	256-QAM	19.66	19.83	19.68	25.16	0.3281
5+15	1	0	1	74		19.71	23.36	22.80		
5+15	1	24	1	0		19.83	19.98	19.90		
Limit	EIRP < 1W					Result			Pass	

LTE Band 66B_CA Maximum Average Power [dBm] (GT - LC = 1.8 dB)										
BW [MHz]	PCC		SCC		Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
	RB Size	RB Offset	RB Size	RB Offset						
10+5	50	0	25	0	QPSK	22.62	22.78	22.62	26.42	0.4385
10+5	1	0	1	24		14.65	14.78	14.59		
10+5	1	49	1	0		24.45	24.62	24.37		
10+5	50	0	25	0	16-QAM	21.67	21.82	21.65	25.85	0.3846
10+5	1	0	1	24		14.95	15.11	14.92		
10+5	1	49	1	0		23.98	24.05	23.66		
10+5	50	0	25	0	64-QAM	21.63	21.76	21.59	24.69	0.2944
10+5	1	0	1	24		14.81	15.17	14.86		
10+5	1	49	1	0		22.76	22.89	22.73		
10+5	50	0	25	0	256-QAM	19.67	19.82	19.63	21.69	0.1476
10+5	1	0	1	24		14.72	14.93	14.83		
10+5	1	49	1	0		19.81	19.89	19.70		
5+10	25	0	50	0	QPSK	22.61	22.82	22.67	26.69	0.4667
5+10	1	0	1	49		14.63	14.81	14.57		
5+10	1	24	1	0		24.81	24.89	24.61		
5+10	25	0	50	0	16-QAM	21.68	21.87	21.88	25.99	0.3972
5+10	1	0	1	49		15.01	15.14	15.08		
5+10	1	24	1	0		23.84	23.82	24.19		
5+10	25	0	50	0	64-QAM	21.70	21.79	21.64	24.86	0.3062
5+10	1	0	1	49		14.83	14.92	15.04		
5+10	1	24	1	0		22.93	23.06	22.84		
5+10	25	0	50	0	256-QAM	19.69	19.87	19.67	21.83	0.1524
5+10	1	0	1	49		14.77	14.99	14.79		
5+10	1	24	1	0		19.79	20.03	19.72		
5+5	25	0	25	0	QPSK	22.76	22.94	22.73	26.65	0.4624
5+5	1	0	1	24		19.64	24.16	23.81		
5+5	1	24	1	0		24.74	24.85	24.71		
5+5	25	0	25	0	16-QAM	21.74	21.97	21.73	26.20	0.4169
5+5	1	0	1	24		19.93	24.40	23.96		
5+5	1	24	1	0		24.02	24.16	24.11		
5+5	25	0	25	0	64-QAM	21.77	21.93	21.75	26.09	0.4064
5+5	1	0	1	24		19.98	24.29	23.93		
5+5	1	24	1	0		23.12	23.11	22.83		
5+5	25	0	25	0	256-QAM	19.73	19.97	19.77	25.17	0.3289
5+5	1	0	1	24		19.82	23.37	23.09		
5+5	1	24	1	0		19.94	20.01	19.81		
Limit	EIRP < 1W					Result			Pass	

LTE Band 66C_CA Maximum Average Power [dBm] (GT - LC = 1.8 dB)										
BW [MHz]	PCC		SCC		Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
	RB Size	RB Offset	RB Size	RB Offset						
20+20	100	0	100	0	QPSK	22.78	22.90	22.86	26.29	0.4256
20+20	1	0	1	99		16.21	16.31	16.33		
20+20	1	99	1	0		24.49	24.49	24.46		
20+20	100	0	100	0	16-QAM	21.83	21.91	21.89	26.06	0.4036
20+20	1	0	1	99		16.52	16.69	16.66		
20+20	1	99	1	0		24.26	24.08	24.08		
20+20	100	0	100	0	64-QAM	21.77	21.90	21.84	24.81	0.3027
20+20	1	0	1	99		16.35	16.55	16.54		
20+20	1	99	1	0		22.54	23.01	22.70		
20+20	100	0	100	0	256-QAM	19.79	19.93	19.88	21.87	0.1538
20+20	1	0	1	99		16.38	16.56	16.57		
20+20	1	99	1	0		20.07	19.89	20.04		
20+15	100	0	75	0	QPSK	22.82	22.99	22.83	26.29	0.4256
20+15	1	0	1	74		16.22	16.34	16.39		
20+15	1	74	1	0		24.44	24.48	24.49		
20+15	100	0	75	0	16-QAM	21.77	21.89	21.84	25.95	0.3936
20+15	1	0	1	74		16.46	16.75	16.81		
20+15	1	74	1	0		24.04	24.15	24.00		
20+15	100	0	75	0	64-QAM	21.74	21.89	21.85	24.60	0.2884
20+15	1	0	1	74		16.41	16.62	16.56		
20+15	1	74	1	0		22.68	22.80	22.70		
20+15	100	0	75	0	256-QAM	19.83	19.91	19.84	21.82	0.1521
20+15	1	0	1	74		16.41	16.50	16.52		
20+15	1	74	1	0		19.97	20.02	19.94		
15+20	75	0	100	0	QPSK	22.81	22.85	22.87	26.28	0.4246
15+20	1	0	1	99		16.21	16.29	16.32		
15+20	1	74	1	0		24.47	24.48	24.46		
15+20	75	0	100	0	16-QAM	21.77	21.89	21.87	25.77	0.3776
15+20	1	0	1	99		16.59	16.64	16.63		
15+20	1	74	1	0		23.97	23.89	23.95		
15+20	75	0	100	0	64-QAM	21.77	21.86	21.86	25.09	0.3228
15+20	1	0	1	99		16.44	16.55	16.51		
15+20	1	74	1	0		22.59	23.29	22.88		
15+20	75	0	100	0	256-QAM	19.79	19.93	19.90	21.77	0.1503
15+20	1	0	1	99		16.36	16.57	16.52		
15+20	1	74	1	0		19.91	19.97	19.86		
Limit	EIRP < 1W					Result			Pass	

LTE Band 66C_CA Maximum Average Power [dBm] (GT - LC = 1.8 dB)										
BW [MHz]	PCC		SCC		Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
	RB Size	RB Offset	RB Size	RB Offset						
20+10	100	0	50	0	QPSK	22.80	22.85	22.82	26.26	0.4227
20+10	1	0	1	49		16.28	16.39	16.31		
20+10	1	99	1	0		24.45	24.46	24.44		
20+10	100	0	50	0	16-QAM	21.76	21.88	21.83	25.92	0.3908
20+10	1	0	1	49		16.59	16.57	16.59		
20+10	1	99	1	0		24.12	23.99	23.99		
20+10	100	0	50	0	64-QAM	21.77	21.88	21.92	24.80	0.3020
20+10	1	0	1	49		16.51	16.49	16.58		
20+10	1	99	1	0		22.58	22.62	23.00		
20+10	100	0	50	0	256-QAM	19.77	19.89	19.81	21.75	0.1496
20+10	1	0	1	49		16.46	16.55	16.48		
20+10	1	99	1	0		19.92	19.95	19.94		
10+20	50	0	100	0	QPSK	22.76	22.92	22.87	26.29	0.4256
10+20	1	0	1	99		16.29	16.39	16.37		
10+20	1	49	1	0		24.44	24.47	24.49		
10+20	50	0	100	0	16-QAM	21.77	21.86	21.87	25.90	0.3890
10+20	1	0	1	99		16.50	16.72	16.54		
10+20	1	49	1	0		24.00	24.10	23.91		
10+20	50	0	100	0	64-QAM	21.80	21.90	21.82	24.98	0.3148
10+20	1	0	1	99		16.57	16.65	16.56		
10+20	1	49	1	0		22.86	23.18	22.91		
10+20	50	0	100	0	256-QAM	19.75	19.90	19.85	21.84	0.1528
10+20	1	0	1	99		16.46	16.60	16.50		
10+20	1	49	1	0		19.87	20.04	19.89		
20+5	100	0	25	0	QPSK	22.68	22.88	22.75	26.27	0.4236
20+5	1	0	1	24		16.23	16.38	16.33		
20+5	1	99	1	0		24.41	24.42	24.47		
20+5	100	0	25	0	16-QAM	21.79	21.86	21.76	25.98	0.3963
20+5	1	0	1	24		16.51	16.83	16.66		
20+5	1	99	1	0		24.18	23.98	23.91		
20+5	100	0	25	0	64-QAM	21.84	21.85	21.79	24.60	0.2884
20+5	1	0	1	24		16.51	16.63	16.51		
20+5	1	99	1	0		22.39	22.36	22.80		
20+5	100	0	25	0	256-QAM	19.82	19.93	19.76	21.82	0.1521
20+5	1	0	1	24		16.36	16.52	16.53		
20+5	1	99	1	0		19.97	20.02	19.93		
Limit	EIRP < 1W					Result			Pass	

LTE Band 66C_CA Maximum Average Power [dBm] (GT - LC = 1.8 dB)										
BW [MHz]	PCC		SCC		Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
	RB Size	RB Offset	RB Size	RB Offset						
5+20	25	0	100	0	QPSK	22.74	22.89	22.82	26.27	0.4236
5+20	1	0	1	99		16.21	16.41	16.33		
5+20	1	24	1	0		24.46	24.46	24.47		
5+20	25	0	100	0	16-QAM	21.75	21.93	21.85	25.97	0.3954
5+20	1	0	1	99		16.57	16.81	16.72		
5+20	1	24	1	0		23.86	24.17	24.08		
5+20	25	0	100	0	64-QAM	21.74	21.88	21.80	24.89	0.3083
5+20	1	0	1	99		16.35	16.70	16.57		
5+20	1	24	1	0		22.89	23.09	22.75		
5+20	25	0	100	0	256-QAM	19.71	19.92	19.86	21.87	0.1538
5+20	1	0	1	99		16.48	16.65	16.52		
5+20	1	24	1	0		19.84	20.07	20.04		
Limit	EIRP < 1W					Result			Pass	

LTE Band 66C_CA Maximum Average Power [dBm] (GT - LC = 1.8 dB)										
BW [MHz]	PCC		SCC		Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
	RB Size	RB Offset	RB Size	RB Offset						
15+10	75	0	50	0	QPSK	22.73	22.92	22.79	26.28	0.4246
15+10	1	0	1	49		16.27	16.38	16.30		
15+10	1	74	1	0		24.46	24.48	24.43		
15+10	75	0	50	0	16-QAM	21.72	21.85	21.80	25.86	0.3855
15+10	1	0	1	49		16.49	16.70	16.60		
15+10	1	74	1	0		24.03	24.06	23.89		
15+10	75	0	50	0	64-QAM	21.77	21.89	21.74	24.77	0.2999
15+10	1	0	1	49		16.51	16.59	16.39		
15+10	1	74	1	0		22.70	22.97	22.87		
15+10	75	0	50	0	256-QAM	19.77	19.89	19.83	21.76	0.1500
15+10	1	0	1	49		16.37	16.55	16.50		
15+10	1	74	1	0		19.78	19.96	19.96		
10+15	50	0	75	0	QPSK	22.72	22.84	22.82	26.25	0.4217
10+15	1	0	1	74		16.23	16.38	16.29		
10+15	1	49	1	0		24.45	24.41	24.44		
10+15	50	0	75	0	16-QAM	21.71	21.87	21.77	25.92	0.3908
10+15	1	0	1	74		16.58	16.80	16.54		
10+15	1	49	1	0		23.95	24.12	23.97		
10+15	50	0	75	0	64-QAM	21.75	21.91	21.77	24.80	0.3020
10+15	1	0	1	74		16.34	16.62	16.53		
10+15	1	49	1	0		22.84	23.00	22.86		
10+15	50	0	75	0	256-QAM	19.73	19.90	19.82	21.72	0.1486
10+15	1	0	1	74		16.46	16.59	16.45		
10+15	1	49	1	0		19.91	19.92	19.88		
15+15	75	0	75	0	QPSK	22.73	22.90	22.79	26.27	0.4236
15+15	1	0	1	74		16.22	16.36	16.31		
15+15	1	74	1	0		24.39	24.47	24.42		
15+15	75	0	75	0	16-QAM	21.78	21.88	21.79	25.79	0.3793
15+15	1	0	1	74		16.52	16.60	16.61		
15+15	1	74	1	0		23.86	23.98	23.99		
15+15	75	0	75	0	64-QAM	21.76	21.90	21.79	24.72	0.2965
15+15	1	0	1	74		16.43	16.60	16.58		
15+15	1	74	1	0		22.85	22.88	22.92		
15+15	75	0	75	0	256-QAM	19.72	19.89	19.85	21.72	0.1486
15+15	1	0	1	74		16.41	16.60	16.53		
15+15	1	74	1	0		19.91	19.89	19.92		
Limit	EIRP < 1W					Result			Pass	

LTE Band 5B

26dB Bandwidth

Mode	LTE Band 5B : 26dB BW(MHz)		
QPSK			
BW	3MHz+5MHz	5MHz+3MHz	5MHz+10MHz
Middle CH	8.19	8.19	14.62
BW	10MHz+5MHz	10MHz+10MHz	N/A
Middle CH	14.68	19.66	-

Mode	LTE Band 5B : 26dB BW(MHz)		
16QAM			
BW	3MHz+5MHz	5MHz+3MHz	5MHz+10MHz
Middle CH	8.13	8.19	14.53
BW	10MHz+5MHz	10MHz+10MHz	N/A
Middle CH	14.71	19.62	-

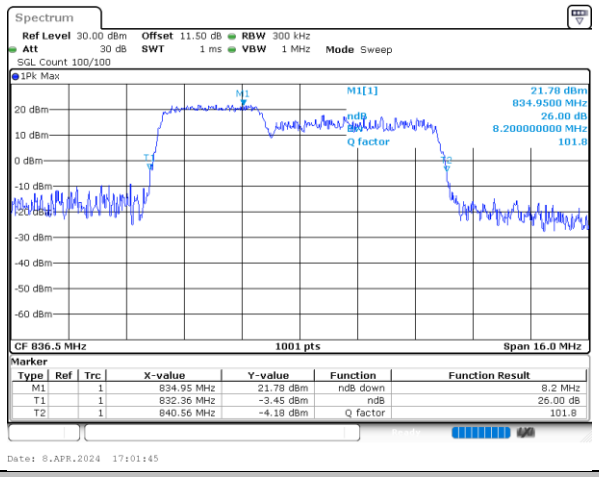
Mode	LTE Band 5B : 26dB BW(MHz)		
64QAM			
BW	3MHz+5MHz	5MHz+3MHz	5MHz+10MHz
Middle CH	8.11	8.13	14.62
BW	10MHz+5MHz	10MHz+10MHz	N/A
Middle CH	14.80	19.66	-

