FCC RF Test Report

APPLICANT	:	**Motorola Mobility LLC**
EQUIPMENT	:	**Mobile Cellular Phone**
BRAND NAME	:	**Motorola**
MODEL NAME	:	**XT2323-4, XT2323-7**
FCC ID	:	**IHDT56AL3**
STANDARD	:	**47 CFR Part 2, 27(L)**
CLASSIFICATION	:	**PCS Licensed Transmitter Held to Ear (PCE)**
TEST DATE(S)	:	**May 30, 2023 ~ Jun. 13, 2023**

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

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

Jason Jia

Approved by: Jason Jia

ACCREDITED
Cert #5145.02

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

TABLE OF CONTENTS

REVISION HISTORY **3**

SUMMARY OF TEST RESULT **4**

1 GENERAL DESCRIPTION **5**

1.1 Applicant 5
1.2 Manufacturer 5
1.3 Product Feature of Equipment Under Test 5
1.4 Product Specification of Equipment Under Test 5
1.5 Modification of EUT 6
1.6 Ma ximum EIRP Power and Emission Designator 6
1.7 Testing Location 6
1.8 Test Software 7
1.9 Specification of Accessory 7
1.10 Applicable Standards 7

2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST **8**

2.1 Test Mode 8
2.2 Connection Diagram of Test System 9
2.3 Support Unit used in test configuration and system 9
2.4 Measurement Results Explanation Example 9
2.5 Frequency List of Low/Middle/High Channels 10

3 CONDUCTED TEST ITEMS **11**

3.1 Measuring Instruments 11
3.2 Test Setup 11
3.3 Test Result of Conducted Test 11
3.4 Conducted Output Power and EIRP 12
3.5 Peak-to-Average Ratio 13
3.6 Occupied Bandwidth 14
3.7 Conducted Band Edge 15
3.8 Conducted Spurious Emission 16
3.9 Frequency Stability 17

4 RADIATED TEST ITEMS **18**

4.1 Measuring Instruments 18
4.2 Test Setup 18
4.3 Test Result of Radiated Test 19
4.4 Radiated Spurious Emission 20

5 LIST OF MEASURING EQUIPMENT **21**

6 MEASUREMENT UNCERTAINTY **22**

APPENDIX A. TEST RESULTS OF CONDUCTED TEST

APPENDIX B. TEST RESULTS OF RADIATED TEST

APPENDIX C. TEST SETUP PHOTOGRAPHS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG340401-04A	Rev. 01	Initial issue of report	Jun. 28, 2023

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	-	Report Only	-
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4)	EIRP < 1Watt		-
3.6	§2.1049	Occupied Bandwidth	-	Report Only	-
3.7	§2.1051 §27.53(h)	Conducted Band Edge Measurement (Band 4)	< 43+10log10(P[Watts])	PASS	-
3.8	§2.1051 §27.53(h)	Conducted Spurious Emission (Band 4)	< 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(h)	Radiated Spurious Emission (Band 4)	< 43+10$\log_{10}$(P[Watts])	PASS	Under limit 41.12 dB at 6840.000 MHz

Conformity Assessment Condition:

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

Disclaimer:

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

1 General Description

1.1 Applicant

Motorola Mobility LLC
222 W, Merchandise Mart Plaza, Chicago IL 60654 USA

1.2 Manufacturer

Motorola Mobility LLC
222 W, Merchandise Mart Plaza, Chicago IL 60654 USA

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2323-4, XT2323-7
FCC ID	IHDT56AL3
IMEI Code	Conducted: 354478360011399/354478360011407 Radiation: 354478360012033/354478360012041
HW Version	DVT2
SW Version	T2TV33.27
EUT Stage	Identical Prototype

Remark:

1. The two models XT2323-4, XT2323-7 are only for market differentiation, all the others are the same
2. The device support single SIM + eSIM.

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	LTE Band 4 : 1710 MHz ~ 1755 MHz
Rx Frequency	LTE Band 4 : 2110 MHz ~ 2155 MHz
Bandwidth	LTE Band 4 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz
Maximum Output Power to Antenna	**Ant 0:** LTE Band 4 : 21.34 dBm **Ant 1:** LTE Band 4 : 20.82 dBm **Ant 2:** LTE Band 4 : 21.43 dBm **Ant 3:** LTE Band 4 : 22.52 dBm
Antenna Gain	**Ant 0:** LTE Band 4 : -3.2 dBi **Ant 1:** LTE Band 4 : -3.1 dBi **Ant 2:** LTE Band 4 : -2.8 dBi **Ant 3:** LTE Band 4 : -1.0 dBi
Type of Modulation	QPSK / 16QAM / 64QAM / 256QAM

Note:

1. The maximum EIRP is calculated from max output power and max antenna gain, only the maximum EIRP of Ant.3 is shown in the report. For conducted test items, we choose the highest power among

all antennas for testing.

2. The device supports two PAs for LTE Band 4 (main PA and other PA), the maximum power of main PA is higher than the other PA, therefore, we chose higher power of main PA to calculate the EIRP and show in the report.

1.5 Modification of EUT

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

1.6 Ma ximum EIRP Power 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)**
1.4	1710.7 ~ 1754.3	0.1374	1M10G7D	0.1371	1M10W7D
3	1711.5 ~ 1753.5	0.1416	2M73G7D	0.1390	2M72W7D
5	1712.5 ~ 1752.5	0.1390	4M53G7D	0.1384	4M51W7D
10	1715.0 ~ 1750.0	0.1387	9M11G7D	0.1371	9M11W7D
15	1717.5 ~ 1747.5	0.1403	13M5G7D	0.1365	13M4W7D
20	1720.0 ~ 1745.0	0.1419	17M9G7D	0.1409	18M0W7D

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		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH04-KS TH01-KS	CN1257	314309

1.8 Test Software

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

1.9 Specification of Accessory

Specification of Accessory				
Base Battery	**Brand Name**	Motorola(ATL)	**Model Name**	PM29
Flip Battery	**Brand Name**	Motorola(ATL)	**Model Name**	PV11

1.10 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)
- 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

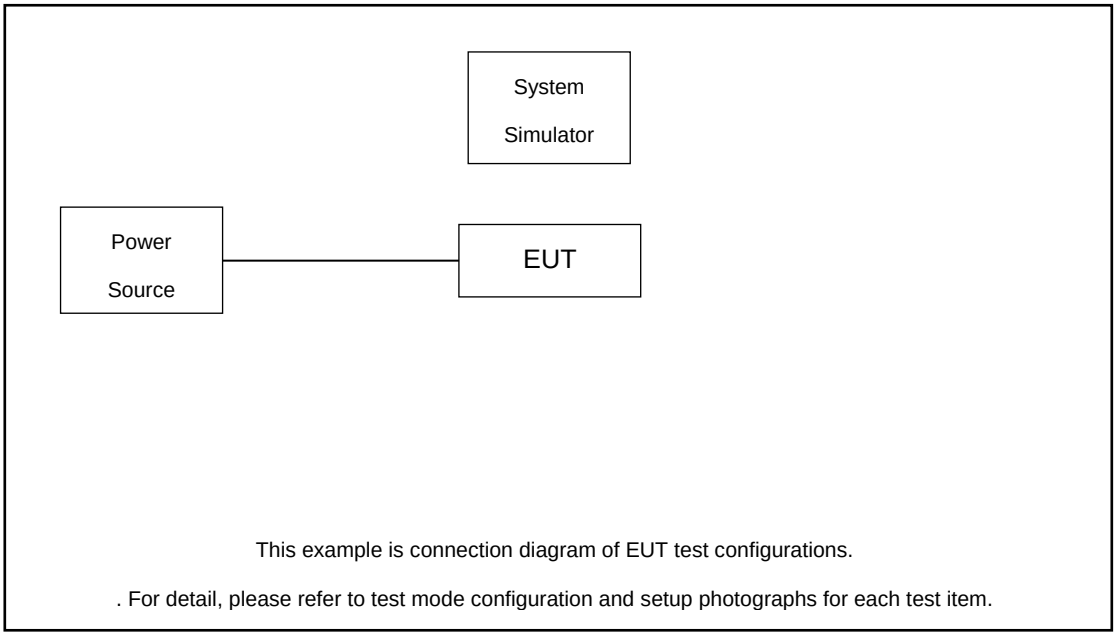
2.1 Test Mode

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(X plane with flip open).

Test Items	Band	Bandwidth (MHz)						Modulation				RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	256QAM	1	Half	Full	L	M	H
Max. Output Power	4	v	v	v	v	v	v	v	v	v	v	v		v	v	v	v
Peak-to-Average Ratio	4						v	v	v	v	v	v		v		v	
26dB and 99% Bandwidth	4	v	v	v	v	v	v	v	v					v		v	
Conducted Band Edge	4	v	v	v	v	v	v	v	v	v	v	v		v	v		v
Conducted Spurious Emission	4	v	v	v	v	v	v	v				v			v	v	v
Frequency Stability	4				v			v						v		v	
Max. Output Power	4	v	v	v	v	v	v	v	v	v	v	v		v	v	v	v
Radiated Spurious Emission	4	Worst Case													v	v	v
Note	1. The mark "**v** " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. 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.																

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

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

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss between 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.

Offset = RF cable loss.

Following shows an offset computation example with cable loss 5.4 dB.

Example :

Offset(dB) = RF cable loss(dB).

= 5.4 (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	20050	20175	20300
	Frequency	1720	1732.5	1745
15	Channel	20025	20175	20325
	Frequency	1717.5	1732.5	1747.5
10	Channel	20000	20175	20350
	Frequency	1715	1732.5	1750
5	Channel	19975	20175	20375
	Frequency	1712.5	1732.5	1752.5
3	Channel	19965	20175	20385
	Frequency	1711.5	1732.5	1753.5
1.4	Channel	19957	20175	20393
	Frequency	1710.7	1732.5	1754.3

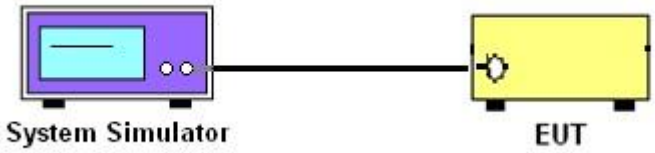
3 Conducted Test Items

3.1 Measuring Instruments

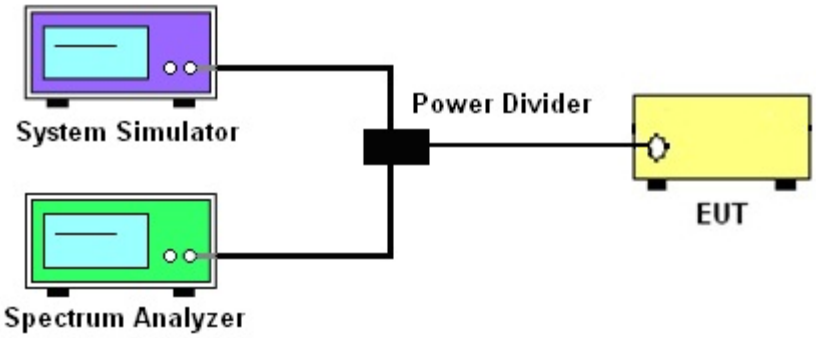
See list of measuring instruments of this test report.

3.2 Test Setup

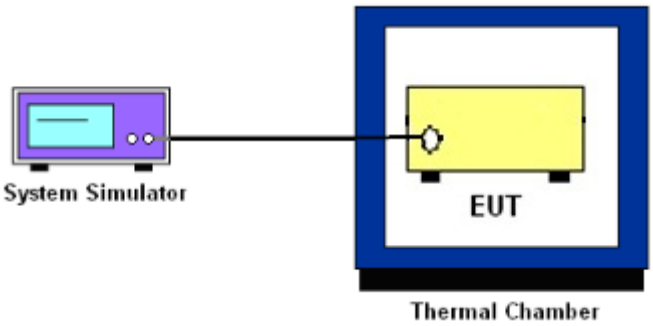
3.2.1 Conducted Output Power



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 EIRP

3.4.1 Description of the Conducted Output Power Measurement and 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 EIRP of mobile transmitters must not exceed 1 Watts for LTE Band 4.

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 (h)

For operations in the 1710 – 1755 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 or a narrower RBW was used and the measured power was integrated over the full required measurement bandwidth of 1 MHz.
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.
9. When using the integration method, the starting frequency of the integration shall be centered at one-half of the RBW away from the band edge.

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 10th 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.

