FCC RF Test Report

APPLICANT	:	Casa Systems, Inc.
EQUIPMENT	:	Apex Enterprise Femto cell (E-Femto) (B4/B13/B66 Plus N48/N77)
BRAND NAME	:	APEX Femto for Enterprise (eFemto)
MODEL NAME	:	5G2101-48
FCC ID	:	2AO385G2101-48
STANDARD	:	47 CFR Part 2, 27(L), 27(F)
CLASSIFICATION	:	Licensed Non-Broadcast Station Transmitter (TNB)
TEST DATE(S)	:	Sep. 01, 2022 ~ Oct. 20, 2022

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

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

Jason Jia

Approved by: Jason Jia

ACCREDITED Cert #5145.02

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

TABLE OF CONTENTS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG282511A	Rev. 01	Initial issue of report	Nov. 04, 2022

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	-	Report Only	-
	§27.50(b)(9)	Effective Radiated Power (Band 13)	ERP < 30 Watt	Pass	-
	§27.50(d)(2)	Equivalent Isotropic Radiated Power (Band 4) (Band 66)	EIRP < 1640 Watt		-
3.6	§2.1049	Occupied Bandwidth	-	Report Only	-
3.7	§2.1051 §27.53(c)(1)(3) §27.53(h)	Conducted Band Edge Measurement (Band 4) (Band 13) (Band 66)	< 43+10log10(P[Watts])	PASS	-
3.8	§2.1051 §27.53(c)(1) §27.53(h)	Conducted Spurious Emission (Band 4) (Band 13) (Band 66)	< 43+10log10(P[Watts])	PASS	-
3.9	§2.1055 §27.54	Frequency Stability Temperature & Voltage	Within Authorized Band	PASS	-
4.4	§2.1053 §27.53(c)(1) §27.53(f) §27.53(h)	Radiated Spurious Emission (Band 4) (Band 13) (Band 66)	< 43+10$\log_{10}$(P[Watts])	PASS	Under limit 35.39 dB at 8550 MHz

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1 General Description

1.1 Applicant

Casa Systems, Inc.
100 Old River Road Andover MA 01810 USA

1.2 Manufacturer

Casa Systems, Inc.
100 Old River Road Andover MA 01810 USA

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Apex Enterprise Femto cell (E-Femto) (B4/B13/B66 Plus N48/N77)
Brand Name	APEX Femto for Enterprise (eFemto)
Model Name	5G2101-48
FCC ID	2AO385G2101-48
HW Version	V02
SW Version	R1.0
EUT Stage	Production Unit

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	LTE Band 4 : 2110 MHz ~ 2155 MHz LTE Band 13 : 746 MHz ~ 756 MHz LTE Band 66 : 2110 MHz~ 2180 MHz
Rx Frequency	LTE Band 4 : 1710 MHz ~ 1755 MHz LTE Band 13 : 777 MHz ~ 787 MHz LTE Band 66 : 1710 MHz ~ 1780 MHz
Bandwidth	LTE Band 4 : 5MHz / 10MHz / 15MHz / 20MHz LTE Band 13 : 5MHz / 10MHz LTE Band 66 : 5MHz / 10MHz / 15MHz / 20MHz
Maximum Output Power to Antenna	**External Antenna MIMO <Ant.1+2>:** LTE Band 4 : 24.23 dBm LTE Band 13 : 23.61 dBm LTE Band 66 : 24.55 dBm **Internal Antenna MIMO <Ant.1+2>:** LTE Band 4 : 23.88 dBm LTE Band 13 : 23.50 dBm LTE Band 66 : 23.96 dBm
Antenna Gain	**External Ant. 1:** LTE Band 4 : 8.8 dBi LTE Band 13 : 7.9 dBi LTE Band 66 : 8.8 dBi

	External Ant. 2: LTE Band 4 : 8.8 dBi LTE Band 13 : 7.9 dBi LTE Band 66 : 8.8 dBi **Internal Ant. 1:** LTE Band 4 : 3.85 dBi LTE Band 13 : 0.94 dBi LTE Band 66 : 4.06 dBi **Internal Ant. 2:** LTE Band 4 : 4.71 dBi LTE Band 13 : 1.01 dBi LTE Band 66 : 4.71 dBi
Type of Modulation	QPSK / 16QAM / 64QAM / 256 QAM

Note:

1. The maximum ERP/EIRP is calculated from max output power and max antenna gain, only the maximum ERP/EIRP of External Antenna is shown on the report for MIMO mode.
2. LTE Tx is non-signaling mode.
3. The base station only support LTE full RB.
4. For SISO & MIMO mode, the testing has assessed only MIMO mode by referring to the higher output power. The MIMO mode is completely uncorrelated, so the directional gain is selected the maximum gain among all antennas.
5. For Internal & External Antenna, they are the same transmitter, thus Conducted items only test External antenna port by referring to higher output power, and RSE test both Internal & External Antenna.
6. The Internal Antenna and External Antenna support manual switch, the Internal & External antenna can't work at the same time, thus MIMO mode only support MIMO <Internal Ant.1+2> or MIMO <External Ant.1+2>, not support MIMO <Internal Ant.1/2 + External Ant.1/2>.

1.5 Modification of EUT

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

1.6 Maximum ERP/EIRP and Emission Designator

LTE Band 4		QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
20	2120.0 ~ 2145.0	2.0091	18M6G7D	1.9143	18M5W7D
LTE Band 13		**QPSK**		**16QAM/64QAM/256QAM**	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
5	748.5 ~ 753.5	0.8630	4M60G7D	0.8185	4M57W7D
10	751.0	0.7674	9M00G7D	0.7534	9M00W7D
LTE Band 66		**QPSK**		**16QAM/64QAM/256QAM**	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
20	2120.0 ~ 2170.0	2.1627	18M6G7D	2.1478	18M5W7D

Note: LTE Band 66 overlaps the entire frequency range of LTE Band 4. Therefore, the test results provided in this report covers Band 66 as well as Band 4.

1.7 Testing Location

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

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

1.8 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH04-KS	AUDIX	E3	6.2009-8-24al

1.9 Applicable Standards

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

- 47 CFR Part 2, 27(L), 27(F)
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

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

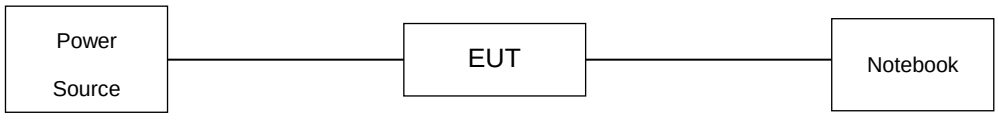
2.1 Test Mode

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.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

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	4	-	-	v	v	v	v	v	v	v	v	-	-	v	v	v	v
	13	-	-	v	v	-	-	v	v	v	v	-	-	v	v	v	v
	66	-	-	v	v	v	v	v	v	v	v	-	-	v	v	v	v
Peak-to-Average Ratio	13	-	-		v	-	-	v	v	v	v	-	-	v		v	
	66	-	-				v	v	v	v	v	-	-	v		v	
26dB and 99% Bandwidth	13	-	-	v	v	-	-	v	v			-	-	v		v	
	66	-	-				v	v	v			-	-	v		v	
Conducted Band Edge	13	-	-	v	v	-	-	v	v	v	v	-	-	v	v		v
	66	-	-	v	v	v	v	v	v	v	v	-	-	v	v		v
Conducted Spurious Emission	13	-	-	v	v	-	-	v				-	-	v	v	v	v
	66	-	-	v	v	v	v	v				-	-	v	v	v	v
Frequency Stability	13	-	-		v	-	-	v				-	-	v		v	
	66	-	-		v			v				-	-	v		v	
E.R.P / E.I.R.P	13	-	-	v	v	-	-	v	v	v	v	-	-	v	v	v	v
	66	-	-	v	v	v	v	v	v	v	v	-	-	v	v	v	v
Radiated Spurious Emission	13	Worst Case														v	
	66	Worst Case														v	
Note	1. The mark "**v** " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. 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. 4. LTE Band 66 overlaps the entire frequency range of LTE Band 4. Therefore, the test results provided in this report covers Band 66 as well as Band 4.																

2.2 Connection Diagram of Test System



This example is connection diagram of EUT test configurations.

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

2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	Power Supply	GWINSTEK	PSS-2002	N/A	N/A	Unshielded, 1.8 m
2.	Notebook	Lenovo	G480	QDS-BRCM1050I	N/A	Unshielded AC I/P cable 1.8m
3.	POE adapter	N/A	N/A	N/A	N/A	N/A

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss 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 4.8 dB and 10dB attenuator.

Example :

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

= 4.8 + 10 = 14.8 (dB)

2.5 Frequency List of Low/Middle/High Channels

LTE Band 4 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	2050	2175	2300
	Frequency	2120	2132.5	2145
15	Channel	2025	2175	2325
	Frequency	2117.5	2132.5	2147.5
10	Channel	2000	2175	2350
	Frequency	2115	2132.5	2150
5	Channel	1975	2175	2375
	Frequency	2112.5	2132.5	2152.5

LTE Band 13 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
10	Channel	-	5230	-
	Frequency	-	751	-
5	Channel	5205	5230	5255
	Frequency	748.5	751	753.5

LTE Band 66 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	66536	66786	67036
	Frequency	2120	2145	2170
15	Channel	66511	66786	67061
	Frequency	2117.5	2145	2172.5
10	Channel	66486	66786	67086
	Frequency	2115	2145	2175
5	Channel	66461	66786	67111
	Frequency	2112.5	2145	2177.5

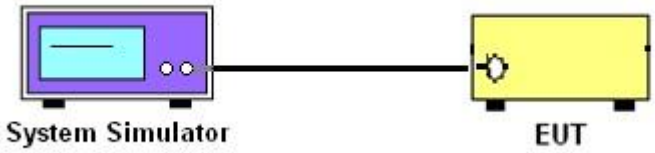
3 Conducted Test Items

3.1 Measuring Instruments

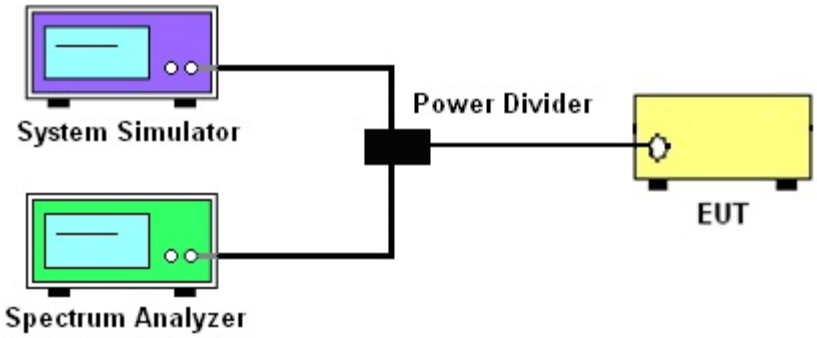
See list of measuring instruments of this test report.

3.2 Test Setup

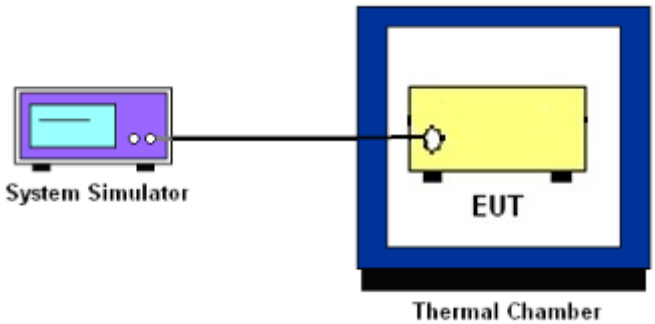
3.2.1 Conducted Output Power



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



3.2.3 Frequency Stability



3.3 Test Result of Conducted Test

Please refer to Appendix A.

3.4 Conducted Output Power and ERP/EIRP

3.4.1 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.

LTE Band 13

§27.50(b)(9) Control stations and mobile stations transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands and fixed stations transmitting in the 787-788 MHz and 805-806 MHz bands are limited to 30 watts ERP.

LTE Band 4 and Band 66

§27.50(d)(2) The power of each fixed or base station transmitting in the 1995-2000 MHz, the 2110-2155 MHz 2155-2180 MHz band, or 2180-2200 MHz band and situated in any geographic location other than that described in paragraph (d)(1) of this section is limited to:

(i) An equivalent isotropically radiated power (EIRP) of 1640 watts when transmitting with an emission bandwidth of 1 MHz or less;

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

3.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2
2. The transmitter output port was connected to the system simulator.
3. Set EUT at maximum power through the system simulator.
4. Select lowest, middle, and highest channels for each band and different modulation.
5. Measure and record the power level from the system simulator.

3.5 Peak-to-Average Ratio

3.5.1 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.

3.5.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2.3.4 (CCDF).
2. The EUT was connected to spectrum and system simulator via a power divider.
3. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
4. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
5. Record the deviation as Peak to Average Ratio.

3.6 Occupied Bandwidth

3.6.1 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.

3.6.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.4
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. 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.
4. 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.
5. Set the detection mode to peak, and the trace mode to max hold.
6. 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)
7. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
8. 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.
9. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

3.7 Conducted Band Edge

3.7.1 Description of Conducted Band Edge Measurement

27.53 (c)

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

(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations;

(5) Compliance with the provisions of paragraphs (c)(1) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed.

27.53 (h)

For operations in the 2110-2155 MHz and 2155-2180 MHz band, the FCC limit is 43 + $10\log_{10}$(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.

3.7.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured.
4. Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
5. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
6. Set spectrum analyzer with RMS detector.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. Checked that all the results comply with the emission limit line.

   Example:

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

   = P(W)- [43 + 10log(P)] (dB)

   = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB) = -13dBm.

3.8 Conducted Spurious Emission

3.8.1 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.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10^{th} harmonic.

3.8.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. 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.
4. The middle channel for the highest RF power within the transmitting frequency was measured.
5. The conducted spurious emission for the whole frequency range was taken.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
7. Set spectrum analyzer with RMS detector.
8. Taking the record of maximum spurious emission.
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
10. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.

3.9 Frequency Stability

3.9.1 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.

3.9.2 Test Procedures for Temperature Variation

1. The testing follows ANSI C63.26 section 5.6.4
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. 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.
4. 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.

3.9.3 Test Procedures for Voltage Variation

1. The testing follows ANSI C63.26 section 5.6.5
2. The EUT was placed in a temperature chamber at 20±5°C and connected with the system simulator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value for other than hand carried battery equipment.
4. For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the battery operating end point, which shall be specified by the manufacturer.
5. The variation in frequency was measured for the worst case.

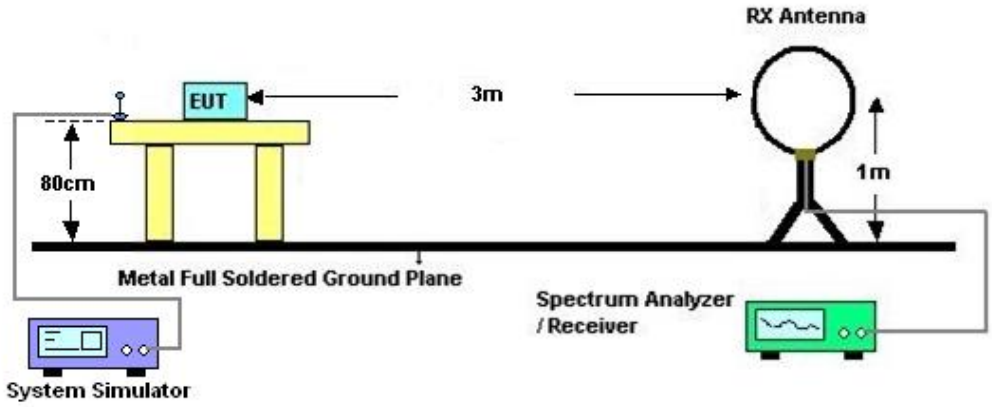
4 Radiated Test Items

4.1 Measuring Instruments

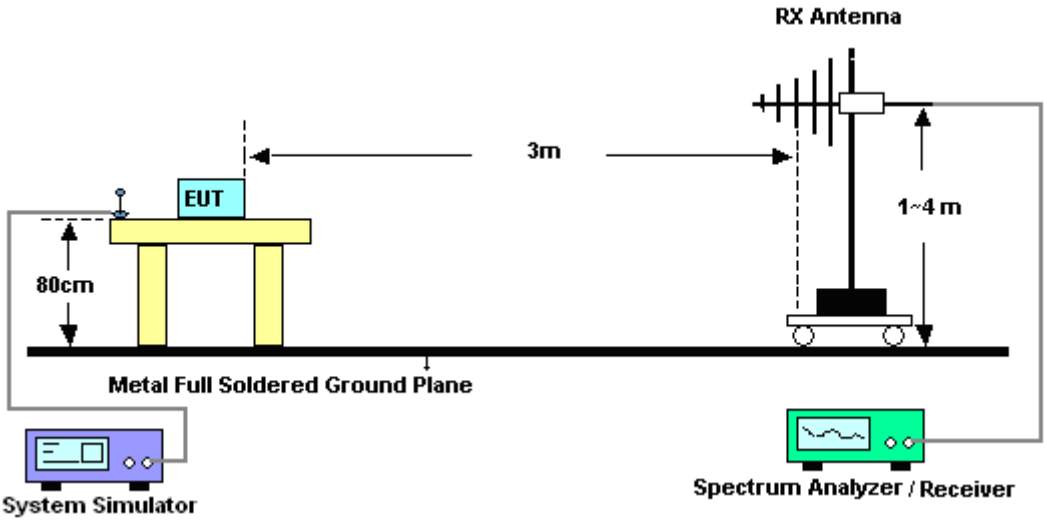
See list of measuring instruments of this test report.