Mode	LTE Band 5B : 26dB BW(MHz)		
256QAM			
BW	3MHz+5MHz	5MHz+3MHz	5MHz+10MHz
Middle CH	8.13	8.18	14.59
BW	10MHz+5MHz	10MHz+10MHz	N/A
Middle CH	14.71	19.66	-

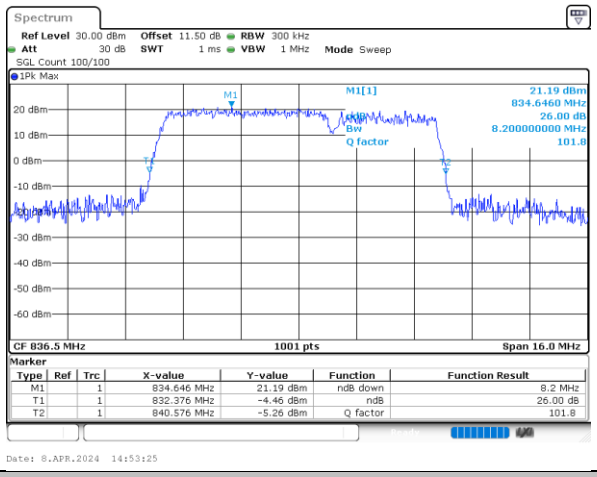
LTE Band 5B

QPSK

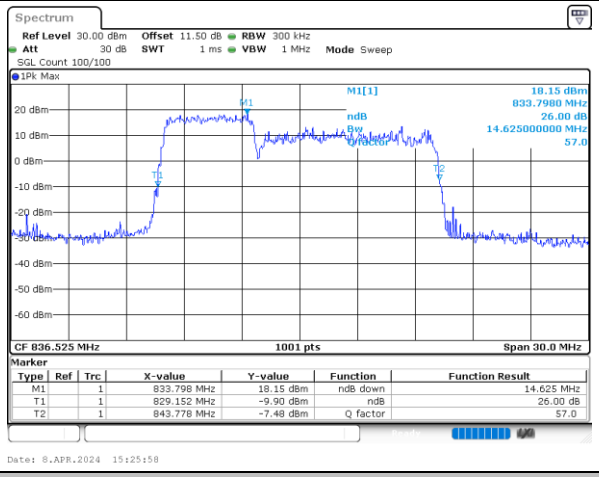
Middle Channel / 3MHz+5MHz



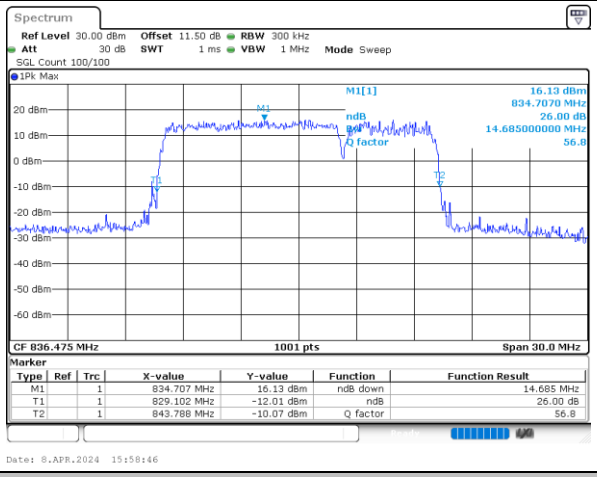
Middle Channel / 5MHz+3MHz



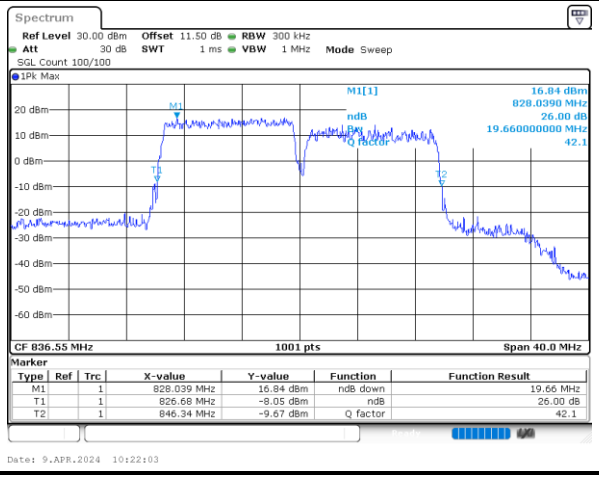
Middle Channel / 5MHz+10MHz



Middle Channel / 10MHz+5MHz



Middle Channel / 10MHz+10MHz

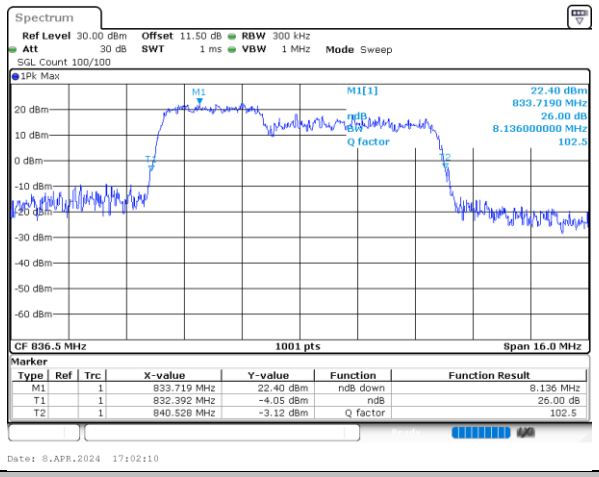


N/A

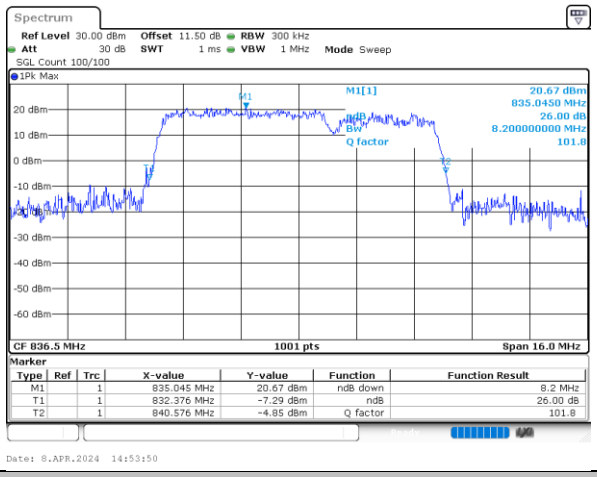
LTE Band 5B

16QAM

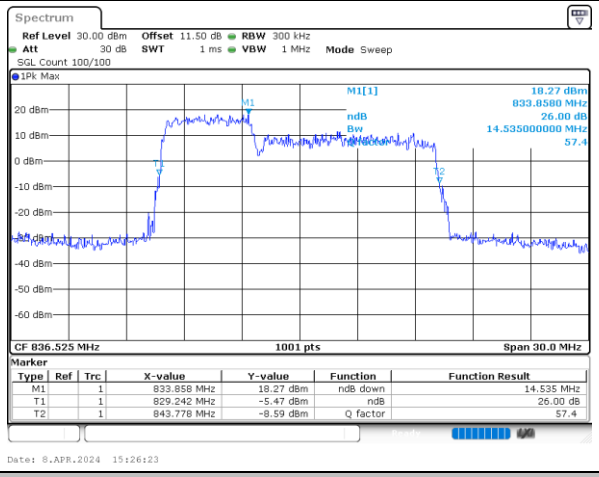
Middle Channel / 3MHz+5MHz



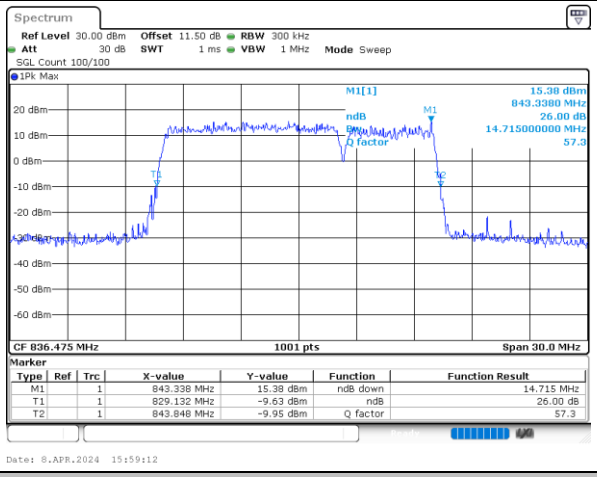
Middle Channel / 5MHz+3MHz



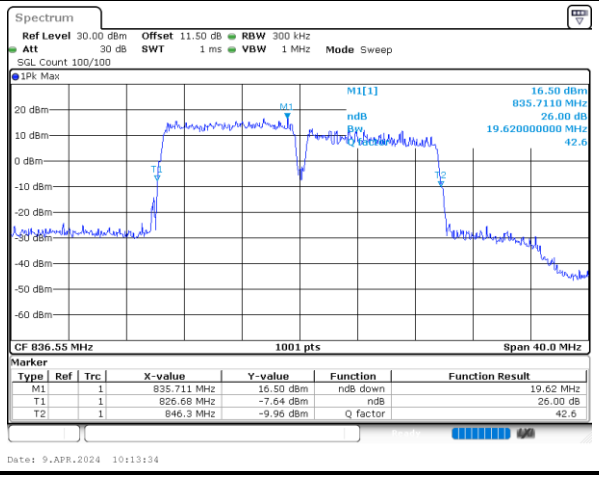
Middle Channel / 5MHz+10MHz



Middle Channel / 10MHz+5MHz



Middle Channel / 10MHz+10MHz

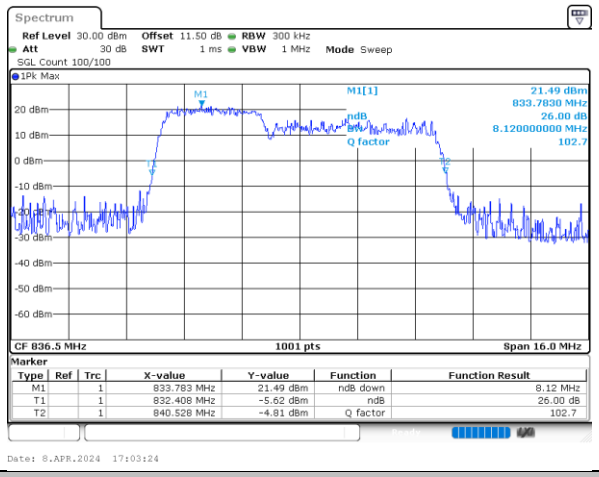


N/A

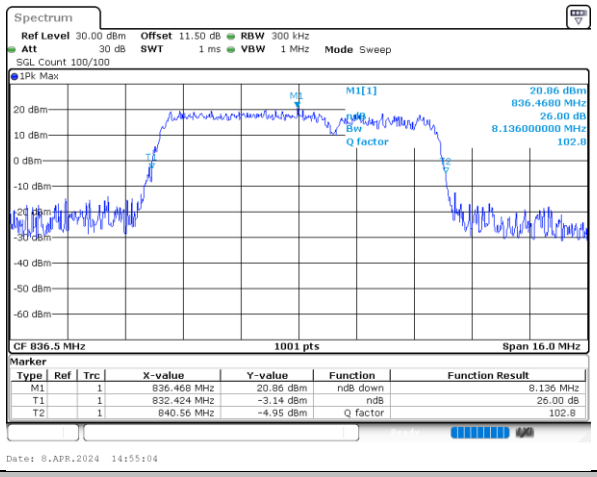
LTE Band 5B

64QAM

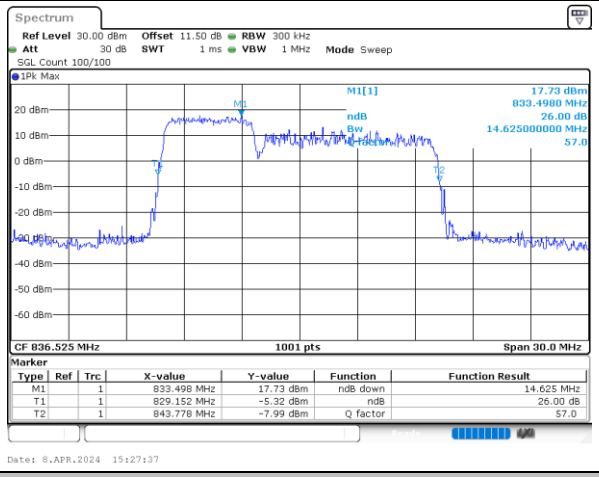
Middle Channel / 3MHz+5MHz



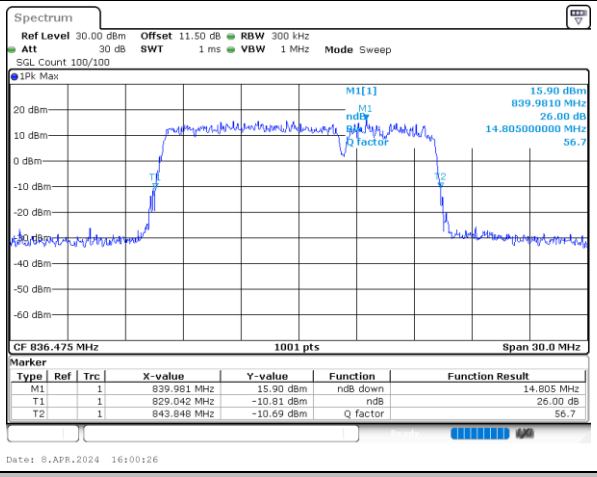
Middle Channel / 5MHz+3MHz



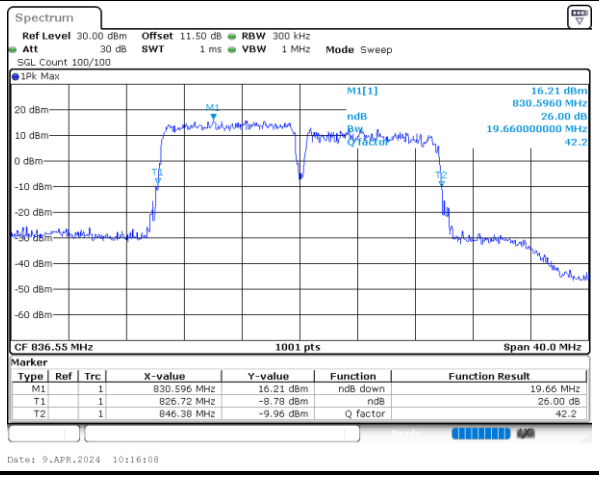