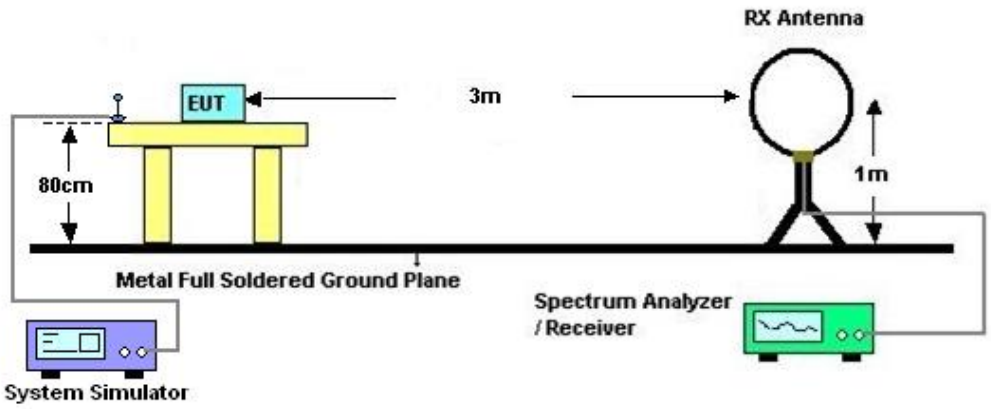
4 Radiated Test Items

4.1 Measuring Instruments

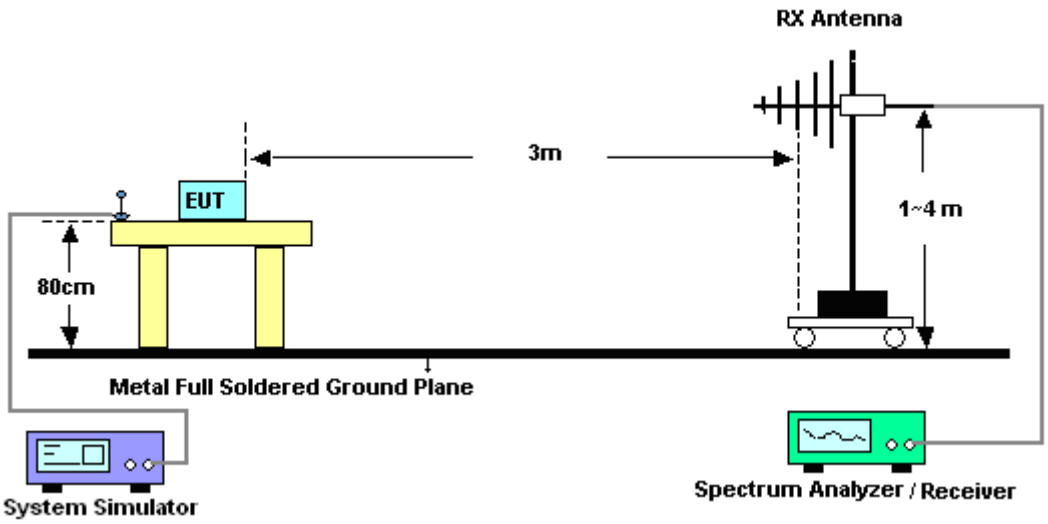
See list of measuring instruments of this test report.

4.2 Test Setup

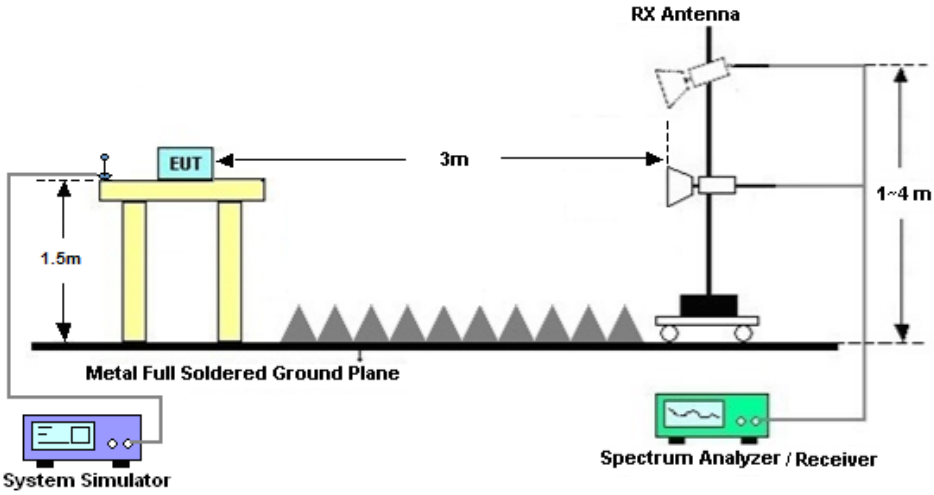
4.2.1 For radiated test below 30MHz



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.

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. 12, 2022	May 30, 2023~ Jun. 13, 2023	Oct. 11, 2023	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	Aug. 26, 2022	May 30, 2023~ Jun. 13, 2023	Aug. 25, 2023	Conducted (TH01-KS)
Temperature & humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 15, 2022	May 30, 2023~ Jun. 13, 2023	Jul. 14, 2023	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 12, 2022	Jun. 02, 2023	Oct. 11, 2023	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 16, 2022	Jun. 02, 2023	Oct. 15, 2023	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	Apr. 09, 2023	Jun. 02, 2023	Apr. 08, 2024	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1284	1GHz~18GHz	Oct. 16, 2022	Jun. 02, 2023	Oct. 15, 2023	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 08, 2023	Jun. 02, 2023	Jan. 07, 2024	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	380827	9KHz-1GHz	Jul. 11, 2022	Jun. 02, 2023	Jul. 10, 2023	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40G GA	060728	18~40GHz	Jan. 05, 2023	Jun. 02, 2023	Jan. 04, 2024	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18G A	060840	1Ghz-18Ghz	Oct. 12, 2022	Jun. 02, 2023	Oct. 11, 2023	Radiation (03CH04-KS)
Amplifier	Agilent	8449B	3008A02370	1Ghz-18Ghz	Oct. 12, 2022	Jun. 02, 2023	Oct. 11, 2023	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jun. 02, 2023	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jun. 02, 2023	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jun. 02, 2023	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

6 Measurement Uncertainty

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

Uncertainty of Conducted Measurement

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

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.82dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.56dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.54dB

Appendix A. Test Results of Conducted Test

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

Conducted Output Power(Average power) and EIRP

LTE Band 4									
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP(W)		
Channel				20050	20175	20300			
Frequency (MHz)				1720	1732.5	1745	L	M	H
20	QPSK	1	0	22.51	22.52	22.24	0.1416	0.1419	0.1330
20	QPSK	1	99	22.17	22.25	22.08	0.1309	0.1334	0.1282
20	QPSK	100	0	22.24	22.41	22.24	0.1330	0.1384	0.1330
20	16QAM	1	0	22.38	22.49	22.38	0.1374	0.1409	0.1374
20	64QAM	1	0	21.76	21.99	21.73	0.1191	0.1256	0.1183
20	256QAM	1	0	18.96	19.04	18.86	0.0625	0.0637	0.0611
Channel				20025	20175	20325	EIRP(W)		
Frequency (MHz)				1717.5	1732.5	1747.5	L	M	H
15	QPSK	1	0	22.38	22.47	22.09	0.1374	0.1403	0.1285
15	16QAM	1	0	22.33	22.35	22.32	0.1358	0.1365	0.1355
Channel				20000	20175	20350	EIRP(W)		
Frequency (MHz)				1715	1732.5	1750	L	M	H
10	QPSK	1	0	22.35	22.42	22.05	0.1365	0.1387	0.1274
10	16QAM	1	0	22.26	22.29	22.37	0.1337	0.1346	0.1371
Channel				19975	20175	20375	EIRP(W)		
Frequency (MHz)				1712.5	1732.5	1752.5	L	M	H
5	QPSK	1	0	22.40	22.43	22.04	0.1380	0.1390	0.1271
5	16QAM	1	0	22.21	22.41	22.20	0.1321	0.1384	0.1318
Channel				19965	20175	20385	EIRP(W)		
Frequency (MHz)				1711.5	1732.5	1753.5	L	M	H
3	QPSK	1	0	22.51	22.39	22.19	0.1416	0.1377	0.1315
3	16QAM	1	0	22.36	22.43	22.20	0.1368	0.1390	0.1318
Channel				19950	20175	20393	EIRP(W)		
Frequency (MHz)				1710	1732.5	1754.3	L	M	H
1.4	QPSK	1	0	22.24	22.38	22.31	0.1330	0.1374	0.1352
1.4	16QAM	1	0	22.23	22.33	22.37	0.1327	0.1358	0.1371

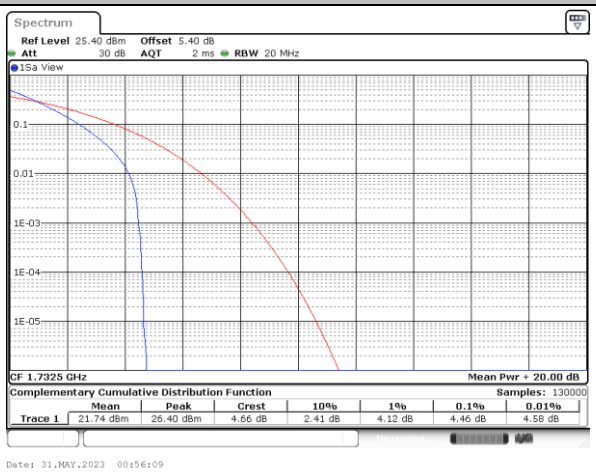
LTE Band 4

Peak-to-Average Ratio

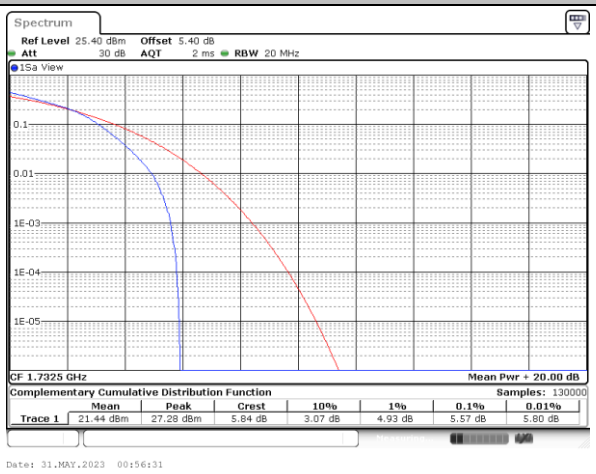
Mode	LTE Band 4 / 20MHz				
Mod.	QPSK	16QAM	64QAM	256QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	4.46	5.57	6.23	6.61	PASS