4.2 Test Setup

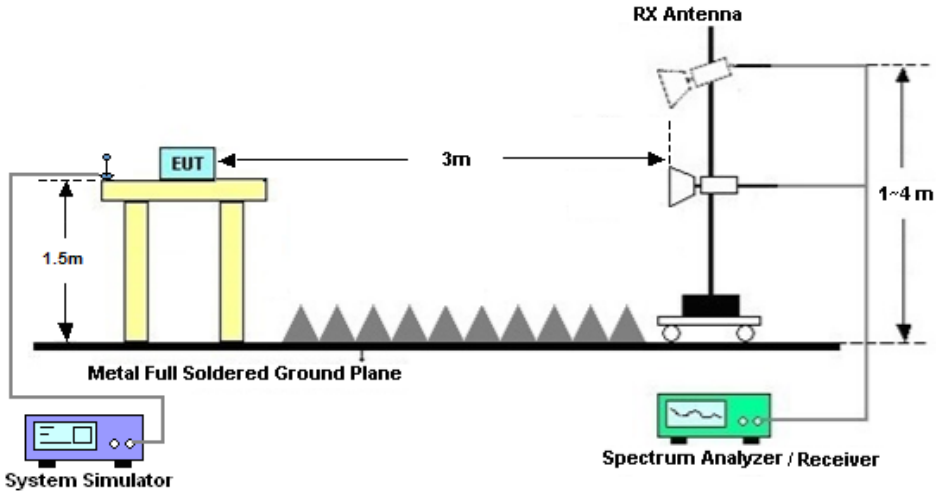
4.2.1 For radiated test below 30MHz



4.2.2 For radiated test from 30MHz to 1GHz



4.2.3 For radiated test above 1GHz



4.3 Test Result of Radiated Test

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.

4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI C63.26. 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.

For LTE Band 13

For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

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

4.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.5
2. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
6. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
7. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
8. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
9. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
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.
    The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 11, 2021	Sep. 01, 2022~ Sep. 07, 2022	Oct. 10, 2022	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	Aug. 25, 2022	Sep. 01, 2022~ Sep. 07, 2022	Aug. 24, 2023	Conducted (TH01-KS)
Temperature &h umidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 15, 2022	Sep. 01, 2022~ Sep. 07, 2022	Jul. 14, 2023	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 12, 2022	Oct. 20, 2022	Oct. 11, 2023	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 30, 2021	Oct. 20, 2022	Oct. 29, 2022	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	May 24, 2022	Oct. 20, 2022	May 23, 2023	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1284	1GHz~18GHz	Jan. 05, 2022	Oct. 20, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2022	Oct. 20, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Jan. 05, 2022	Oct. 20, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
Amplifier	Agilent	8449B	3008A02370	1Ghz-18Ghz	Oct. 12, 2022	Oct. 20, 2022	Oct. 11, 2023	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40G GA	060728	18~40GHz	Jan. 05, 2022	Oct. 20, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Oct. 20, 2022	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Oct. 20, 2022	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Oct. 20, 2022	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

6 Uncertainty of Evaluation

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

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

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

Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

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

Appendix A. Test Results of Conducted Test

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

Conducted Output Power(Average power) and ERP/EIRP

MIMO External Antenna <1+2>:

LTE-Band4							
Ant	BW	Type of Modulation	Channel	Frequency MHz	Power	Gain	EIRP
1+2	5M	QPSK	1975	2112.5	23.71	8.8	1.7824
		QPSK	2175	2132	23.77	8.8	1.8072
		QPSK	2375	2152.5	24.01	8.8	1.9099
	10M	QPSK	2000	2115	23.77	8.8	1.8072
		QPSK	2175	2132.5	23.86	8.8	1.8450
		QPSK	2350	2150	24.02	8.8	1.9143
	15M	QPSK	2025	2117.5	23.80	8.8	1.8197
		QPSK	2175	2132.5	23.89	8.8	1.8578
		QPSK	2325	2147.5	24.09	8.8	1.9454
	20M	QPSK	2050	2120	23.79	8.8	1.8155
		QPSK	2175	2132.5	23.91	8.8	1.8664
		QPSK	2300	2145	24.23	8.8	2.0091
	5M	16QAM	1975	2112.5	23.67	8.8	1.7660
		16QAM	2175	2132	23.76	8.8	1.8030
		16QAM	2375	2152.5	23.97	8.8	1.8923
	10M	16QAM	2000	2115	23.66	8.8	1.7620
		16QAM	2175	2132.5	23.68	8.8	1.7701
		16QAM	2350	2150	23.95	8.8	1.8836
	15M	16QAM	2025	2117.5	23.74	8.8	1.7947
		16QAM	2175	2132.5	23.81	8.8	1.8239
		16QAM	2325	2147.5	23.96	8.8	1.8880
	20M	16QAM	2050	2120	23.72	8.8	1.7865
		16QAM	2175	2132.5	23.81	8.8	1.8239
		16QAM	2300	2145	24.02	8.8	1.9143
	5M	64QAM	1975	2112.5	23.59	8.8	1.7338
		64QAM	2175	2132	23.85	8.8	1.8408
		64QAM	2375	2152.5	23.92	8.8	1.8707
	10M	64QAM	2000	2115	23.75	8.8	1.7989
		64QAM	2175	2132.5	23.73	8.8	1.7906
		64QAM	2350	2150	23.93	8.8	1.8750
	15M	64QAM	2025	2117.5	23.64	8.8	1.7539
		64QAM	2175	2132.5	23.76	8.8	1.8030

		64QAM	2325	2147.5	23.89	8.8	1.8578
	20M	64QAM	2050	2120	23.65	8.8	1.7579
		64QAM	2175	2132.5	23.74	8.8	1.7947
		64QAM	2300	2145	23.90	8.8	1.8621
	5M	256QAM	1975	2112.5	23.65	8.8	1.7579
		257QAM	2175	2132	23.79	8.8	1.8155
		258QAM	2375	2152.5	23.89	8.8	1.8578
	10M	259QAM	2000	2115	23.61	8.8	1.7418
		260QAM	2175	2132.5	23.70	8.8	1.7783
		261QAM	2350	2150	23.88	8.8	1.8535
	15M	262QAM	2025	2117.5	23.78	8.8	1.8113
		263QAM	2175	2132.5	23.76	8.8	1.8030
		264QAM	2325	2147.5	23.93	8.8	1.8750
	20M	265QAM	2050	2120	23.76	8.8	1.8030
		266QAM	2175	2132.5	23.80	8.8	1.8197
		267QAM	2300	2145	23.88	8.8	1.8535

LTE-Band13							
Ant	BW	Type of Modulation	Channel	Frequency MHz	Power	Gain	ERP
1+2	5M	QPSK	5205	748.5	23.61	7.9	0.8630
		QPSK	5230	751	23.10	7.9	0.7674
		QPSK	5255	753.5	22.88	7.9	0.7295
	10M	QPSK	5230	751	23.10	7.9	0.7674
	5M	16QAM	5205	748.5	23.38	7.9	0.8185
		16QAM	5230	751	23.06	7.9	0.7603
		16QAM	5255	753.5	22.85	7.9	0.7244
	10M	16QAM	5230	751	23.02	7.9	0.7534
	5M	64QAM	5205	748.5	23.29	7.9	0.8017
		64QAM	5230	751	22.99	7.9	0.7482
		64QAM	5255	753.5	22.84	7.9	0.7228
	10M	64QAM	5230	751	22.93	7.9	0.7379
	5M	256QAM	5205	748.5	23.21	7.9	0.7870
		256QAM	5230	751	23.02	7.9	0.7534
		256QAM	5255	753.5	22.83	7.9	0.7211
	10M	256QAM	5230	751	22.96	7.9	0.7430

LTE-Band66							
Ant	BW	Type of Modulation	Channel	Frequency MHz	Power	Gain	EIRP
1+2	5M	QPSK	66461	2112.5	23.70	8.8	1.7783
		QPSK	66786	2145	23.86	8.8	1.8450
		QPSK	67111	2177.5	24.43	8.8	2.1038
	10M	QPSK	66486	2115	23.75	8.8	1.7989
		QPSK	66786	2145	23.92	8.8	1.8707
		QPSK	67086	2175	24.48	8.8	2.1281
	15M	QPSK	66511	2117.5	23.79	8.8	1.8155
		QPSK	66786	2145	23.98	8.8	1.8967
		QPSK	67061	2172.5	24.53	8.8	2.1528
	20M	QPSK	66536	2120	23.84	8.8	1.8365
		QPSK	66786	2145	24.01	8.8	1.9099
		QPSK	67036	2170	24.55	8.8	2.1627
	5M	16QAM	66461	2112.5	23.66	8.8	1.7620
		16QAM	66786	2145	23.87	8.8	1.8493
		16QAM	67111	2177.5	24.41	8.8	2.0941
	10M	16QAM	66486	2115	23.68	8.8	1.7701
		16QAM	66786	2145	23.85	8.8	1.8408
		16QAM	67086	2175	24.44	8.8	2.1086
	15M	16QAM	66511	2117.5	23.76	8.8	1.8030
		16QAM	66786	2145	23.94	8.8	1.8793
		16QAM	67061	2172.5	24.50	8.8	2.1380
	20M	16QAM	66536	2120	23.77	8.8	1.8072
		16QAM	66786	2145	23.98	8.8	1.8967
		16QAM	67036	2170	24.52	8.8	2.1478
	5M	64QAM	66461	2112.5	23.64	8.8	1.7539
		64QAM	66786	2145	23.90	8.8	1.8621
		64QAM	67111	2177.5	24.41	8.8	2.0941
	10M	64QAM	66486	2115	23.71	8.8	1.7824
		64QAM	66786	2145	23.88	8.8	1.8535
		64QAM	67086	2175	24.44	8.8	2.1086
	15M	64QAM	66511	2117.5	23.75	8.8	1.7989
		64QAM	66786	2145	23.91	8.8	1.8664
		64QAM	67061	2172.5	24.47	8.8	2.1232
	20M	64QAM	66536	2120	23.76	8.8	1.8030
		64QAM	66786	2145	23.96	8.8	1.8880
		64QAM	67036	2170	24.49	8.8	2.1330
	5M	256QAM	66461	2112.5	23.61	8.8	1.7418
		257QAM	66786	2145	23.87	8.8	1.8493
		258QAM	67111	2177.5	23.60	8.8	1.7378
	10M	259QAM	66486	2115	23.67	8.8	1.7660
		260QAM	66786	2145	23.85	8.8	1.8408
		261QAM	67086	2175	23.62	8.8	1.7458

	15M	262QAM	66511	2117.5	23.72	8.8	1.7865
		263QAM	66786	2145	23.88	8.8	1.8535
		264QAM	67061	2172.5	23.67	8.8	1.7660
	20M	265QAM	66536	2120	23.73	8.8	1.7906
		266QAM	66786	2145	23.94	8.8	1.8793
		267QAM	67036	2170	24.44	8.8	1.7783

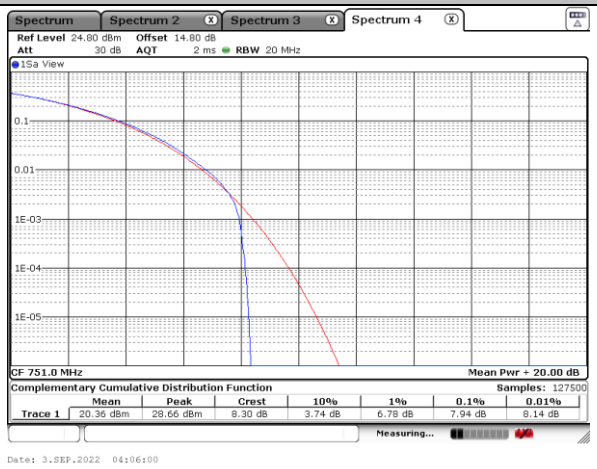
LTE Band 13_MIMO Ant1

Peak-to-Average Ratio

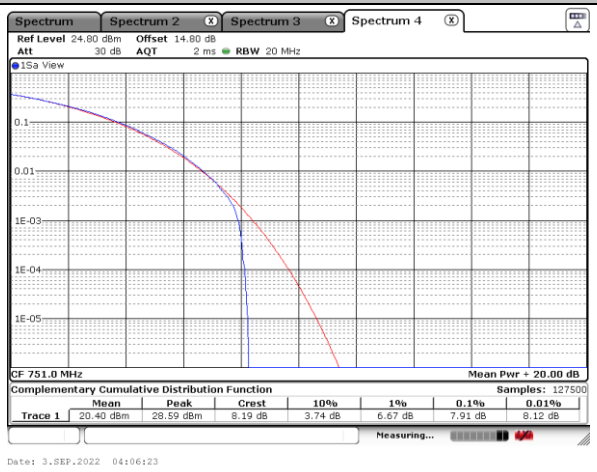
Mode	LTE Band 13 / 10MHz				
Mod.	QPSK	16QAM	64QAM	256QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	7.94	7.91	7.88	8.03	PASS

LTE Band 13 / 10MHz

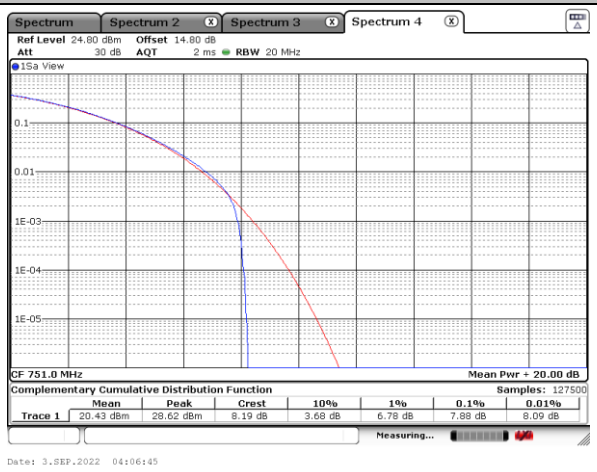
Middle Channel / Full RB/ QPSK



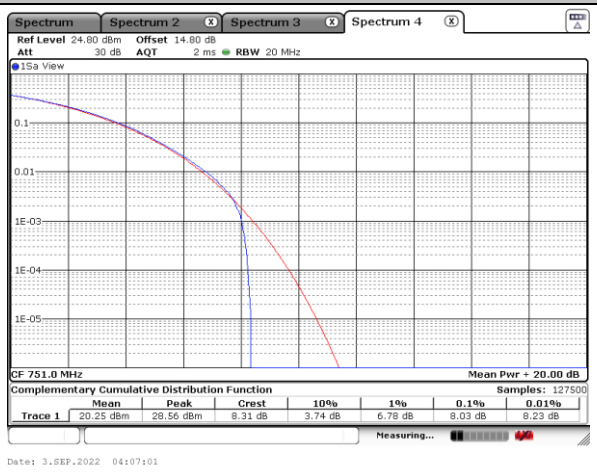
Middle Channel / Full RB/ 16QAM



Middle Channel / Full RB/ 64QAM



Middle Channel / Full RB/ 256QAM

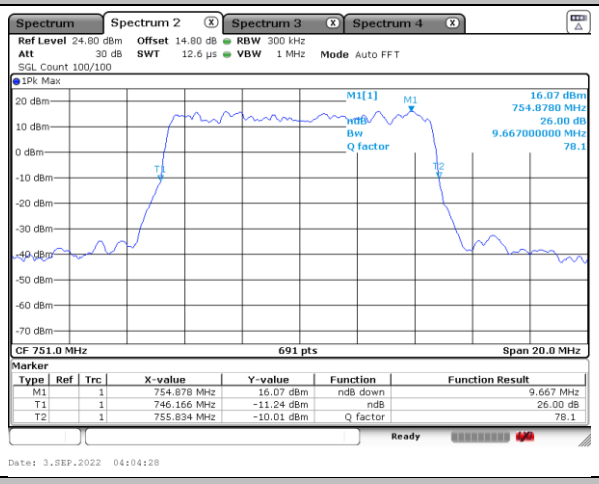


26dB Bandwidth

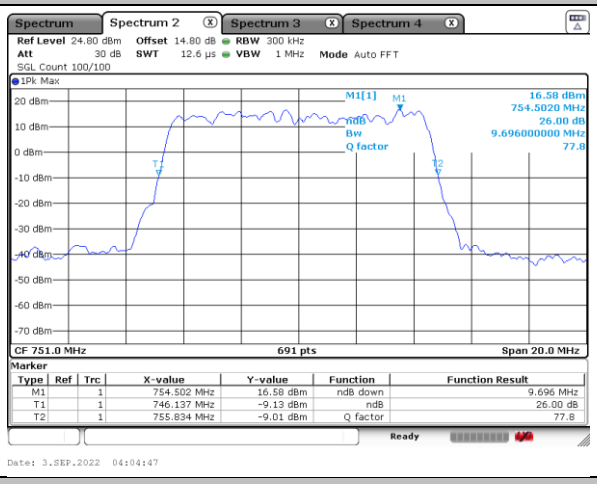
Mode	LTE Band 13 : 26dB BW(MHz)	
BW	10MHz	
Mod.	QPSK	16QAM
Middle CH	9.67	9.70
BW	5MHz	
Mod.	QPSK	16QAM
Middle CH	5.09	5.09