Middle Channel / 5MHz+10MHz



Middle Channel / 10MHz+5MHz



Middle Channel / 10MHz+10MHz

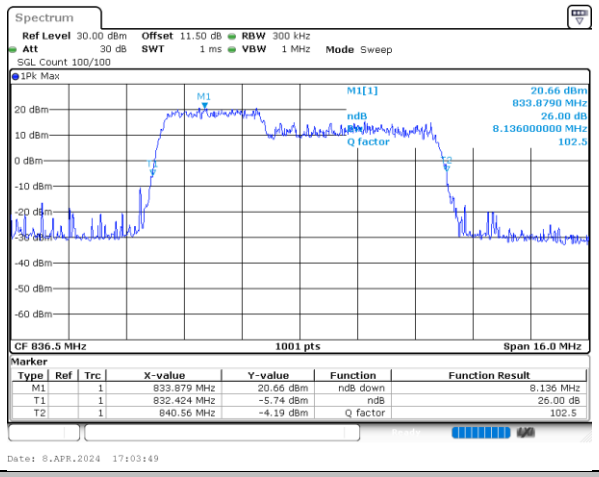


N/A

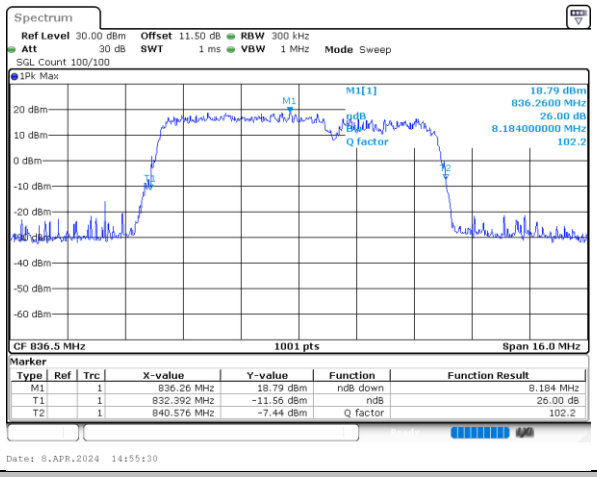
LTE Band 5B

256QAM

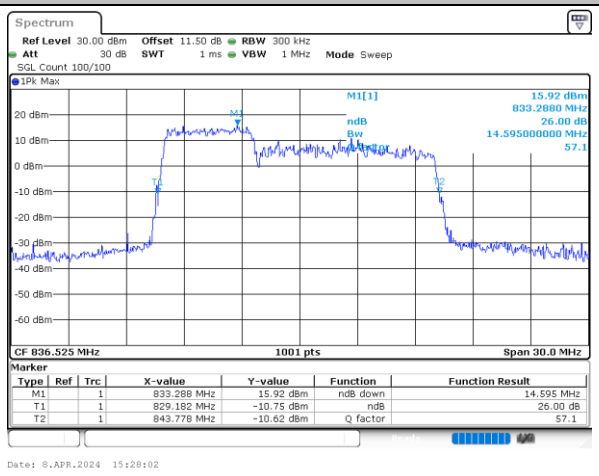
Middle Channel / 3MHz+5MHz



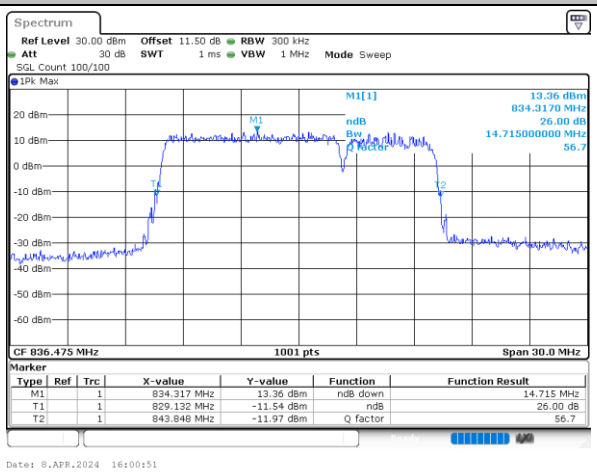
Middle Channel / 5MHz+3MHz



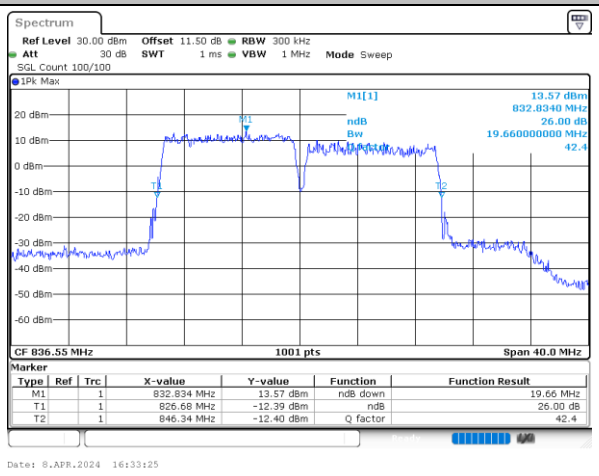
Middle Channel / 5MHz+10MHz



Middle Channel / 10MHz+5MHz



Middle Channel / 10MHz+10MHz



N/A

Occupied Bandwidth

Mode	LTE Band 5B : 99%OBW(MHz)		
QPSK			
BW	3MHz+5MHz	5MHz+3MHz	5MHz+10MHz
Middle CH	7.54	7.54	13.75
BW	10MHz+5MHz	10MHz+10MHz	N/A
Middle CH	13.93	18.70	-

Mode	LTE Band 5B : 99%OBW(MHz)		
16QAM			
BW	3MHz+5MHz	5MHz+3MHz	5MHz+10MHz
Middle CH	7.54	7.52	13.78
BW	10MHz+5MHz	10MHz+10MHz	N/A
Middle CH	13.87	18.70	-

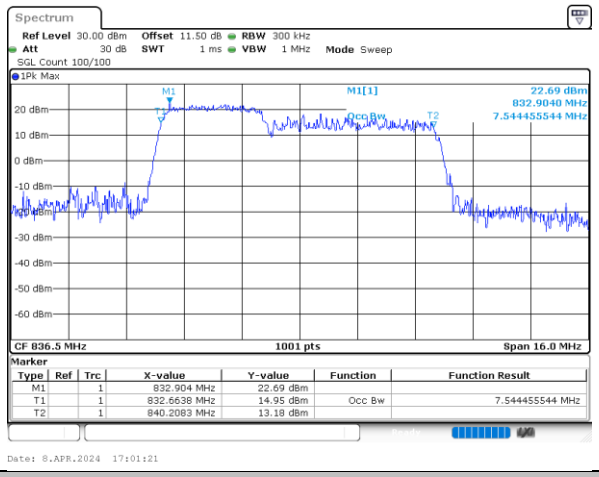
Mode	LTE Band 5B : 99%OBW(MHz)		
64QAM			
BW	3MHz+5MHz	5MHz+3MHz	5MHz+10MHz
Middle CH	7.51	7.52	13.81
BW	10MHz+5MHz	10MHz+10MHz	N/A
Middle CH	13.84	18.70	-

Mode	LTE Band 5B : 99%OBW(MHz)		
254QAM			
BW	3MHz+5MHz	5MHz+3MHz	5MHz+10MHz
Middle CH	7.51	7.56	13.81
BW	10MHz+5MHz	10MHz+10MHz	N/A
Middle CH	13.90	18.70	-