LTE Band 4 / 20MHz

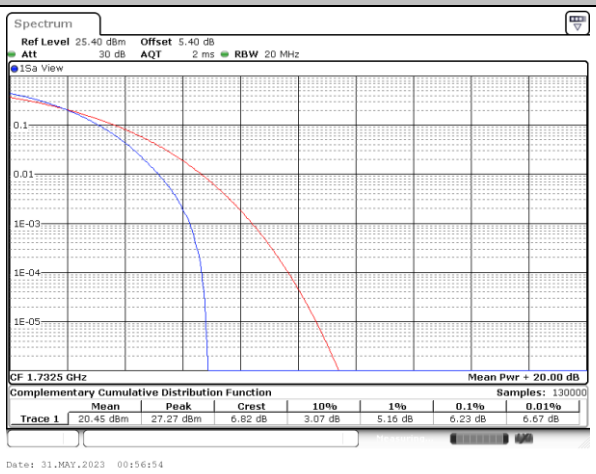
Middle Channel / Full RB/ QPSK



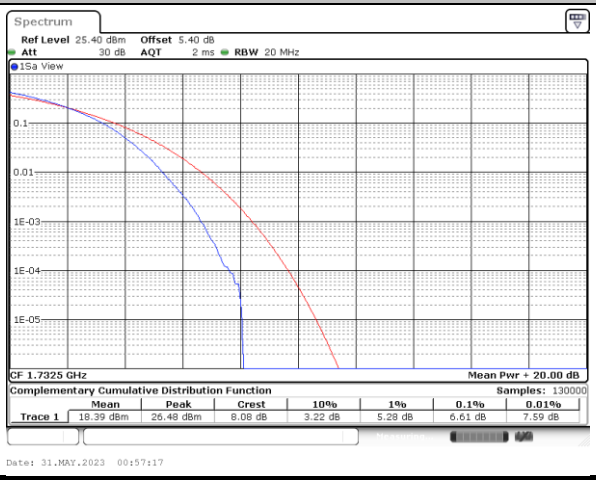
Middle Channel / Full RB/ 16QAM



Middle Channel / Full RB/ 64QAM



Middle Channel / Full RB/ 256QAM

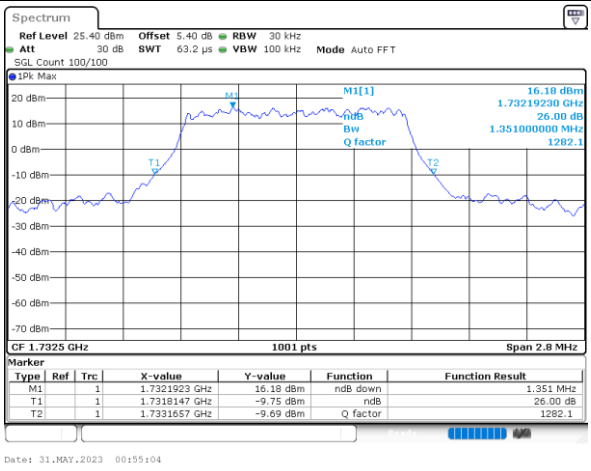


26dB Bandwidth

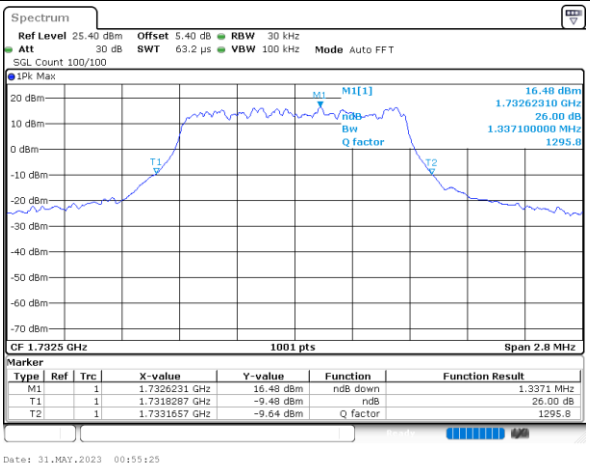
Mode	LTE Band 4 : 26dB BW(MHz)	
BW	1.4MHz	
Mod.	QPSK	16QAM
Middle CH	1.35	1.34
BW	3MHz	
Mod.	QPSK	16QAM
Middle CH	3.05	3.12
BW	5MHz	
Mod.	QPSK	16QAM
Middle CH	4.92	5.14
BW	10MHz	
Mod.	QPSK	16QAM
Middle CH	9.77	9.99
BW	15MHz	
Mod.	QPSK	16QAM
Middle CH	14.33	14.72
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	19.02	18.90