LTE Band 13

Middle Channel / 10MHz / QPSK

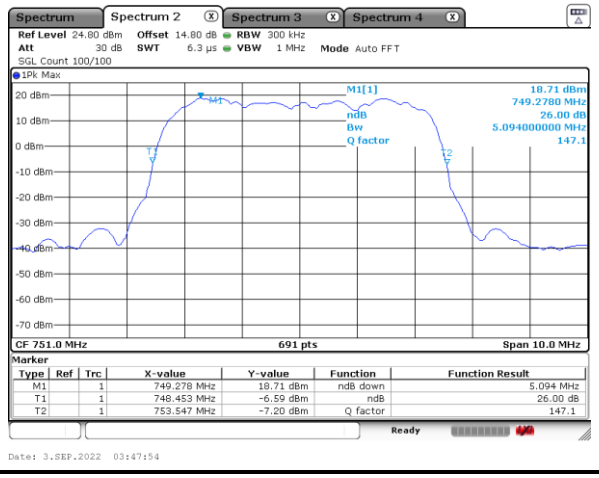


Middle Channel / 10MHz / 16QAM

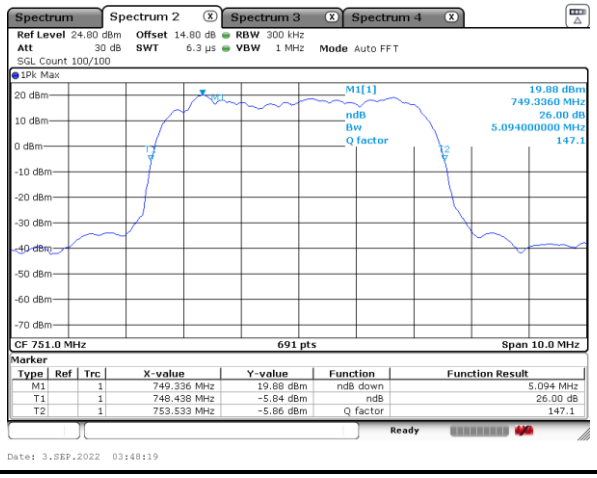


LTE Band 13

Middle Channel / 5MHz / QPSK



Middle Channel / 5MHz / 16QAM

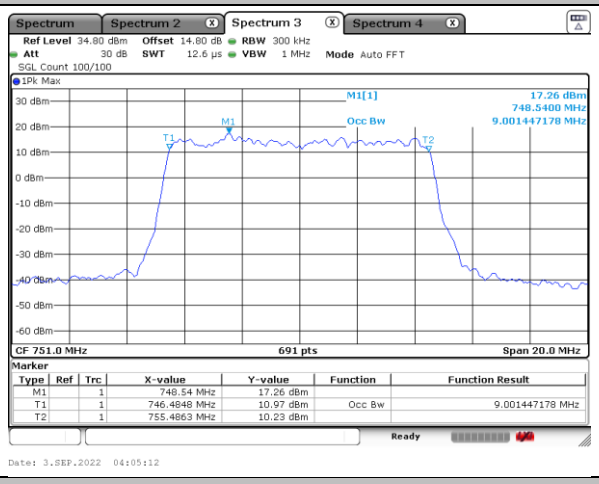


Occupied Bandwidth

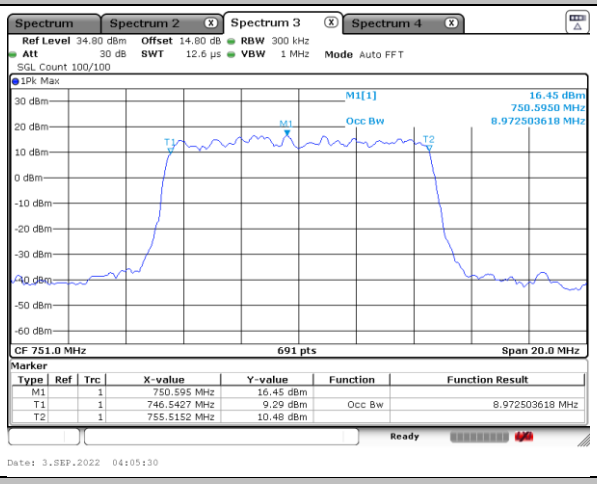
Mode	LTE Band 13 : 99%OBW(MHz)	
BW	10MHz	
Mod.	QPSK	16QAM
Middle CH	9.00	8.97
BW	5MHz	
Mod.	QPSK	16QAM
Middle CH	4.60	4.57

LTE Band 13

Middle Channel / 10MHz / QPSK

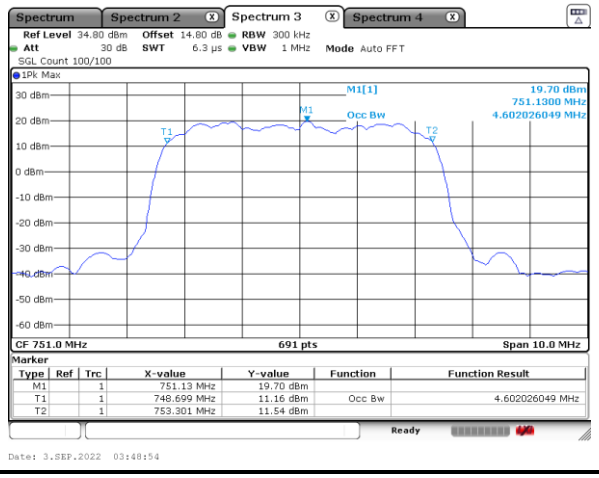


Middle Channel / 10MHz / 16QAM

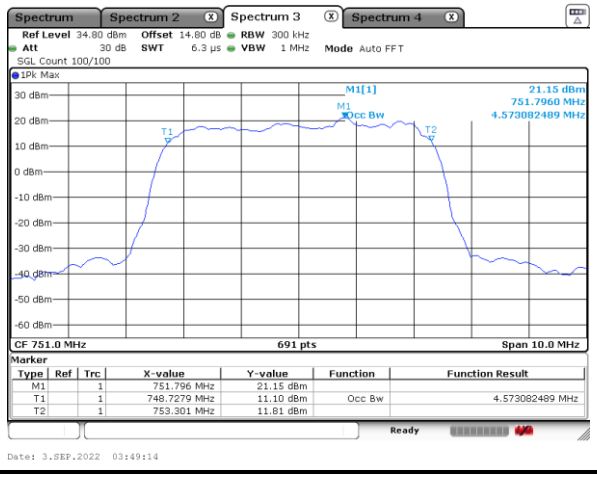


LTE Band 13

Middle Channel / 5MHz / QPSK



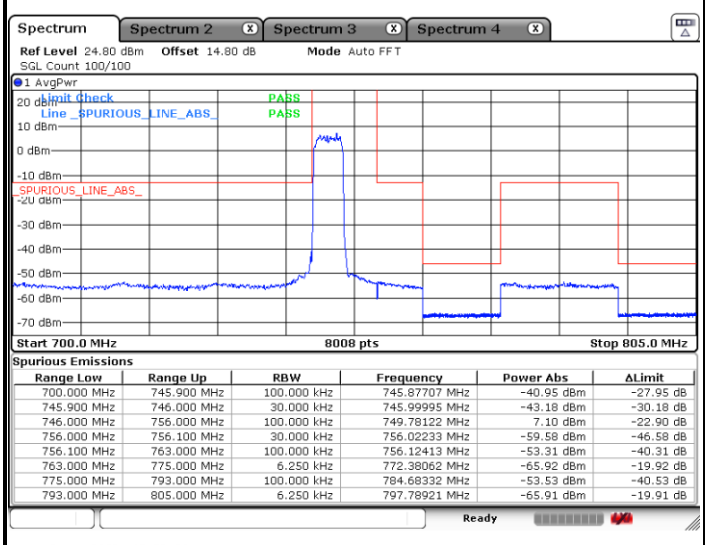
Middle Channel / 5MHz / 16QAM



Conducted Band Edge

LTE Band 13 / 5MHz / QPSK

Lowest Band Edge / Full RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.87707 MHz	-40.95 dBm	-27.95 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.99995 MHz	-43.18 dBm	-30.18 dB
746.000 MHz	756.000 MHz	100.000 kHz	749.78122 MHz	7.10 dBm	-22.90 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.02233 MHz	-59.58 dBm	-46.58 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.12413 MHz	-53.31 dBm	-40.31 dB
763.000 MHz	775.000 MHz	6.250 kHz	772.38062 MHz	-65.92 dBm	-19.92 dB
775.000 MHz	793.000 MHz	100.000 kHz	784.68332 MHz	-53.53 dBm	-40.53 dB
793.000 MHz	805.000 MHz	6.250 kHz	797.78921 MHz	-65.91 dBm	-19.91 dB

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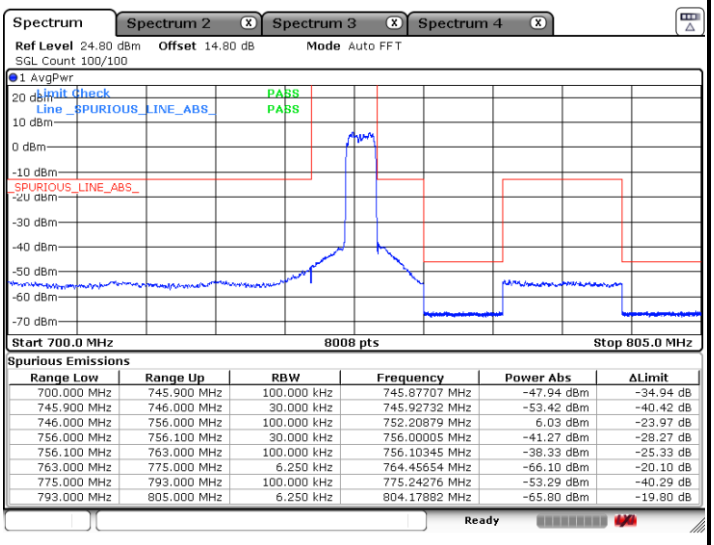
Highest Band Edge / Full RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.87707 MHz	-47.94 dBm	-34.94 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.92732 MHz	-53.42 dBm	-40.42 dB
746.000 MHz	756.000 MHz	100.000 kHz	752.20879 MHz	6.03 dBm	-23.97 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.00005 MHz	-41.27 dBm	-28.27 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.10345 MHz	-38.33 dBm	-25.33 dB
763.000 MHz	775.000 MHz	6.250 kHz	764.45654 MHz	-66.10 dBm	-20.10 dB
775.000 MHz	793.000 MHz	100.000 kHz	775.24276 MHz	-53.29 dBm	-40.29 dB
793.000 MHz	805.000 MHz	6.250 kHz	804.17882 MHz	-65.80 dBm	-19.80 dB

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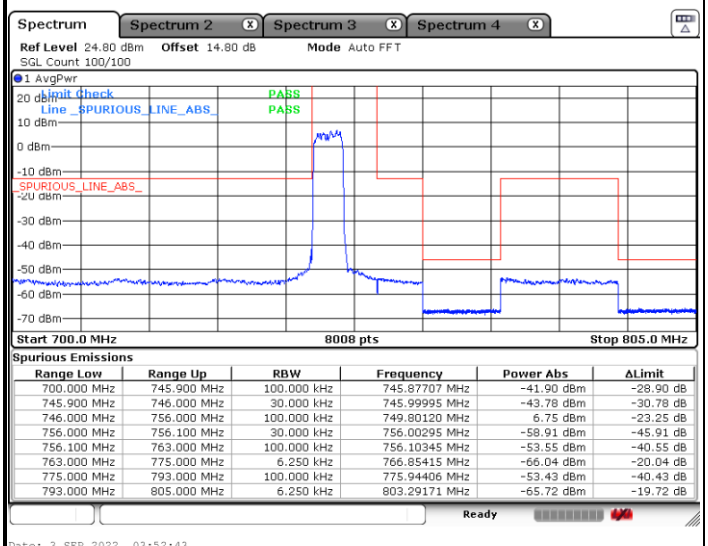
LTE Band 13 / 5MHz / 16QAM

Lowest Band Edge / Full RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.87707 MHz	-41.90 dBm	-28.90 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.99995 MHz	-43.78 dBm	-30.78 dB
746.000 MHz	756.000 MHz	100.000 kHz	749.80120 MHz	6.75 dBm	-23.25 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.00295 MHz	-58.91 dBm	-45.91 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.10345 MHz	-53.55 dBm	-40.55 dB
763.000 MHz	775.000 MHz	6.250 kHz	766.85415 MHz	-66.04 dBm	-20.04 dB
775.000 MHz	793.000 MHz	100.000 kHz	775.94406 MHz	-53.43 dBm	-40.43 dB
793.000 MHz	805.000 MHz	6.250 kHz	803.29171 MHz	-65.72 dBm	-19.72 dB

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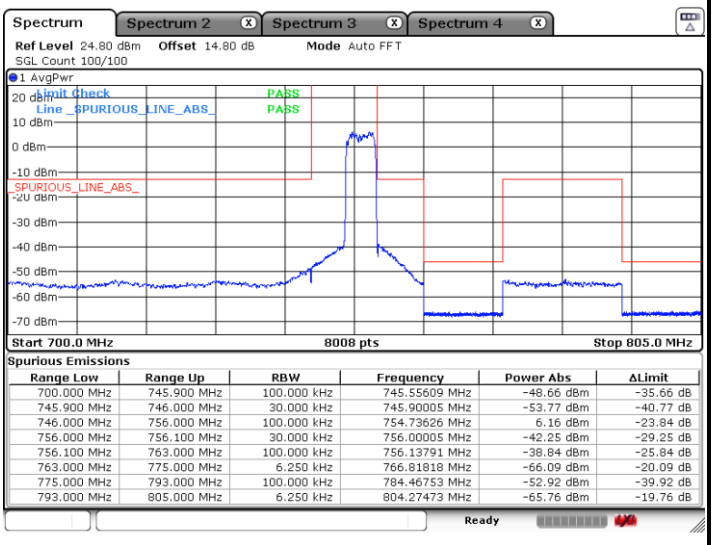
Highest Band Edge / Full RB



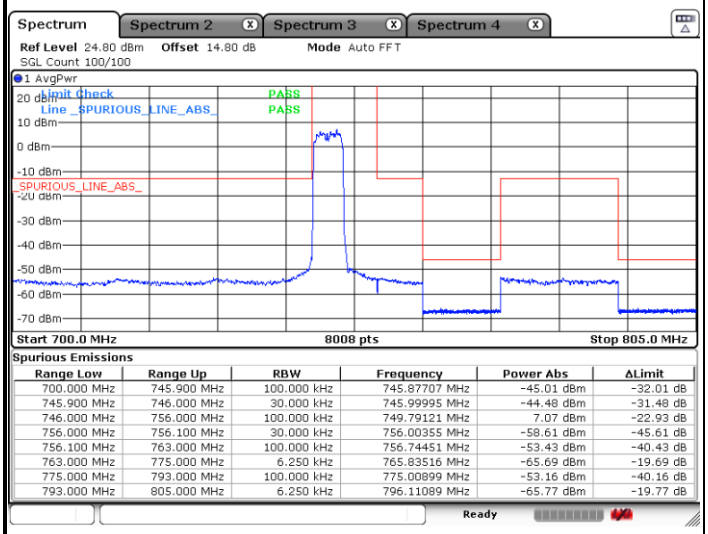
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.55609 MHz	-48.66 dBm	-35.66 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.90005 MHz	-53.77 dBm	-40.77 dB
746.000 MHz	756.000 MHz	100.000 kHz	754.73626 MHz	6.16 dBm	-23.84 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.00005 MHz	-42.25 dBm	-29.25 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.13791 MHz	-38.84 dBm	-25.84 dB
763.000 MHz	775.000 MHz	6.250 kHz	766.81818 MHz	-66.09 dBm	-20.09 dB
775.000 MHz	793.000 MHz	100.000 kHz	784.46753 MHz	-52.92 dBm	-39.92 dB
793.000 MHz	805.000 MHz	6.250 kHz	804.27473 MHz	-65.76 dBm	-19.76 dB

Date: 3.SEP.2022 03:40:50

LTE Band 13 / 5MHz / 64QAM

Lowest Band Edge / Full RB

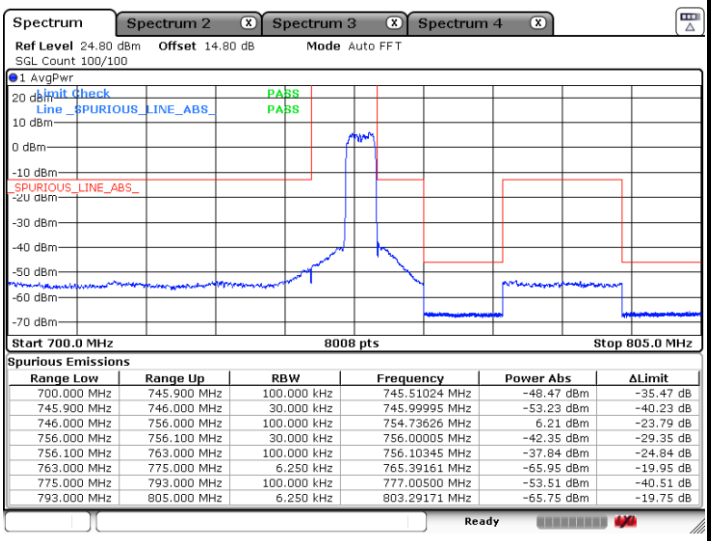


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.87707 MHz	-45.01 dBm	-32.01 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.99995 MHz	-44.48 dBm	-31.48 dB
746.000 MHz	756.000 MHz	100.000 kHz	749.79121 MHz	7.07 dBm	-22.93 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.00355 MHz	-58.61 dBm	-45.61 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.74451 MHz	-53.43 dBm	-40.43 dB
763.000 MHz	775.000 MHz	6.250 kHz	765.83516 MHz	-65.69 dBm	-19.69 dB
775.000 MHz	793.000 MHz	100.000 kHz	775.00899 MHz	-53.16 dBm	-40.16 dB
793.000 MHz	805.000 MHz	6.250 kHz	796.11089 MHz	-65.77 dBm	-19.77 dB