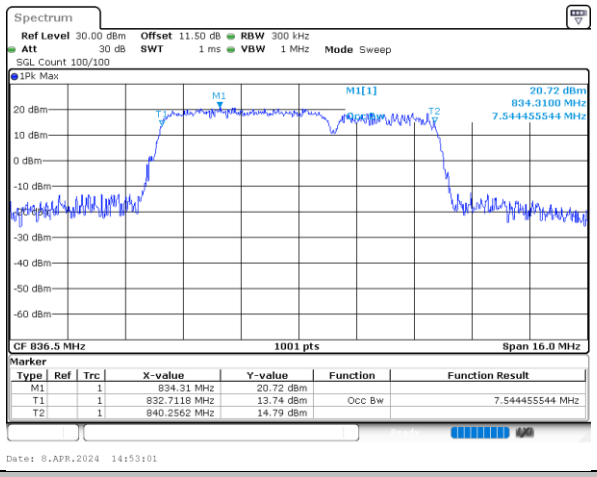
LTE Band 5B

QPSK

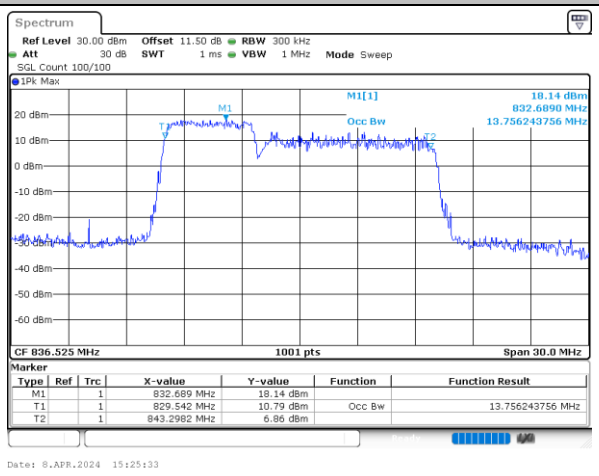
Middle Channel / 3MHz+5MHz



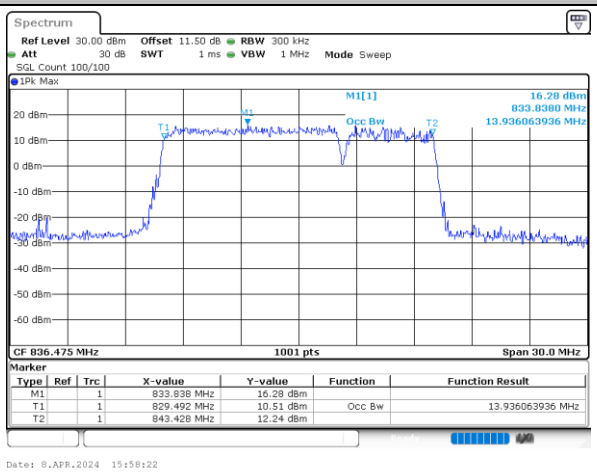
Middle Channel / 5MHz+3MHz



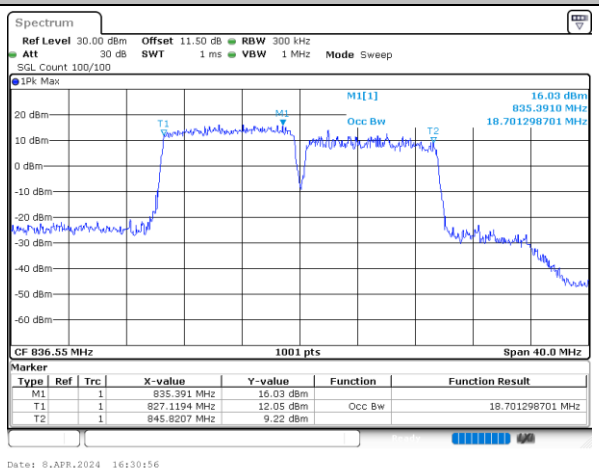
Middle Channel / 5MHz+10MHz



Middle Channel / 10MHz+5MHz



Middle Channel / 10MHz+10MHz

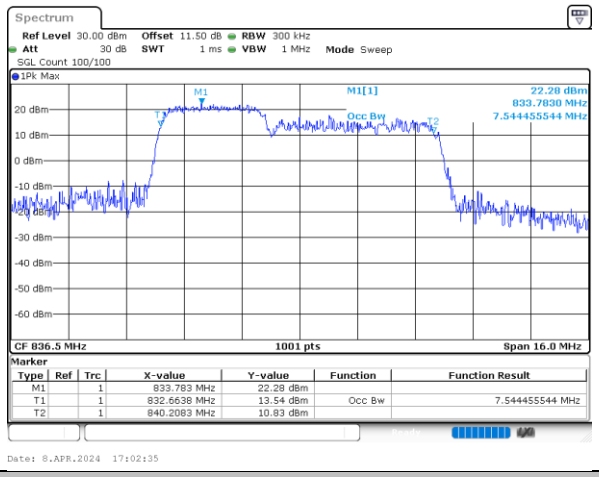


N/A

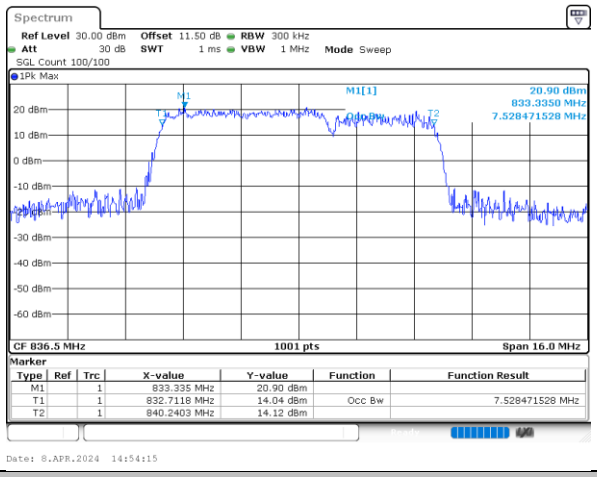
LTE Band 5B

16QAM

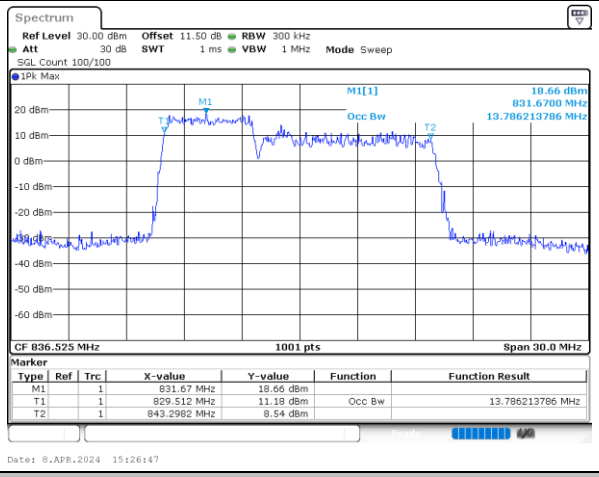
Middle Channel / 3MHz+5MHz



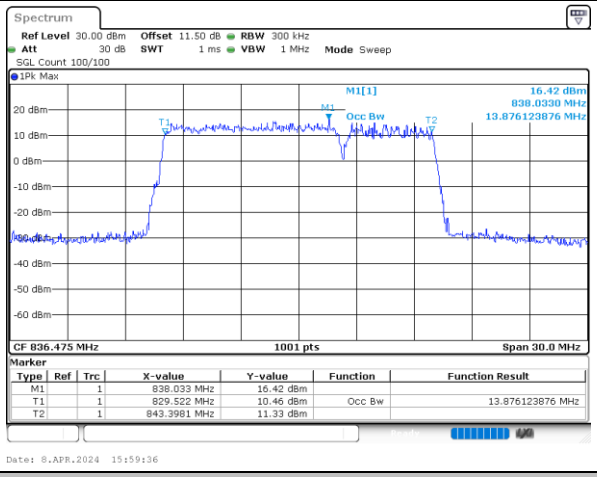
Middle Channel / 5MHz+3MHz



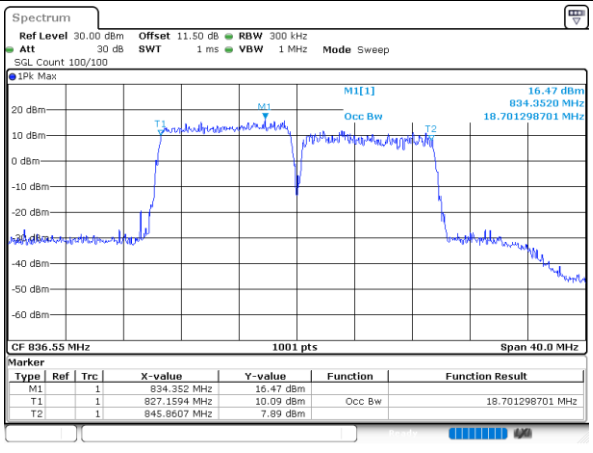
Middle Channel / 5MHz+10MHz



Middle Channel / 10MHz+5MHz



Middle Channel / 10MHz+10MHz

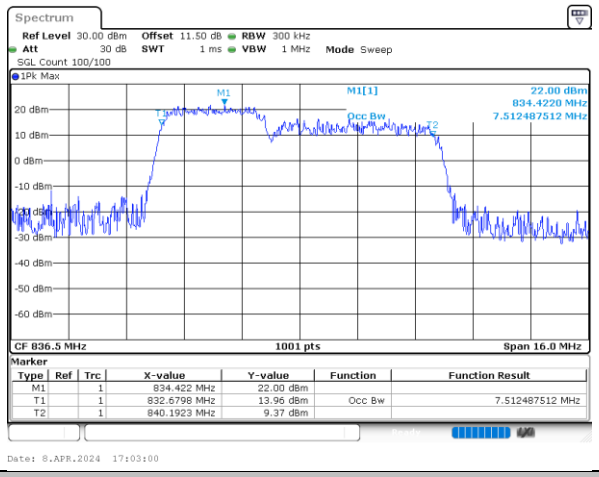


N/A

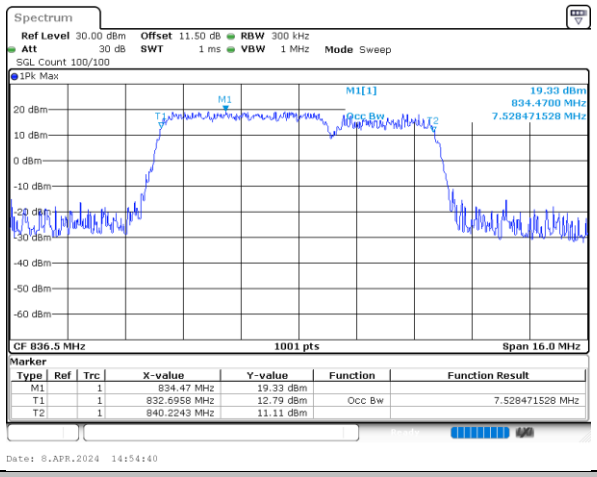
LTE Band 5B

64QAM

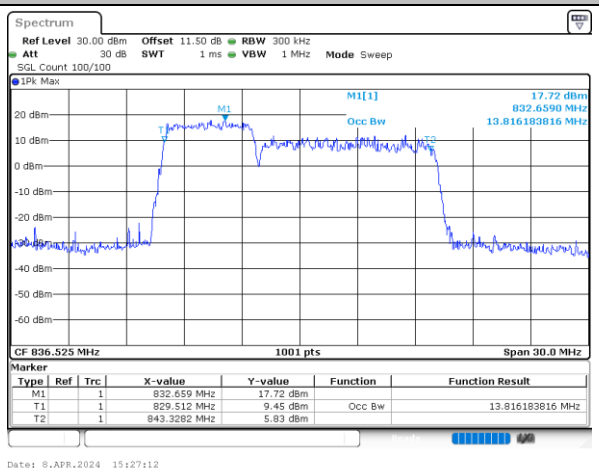
Middle Channel / 3MHz+5MHz



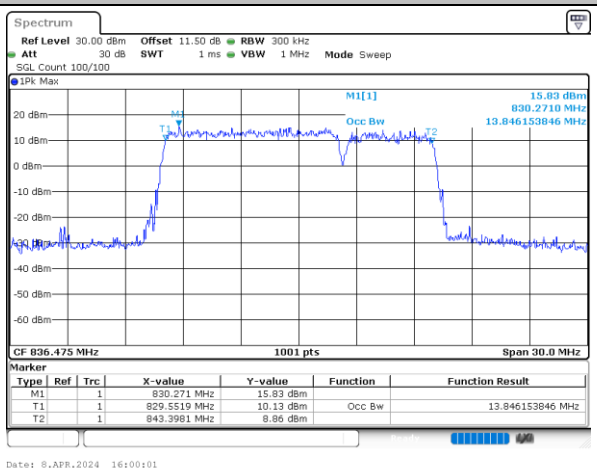
Middle Channel / 5MHz+3MHz



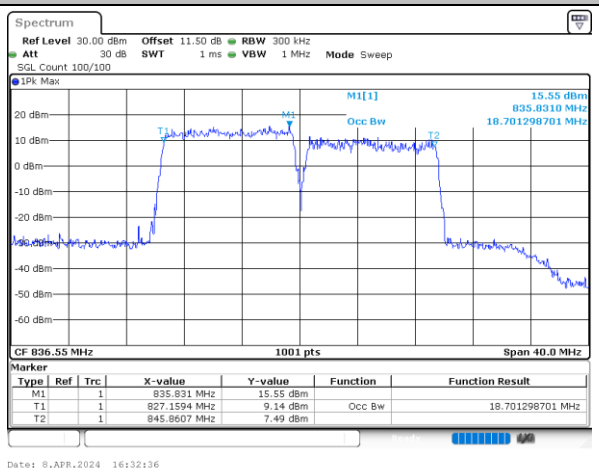
Middle Channel / 5MHz+10MHz



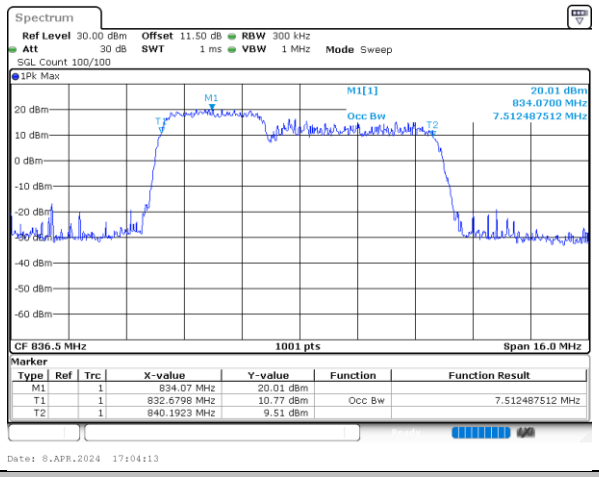
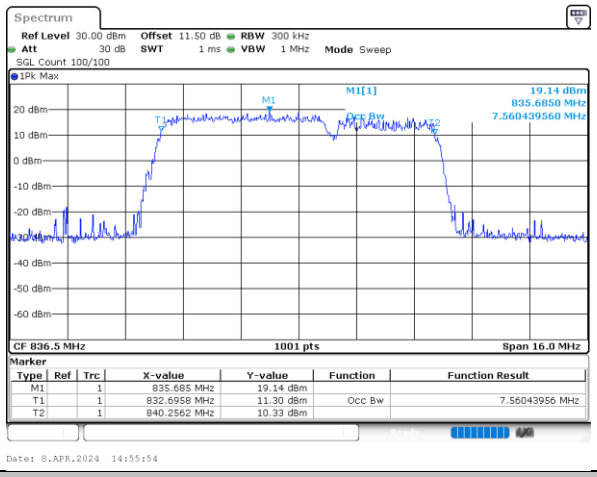
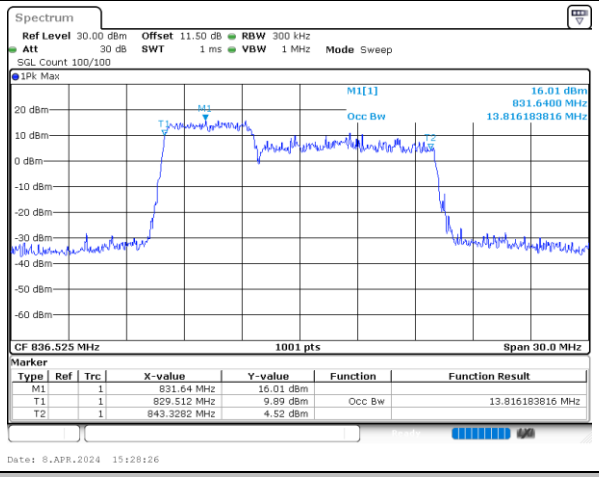
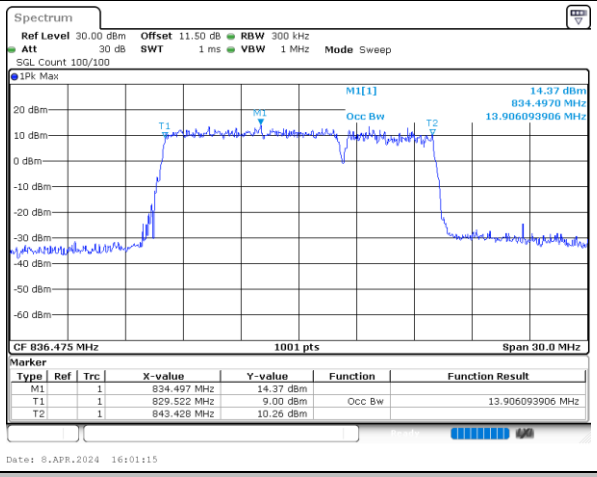
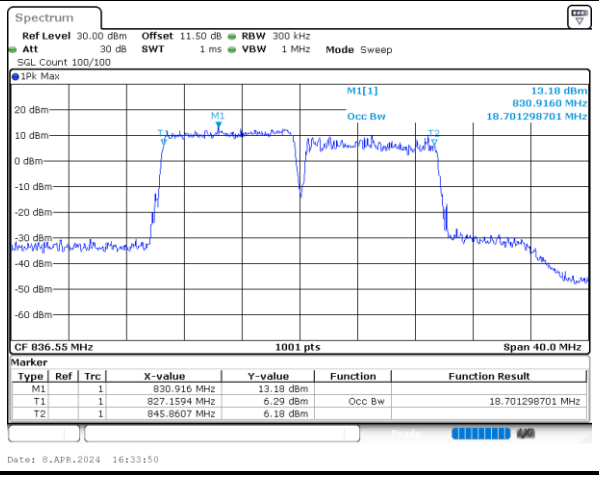
Middle Channel / 10MHz+5MHz



Middle Channel / 10MHz+10MHz



N/A

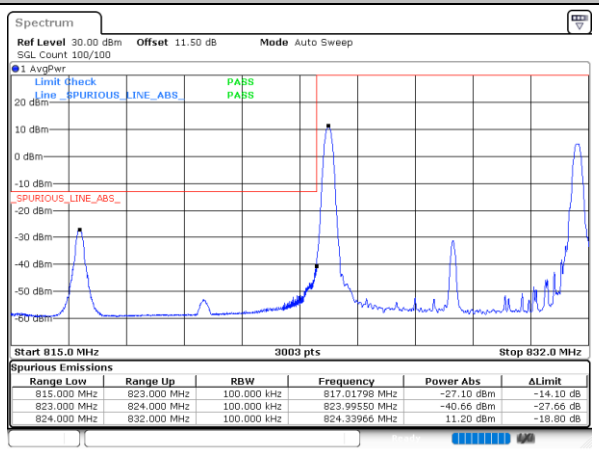
LTE Band 5B	
256QAM	
Middle Channel / 3MHz+5MHz	Middle Channel / 5MHz+3MHz
	