LTE Band 4

Middle Channel / 1.4MHz / QPSK

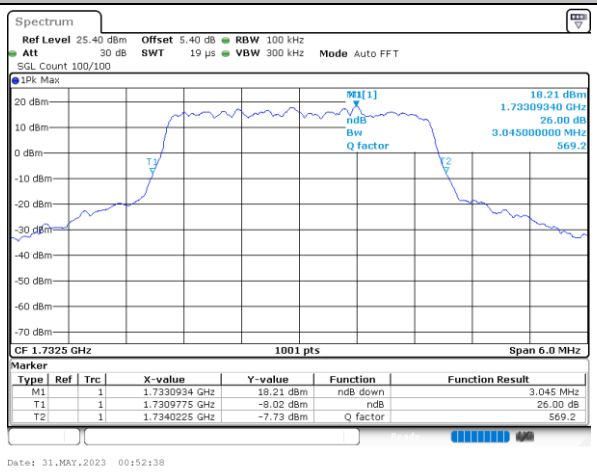


Middle Channel / 1.4MHz / 16QAM

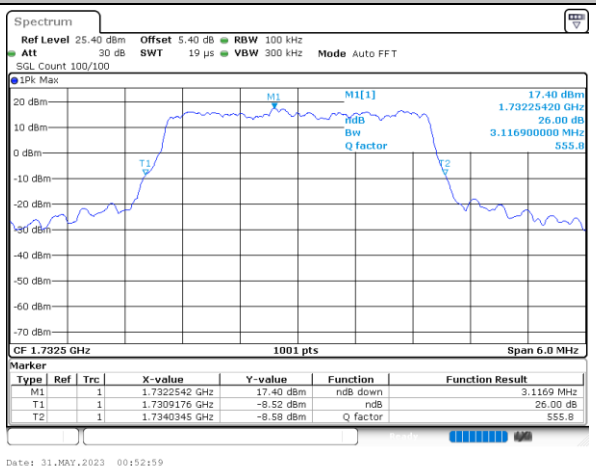


LTE Band 4

Middle Channel / 3MHz / QPSK

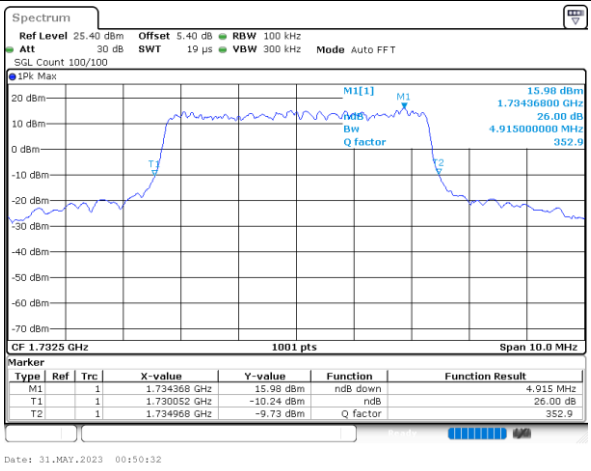


Middle Channel / 3MHz / 16QAM

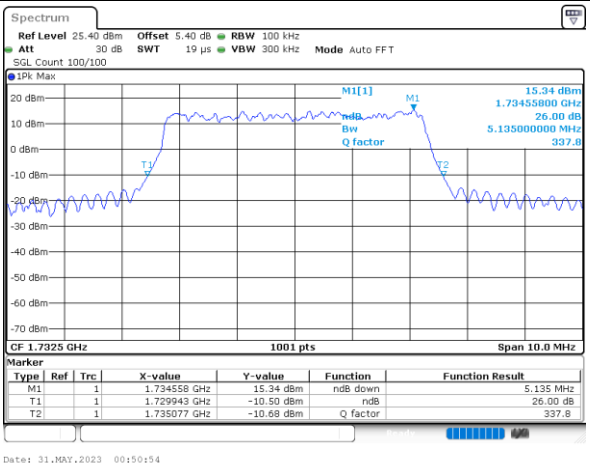


LTE Band 4

Middle Channel / 5MHz / QPSK

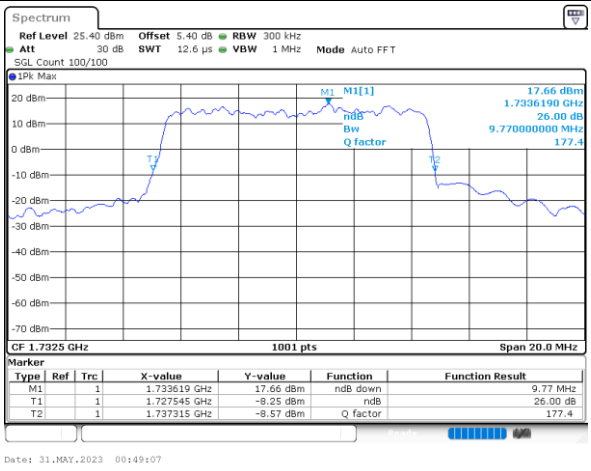


Middle Channel / 5MHz / 16QAM

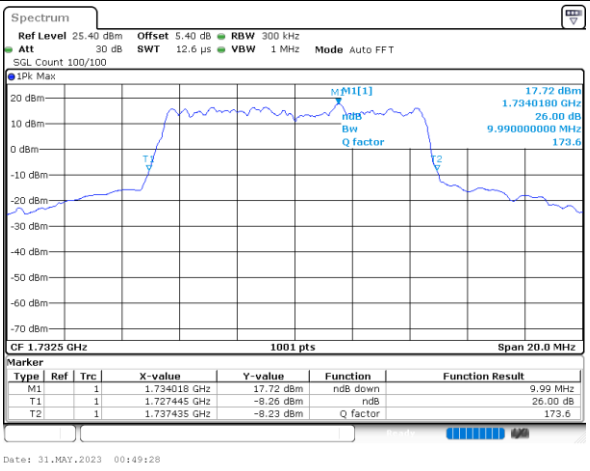


LTE Band 4

Middle Channel / 10MHz / QPSK

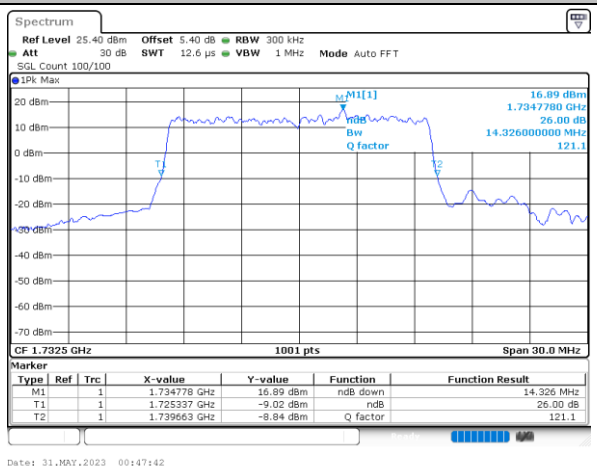


Middle Channel / 10MHz / 16QAM

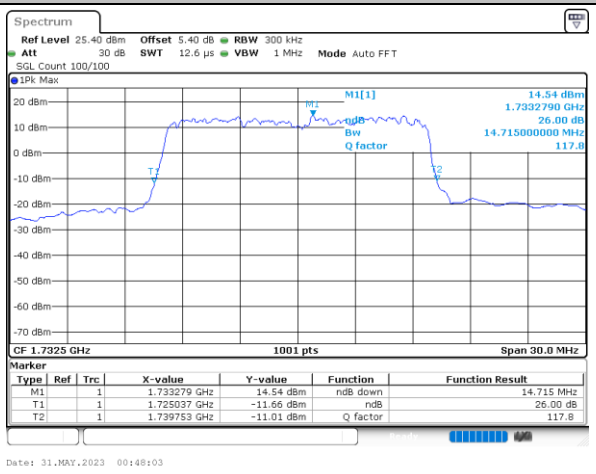


LTE Band 4

Middle Channel / 15MHz / QPSK

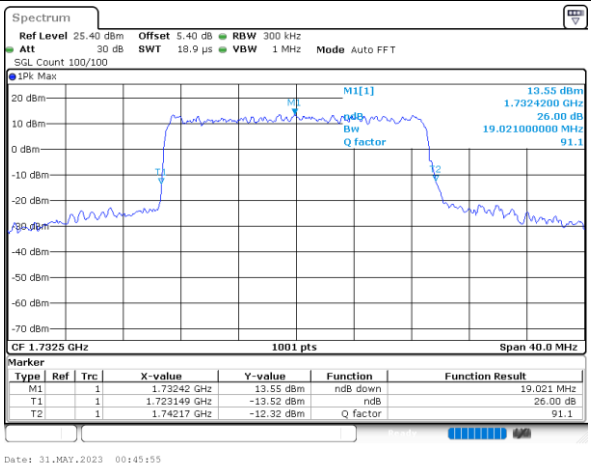


Middle Channel / 15MHz / 16QAM

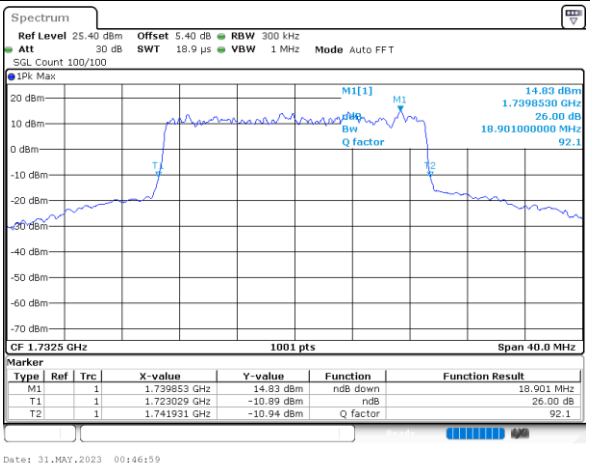


LTE Band 4

Middle Channel / 20MHz / QPSK



Middle Channel / 20MHz / 16QAM

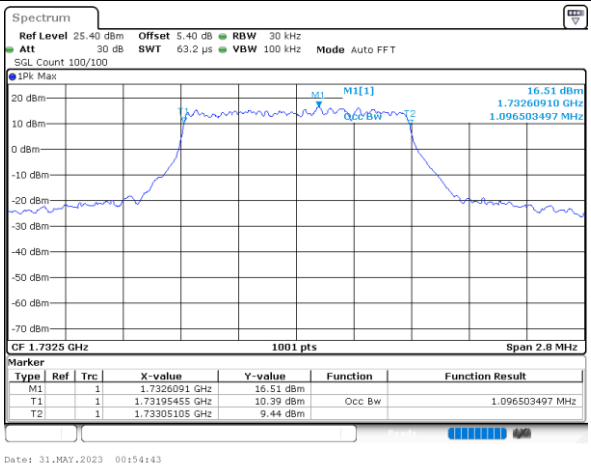


Occupied Bandwidth

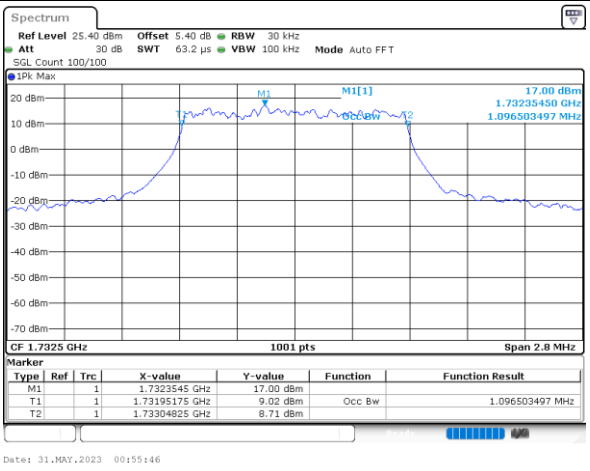
Mode	LTE Band 4 : 99%OBW(MHz)	
BW	1.4MHz	
Mod.	QPSK	16QAM
Middle CH	1.10	1.10
BW	3MHz	
Mod.	QPSK	16QAM
Middle CH	2.72	2.72
BW	5MHz	
Mod.	QPSK	16QAM
Middle CH	4.50	4.51
BW	10MHz	
Mod.	QPSK	16QAM
Middle CH	9.11	9.07
BW	15MHz	
Mod.	QPSK	16QAM
Middle CH	13.52	13.43
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	17.86	18.02