Date: 3.SEP.2022 03:52:58

Highest Band Edge / Full RB



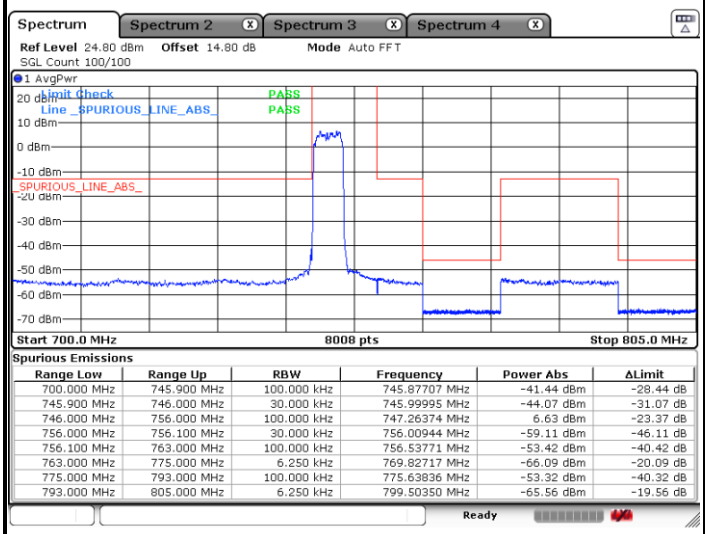
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.51024 MHz	-48.47 dBm	-35.47 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.99995 MHz	-53.23 dBm	-40.23 dB
746.000 MHz	756.000 MHz	100.000 kHz	754.73626 MHz	6.21 dBm	-23.79 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.00005 MHz	-42.35 dBm	-29.35 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.10345 MHz	-37.84 dBm	-24.84 dB
763.000 MHz	775.000 MHz	6.250 kHz	765.39161 MHz	-65.95 dBm	-19.95 dB
775.000 MHz	793.000 MHz	100.000 kHz	777.00500 MHz	-53.51 dBm	-40.51 dB
793.000 MHz	805.000 MHz	6.250 kHz	803.29171 MHz	-65.75 dBm	-19.75 dB

Date: 3.SEP.2022 03:42:36

LTE Band 13 / 5MHz / 256QAM

Lowest Band Edge / Full RB

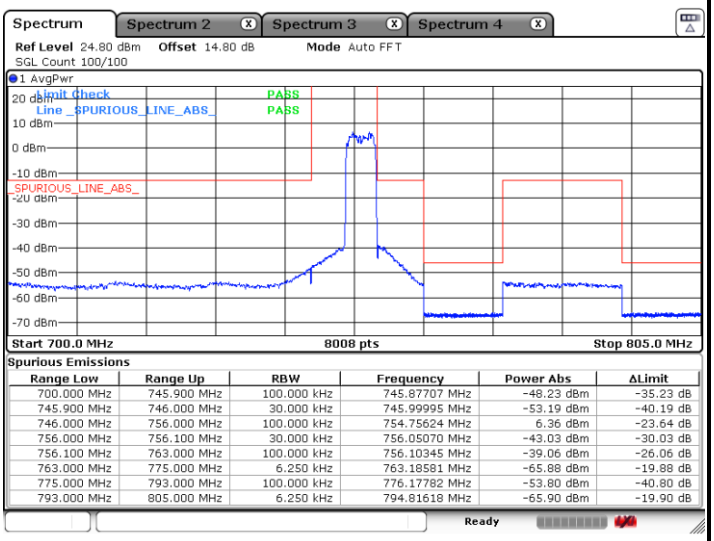


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.87707 MHz	-41.44 dBm	-28.44 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.99995 MHz	-44.07 dBm	-31.07 dB
746.000 MHz	756.000 MHz	100.000 kHz	747.26374 MHz	6.63 dBm	-23.37 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.00944 MHz	-59.11 dBm	-46.11 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.53771 MHz	-53.42 dBm	-40.42 dB
763.000 MHz	775.000 MHz	6.250 kHz	769.82717 MHz	-66.09 dBm	-20.09 dB
775.000 MHz	793.000 MHz	100.000 kHz	775.63836 MHz	-53.32 dBm	-40.32 dB
793.000 MHz	805.000 MHz	6.250 kHz	799.50350 MHz	-65.56 dBm	-19.56 dB

Date: 3.SEP.2022 03:53:19

Highest Band Edge / Full RB



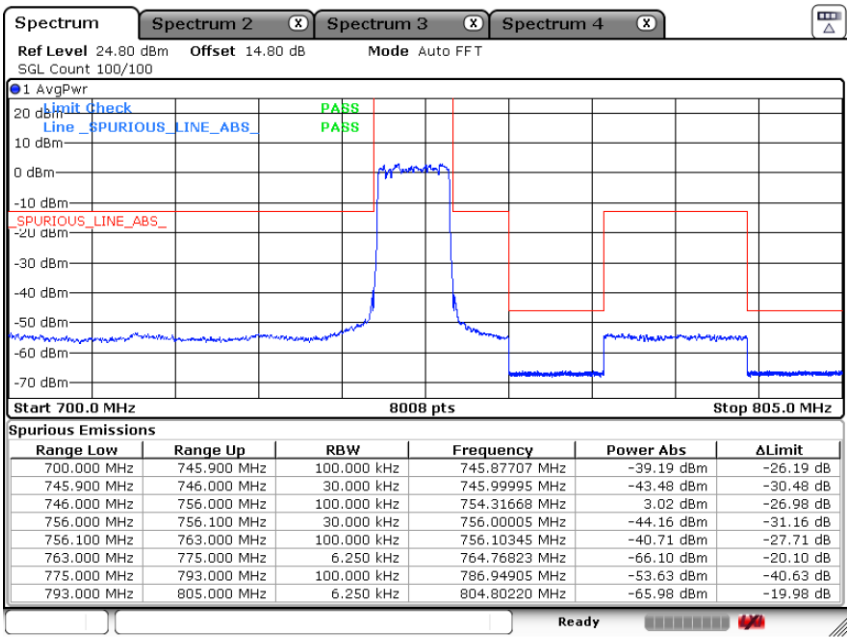
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.87707 MHz	-48.23 dBm	-35.23 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.99995 MHz	-53.19 dBm	-40.19 dB
746.000 MHz	756.000 MHz	100.000 kHz	754.75624 MHz	6.36 dBm	-23.64 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.05070 MHz	-43.03 dBm	-30.03 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.10345 MHz	-39.06 dBm	-26.06 dB
763.000 MHz	775.000 MHz	6.250 kHz	763.18581 MHz	-65.88 dBm	-19.88 dB
775.000 MHz	793.000 MHz	100.000 kHz	776.17782 MHz	-53.80 dBm	-40.80 dB
793.000 MHz	805.000 MHz	6.250 kHz	794.81618 MHz	-65.90 dBm	-19.90 dB

Date: 3.SEP.2022 03:43:12

LTE Band 13 / 10MHz / QPSK

Middle Band Edge / Full RB



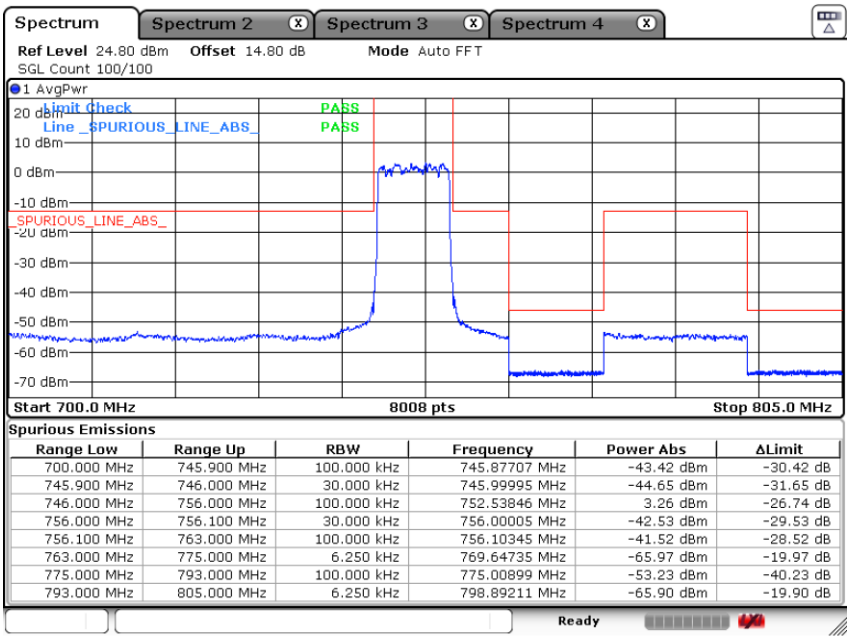
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.87707 MHz	-39.19 dBm	-26.19 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.99995 MHz	-43.48 dBm	-30.48 dB
746.000 MHz	756.000 MHz	100.000 kHz	754.31668 MHz	3.02 dBm	-26.98 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.00005 MHz	-44.16 dBm	-31.16 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.10345 MHz	-40.71 dBm	-27.71 dB
763.000 MHz	775.000 MHz	6.250 kHz	764.76823 MHz	-66.10 dBm	-20.10 dB
775.000 MHz	793.000 MHz	100.000 kHz	786.94905 MHz	-53.63 dBm	-40.63 dB
793.000 MHz	805.000 MHz	6.250 kHz	804.80220 MHz	-65.98 dBm	-19.98 dB

Date: 3.SEP.2022 04:03:49

LTE Band 13 / 10MHz / 16QAM

Middle Band Edge / Full RB



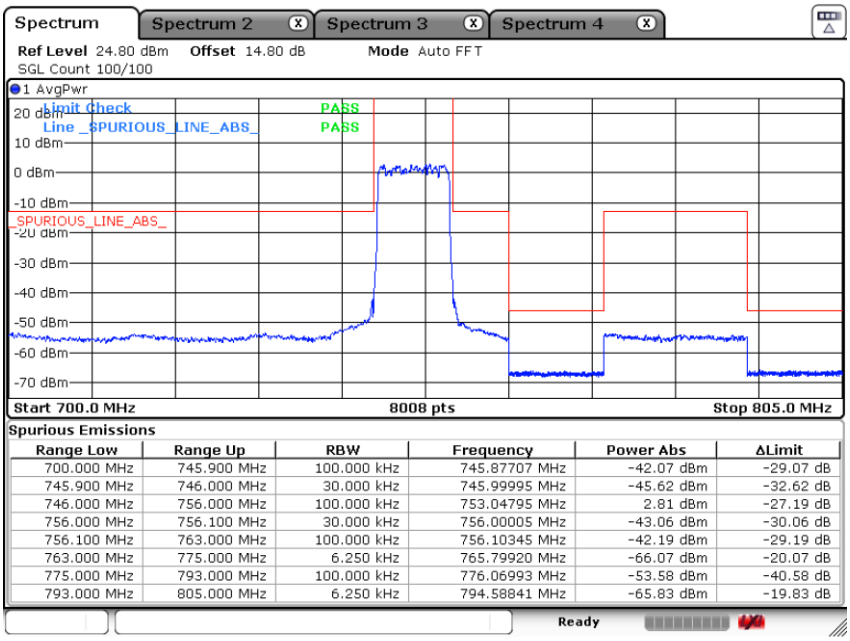
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.87707 MHz	-43.42 dBm	-30.42 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.99995 MHz	-44.65 dBm	-31.65 dB
746.000 MHz	756.000 MHz	100.000 kHz	752.53846 MHz	3.26 dBm	-26.74 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.00005 MHz	-42.53 dBm	-29.53 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.10345 MHz	-41.52 dBm	-28.52 dB
763.000 MHz	775.000 MHz	6.250 kHz	769.64735 MHz	-65.97 dBm	-19.97 dB
775.000 MHz	793.000 MHz	100.000 kHz	775.00899 MHz	-53.23 dBm	-40.23 dB
793.000 MHz	805.000 MHz	6.250 kHz	798.89211 MHz	-65.90 dBm	-19.90 dB

Date: 3.SEP.2022 04:03:30

LTE Band 13 / 10MHz / 64QAM

Middle Band Edge / Full RB



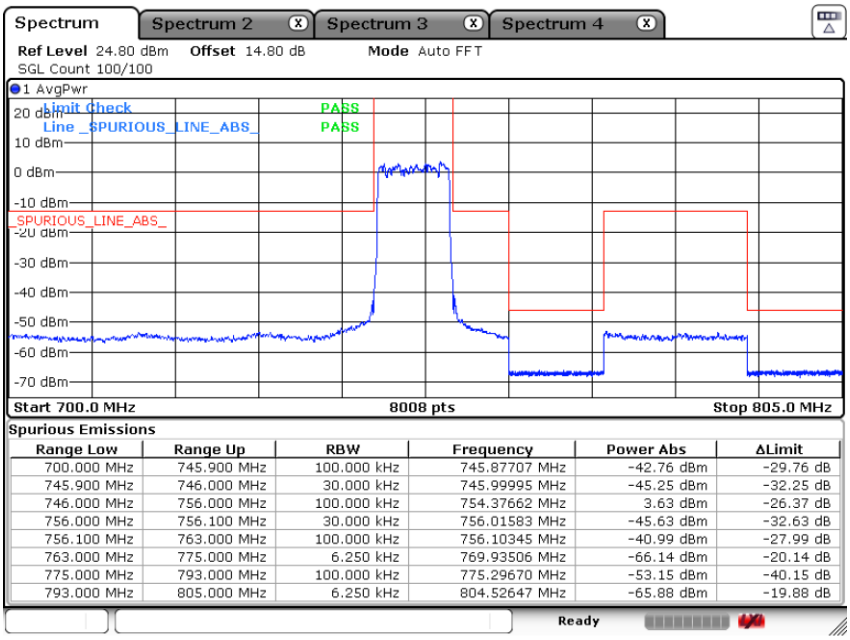
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.87707 MHz	-42.07 dBm	-29.07 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.99995 MHz	-45.62 dBm	-32.62 dB
746.000 MHz	756.000 MHz	100.000 kHz	753.04795 MHz	2.81 dBm	-27.19 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.00005 MHz	-43.06 dBm	-30.06 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.10345 MHz	-42.19 dBm	-29.19 dB
763.000 MHz	775.000 MHz	6.250 kHz	765.79920 MHz	-66.07 dBm	-20.07 dB
775.000 MHz	793.000 MHz	100.000 kHz	776.06993 MHz	-53.58 dBm	-40.58 dB
793.000 MHz	805.000 MHz	6.250 kHz	794.58841 MHz	-65.83 dBm	-19.83 dB

Date: 3.SEP.2022 04:03:12

LTE Band 13 / 10MHz / 256QAM

Middle Band Edge / Full RB



Spurious Emissions

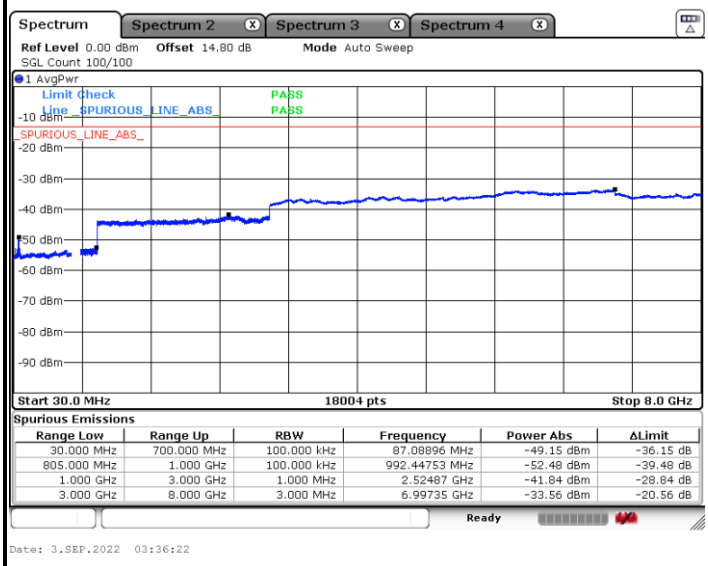
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.87707 MHz	-42.76 dBm	-29.76 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.99995 MHz	-45.25 dBm	-32.25 dB
746.000 MHz	756.000 MHz	100.000 kHz	754.37662 MHz	3.63 dBm	-26.37 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.01583 MHz	-45.63 dBm	-32.63 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.10345 MHz	-40.99 dBm	-27.99 dB
763.000 MHz	775.000 MHz	6.250 kHz	769.93506 MHz	-66.14 dBm	-20.14 dB
775.000 MHz	793.000 MHz	100.000 kHz	775.29670 MHz	-53.15 dBm	-40.15 dB
793.000 MHz	805.000 MHz	6.250 kHz	804.52647 MHz	-65.88 dBm	-19.88 dB