Middle Channel / 5MHz+10MHz	Middle Channel / 10MHz+5MHz
	
Middle Channel / 10MHz+10MHz	N/A
	

Conducted Band Edge

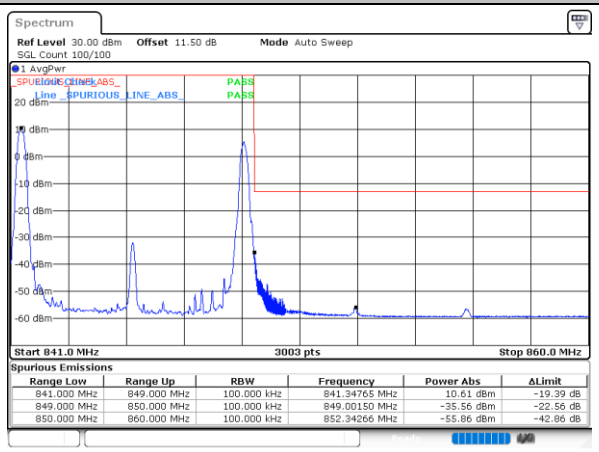
LTE Band 5B / 3MHz+5MHz

QPSK

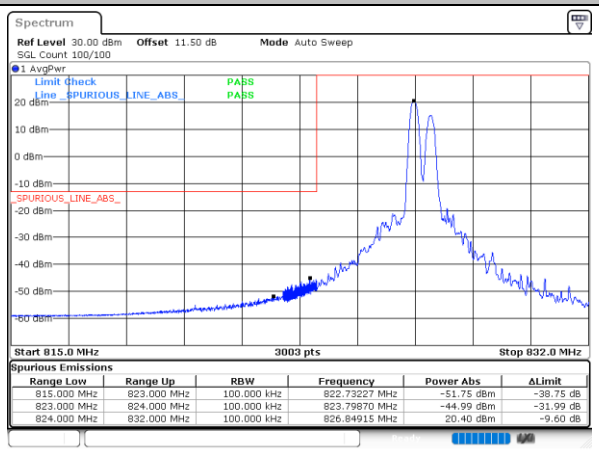
Lowest Band Edge / 1RB0 and 1RB24



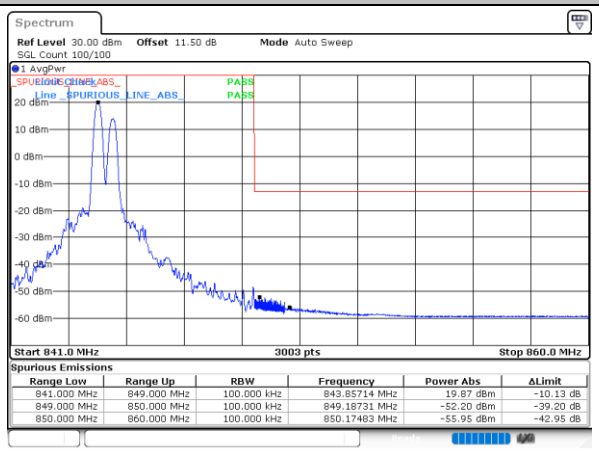
Highest Band Edge / 1RB0 and 1RB24



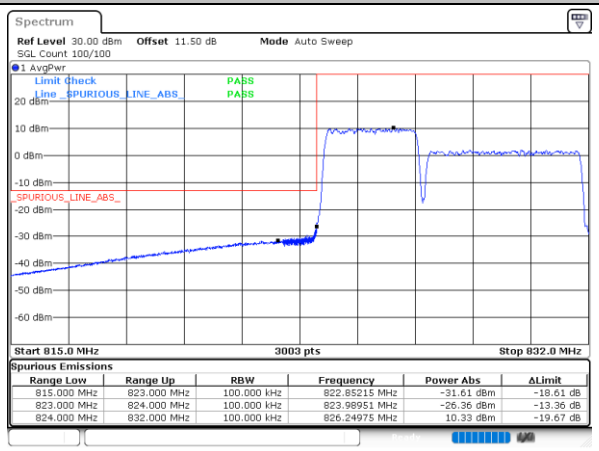
Lowest Band Edge / 1RB14 and 1RB0



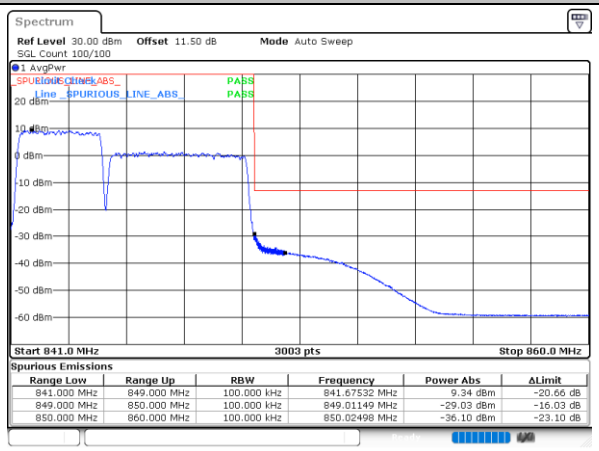
Highest Band Edge / 1RB14 and 1RB0



Lowest Band Edge / Full RB



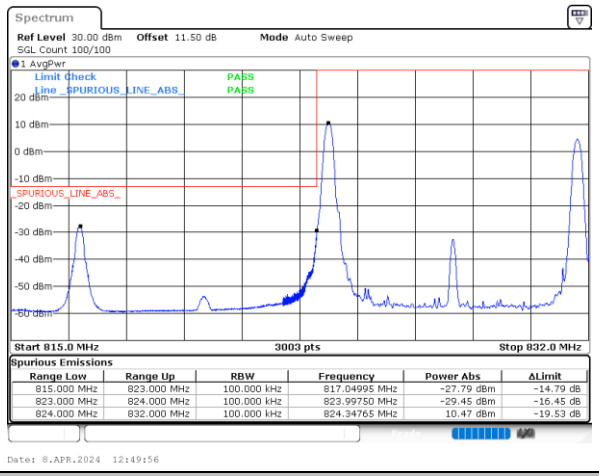
Highest Band Edge / Full RB



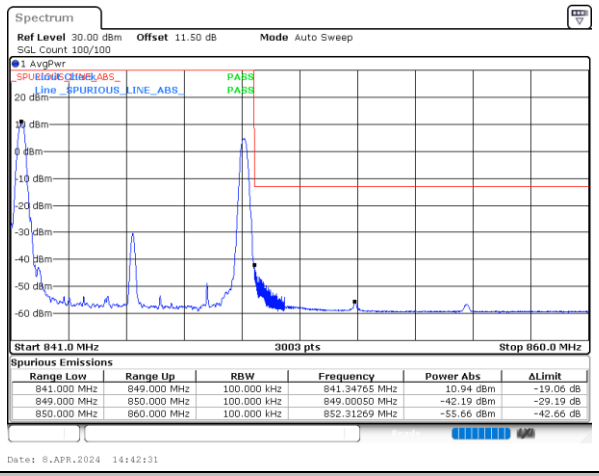
LTE Band 5B / 5MHz+3MHz

QPSK

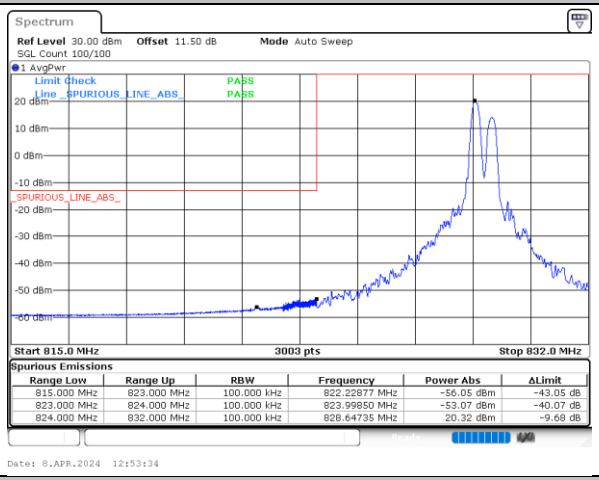
Lowest Band Edge / 1RB0 and 1RB14



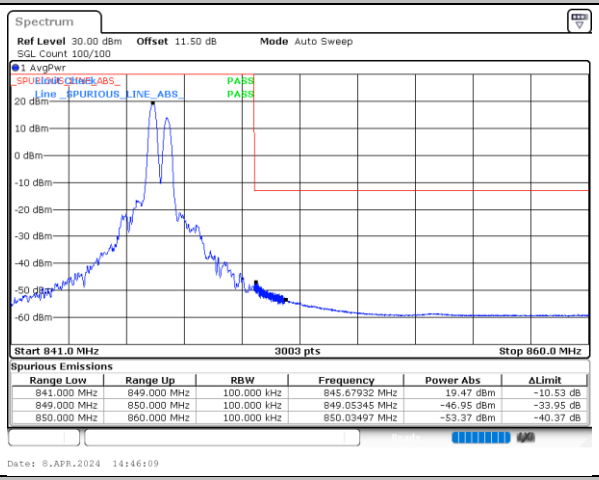
Highest Band Edge / 1RB0 and 1RB14



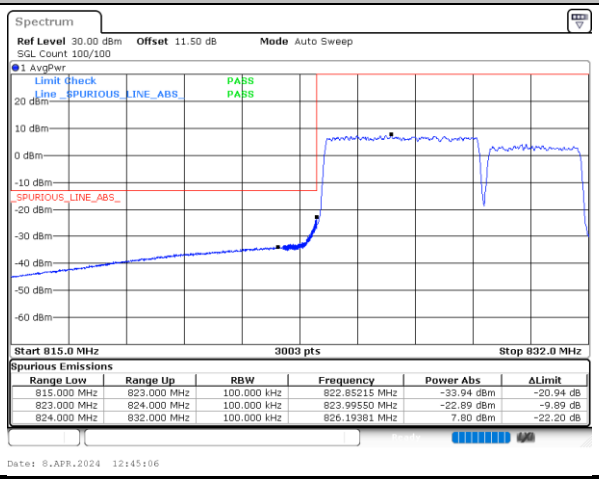
Lowest Band Edge / 1RB24 and 1RB0



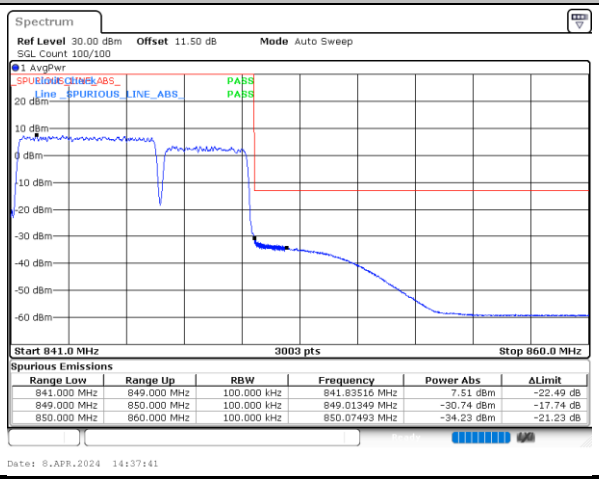
Highest Band Edge / 1RB24 and 1RB0

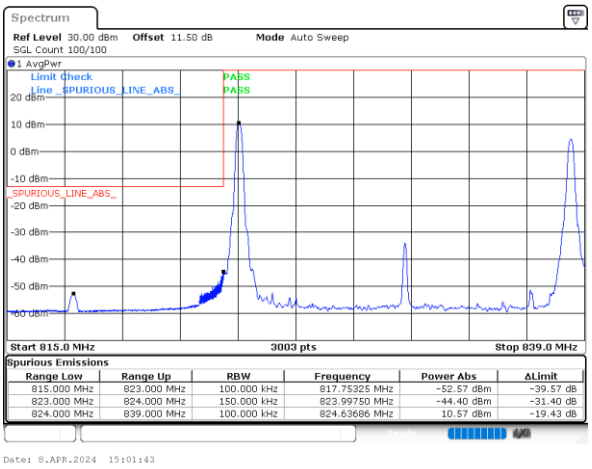
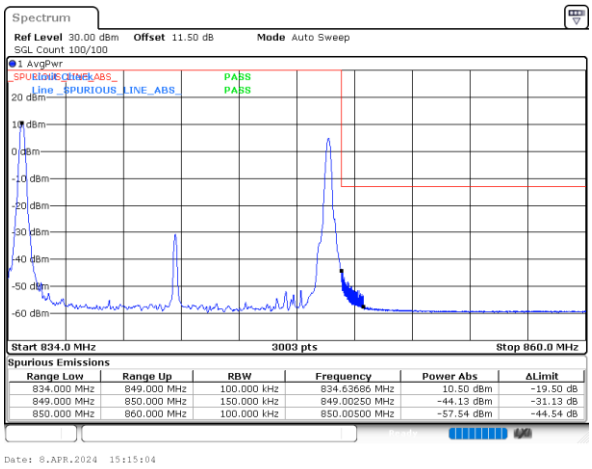
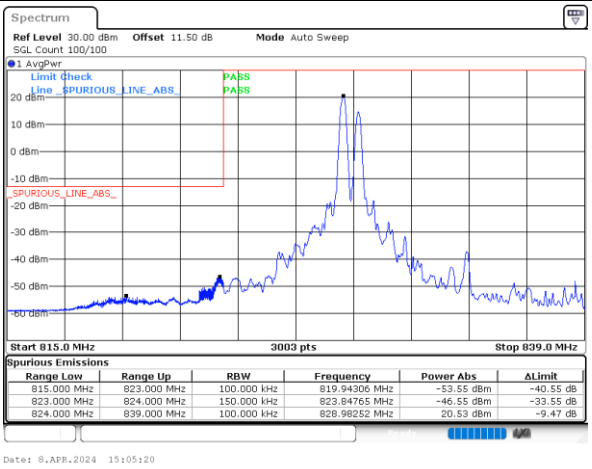
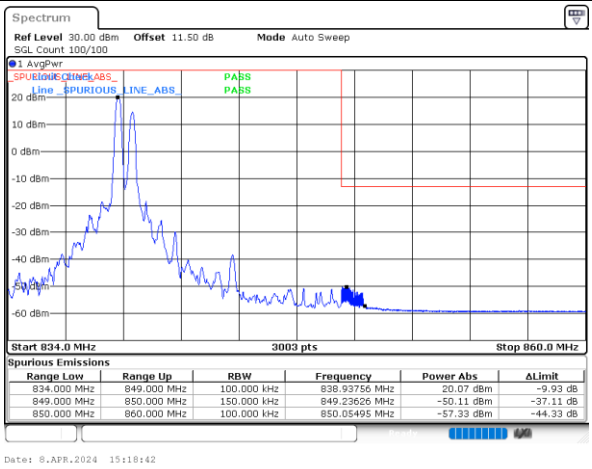
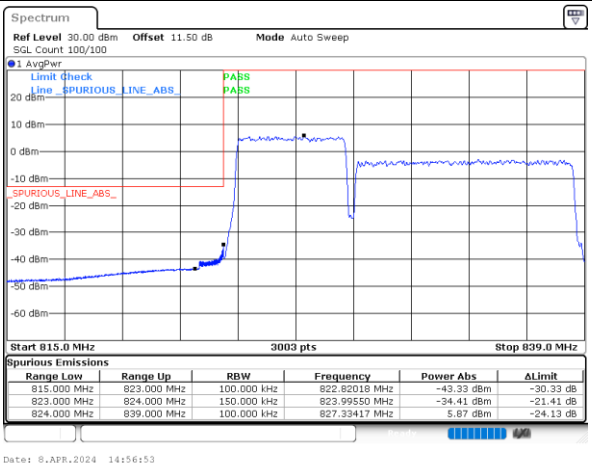
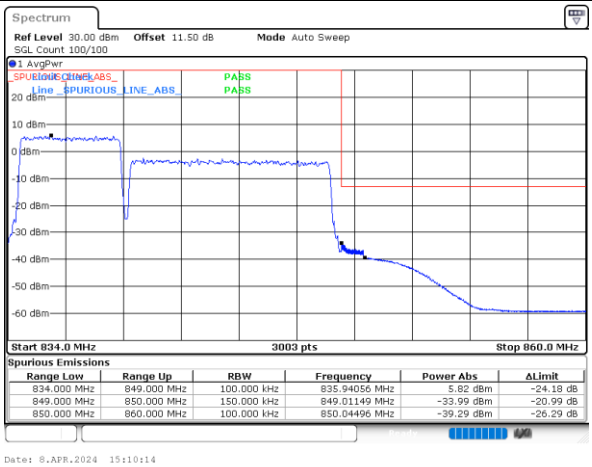