LTE Band 4

Middle Channel / 1.4MHz / QPSK

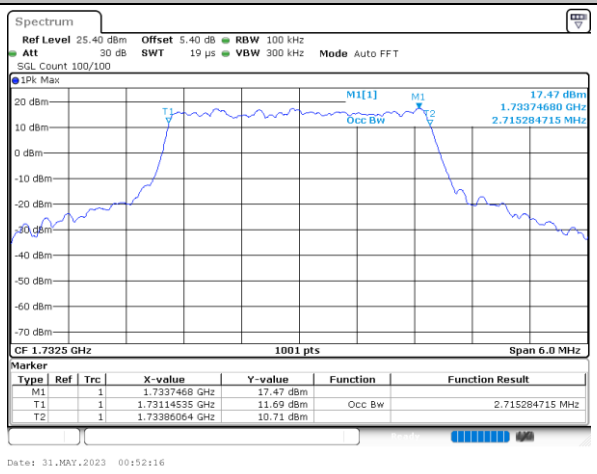


Middle Channel / 1.4MHz / 16QAM

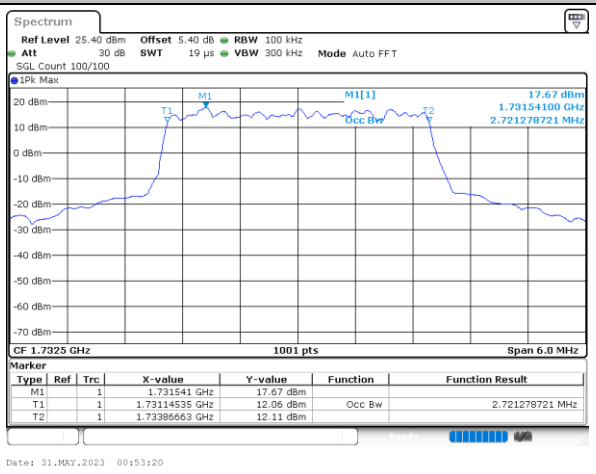


LTE Band 4

Middle Channel / 3MHz / QPSK

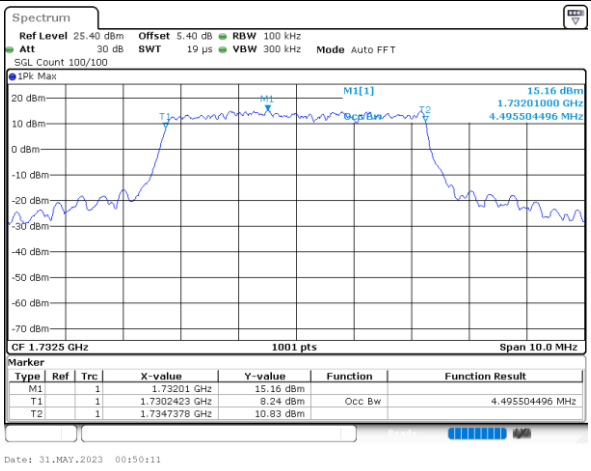


Middle Channel / 3MHz / 16QAM

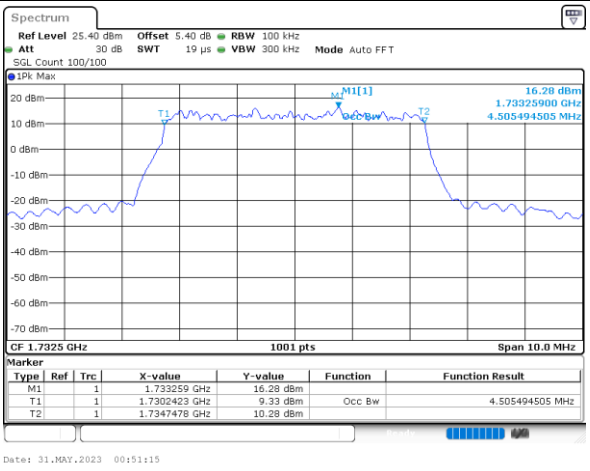


LTE Band 4

Middle Channel / 5MHz / QPSK

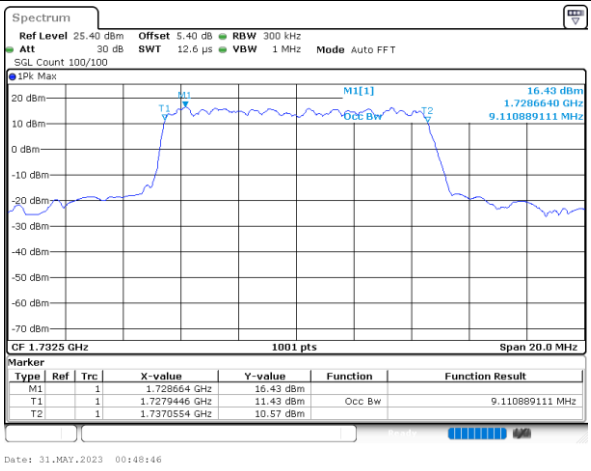


Middle Channel / 5MHz / 16QAM

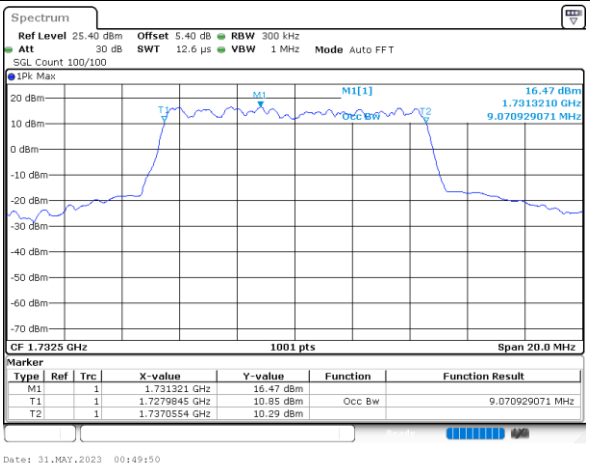


LTE Band 4

Middle Channel / 10MHz / QPSK

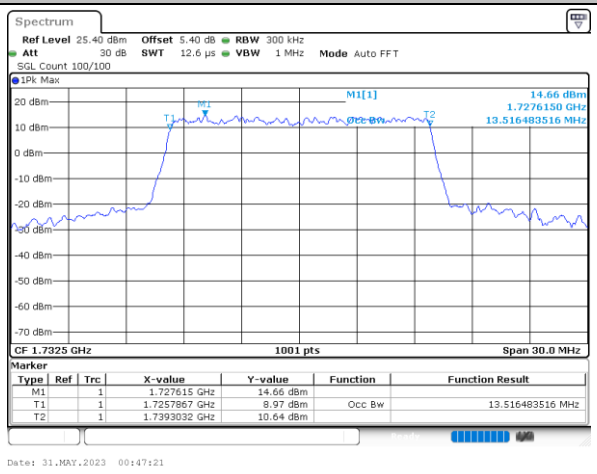


Middle Channel / 10MHz / 16QAM

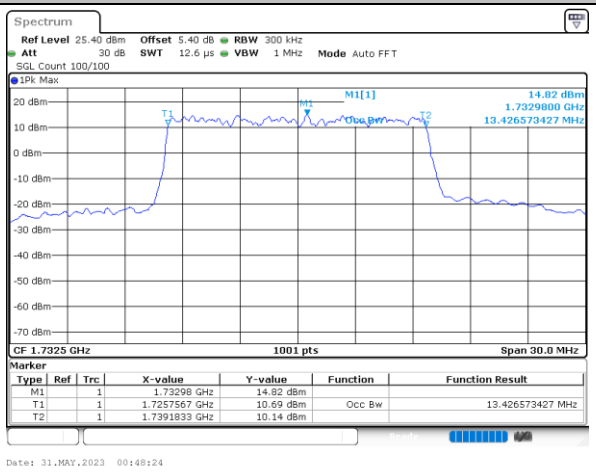


LTE Band 4

Middle Channel / 15MHz / QPSK

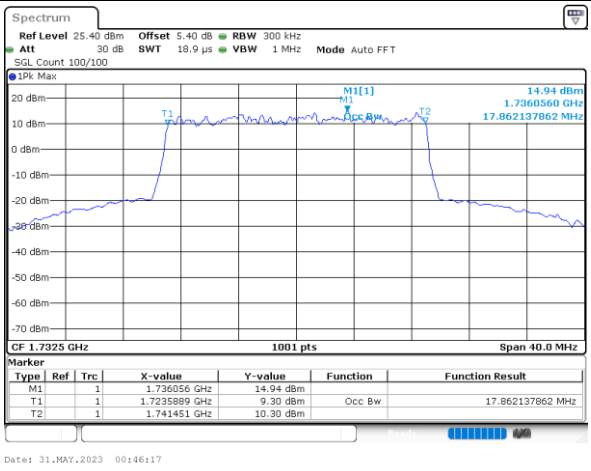


Middle Channel / 15MHz / 16QAM

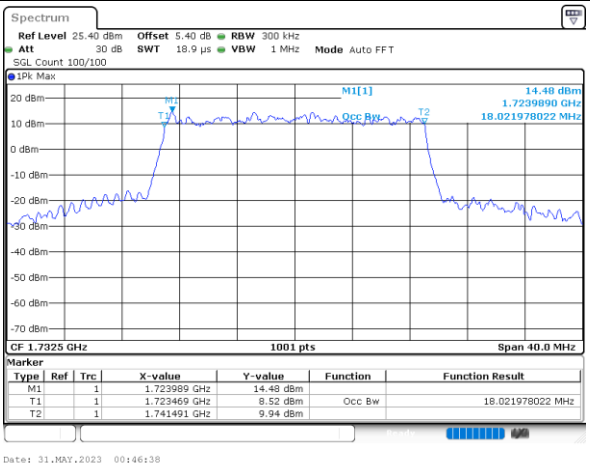


LTE Band 4

Middle Channel / 20MHz / QPSK



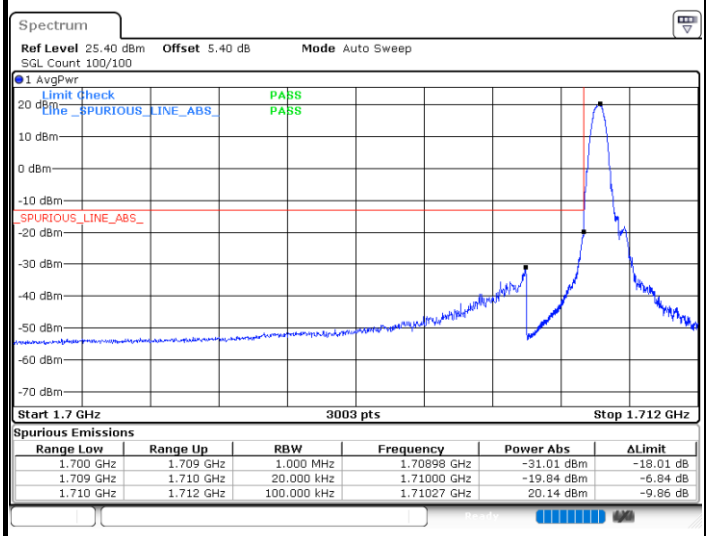
Middle Channel / 20MHz / 16QAM



Conducted Band Edge

LTE Band 4 / 1.4MHz / QPSK

Lowest Band Edge / 1RB

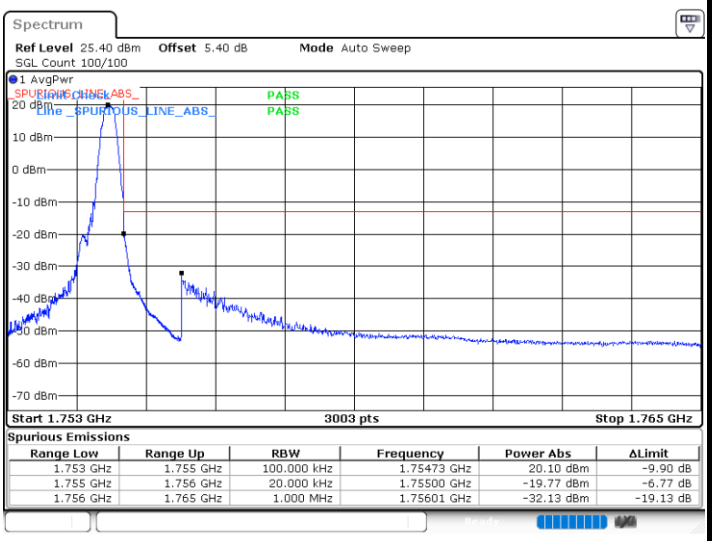


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70898 GHz	-31.01 dBm	-18.01 dB
1.709 GHz	1.710 GHz	20.000 kHz	1.71000 GHz	-19.84 dBm	-6.84 dB
1.710 GHz	1.712 GHz	100.000 kHz	1.71027 GHz	20.14 dBm	-9.86 dB

Date: 30.MAY.2023 22:05:13

Highest Band Edge / 1RB

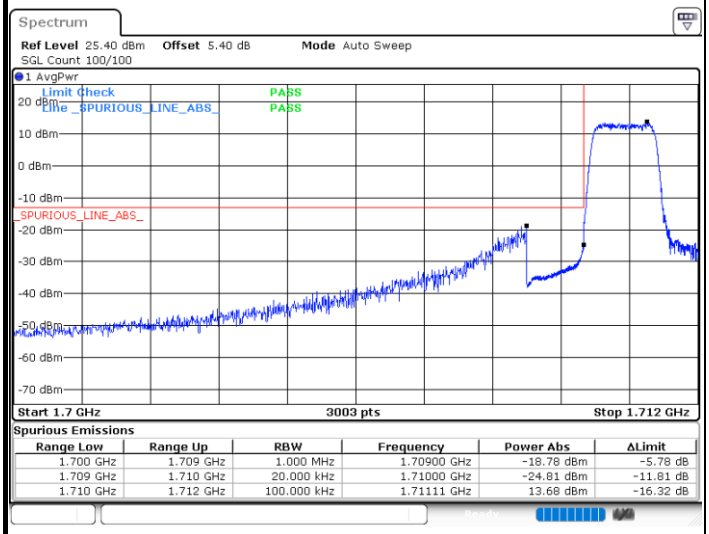


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.753 GHz	1.755 GHz	100.000 kHz	1.75473 GHz	20.10 dBm	-9.90 dB
1.755 GHz	1.756 GHz	20.000 kHz	1.75500 GHz	-19.77 dBm	-6.77 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75601 GHz	-32.13 dBm	-19.13 dB

Date: 30.MAY.2023 22:20:39

Lowest Band Edge / Full RB

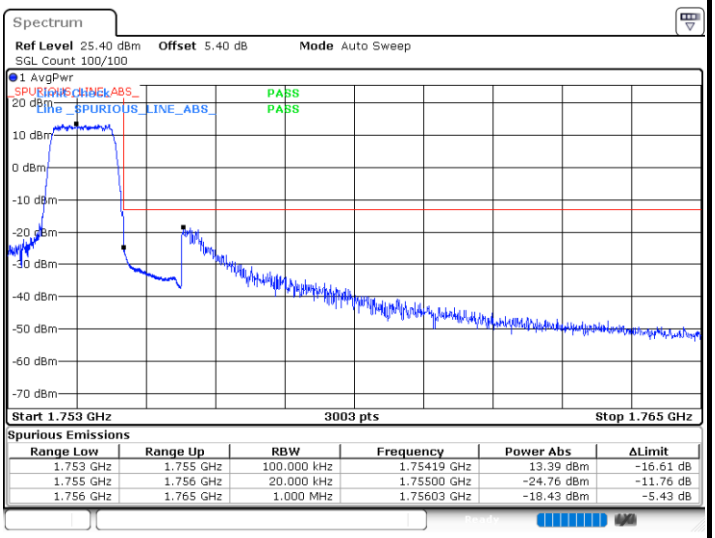


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70900 GHz	-18.78 dBm	-5.78 dB
1.709 GHz	1.710 GHz	20.000 kHz	1.71000 GHz	-24.81 dBm	-11.81 dB
1.710 GHz	1.712 GHz	100.000 kHz	1.71111 GHz	13.68 dBm	-16.32 dB

Date: 30.MAY.2023 22:11:53

Highest Band Edge / Full RB



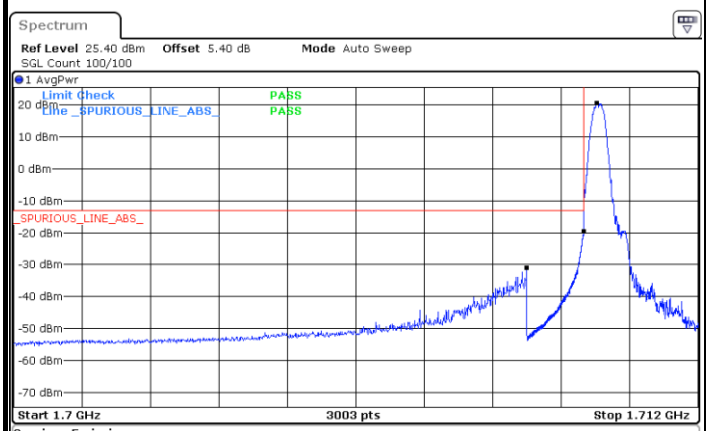
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.753 GHz	1.755 GHz	100.000 kHz	1.75419 GHz	13.39 dBm	-16.61 dB
1.755 GHz	1.756 GHz	20.000 kHz	1.75500 GHz	-24.76 dBm	-11.76 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75603 GHz	-18.43 dBm	-5.43 dB

Date: 30.MAY.2023 22:26:02

LTE Band 4 / 1.4MHz / 16QAM

Lowest Band Edge / 1 RB

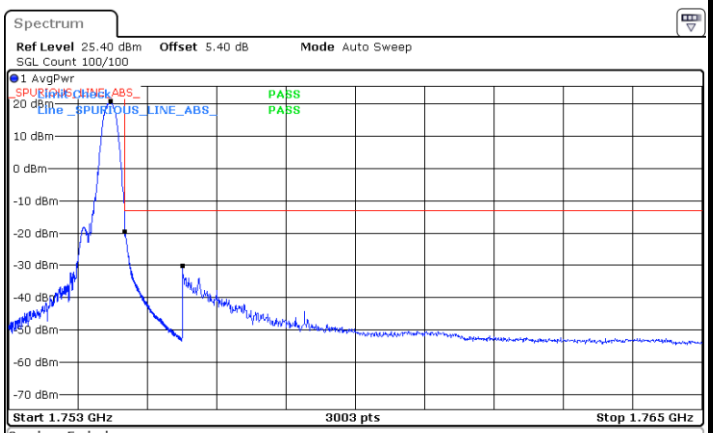


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70900 GHz	-31.00 dBm	-18.00 dB
1.709 GHz	1.710 GHz	20.000 kHz	1.71000 GHz	-19.65 dBm	-6.65 dB
1.710 GHz	1.712 GHz	100.000 kHz	1.71022 GHz	20.48 dBm	-9.52 dB

Date: 30.MAY.2023 22:06:33

Highest Band Edge / 1 RB

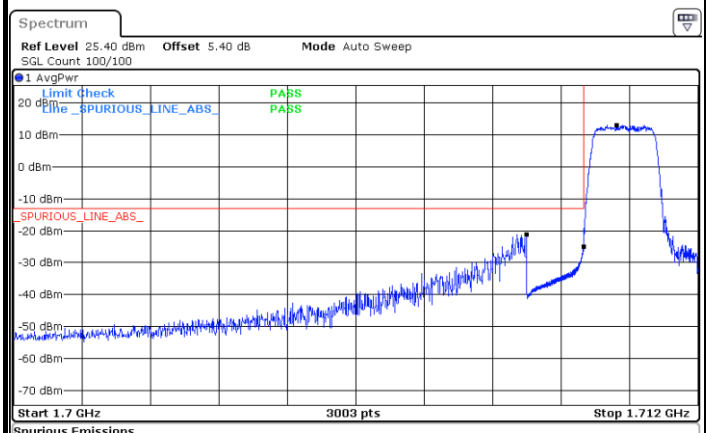


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.753 GHz	1.755 GHz	100.000 kHz	1.75477 GHz	20.68 dBm	-9.32 dB
1.755 GHz	1.756 GHz	20.000 kHz	1.75500 GHz	-19.49 dBm	-6.49 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75600 GHz	-30.16 dBm	-17.16 dB

Date: 30.MAY.2023 22:21:59

Lowest Band Edge / Full RB

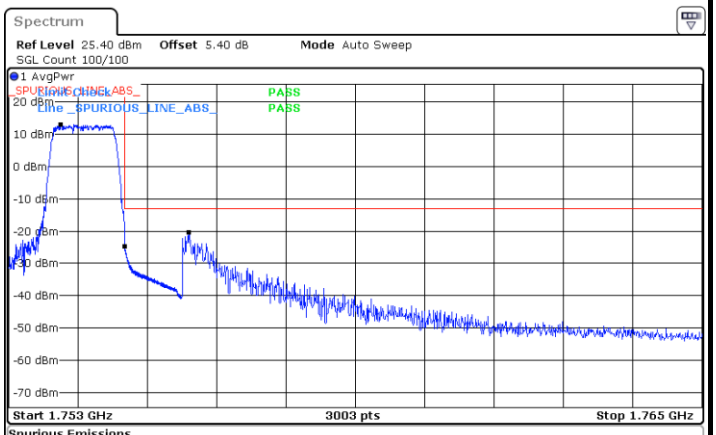


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70899 GHz	-21.11 dBm	-8.11 dB
1.709 GHz	1.710 GHz	20.000 kHz	1.71000 GHz	-25.01 dBm	-12.01 dB
1.710 GHz	1.712 GHz	100.000 kHz	1.71056 GHz	12.99 dBm	-17.01 dB