Date: 3.SEP.2022 04:03:01

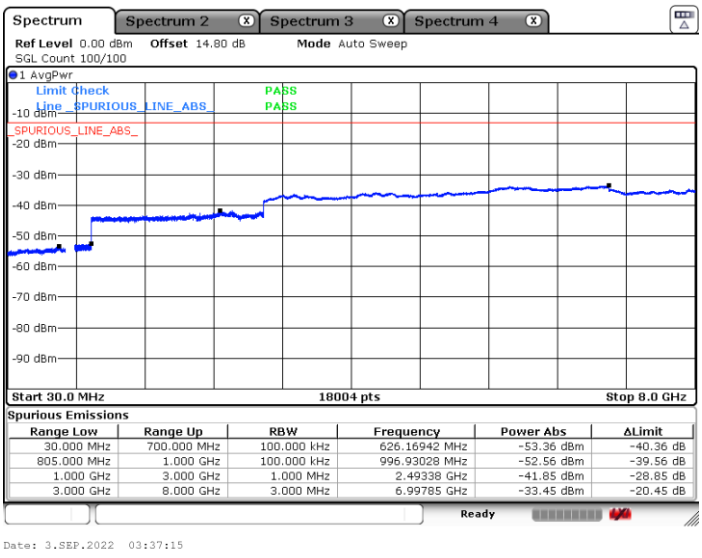
Conducted Spurious Emission

LTE Band 13 / 5MHz

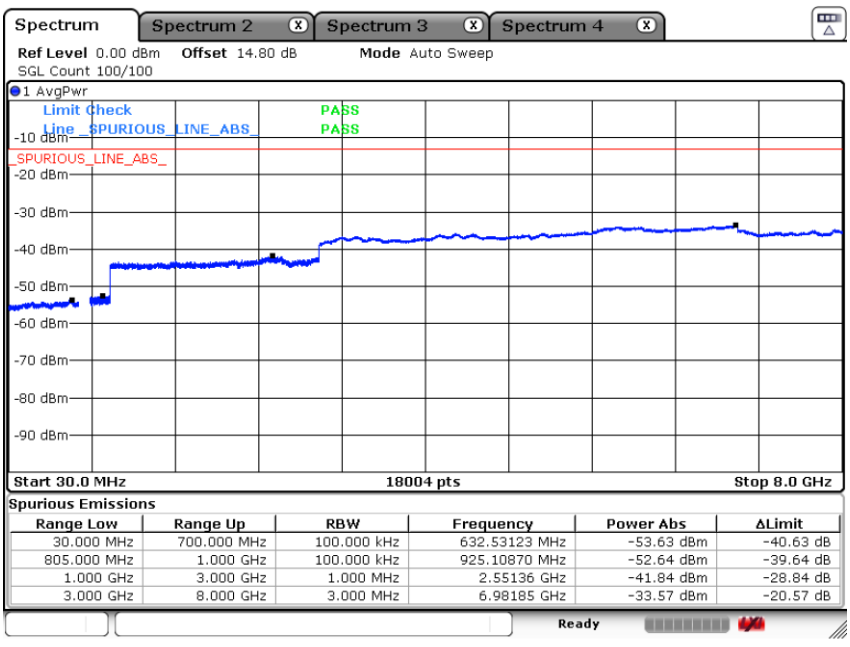
Lowest Channel / QPSK



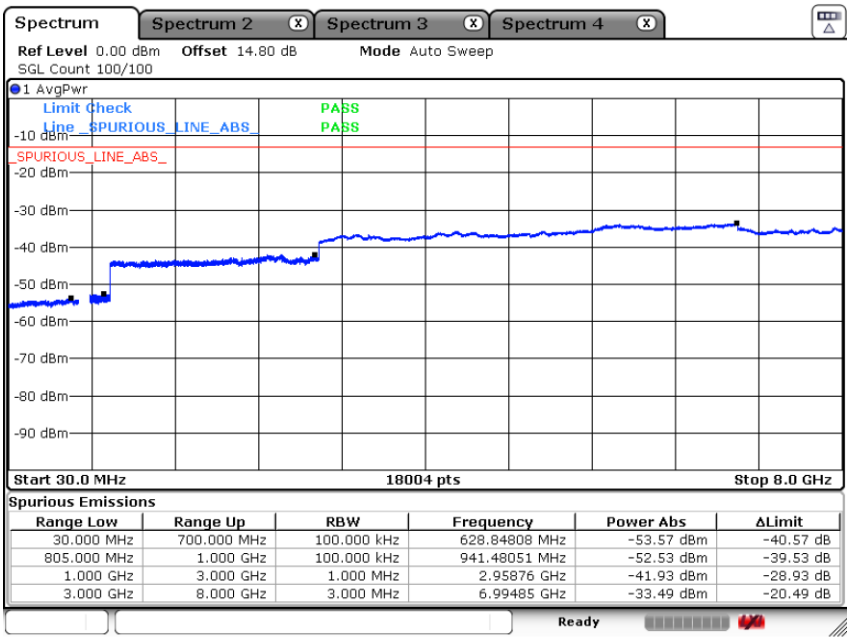
Middle Channel / QPSK



Highest Channel / QPSK



LTE Band 13 / 10MHz
Middle Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	700.000 MHz	100.000 kHz	628.84808 MHz	-53.57 dBm	-40.57 dB
805.000 MHz	1.000 GHz	100.000 kHz	941.48051 MHz	-52.53 dBm	-39.53 dB
1.000 GHz	3.000 GHz	1.000 MHz	2.95876 GHz	-41.93 dBm	-28.93 dB
3.000 GHz	8.000 GHz	3.000 MHz	6.99485 GHz	-33.49 dBm	-20.49 dB

Frequency Stability

Test Conditions		LTE Band 13 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0102	PASS
40	Normal Voltage	0.0081	
30	Normal Voltage	0.0053	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0021	
0	Normal Voltage	0.0051	
-10	Normal Voltage	0.0063	
-20	Normal Voltage	0.0095	
-30	Normal Voltage	0.0112	
20	Maximum Voltage	0.0126	
20	Normal Voltage	0.0009	
20	End Point	0.0036	

Note:

1. Normal Voltage =12V. ; End Point =11.4 V. ; Maximum Voltage =12.6 V
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

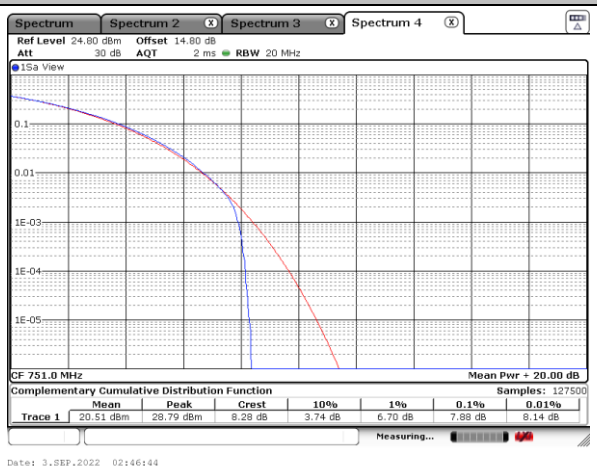
LTE Band 13_MIMO Ant 2

Peak-to-Average Ratio

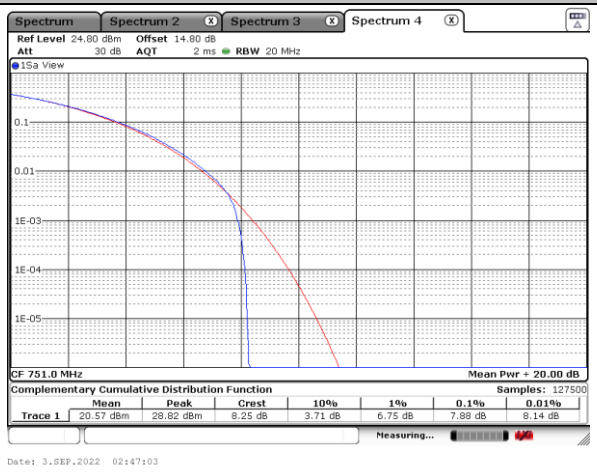
Mode	LTE Band 13 / 10MHz				
Mod.	QPSK	16QAM	64QAM	256QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	7.88	7.88	7.83	7.80	PASS

LTE Band 13 / 10MHz

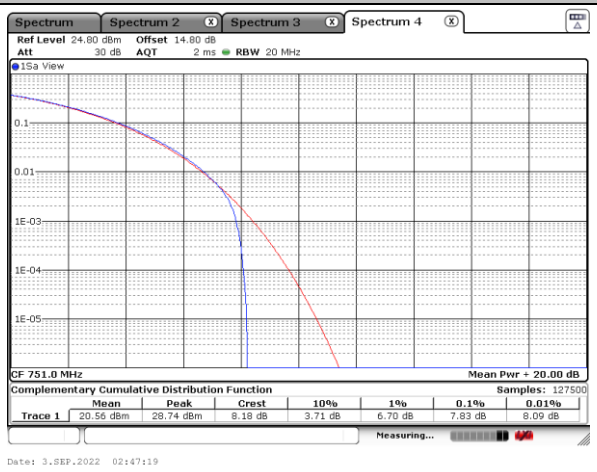
Middle Channel / Full RB/ QPSK



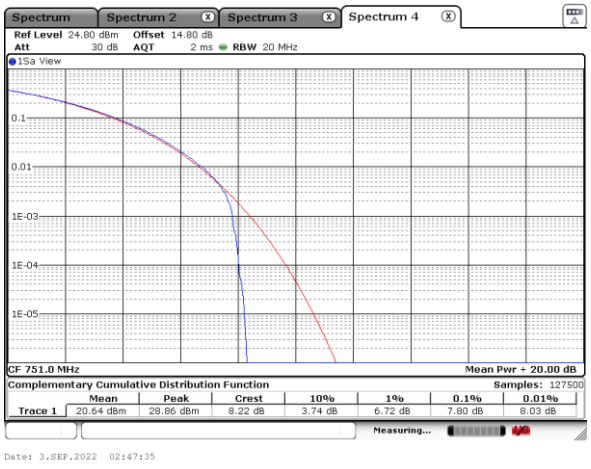
Middle Channel / Full RB/ 16QAM



Middle Channel / Full RB/ 64QAM



Middle Channel / Full RB/ 256QAM

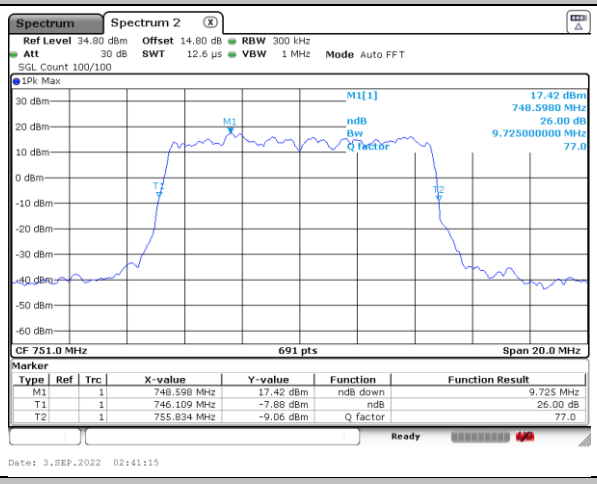


26dB Bandwidth

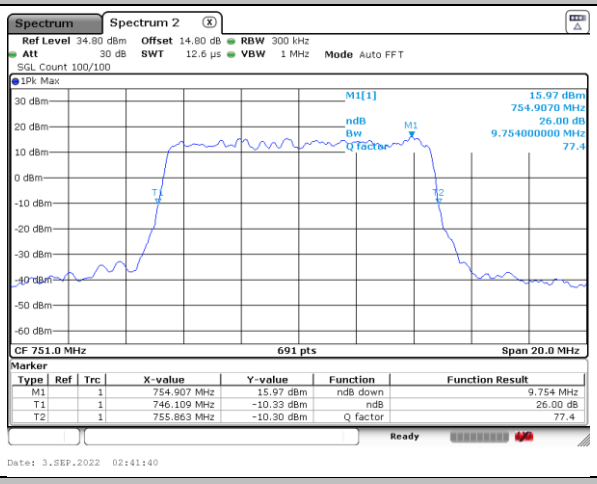
Mode	LTE Band 13 : 26dB BW(MHz)	
BW	10MHz	
Mod.	QPSK	16QAM
Middle CH	9.73	9.75
BW	5MHz	
Mod.	QPSK	16QAM
Middle CH	5.08	5.07

LTE Band 13

Middle Channel / 10MHz / QPSK

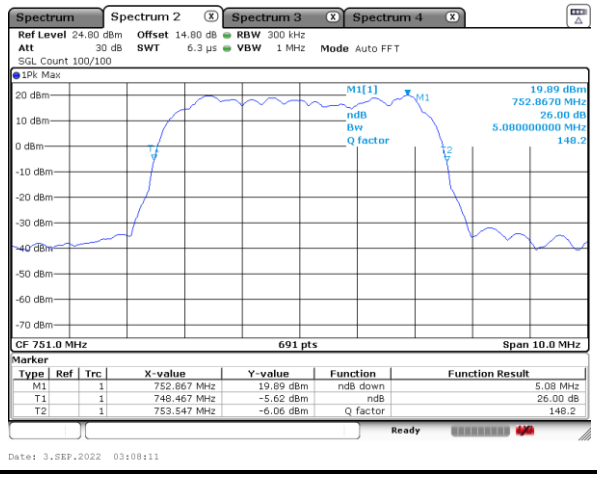


Middle Channel / 10MHz / 16QAM

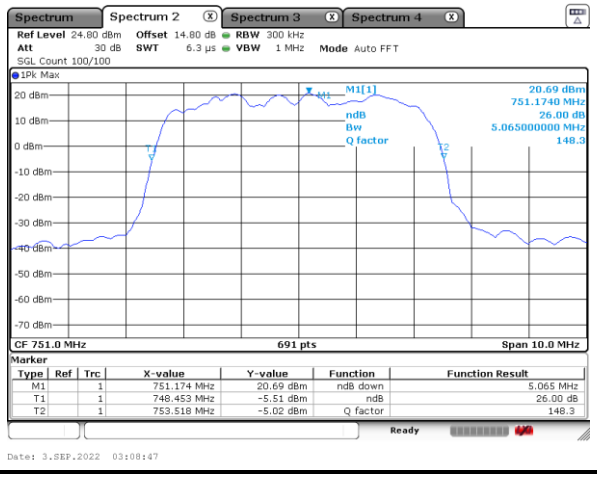


LTE Band 13

Middle Channel / 5MHz / QPSK



Middle Channel / 5MHz / 16QAM

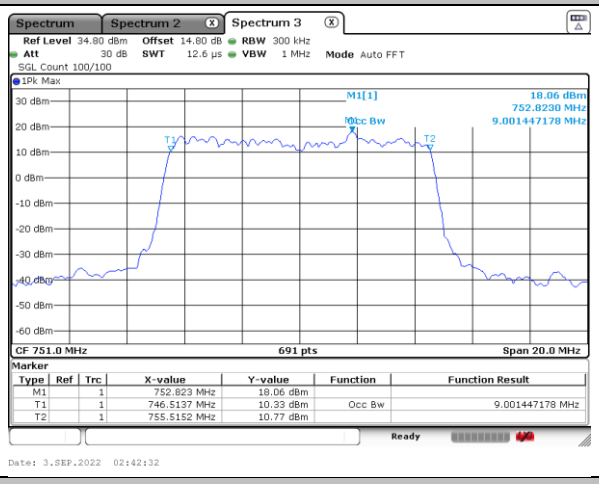


Occupied Bandwidth

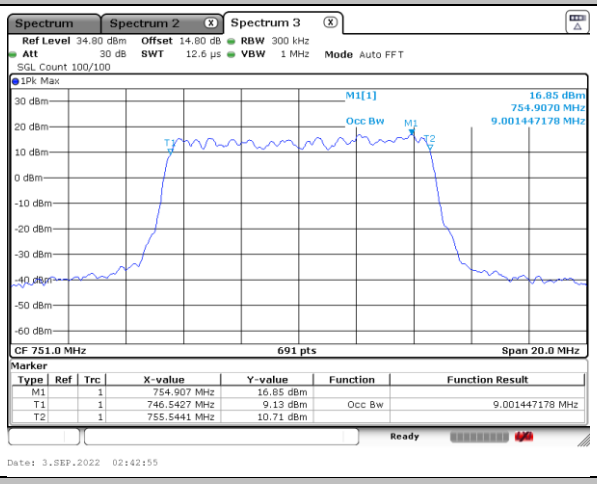
Mode	LTE Band 13 : 99%OBW(MHz)	
BW	10MHz	
Mod.	QPSK	16QAM
Middle CH	9.00	9.00
BW	5MHz	
Mod.	QPSK	16QAM
Middle CH	4.54	4.49