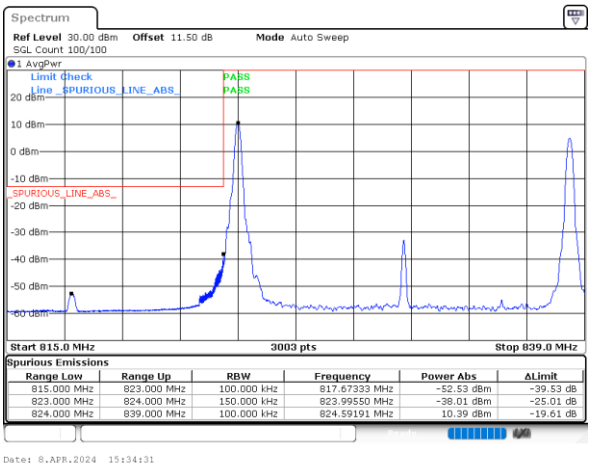
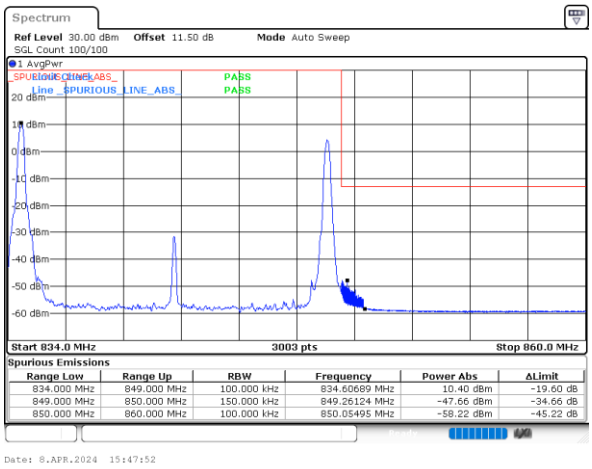
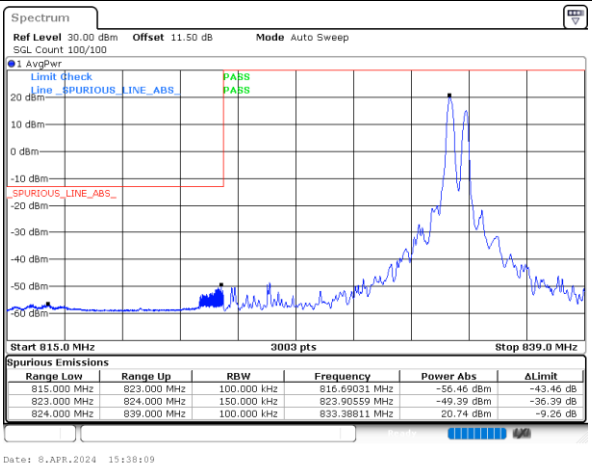
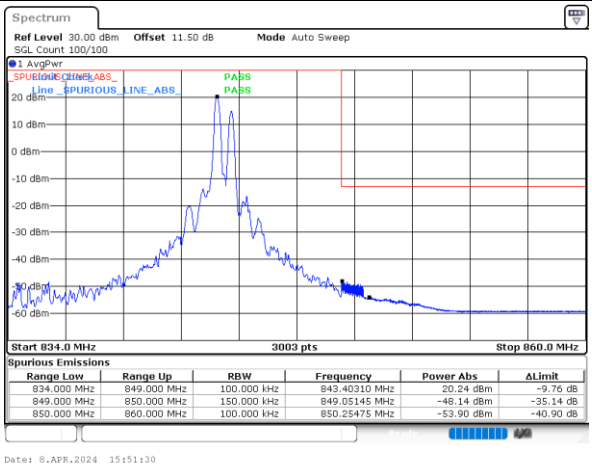
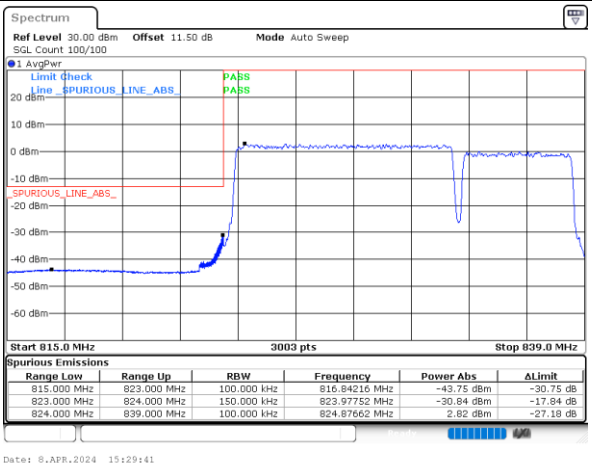
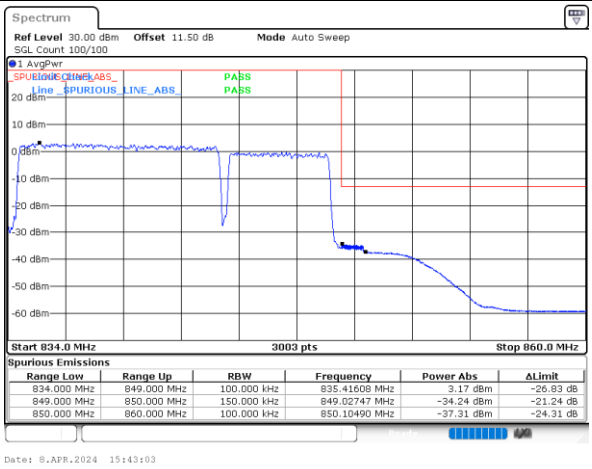
Lowest Band Edge / Full RB

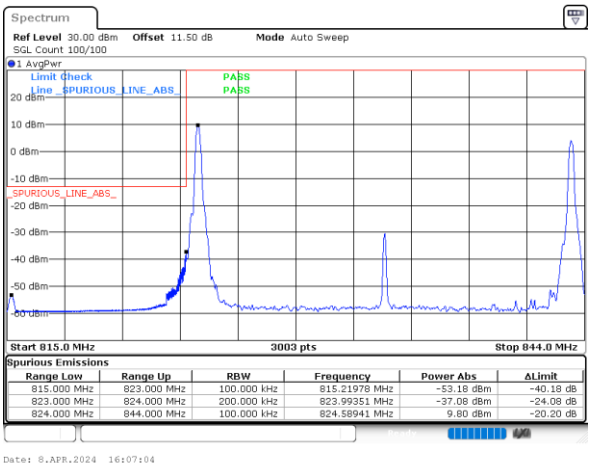
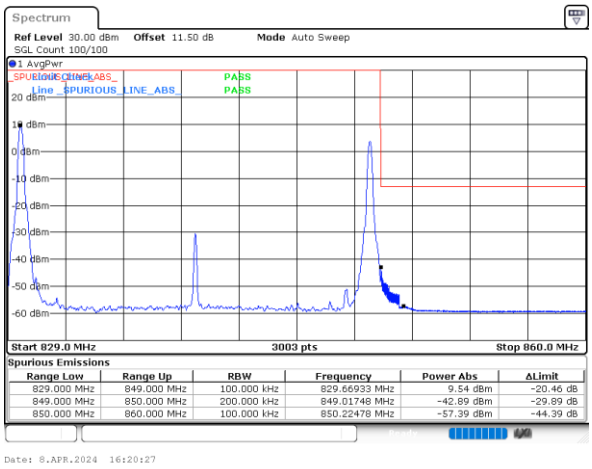
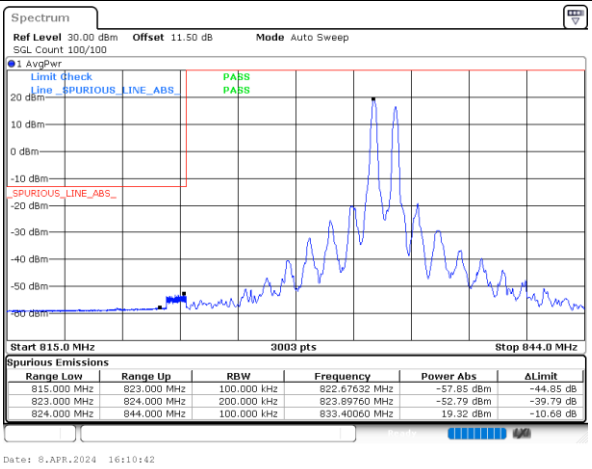
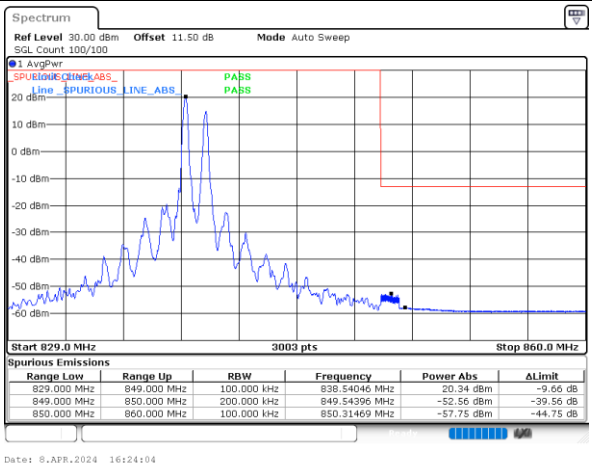
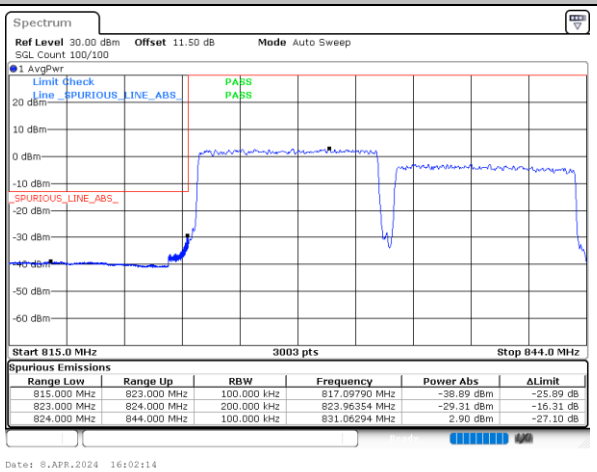
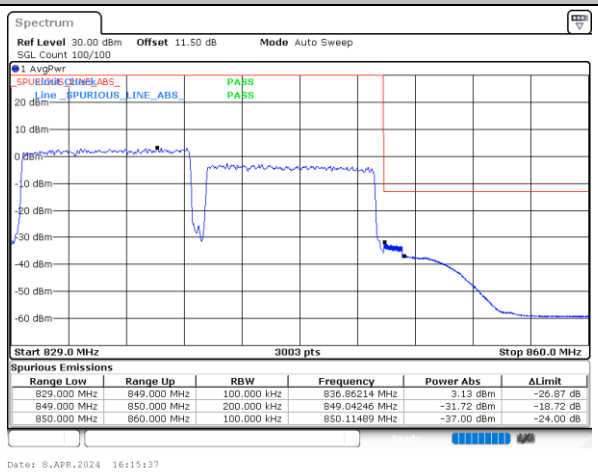


Highest Band Edge / Full RB



LTE Band 5B / 5MHz+10MHz	
QPSK	
Lowest Band Edge / 1RB0 and 1RB49	Highest Band Edge / 1RB0 and 1RB49
	
Lowest Band Edge / 1RB24 and 1RB0	Highest Band Edge / 1RB24 and 1RB0
	
Lowest Band Edge / Full RB	Highest Band Edge / Full RB
	

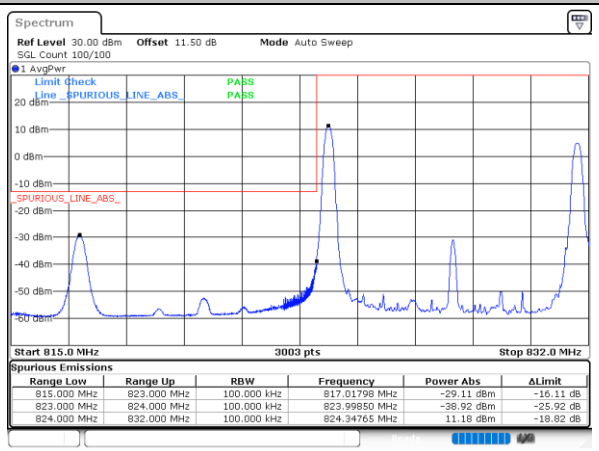
LTE Band 5B / 10MHz+5MHz	
QPSK	
Lowest Band Edge / 1RB0 and 1RB24	Highest Band Edge / 1RB0 and 1RB24
	
Lowest Band Edge / 1RB49 and 1RB0	Highest Band Edge / 1RB49 and 1RB0
	
Lowest Band Edge / Full RB	Highest Band Edge / Full RB
	

LTE Band 5B / 10MHz+10MHz	
QPSK	
Lowest Band Edge / 1RB0 and 1RB49	Highest Band Edge / 1RB0 and 1RB49
	