Date: 30.MAY.2023 22:10:33

Highest Band Edge / Full RB



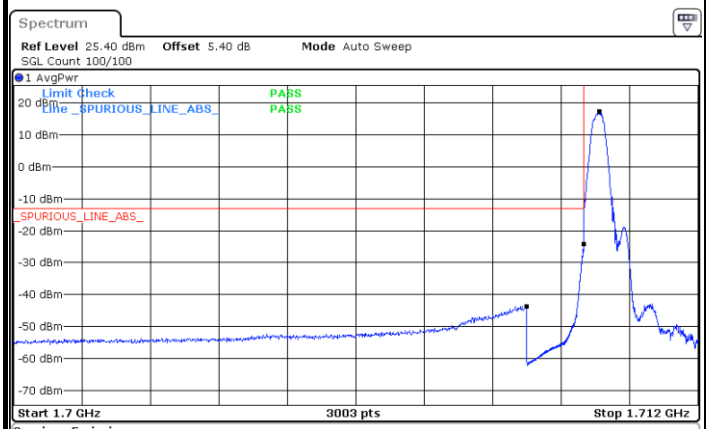
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.753 GHz	1.755 GHz	100.000 kHz	1.75390 GHz	13.03 dBm	-16.97 dB
1.755 GHz	1.756 GHz	20.000 kHz	1.75500 GHz	-24.85 dBm	-11.85 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75612 GHz	-20.51 dBm	-7.51 dB

Date: 30.MAY.2023 22:27:22

LTE Band 4 / 1.4MHz / 64QAM

Lowest Band Edge / 1 RB

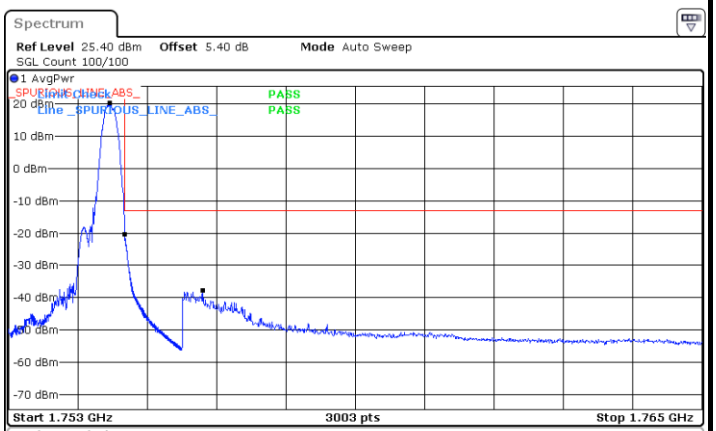


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70899 GHz	-43.58 dBm	-30.58 dB
1.709 GHz	1.710 GHz	20.000 kHz	1.71000 GHz	-24.20 dBm	-11.20 dB
1.710 GHz	1.712 GHz	100.000 kHz	1.71027 GHz	17.19 dBm	-12.81 dB

Date: 30.MAY.2023 22:17:53

Highest Band Edge / 1 RB

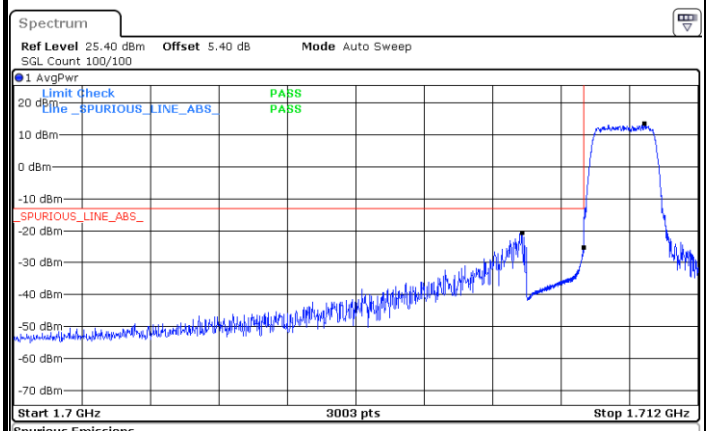


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.753 GHz	1.755 GHz	100.000 kHz	1.75475 GHz	20.28 dBm	-9.72 dB
1.755 GHz	1.756 GHz	20.000 kHz	1.75500 GHz	-20.32 dBm	-7.32 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75636 GHz	-37.84 dBm	-24.84 dB

Date: 30.MAY.2023 22:23:19

Lowest Band Edge / Full RB

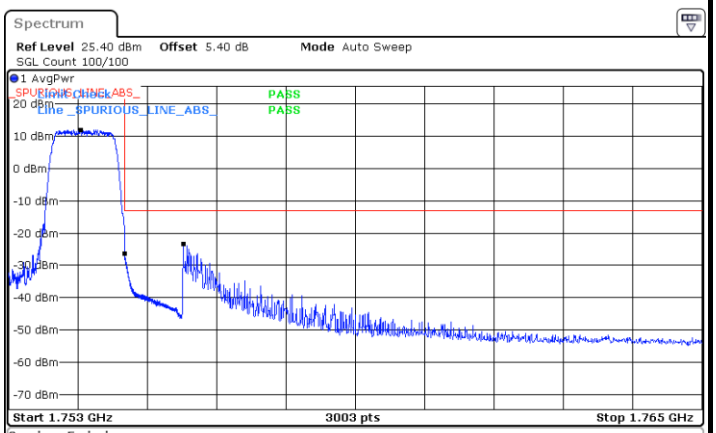


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70891 GHz	-20.60 dBm	-7.60 dB
1.709 GHz	1.710 GHz	20.000 kHz	1.71000 GHz	-25.33 dBm	-12.33 dB
1.710 GHz	1.712 GHz	100.000 kHz	1.71106 GHz	13.38 dBm	-16.62 dB

Date: 30.MAY.2023 22:09:13

Highest Band Edge / Full RB



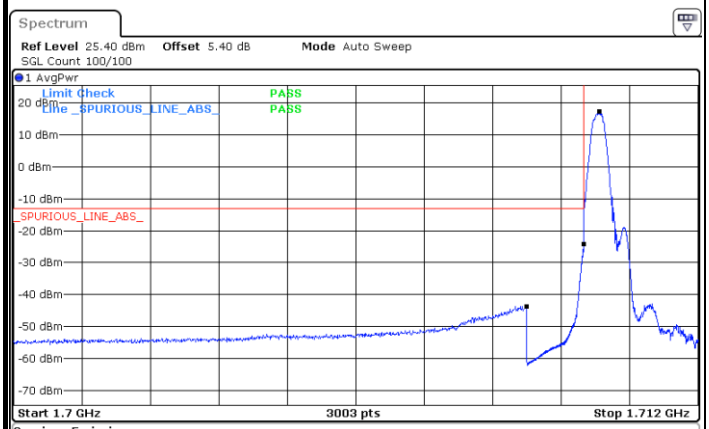
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.753 GHz	1.755 GHz	100.000 kHz	1.75425 GHz	11.96 dBm	-18.04 dB
1.755 GHz	1.756 GHz	20.000 kHz	1.75500 GHz	-26.31 dBm	-13.31 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75602 GHz	-23.48 dBm	-10.48 dB

Date: 30.MAY.2023 22:28:42

LTE Band 4 / 1.4MHz / 256QAM

Lowest Band Edge / 1 RB

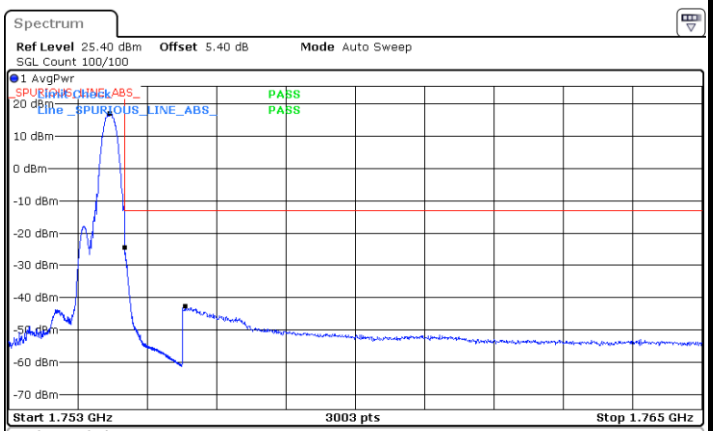


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70899 GHz	-43.58 dBm	-30.58 dB
1.709 GHz	1.710 GHz	20.000 kHz	1.71000 GHz	-24.20 dBm	-11.20 dB
1.710 GHz	1.712 GHz	100.000 kHz	1.71027 GHz	17.19 dBm	-12.81 dB

Date: 30.MAY.2023 22:17:53

Highest Band Edge / 1 RB

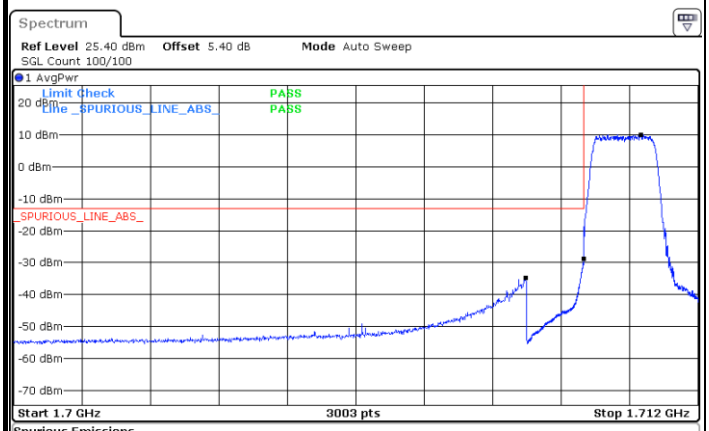


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.753 GHz	1.755 GHz	100.000 kHz	1.75475 GHz	17.11 dBm	-12.89 dB
1.755 GHz	1.756 GHz	20.000 kHz	1.75500 GHz	-24.44 dBm	-11.44 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75606 GHz	-42.65 dBm	-29.65 dB

Date: 30.MAY.2023 22:24:39

Lowest Band Edge / Full RB

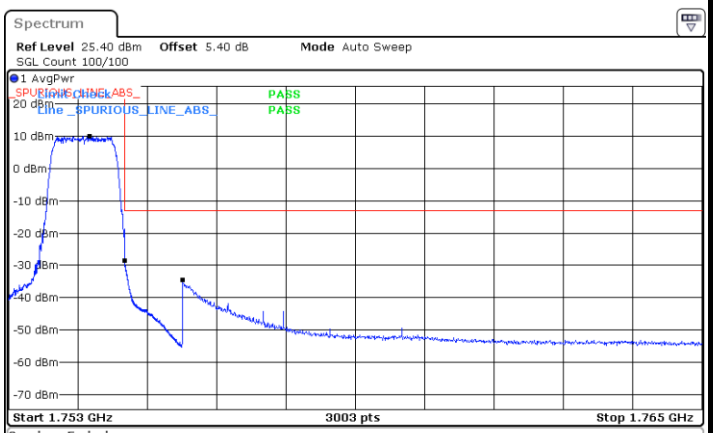


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70898 GHz	-34.79 dBm	-21.79 dB
1.709 GHz	1.710 GHz	20.000 kHz	1.71000 GHz	-28.74 dBm	-15.74 dB
1.710 GHz	1.712 GHz	100.000 kHz	1.71100 GHz	9.97 dBm	-20.03 dB

Date: 30.MAY.2023 22:19:16

Highest Band Edge / Full RB



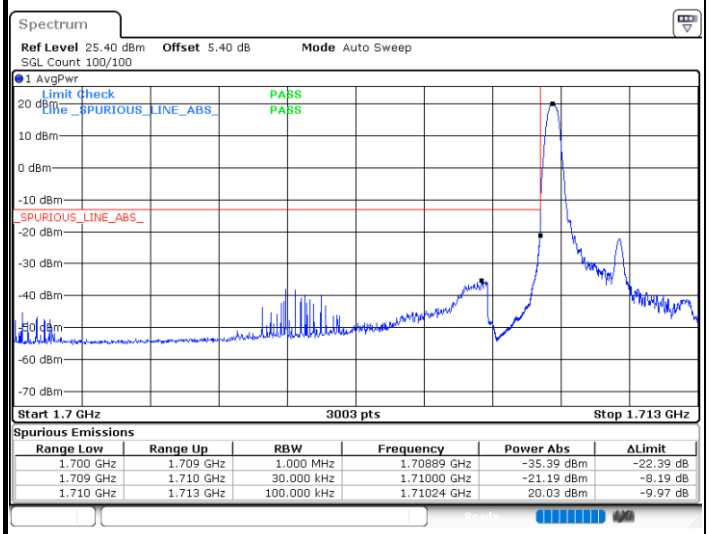
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.753 GHz	1.755 GHz	100.000 kHz	1.75440 GHz	9.88 dBm	-20.12 dB
1.755 GHz	1.756 GHz	20.000 kHz	1.75500 GHz	-28.62 dBm	-15.62 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75600 GHz	-34.43 dBm	-21.43 dB