LTE Band 13

Middle Channel / 10MHz / QPSK

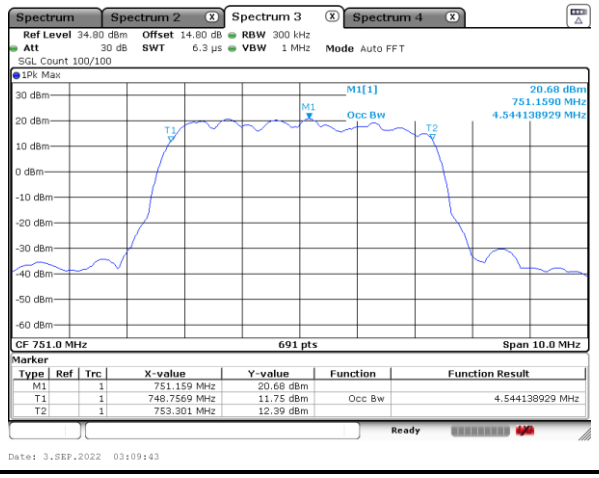


Middle Channel / 10MHz / 16QAM

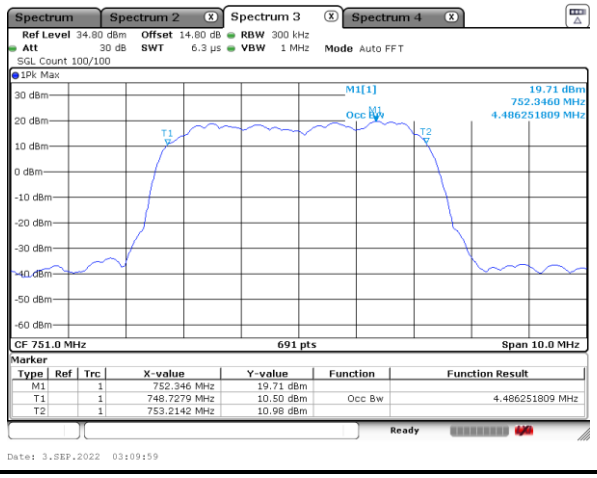


LTE Band 13

Middle Channel / 5MHz / QPSK



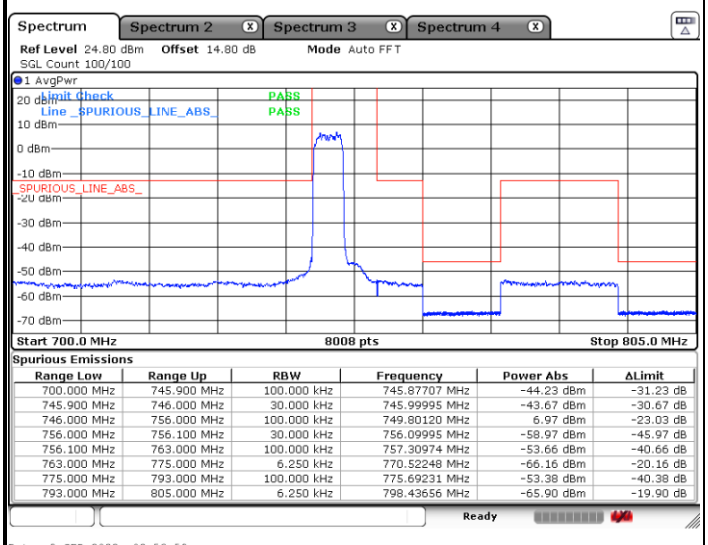
Middle Channel / 5MHz / 16QAM



Conducted Band Edge

LTE Band 13 / 5MHz / QPSK

Lowest Band Edge / Full RB

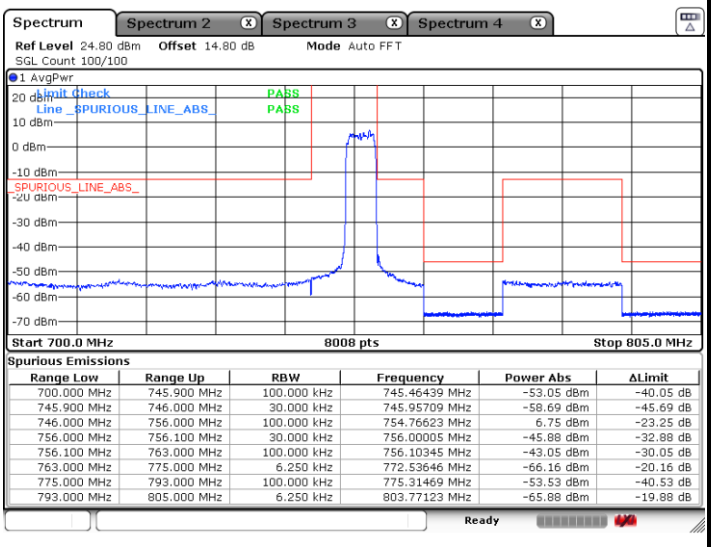


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.87707 MHz	-44.23 dBm	-31.23 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.99995 MHz	-43.67 dBm	-30.67 dB
746.000 MHz	756.000 MHz	100.000 kHz	749.80120 MHz	6.97 dBm	-23.03 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.09995 MHz	-58.97 dBm	-45.97 dB
756.100 MHz	763.000 MHz	100.000 kHz	757.30974 MHz	-53.66 dBm	-40.66 dB
763.000 MHz	775.000 MHz	6.250 kHz	770.52248 MHz	-66.16 dBm	-20.16 dB
775.000 MHz	793.000 MHz	100.000 kHz	775.69231 MHz	-53.38 dBm	-40.38 dB
793.000 MHz	805.000 MHz	6.250 kHz	798.43656 MHz	-65.90 dBm	-19.90 dB

Date: 3.SEP.2022 02:58:53

Highest Band Edge / Full RB



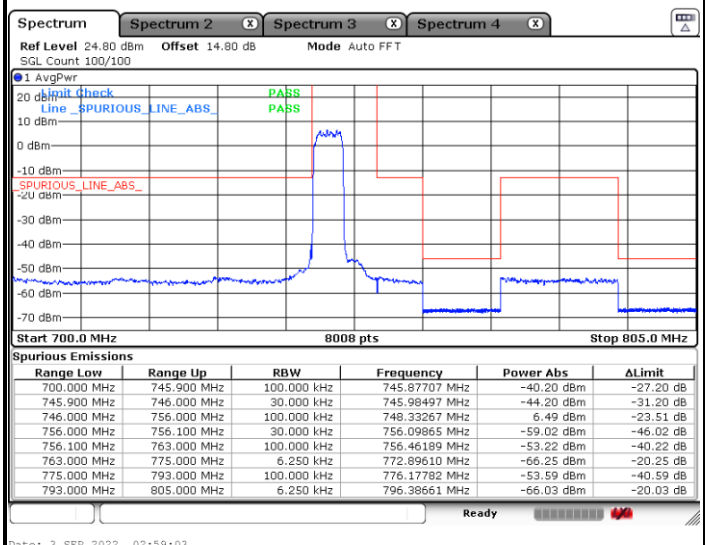
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.46439 MHz	-53.05 dBm	-40.05 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.95709 MHz	-58.69 dBm	-45.69 dB
746.000 MHz	756.000 MHz	100.000 kHz	754.76623 MHz	6.75 dBm	-23.25 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.00005 MHz	-45.88 dBm	-32.88 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.10345 MHz	-43.05 dBm	-30.05 dB
763.000 MHz	775.000 MHz	6.250 kHz	772.53646 MHz	-66.16 dBm	-20.16 dB
775.000 MHz	793.000 MHz	100.000 kHz	775.31469 MHz	-53.53 dBm	-40.53 dB
793.000 MHz	805.000 MHz	6.250 kHz	803.77123 MHz	-65.88 dBm	-19.88 dB

Date: 3.SEP.2022 03:27:19

LTE Band 13 / 5MHz / 16QAM

Lowest Band Edge / Full RB

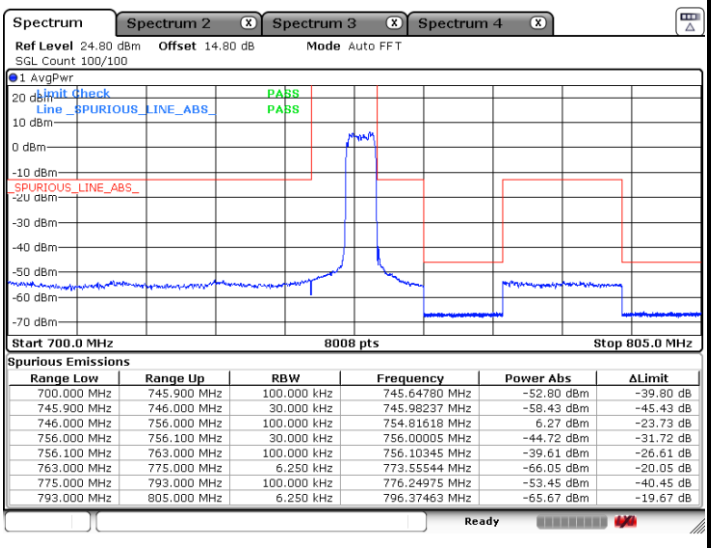


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.87707 MHz	-40.20 dBm	-27.20 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.98497 MHz	-44.20 dBm	-31.20 dB
746.000 MHz	756.000 MHz	100.000 kHz	748.33267 MHz	6.49 dBm	-23.51 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.09865 MHz	-59.02 dBm	-46.02 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.46189 MHz	-53.22 dBm	-40.22 dB
763.000 MHz	775.000 MHz	6.250 kHz	772.89610 MHz	-66.25 dBm	-20.25 dB
775.000 MHz	793.000 MHz	100.000 kHz	776.17782 MHz	-53.59 dBm	-40.59 dB
793.000 MHz	805.000 MHz	6.250 kHz	796.38661 MHz	-66.03 dBm	-20.03 dB

Date: 3.SEP.2022 02:59:03

Highest Band Edge / Full RB



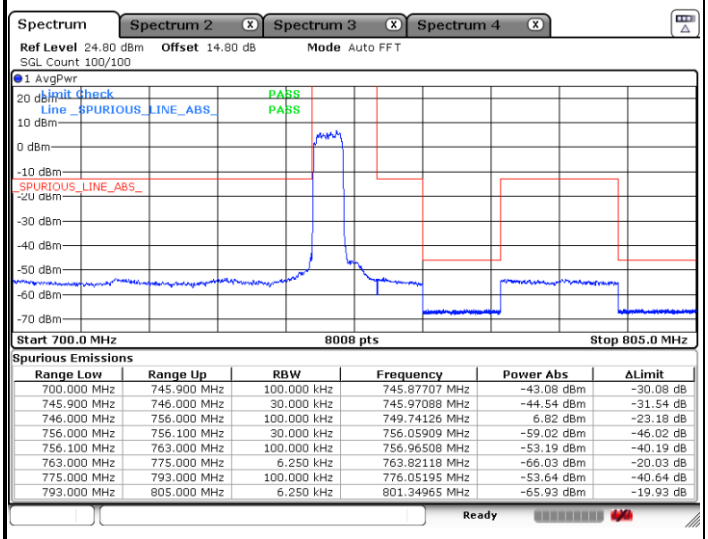
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.64780 MHz	-52.80 dBm	-39.80 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.98237 MHz	-58.43 dBm	-45.43 dB
746.000 MHz	756.000 MHz	100.000 kHz	754.81618 MHz	6.27 dBm	-23.73 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.00005 MHz	-44.72 dBm	-31.72 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.10345 MHz	-39.61 dBm	-26.61 dB
763.000 MHz	775.000 MHz	6.250 kHz	773.55544 MHz	-66.05 dBm	-20.05 dB
775.000 MHz	793.000 MHz	100.000 kHz	776.24975 MHz	-53.45 dBm	-40.45 dB
793.000 MHz	805.000 MHz	6.250 kHz	796.37463 MHz	-65.67 dBm	-19.67 dB

Date: 3.SEP.2022 03:27:43

LTE Band 13 / 5MHz / 64QAM

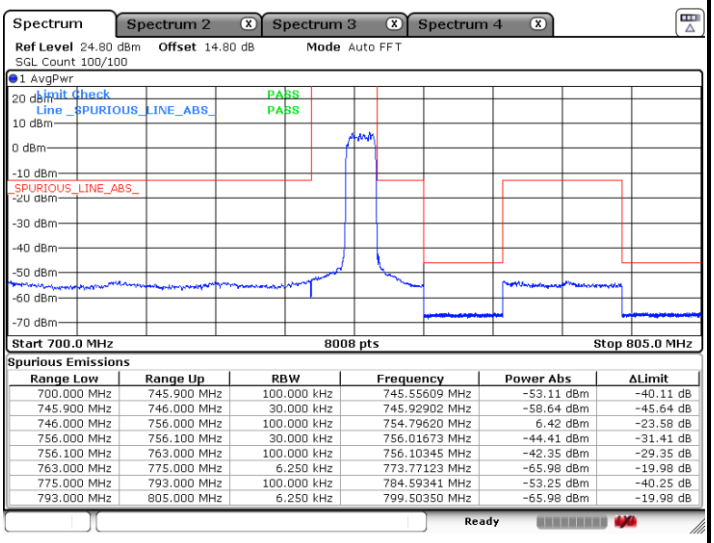
Lowest Band Edge / Full RB



Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.87707 MHz	-43.08 dBm	-30.08 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.97088 MHz	-44.54 dBm	-31.54 dB
746.000 MHz	756.000 MHz	100.000 kHz	749.74126 MHz	6.82 dBm	-23.18 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.05909 MHz	-59.02 dBm	-46.02 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.96508 MHz	-53.19 dBm	-40.19 dB
763.000 MHz	775.000 MHz	6.250 kHz	763.82118 MHz	-66.03 dBm	-20.03 dB
775.000 MHz	793.000 MHz	100.000 kHz	776.05195 MHz	-53.64 dBm	-40.64 dB
793.000 MHz	805.000 MHz	6.250 kHz	801.34965 MHz	-65.93 dBm	-19.93 dB

Date: 3.SEP.2022 02:59:17

Highest Band Edge / Full RB

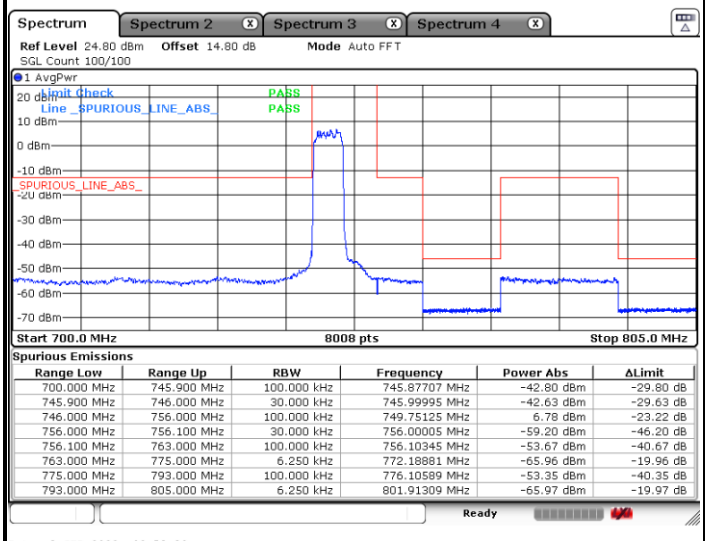


Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.55609 MHz	-53.11 dBm	-40.11 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.92902 MHz	-58.64 dBm	-45.64 dB
746.000 MHz	756.000 MHz	100.000 kHz	754.79620 MHz	6.42 dBm	-23.58 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.01673 MHz	-44.41 dBm	-31.41 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.10345 MHz	-42.35 dBm	-29.35 dB
763.000 MHz	775.000 MHz	6.250 kHz	773.77123 MHz	-65.98 dBm	-19.98 dB
775.000 MHz	793.000 MHz	100.000 kHz	784.59341 MHz	-53.25 dBm	-40.25 dB
793.000 MHz	805.000 MHz	6.250 kHz	799.50350 MHz	-65.98 dBm	-19.98 dB

Date: 3.SEP.2022 03:27:58

LTE Band 13 / 5MHz / 256QAM

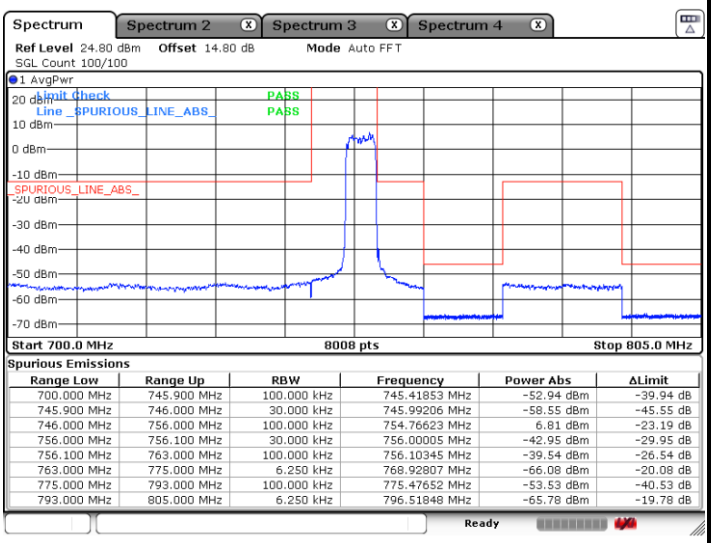
Lowest Band Edge / Full RB



Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.87707 MHz	-42.80 dBm	-29.80 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.99995 MHz	-42.63 dBm	-29.63 dB
746.000 MHz	756.000 MHz	100.000 kHz	749.75125 MHz	6.78 dBm	-23.22 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.00005 MHz	-59.20 dBm	-46.20 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.10345 MHz	-53.67 dBm	-40.67 dB
763.000 MHz	775.000 MHz	6.250 kHz	772.18881 MHz	-65.96 dBm	-19.96 dB
775.000 MHz	793.000 MHz	100.000 kHz	776.10589 MHz	-53.35 dBm	-40.35 dB
793.000 MHz	805.000 MHz	6.250 kHz	801.91309 MHz	-65.97 dBm	-19.97 dB

Date: 3.SEP.2022 02:59:30

Highest Band Edge / Full RB

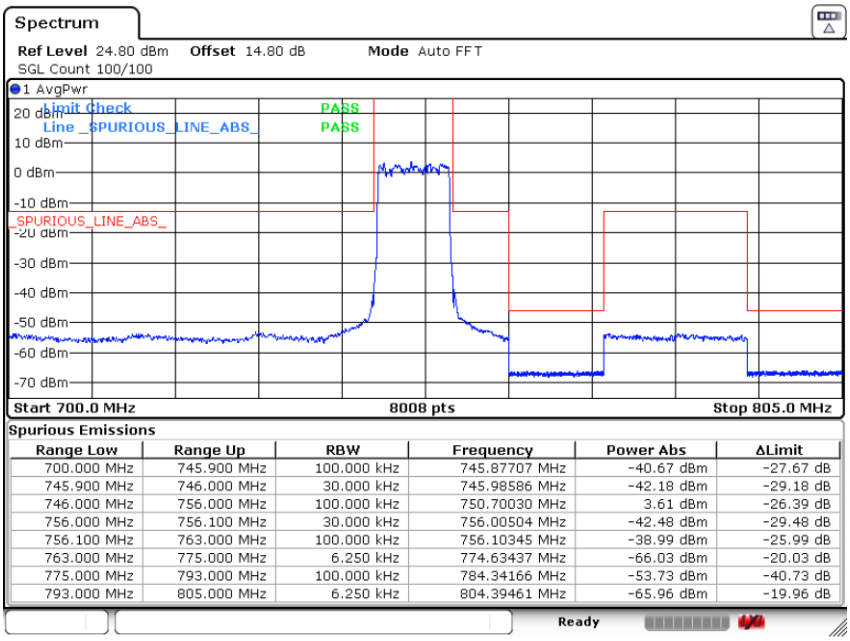


Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.41853 MHz	-52.94 dBm	-39.94 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.99206 MHz	-58.55 dBm	-45.55 dB
746.000 MHz	756.000 MHz	100.000 kHz	754.76623 MHz	6.81 dBm	-23.19 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.00005 MHz	-42.95 dBm	-29.95 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.10345 MHz	-39.54 dBm	-26.54 dB
763.000 MHz	775.000 MHz	6.250 kHz	768.92807 MHz	-66.08 dBm	-20.08 dB
775.000 MHz	793.000 MHz	100.000 kHz	775.47652 MHz	-53.53 dBm	-40.53 dB
793.000 MHz	805.000 MHz	6.250 kHz	796.51848 MHz	-65.78 dBm	-19.78 dB