Lowest Band Edge / 1RB49 and 1RB0	Highest Band Edge / 1RB49 and 1RB0
	
Lowest Band Edge / Full RB	Highest Band Edge / Full RB
	

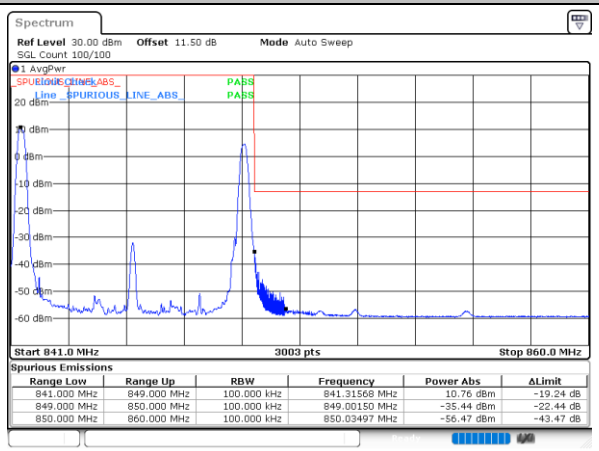
LTE Band 5B / 3MHz+5MHz

16QAM

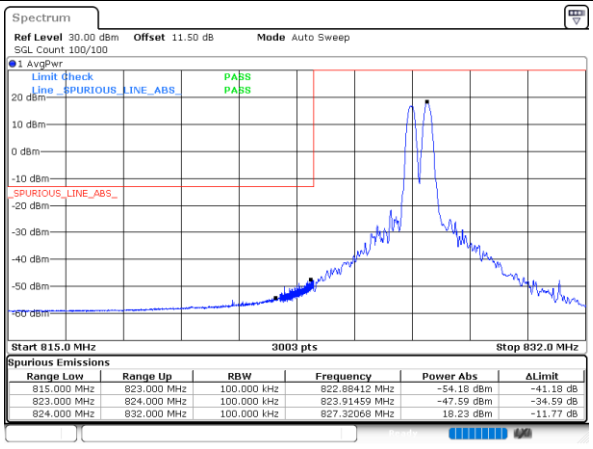
Lowest Band Edge / 1RB0 and 1RB24



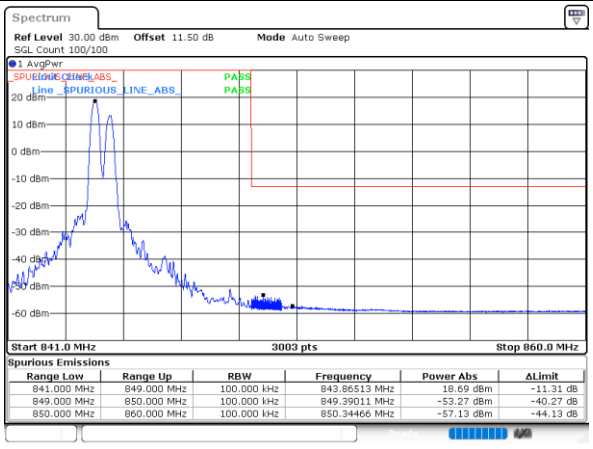
Highest Band Edge / 1RB0 and 1RB24



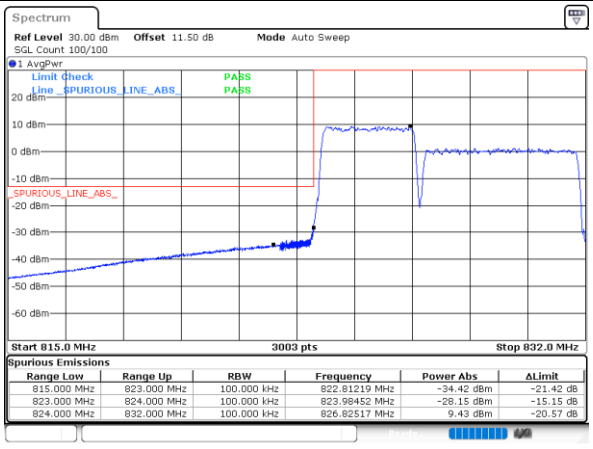
Lowest Band Edge / 1RB14 and 1RB0



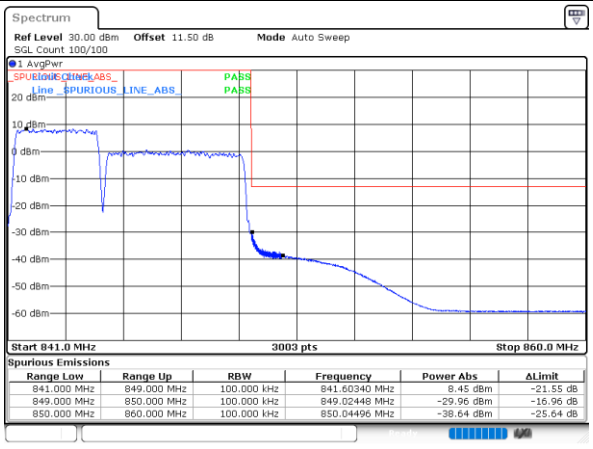
Highest Band Edge / 1RB14 and 1RB0

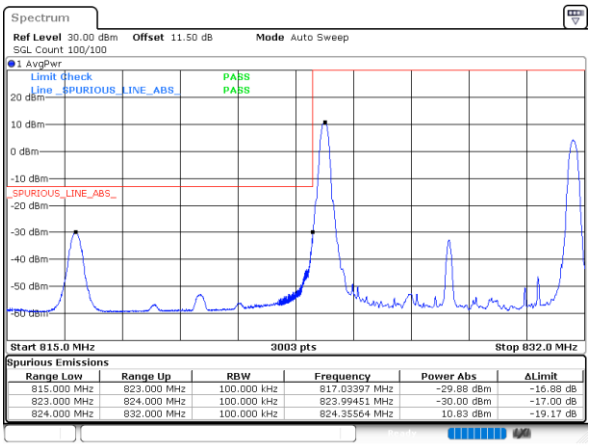
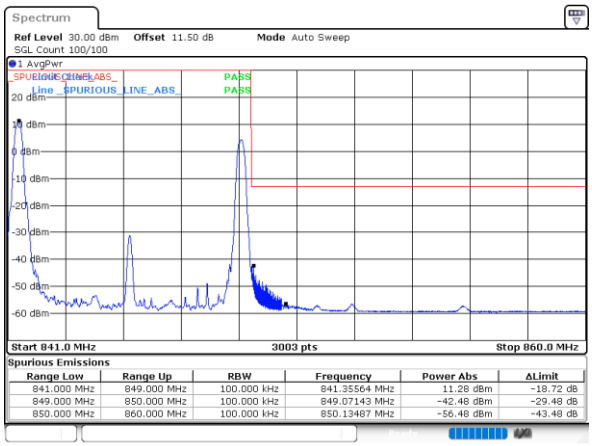
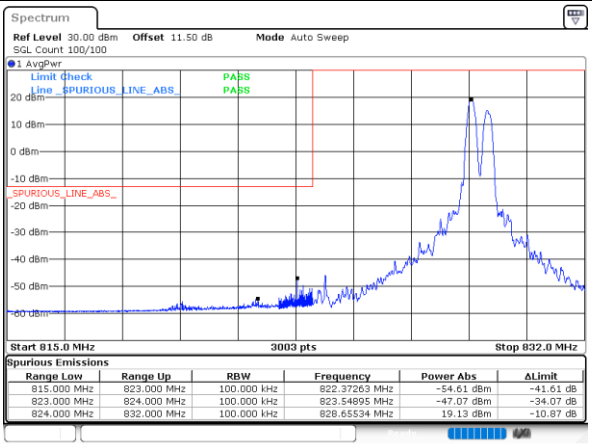
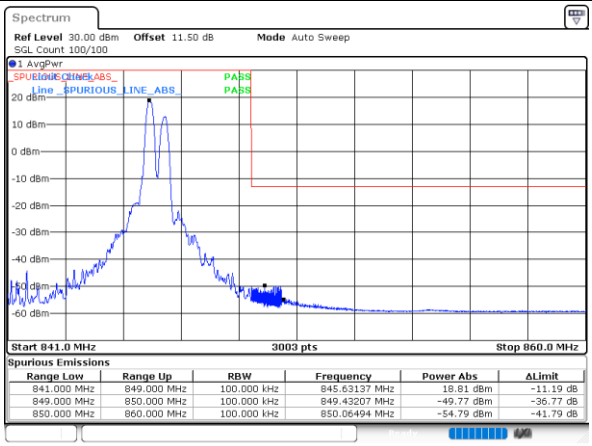
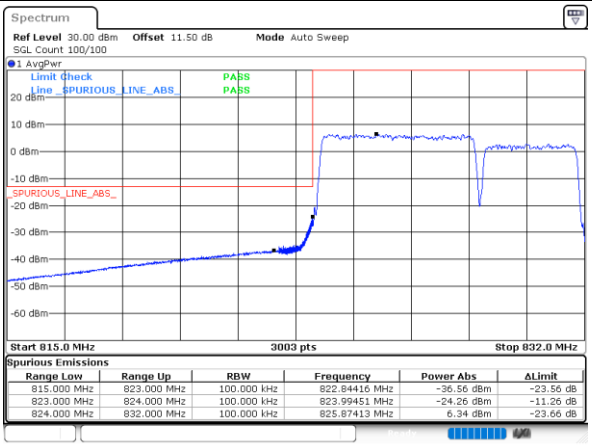
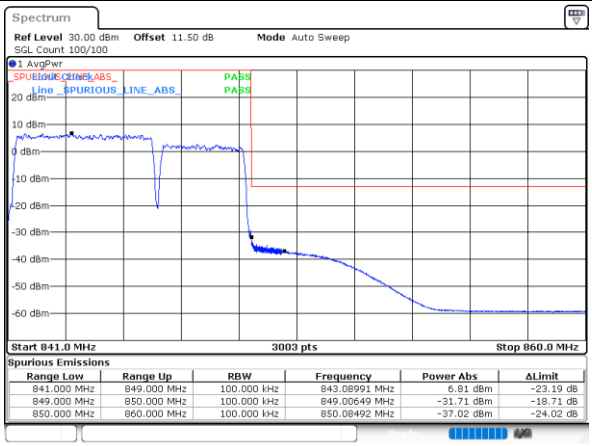


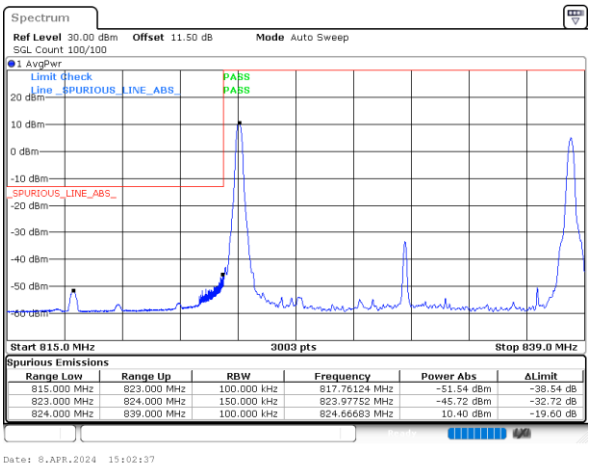
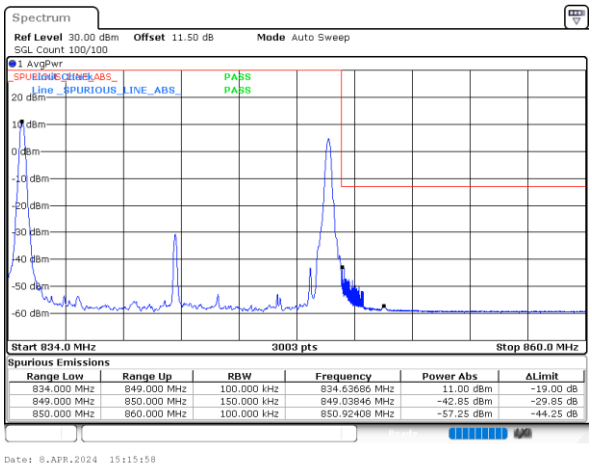
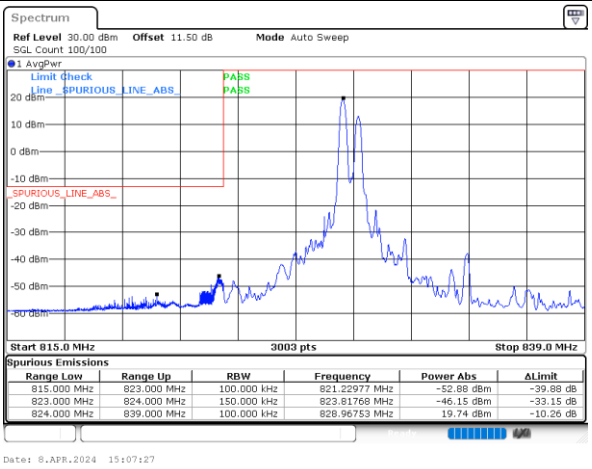
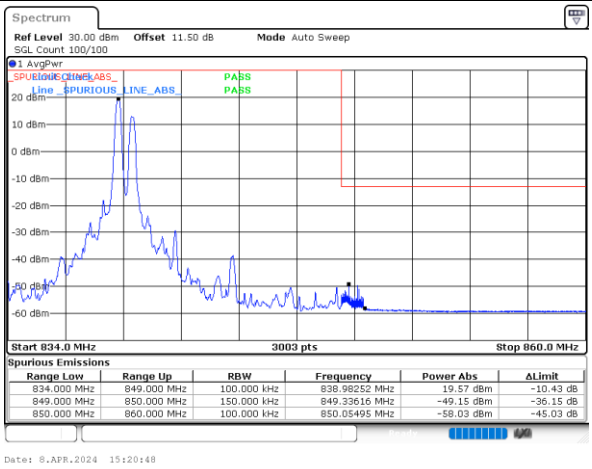
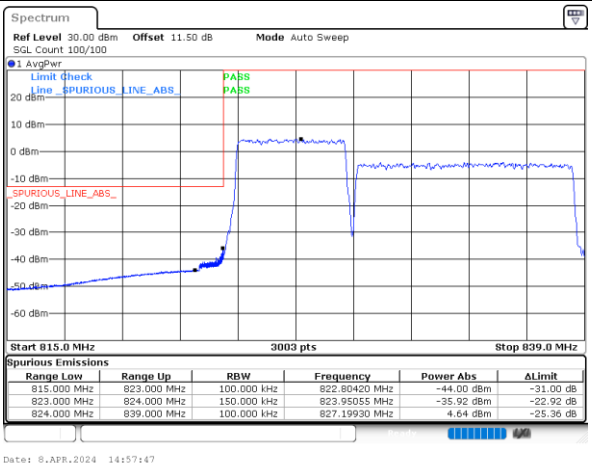
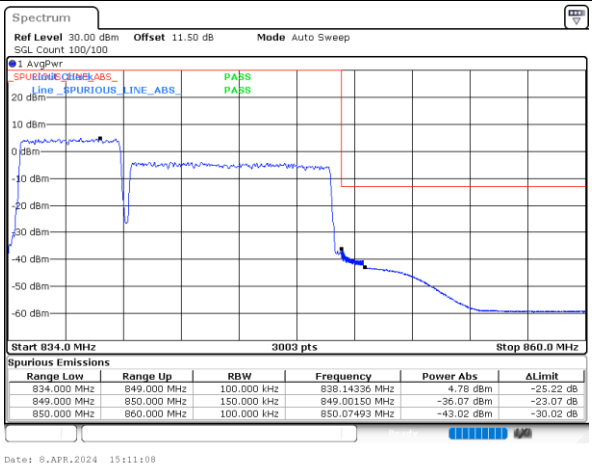
Lowest Band Edge / Full RB