Date: 30.MAY.2023 22:30:02

LTE Band 4 / 3MHz / QPSK

Lowest Band Edge / 1RB

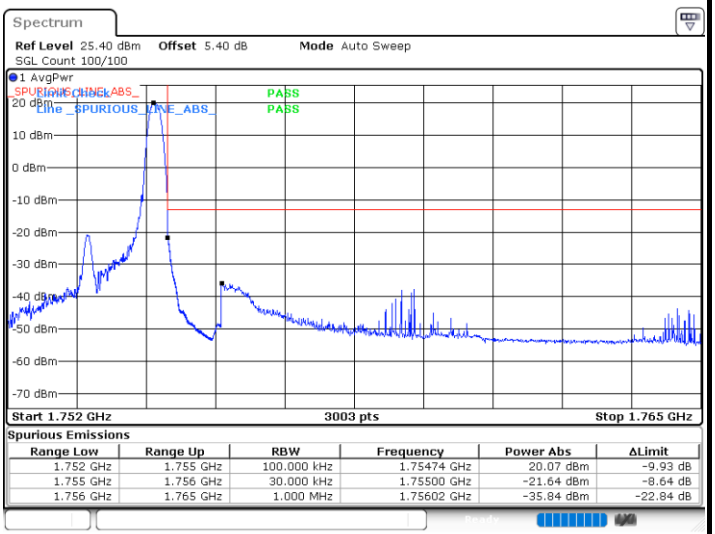


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70889 GHz	-35.39 dBm	-22.39 dB
1.709 GHz	1.710 GHz	30.000 kHz	1.71000 GHz	-21.19 dBm	-8.19 dB
1.710 GHz	1.713 GHz	100.000 kHz	1.71024 GHz	20.03 dBm	-9.97 dB

Date: 30.MAY.2023 22:34:15

Highest Band Edge / 1 RB

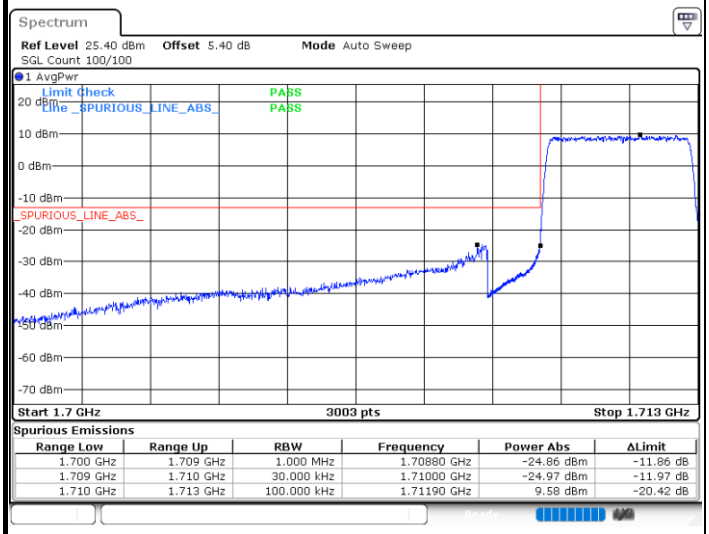


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.752 GHz	1.755 GHz	100.000 kHz	1.75474 GHz	20.07 dBm	-9.93 dB
1.755 GHz	1.756 GHz	30.000 kHz	1.75500 GHz	-21.64 dBm	-8.64 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75602 GHz	-35.84 dBm	-22.84 dB

Date: 30.MAY.2023 22:49:53

Lowest Band Edge / Full RB

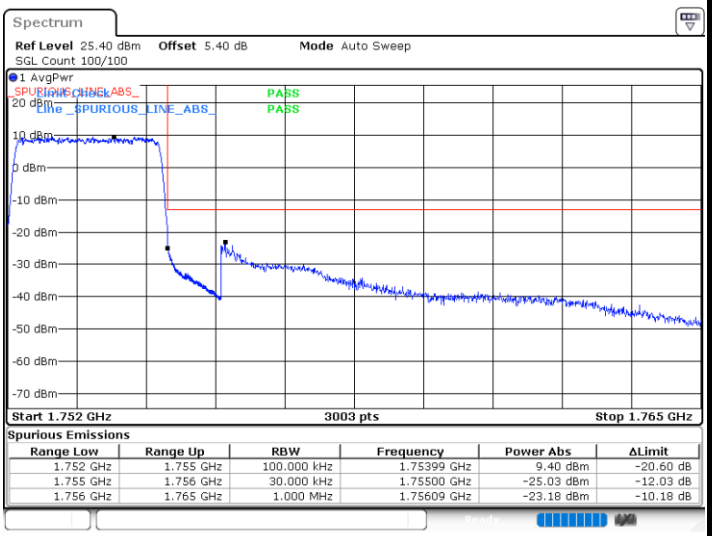


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70880 GHz	-24.86 dBm	-11.86 dB
1.709 GHz	1.710 GHz	30.000 kHz	1.71000 GHz	-24.97 dBm	-11.97 dB
1.710 GHz	1.713 GHz	100.000 kHz	1.71190 GHz	9.58 dBm	-20.42 dB

Date: 30.MAY.2023 22:39:18

Highest Band Edge / Full RB



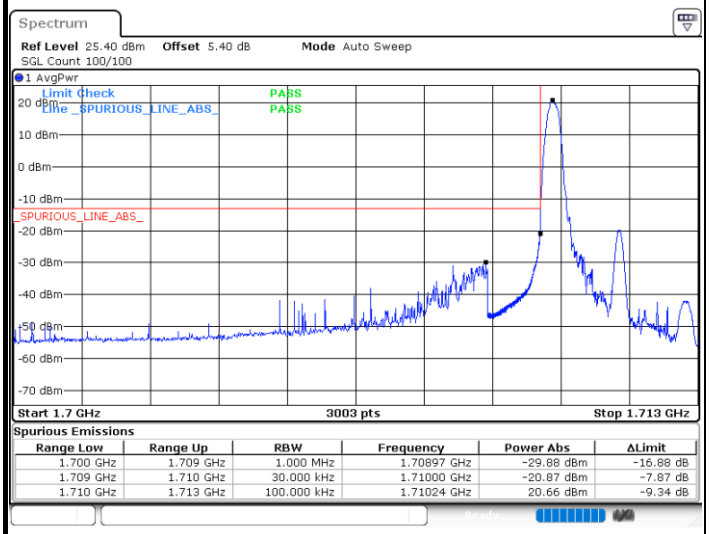
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.752 GHz	1.755 GHz	100.000 kHz	1.75399 GHz	9.40 dBm	-20.60 dB
1.755 GHz	1.756 GHz	30.000 kHz	1.75500 GHz	-25.03 dBm	-12.03 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75609 GHz	-23.18 dBm	-10.18 dB

Date: 30.MAY.2023 22:54:35

LTE Band 4 / 3MHz / 16QAM

Lowest Band Edge / 1 RB

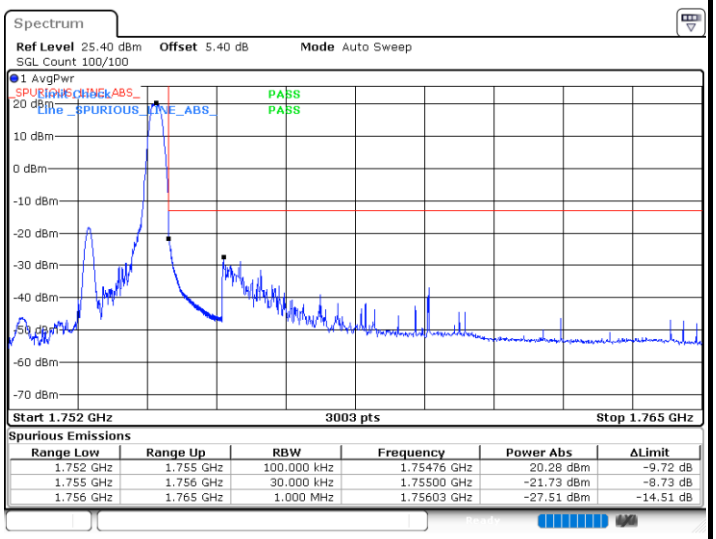


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70897 GHz	-29.88 dBm	-16.88 dB
1.709 GHz	1.710 GHz	30.000 kHz	1.71000 GHz	-20.87 dBm	-7.87 dB
1.710 GHz	1.713 GHz	100.000 kHz	1.71024 GHz	20.66 dBm	-9.34 dB

Date: 30.MAY.2023 22:35:35

Highest Band Edge /1 RB

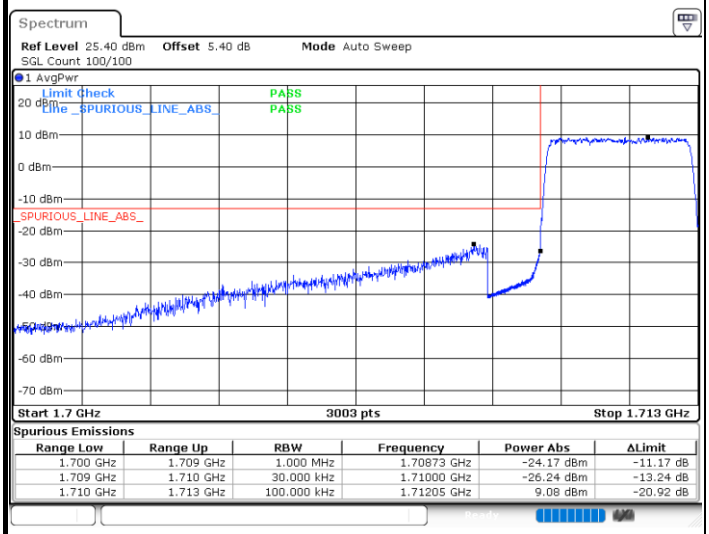


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.752 GHz	1.755 GHz	100.000 kHz	1.75476 GHz	20.28 dBm	-9.72 dB
1.755 GHz	1.756 GHz	30.000 kHz	1.75500 GHz	-21.73 dBm	-8.73 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75603 GHz	-27.51 dBm	-14.51 dB

Date: 30.MAY.2023 22:51:03

Lowest Band Edge / Full RB

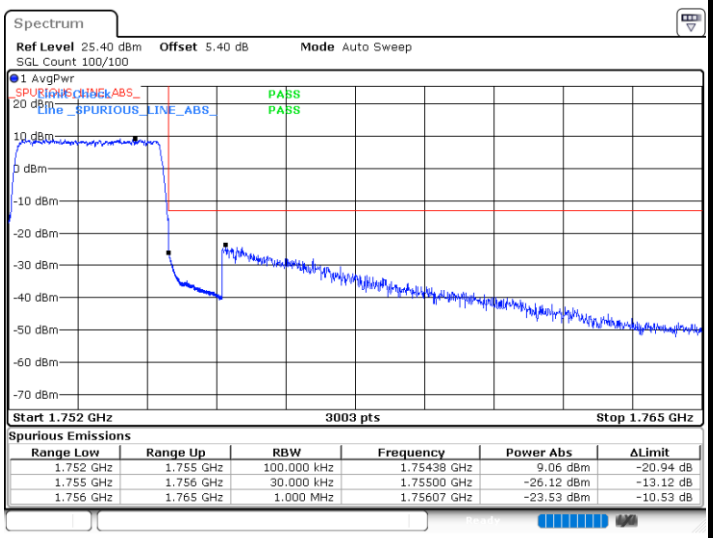


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70873 GHz	-24.17 dBm	-11.17 dB
1.709 GHz	1.710 GHz	30.000 kHz	1.71000 GHz	-26.24 dBm	-13.24 dB
1.710 GHz	1.713 GHz	100.000 kHz	1.71205 GHz	9.08 dBm	-20.92 dB