Date: 3.SEP.2022 03:28:12

LTE Band 13 / 10MHz / QPSK

Middle Band Edge / Full RB



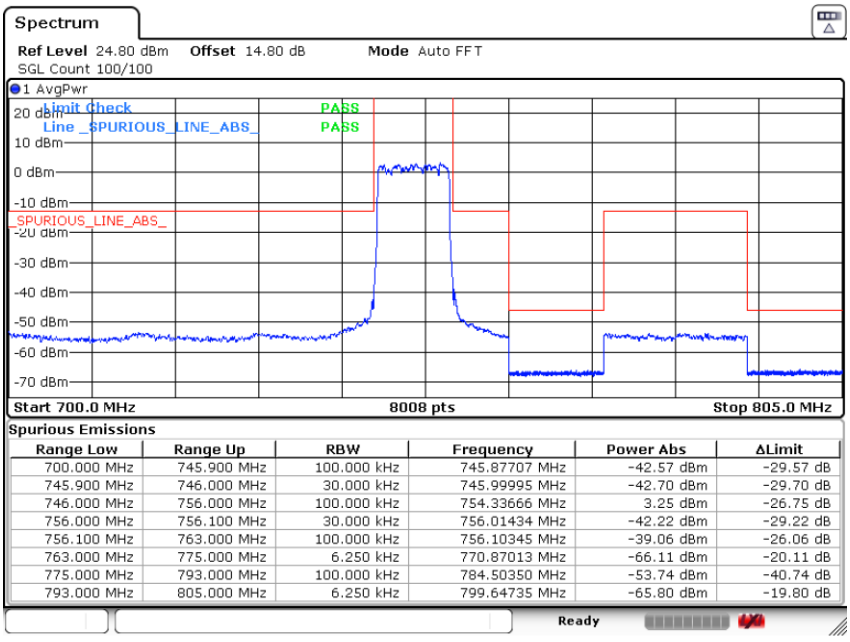
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.87707 MHz	-40.67 dBm	-27.67 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.98586 MHz	-42.18 dBm	-29.18 dB
746.000 MHz	756.000 MHz	100.000 kHz	750.70030 MHz	3.61 dBm	-26.39 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.00504 MHz	-42.48 dBm	-29.48 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.10345 MHz	-38.99 dBm	-25.99 dB
763.000 MHz	775.000 MHz	6.250 kHz	774.63437 MHz	-66.03 dBm	-20.03 dB
775.000 MHz	793.000 MHz	100.000 kHz	784.34166 MHz	-53.73 dBm	-40.73 dB
793.000 MHz	805.000 MHz	6.250 kHz	804.39461 MHz	-65.96 dBm	-19.96 dB

Date: 3.SEP.2022 02:38:18

LTE Band 13 / 10MHz / 16QAM

middle Band Edge / Full RB



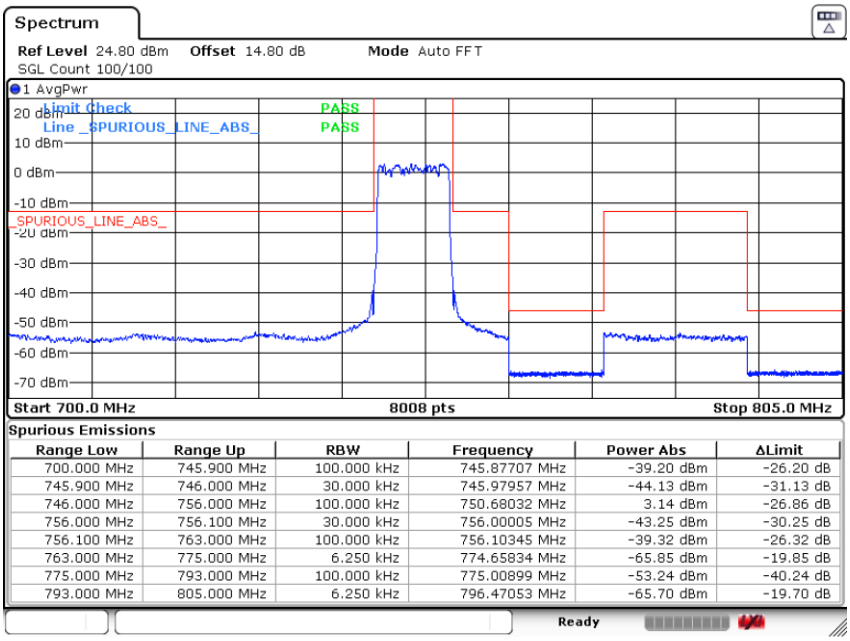
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.87707 MHz	-42.57 dBm	-29.57 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.99995 MHz	-42.70 dBm	-29.70 dB
746.000 MHz	756.000 MHz	100.000 kHz	754.33666 MHz	3.25 dBm	-26.75 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.01434 MHz	-42.22 dBm	-29.22 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.10345 MHz	-39.06 dBm	-26.06 dB
763.000 MHz	775.000 MHz	6.250 kHz	770.87013 MHz	-66.11 dBm	-20.11 dB
775.000 MHz	793.000 MHz	100.000 kHz	784.50350 MHz	-53.74 dBm	-40.74 dB
793.000 MHz	805.000 MHz	6.250 kHz	799.64735 MHz	-65.80 dBm	-19.80 dB

Date: 3.SEP.2022 02:38:45

LTE Band 13 / 10MHz / 64QAM

middle Band Edge / Full RB



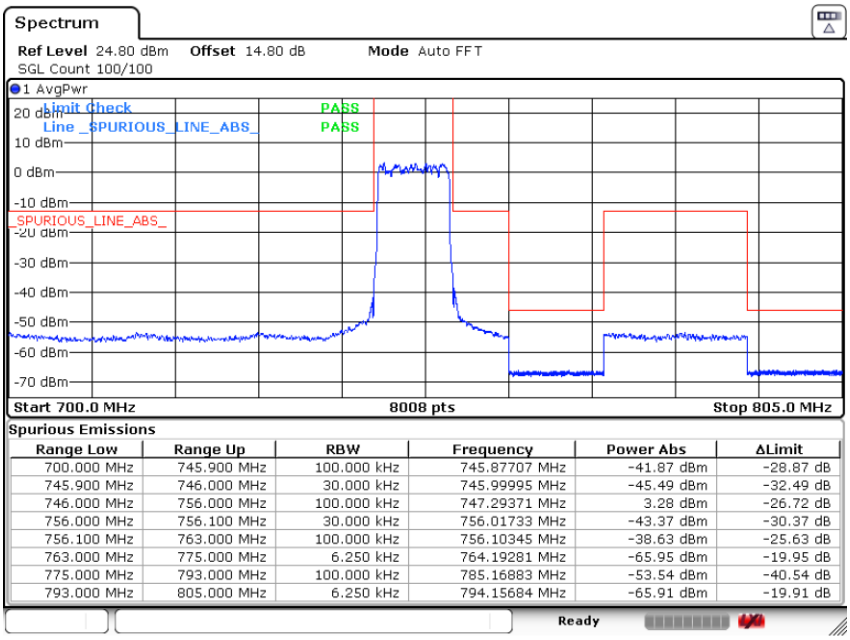
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.87707 MHz	-39.20 dBm	-26.20 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.97957 MHz	-44.13 dBm	-31.13 dB
746.000 MHz	756.000 MHz	100.000 kHz	750.68032 MHz	3.14 dBm	-26.86 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.00005 MHz	-43.25 dBm	-30.25 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.10345 MHz	-39.32 dBm	-26.32 dB
763.000 MHz	775.000 MHz	6.250 kHz	774.65834 MHz	-65.85 dBm	-19.85 dB
775.000 MHz	793.000 MHz	100.000 kHz	775.00899 MHz	-53.24 dBm	-40.24 dB
793.000 MHz	805.000 MHz	6.250 kHz	796.47053 MHz	-65.70 dBm	-19.70 dB

Date: 3.SEP.2022 02:39:11

LTE Band 13 / 10MHz / 256QAM

Middle Band Edge / Full RB



Spurious Emissions

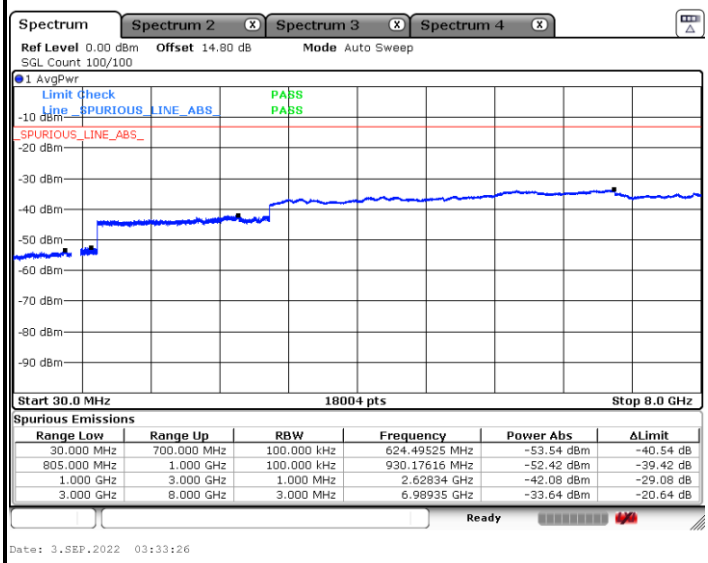
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
700.000 MHz	745.900 MHz	100.000 kHz	745.87707 MHz	-41.87 dBm	-28.87 dB
745.900 MHz	746.000 MHz	30.000 kHz	745.99995 MHz	-45.49 dBm	-32.49 dB
746.000 MHz	756.000 MHz	100.000 kHz	747.29371 MHz	3.28 dBm	-26.72 dB
756.000 MHz	756.100 MHz	30.000 kHz	756.01733 MHz	-43.37 dBm	-30.37 dB
756.100 MHz	763.000 MHz	100.000 kHz	756.10345 MHz	-38.63 dBm	-25.63 dB
763.000 MHz	775.000 MHz	6.250 kHz	764.19281 MHz	-65.95 dBm	-19.95 dB
775.000 MHz	793.000 MHz	100.000 kHz	785.16883 MHz	-53.54 dBm	-40.54 dB
793.000 MHz	805.000 MHz	6.250 kHz	794.15684 MHz	-65.91 dBm	-19.91 dB

Date: 3.SEP.2022 02:39:26

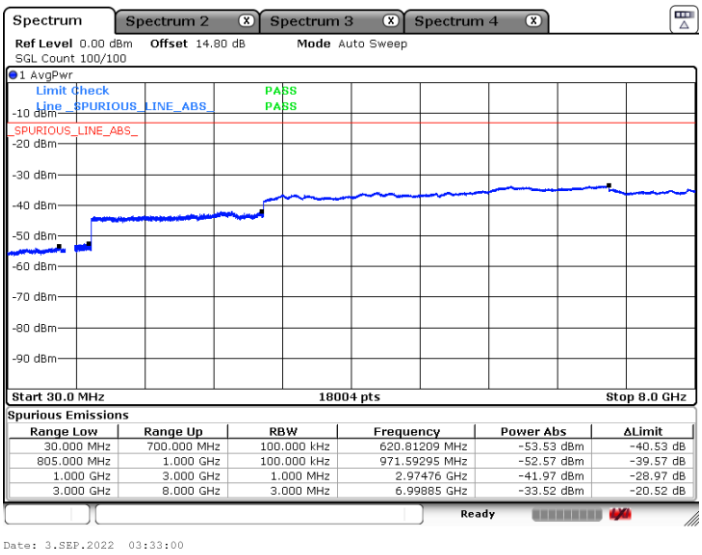
Conducted Spurious Emission

LTE Band 13 / 5MHz

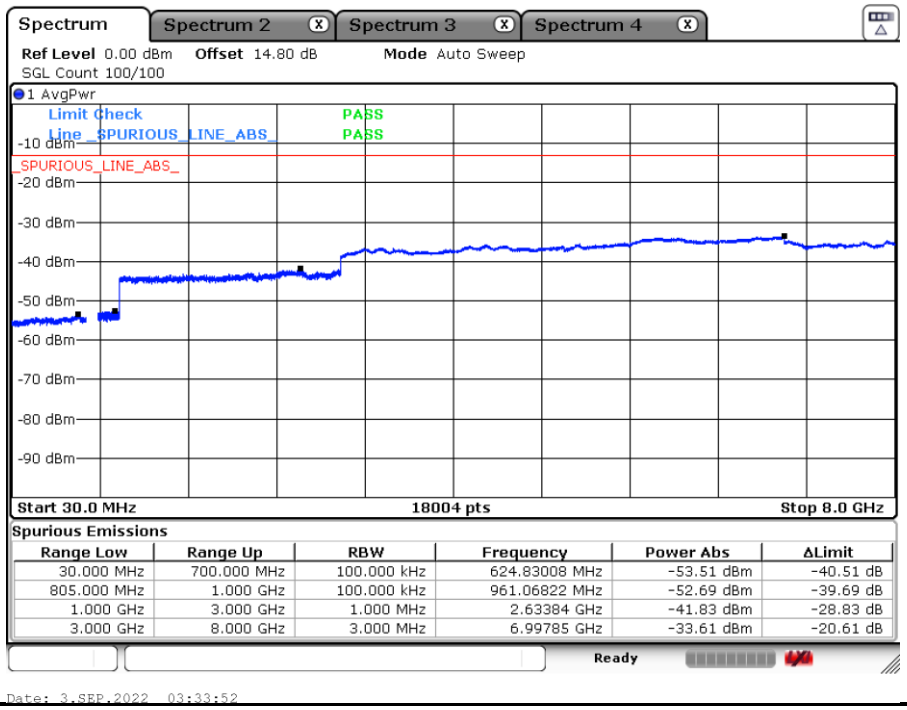
Lowest Channel / QPSK



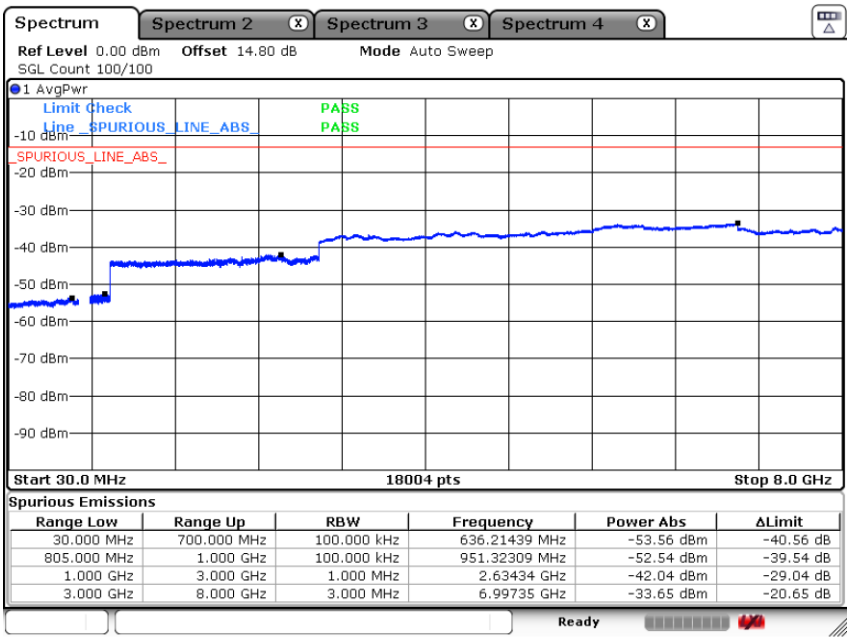
Middle Channel / QPSK



Highest Channel / QPSK



LTE Band 13 / 10MHz
Middle Channel / QPSK



Frequency Stability

Test Conditions		LTE Band 13 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0005	PASS
40	Normal Voltage	0.0021	
30	Normal Voltage	0.0016	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0034	
0	Normal Voltage	0.0011	
-10	Normal Voltage	0.0033	
-20	Normal Voltage	0.0021	
-30	Normal Voltage	0.0013	
20	Maximum Voltage	0.0.002	
20	Normal Voltage	0.0010	
20	End Point	0.0006	

Note:

1. Normal Voltage =12V. ; End Point =11.4 V. ; Maximum Voltage =12.6 V
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

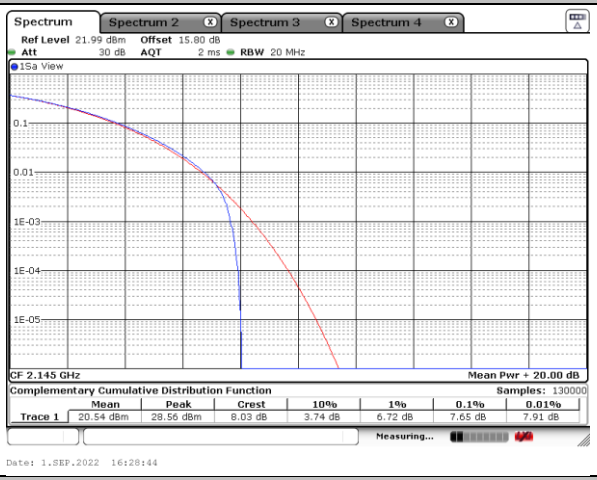
LTE Band 66_MIMO Ant 1

Peak-to-Average Ratio

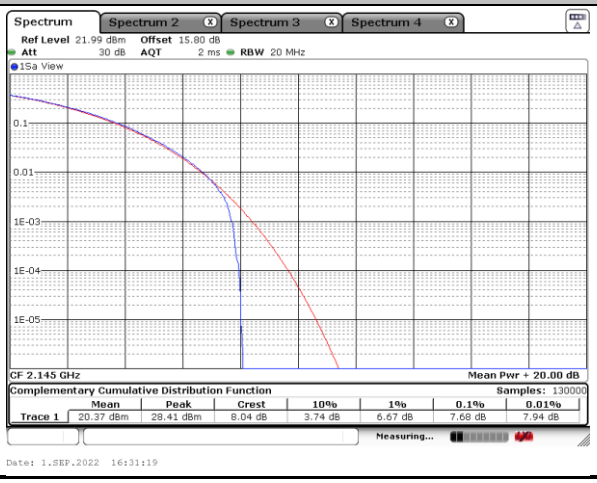
Mode	LTE Band 66 / 20MHz				
Mod.	QPSK	16QAM	64QAM	256QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	7.65	7.68	7.71	7.74	PASS