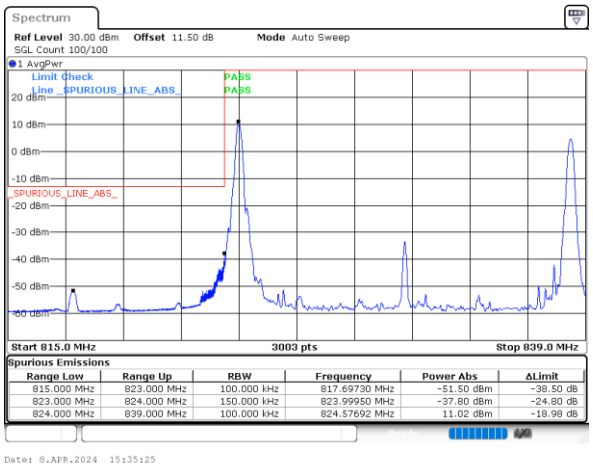
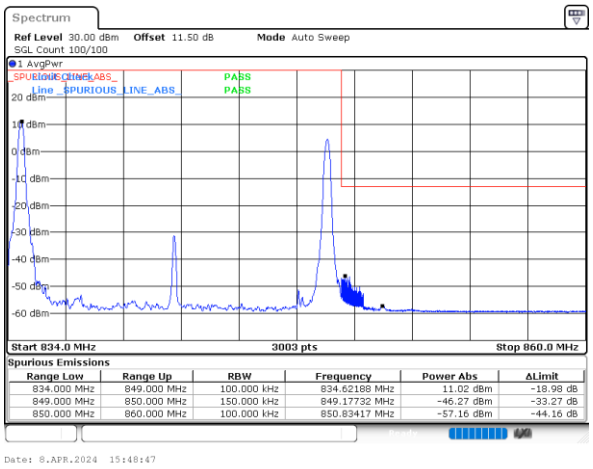
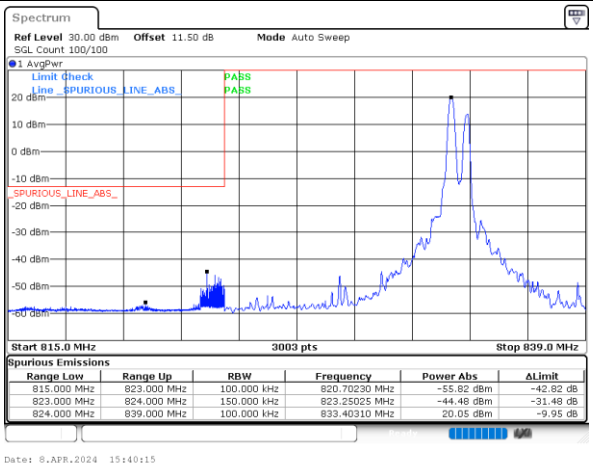
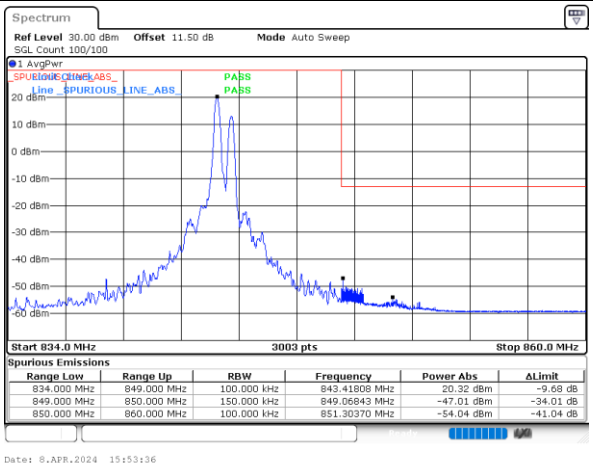
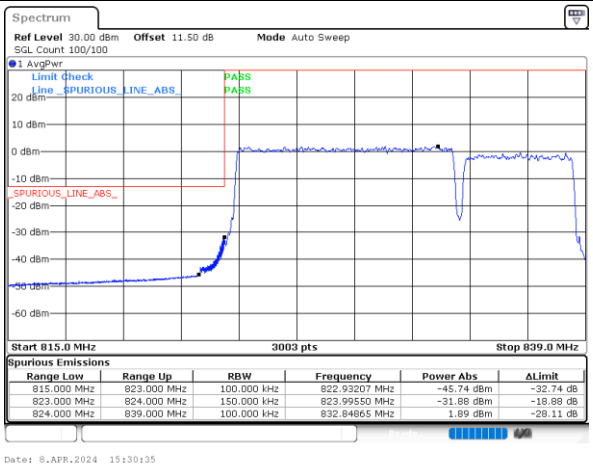
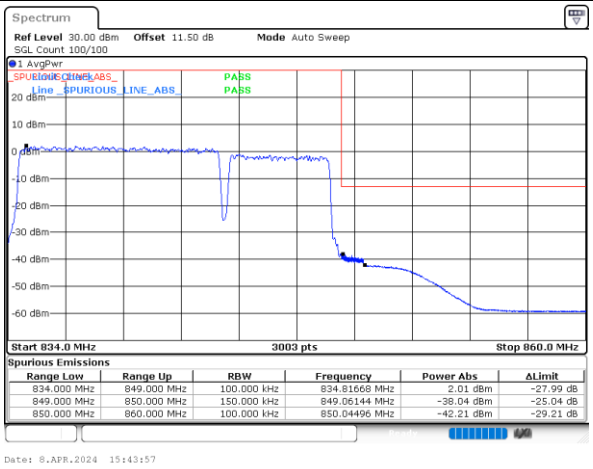


Highest Band Edge / Full RB



LTE Band 5B / 5MHz+3MHz	
16QAM	
Lowest Band Edge / 1RB0 and 1RB14	Highest Band Edge / 1RB0 and 1RB14
	
Lowest Band Edge / 1RB24 and 1RB0	Highest Band Edge / 1RB24 and 1RB0
	
Lowest Band Edge / Full RB	Highest Band Edge / Full RB
	

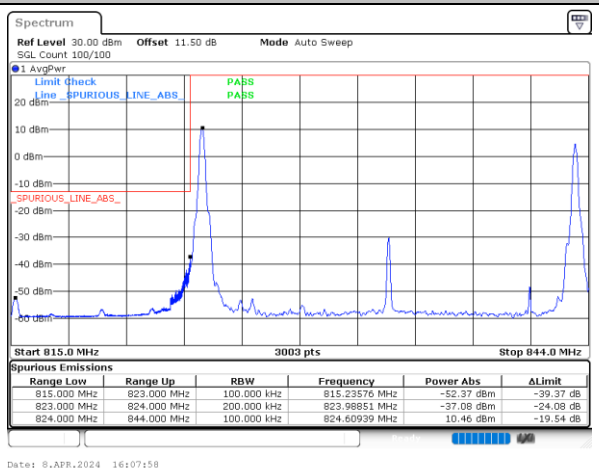
LTE Band 5B / 5MHz+10MHz	
16QAM	
Lowest Band Edge / 1RB0 and 1RB49	**Highest Band Edge / 1RB0 and 1RB49**
	
Lowest Band Edge / 1RB24 and 1RB0	**Highest Band Edge / 1RB24 and 1RB0**
	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

LTE Band 5B / 10MHz+5MHz	
16QAM	
Lowest Band Edge / 1RB0 and 1RB24	Highest Band Edge / 1RB0 and 1RB24
	
Lowest Band Edge / 1RB49 and 1RB0	Highest Band Edge / 1RB49 and 1RB0
	
Lowest Band Edge / Full RB	Highest Band Edge / Full RB
	

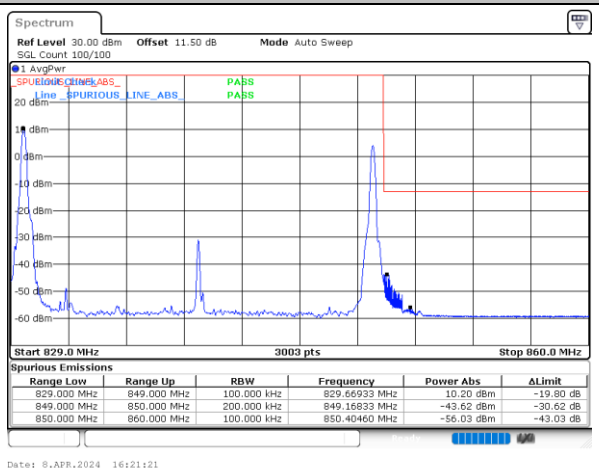
LTE Band 5B / 10MHz+10MHz

16QAM

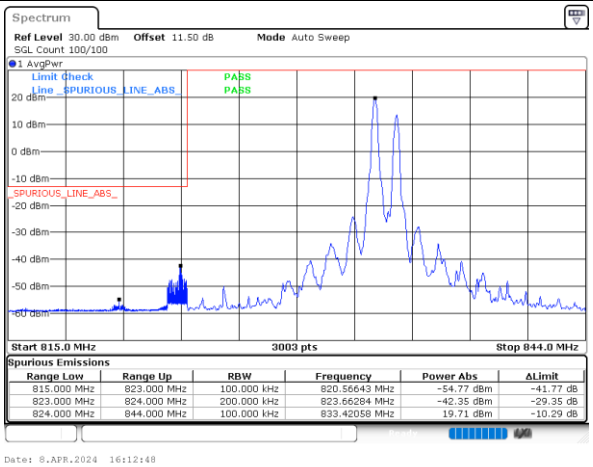
Lowest Band Edge / 1RB0 and 1RB49



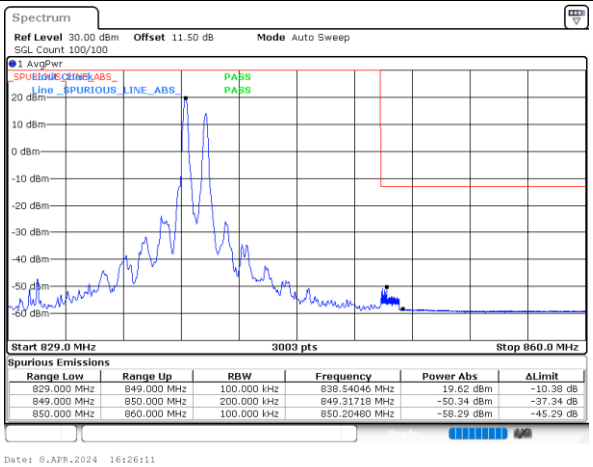
Highest Band Edge / 1RB0 and 1RB49



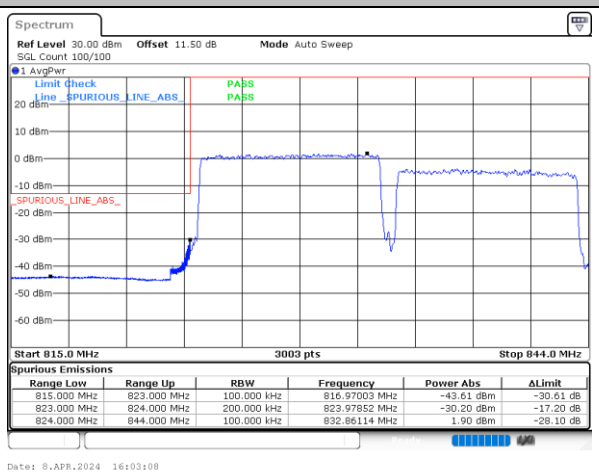
Lowest Band Edge / 1RB49 and 1RB0



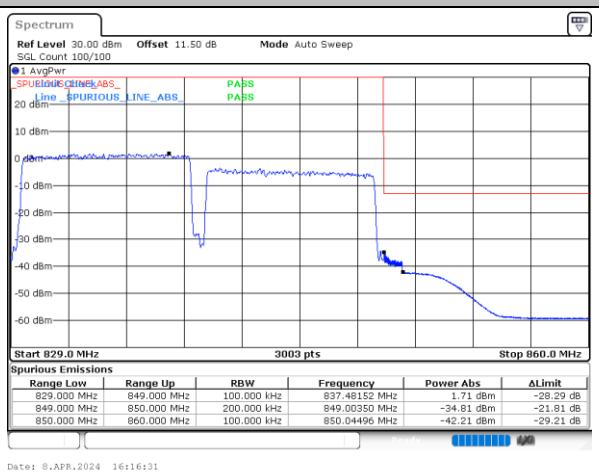
Highest Band Edge / 1RB49 and 1RB0

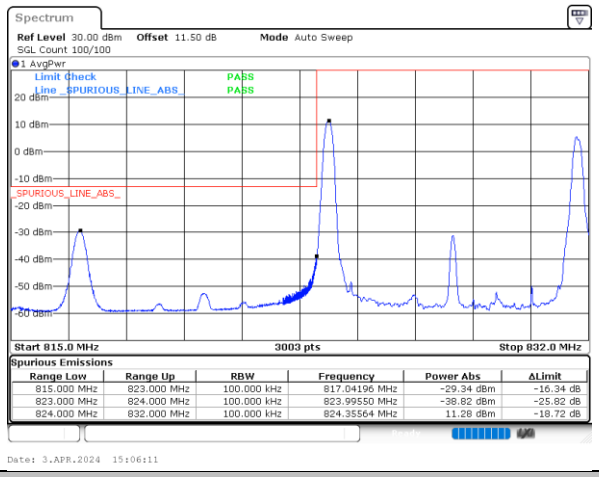
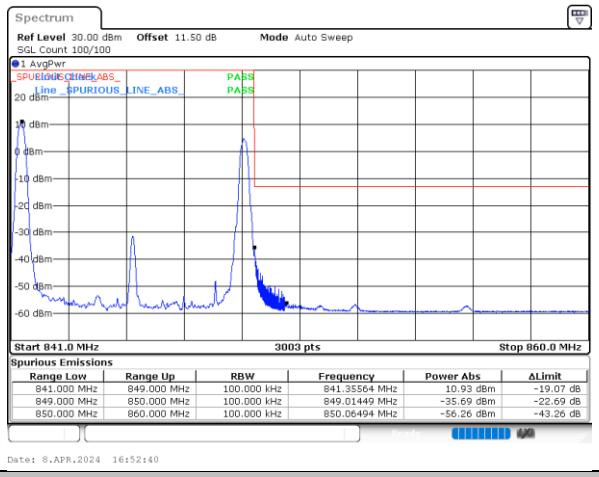
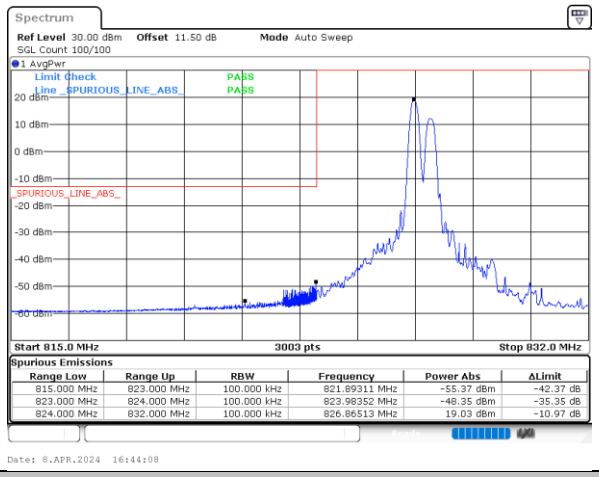
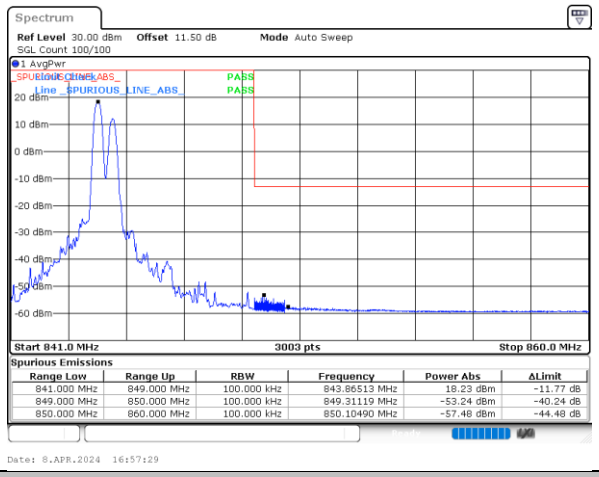


Lowest Band Edge / Full RB



Highest Band Edge / Full RB



LTE Band 5B / 3MHz+5MHz	
64QAM	
Lowest Band Edge / 1RB0 and 1RB24	Highest Band Edge / 1RB0 and 1RB24
	
Lowest Band Edge / 1RB14 and 1RB0	Highest Band Edge / 1RB14 and 1RB0
	
Lowest Band Edge / Full RB	Highest Band Edge / Full RB