LTE Band 66 / 20MHz

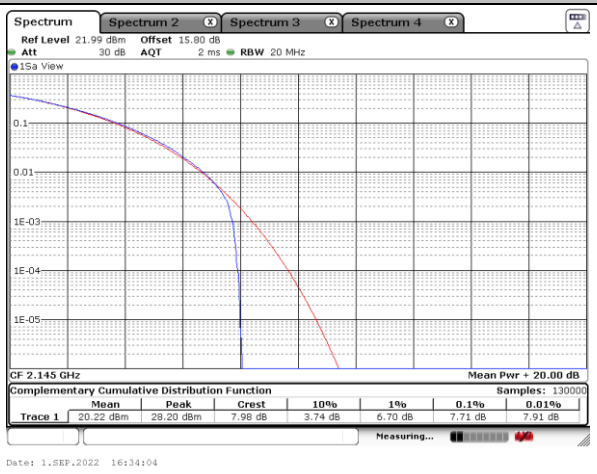
Middle Channel / Full RB/ QPSK



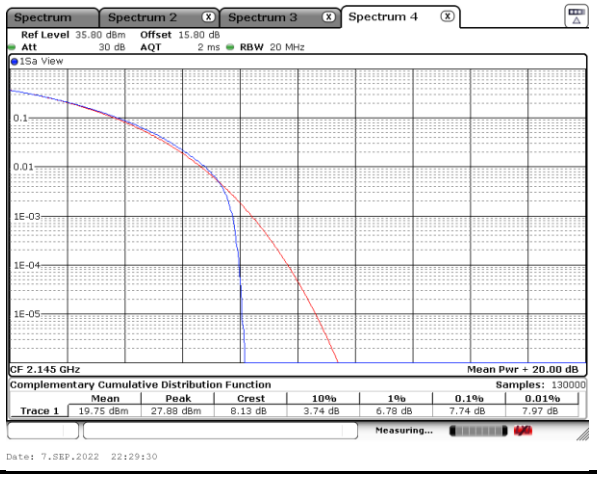
Middle Channel / Full RB/ 16QAM



Middle Channel / Full RB/ 64QAM



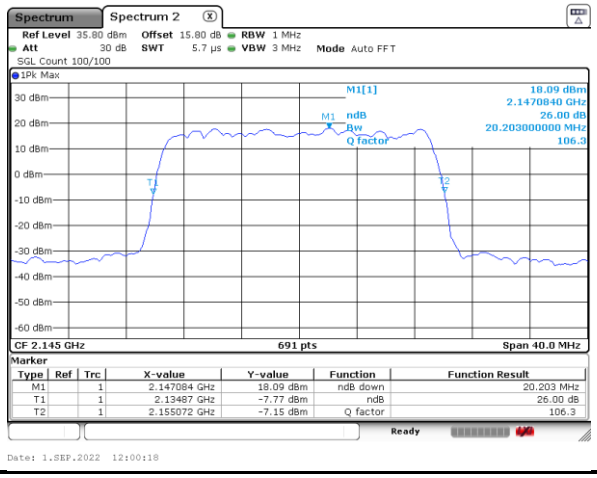
Middle Channel / Full RB/ 256QAM

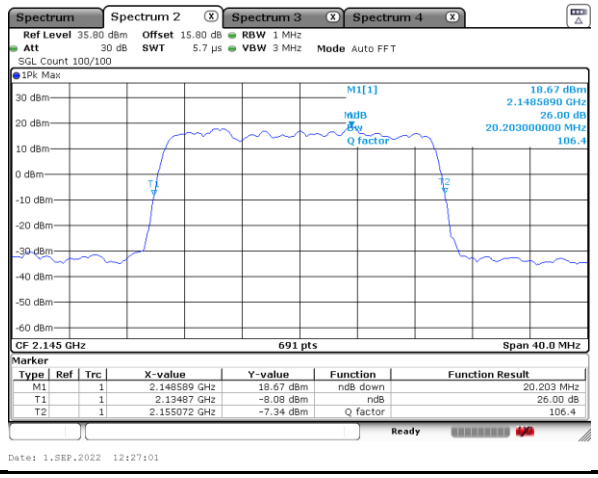


26dB Bandwidth

Mode	LTE Band 66 : 26dB BW(MHz)	
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	20.20	20.20

LTE Band 66	
Middle Channel / 20MHz / QPSK	Middle Channel / 20MHz / 16QAM

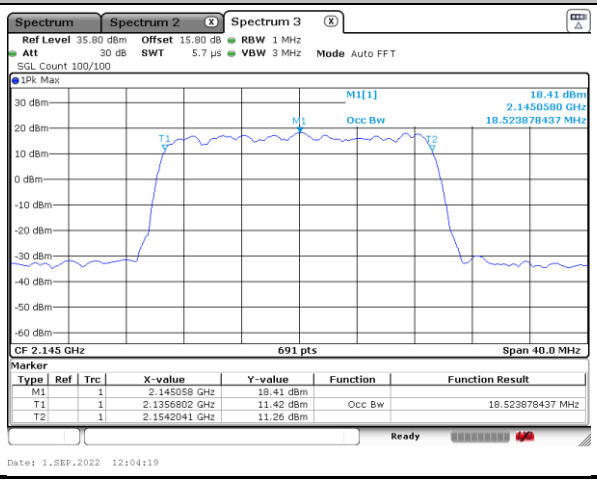


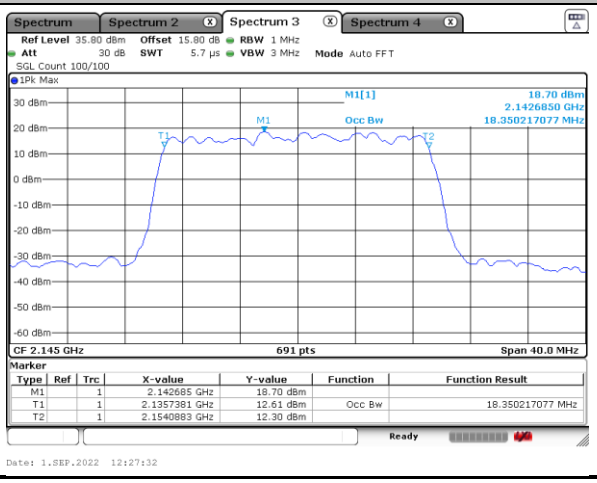


Occupied Bandwidth

Mode	LTE Band 66 : 99%OBW(MHz)	
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	18.52	18.35

LTE Band 66	
Middle Channel / 20MHz / QPSK	Middle Channel / 20MHz / 16QAM

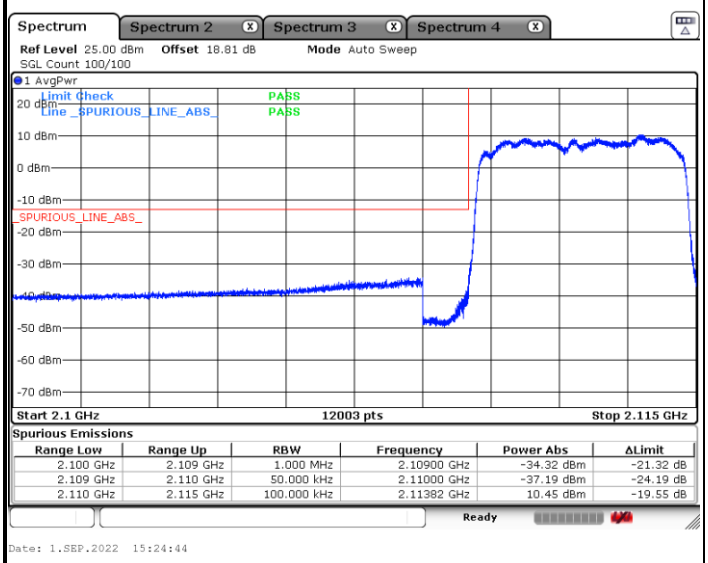




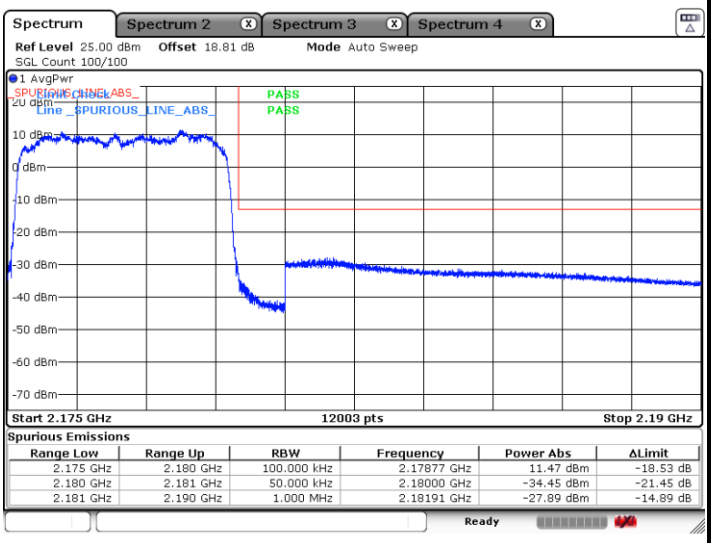
Conducted Band Edge

LTE Band 66 / 5MHz / QPSK

Lowest Band Edge / Full RB

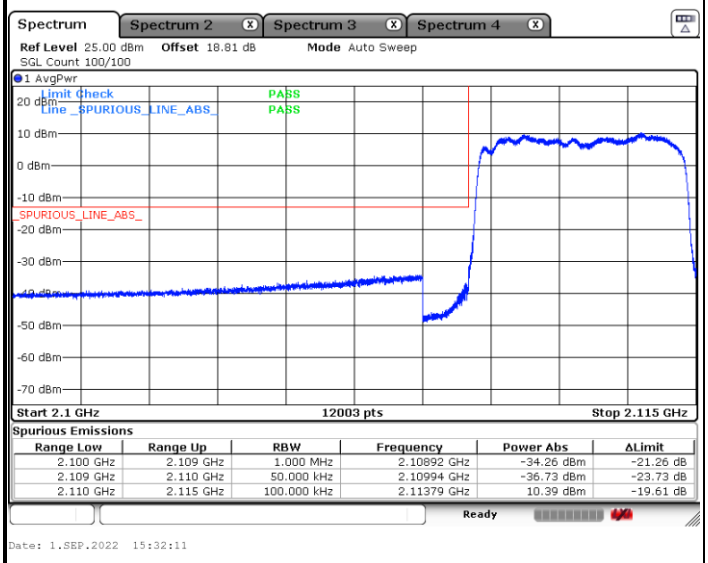


Highest Band Edge / Full RB

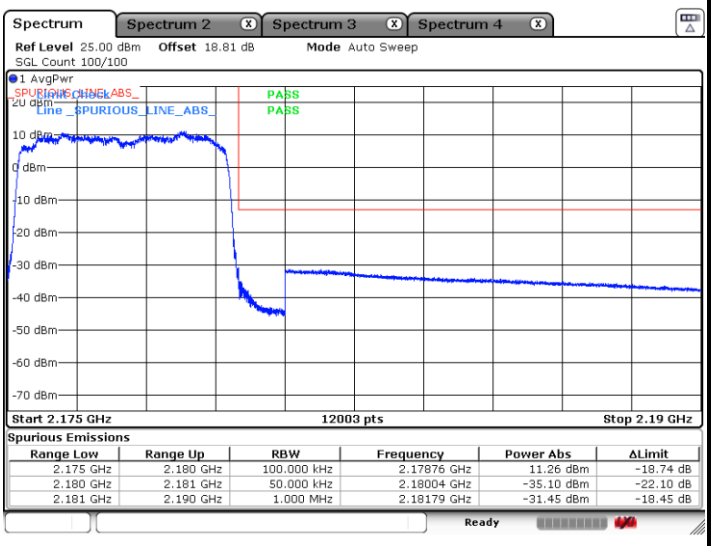


LTE Band 66 / 5MHz / 16QAM

Lowest Band Edge / Full RB

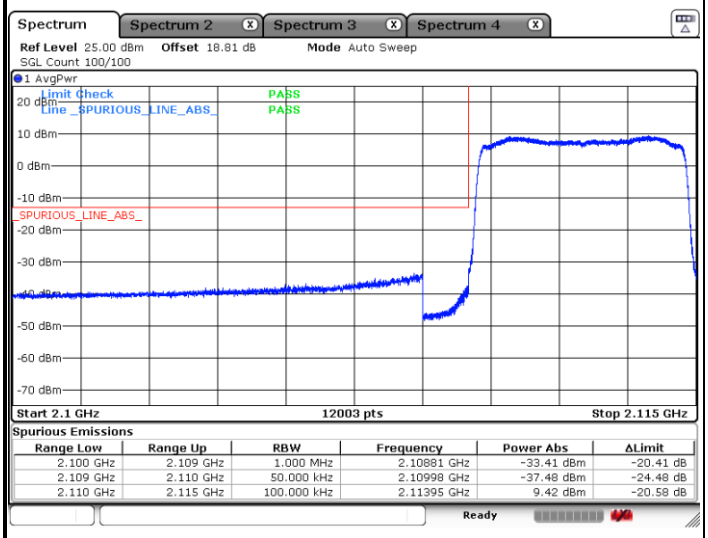


Highest Band Edge / Full RB



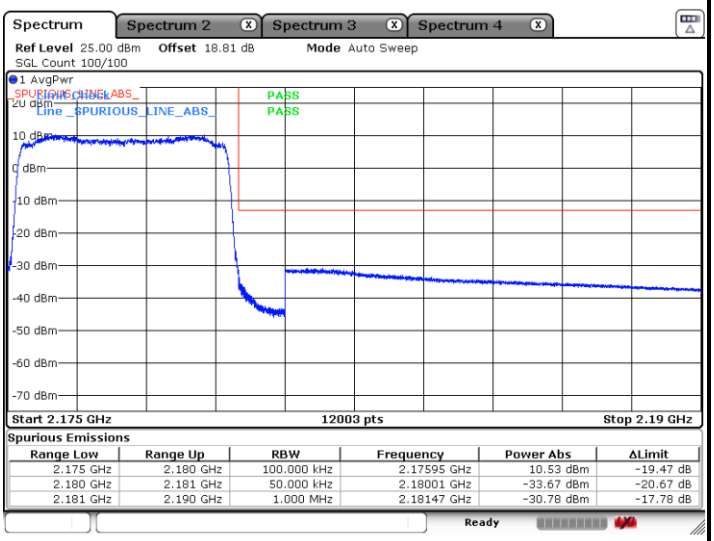
LTE Band 66 / 5MHz / 64QAM

Lowest Band Edge / Full RB



Date: 1.SEP.2022 15:34:33

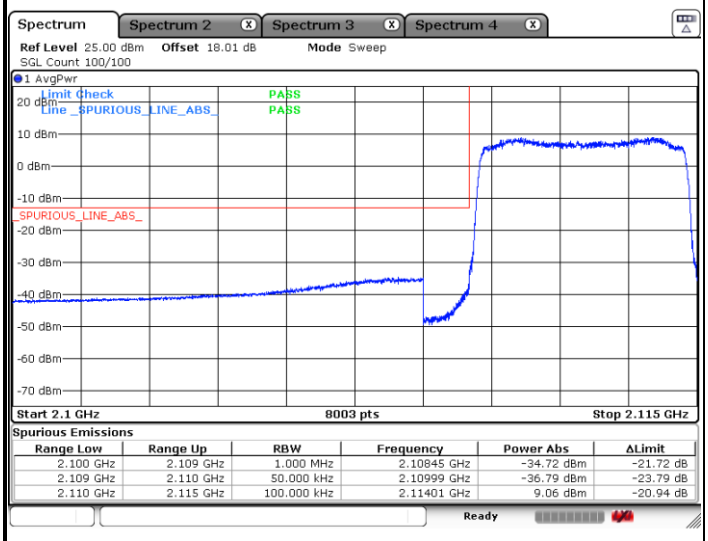
Highest Band Edge / Full RB



Date: 1.SEP.2022 16:17:17

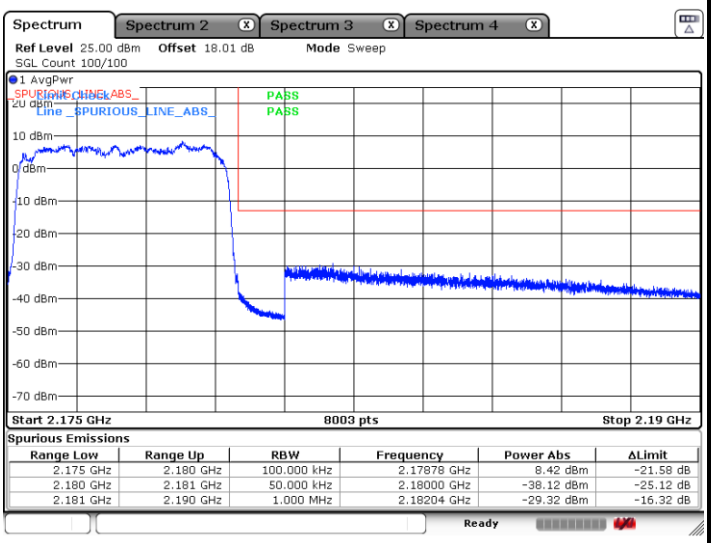
LTE Band 66 / 5MHz / 256QAM

Lowest Band Edge / Full RB



Date: 8.SEP.2022 00:04:19

Highest Band Edge / Full RB



Date: 7.SEP.2022 23:41:38