Date: 30.MAY.2023 22:40:28

Highest Band Edge / Full RB



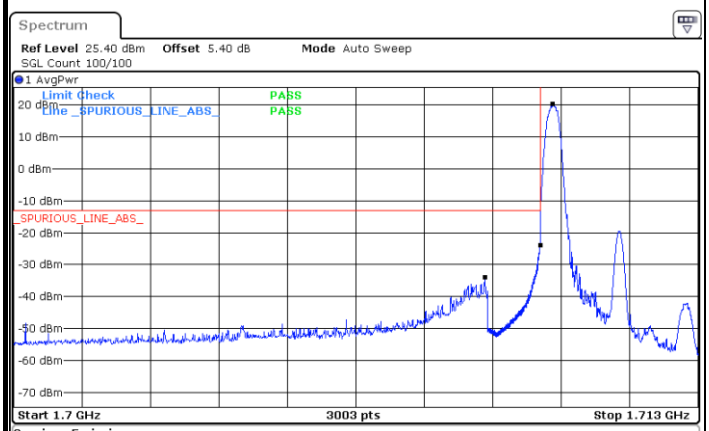
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.752 GHz	1.755 GHz	100.000 kHz	1.75438 GHz	9.06 dBm	-20.94 dB
1.755 GHz	1.756 GHz	30.000 kHz	1.75500 GHz	-26.12 dBm	-13.12 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75607 GHz	-23.53 dBm	-10.53 dB

Date: 30.MAY.2023 22:55:46

LTE Band 4 / 3MHz / 64QAM

Lowest Band Edge / 1 RB

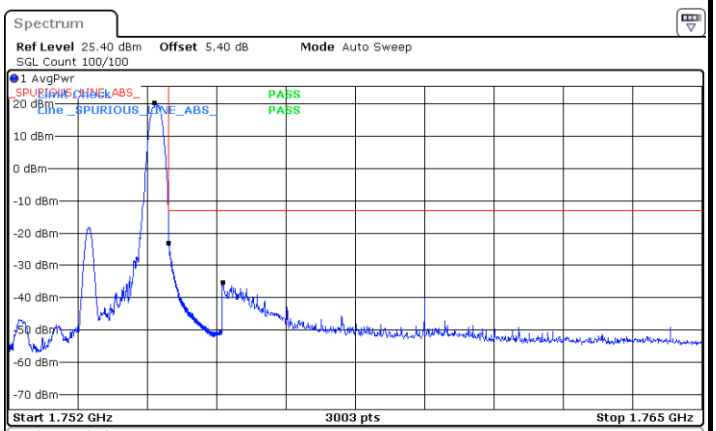


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70895 GHz	-34.02 dBm	-21.02 dB
1.709 GHz	1.710 GHz	30.000 kHz	1.71000 GHz	-23.86 dBm	-10.86 dB
1.710 GHz	1.713 GHz	100.000 kHz	1.71024 GHz	20.20 dBm	-9.80 dB

Date: 30.MAY.2023 22:36:55

Highest Band Edge /1 RB

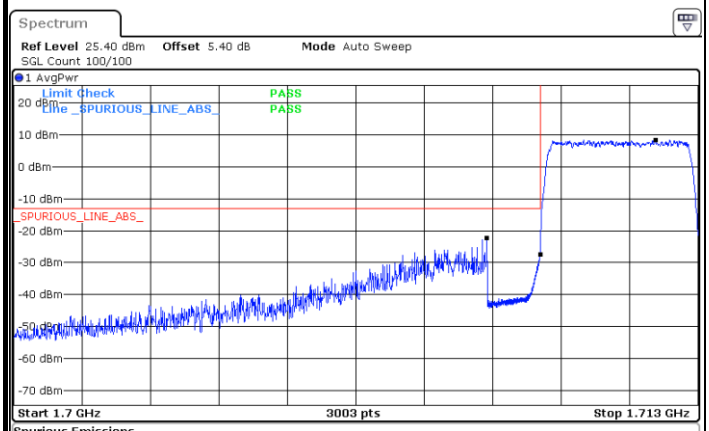


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.752 GHz	1.755 GHz	100.000 kHz	1.75474 GHz	20.13 dBm	-9.87 dB
1.755 GHz	1.756 GHz	30.000 kHz	1.75500 GHz	-23.03 dBm	-10.03 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75601 GHz	-35.18 dBm	-22.18 dB

Date: 30.MAY.2023 22:52:13

Lowest Band Edge / Full RB

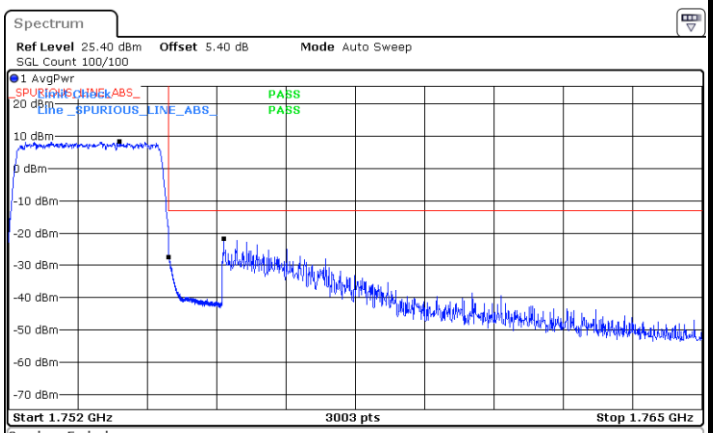


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70899 GHz	-22.42 dBm	-9.42 dB
1.709 GHz	1.710 GHz	30.000 kHz	1.71000 GHz	-27.46 dBm	-14.46 dB
1.710 GHz	1.713 GHz	100.000 kHz	1.71219 GHz	8.39 dBm	-21.61 dB

Date: 30.MAY.2023 22:41:38

Highest Band Edge / Full RB



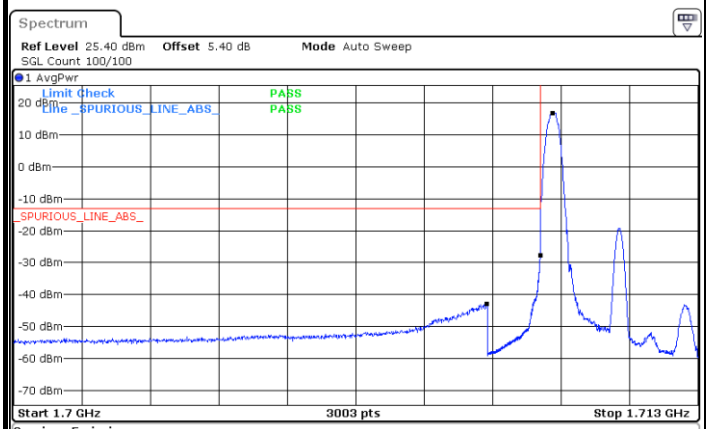
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.752 GHz	1.755 GHz	100.000 kHz	1.75408 GHz	8.46 dBm	-21.54 dB
1.755 GHz	1.756 GHz	30.000 kHz	1.75500 GHz	-27.54 dBm	-14.54 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75604 GHz	-21.89 dBm	-8.89 dB

Date: 30.MAY.2023 22:56:56

LTE Band 4 / 3MHz / 256QAM

Lowest Band Edge / 1 RB

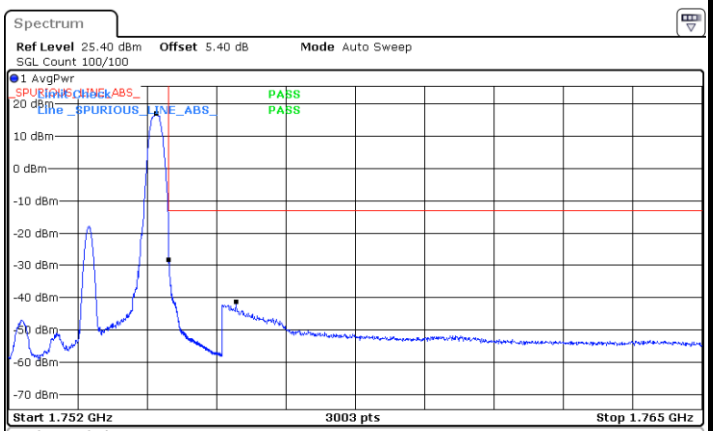


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70899 GHz	-42.79 dBm	-29.79 dB
1.709 GHz	1.710 GHz	30.000 kHz	1.71000 GHz	-27.81 dBm	-14.81 dB
1.710 GHz	1.713 GHz	100.000 kHz	1.71023 GHz	16.82 dBm	-13.18 dB

Date: 30.MAY.2023 22:38:05

Highest Band Edge /1 RB

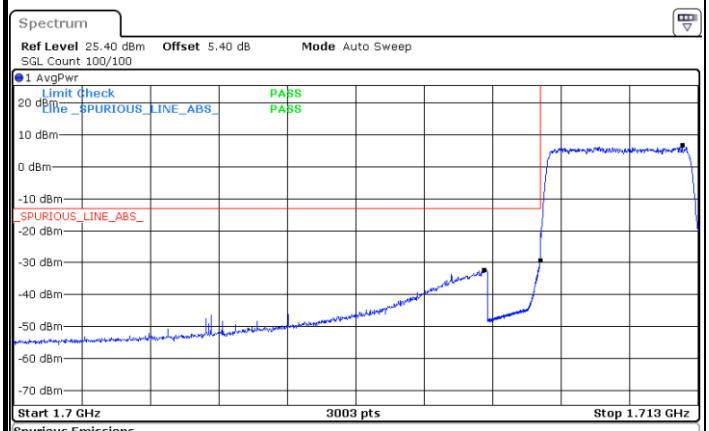


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.752 GHz	1.755 GHz	100.000 kHz	1.75476 GHz	17.03 dBm	-12.97 dB
1.755 GHz	1.756 GHz	30.000 kHz	1.75500 GHz	-28.24 dBm	-15.24 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75627 GHz	-41.38 dBm	-28.38 dB

Date: 30.MAY.2023 22:53:23

Lowest Band Edge / Full RB

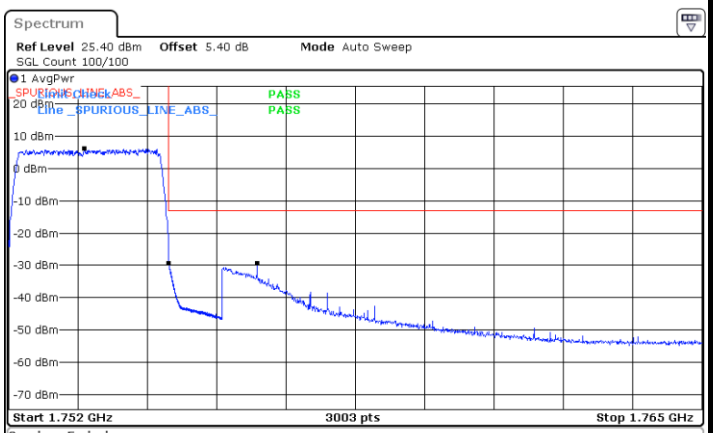


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70893 GHz	-32.45 dBm	-19.45 dB
1.709 GHz	1.710 GHz	30.000 kHz	1.71000 GHz	-29.42 dBm	-16.42 dB
1.710 GHz	1.713 GHz	100.000 kHz	1.71270 GHz	6.62 dBm	-23.38 dB

Date: 30.MAY.2023 22:42:48

Highest Band Edge / Full RB



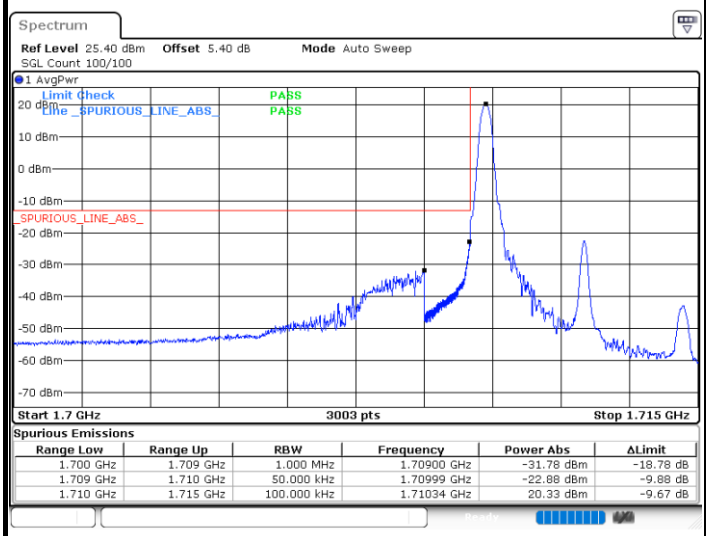
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.752 GHz	1.755 GHz	100.000 kHz	1.75343 GHz	6.22 dBm	-23.78 dB
1.755 GHz	1.756 GHz	30.000 kHz	1.75500 GHz	-29.39 dBm	-16.39 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75665 GHz	-29.32 dBm	-16.32 dB

Date: 30.MAY.2023 22:58:06

LTE Band 4 / 5MHz / QPSK

Lowest Band Edge / 1 RB

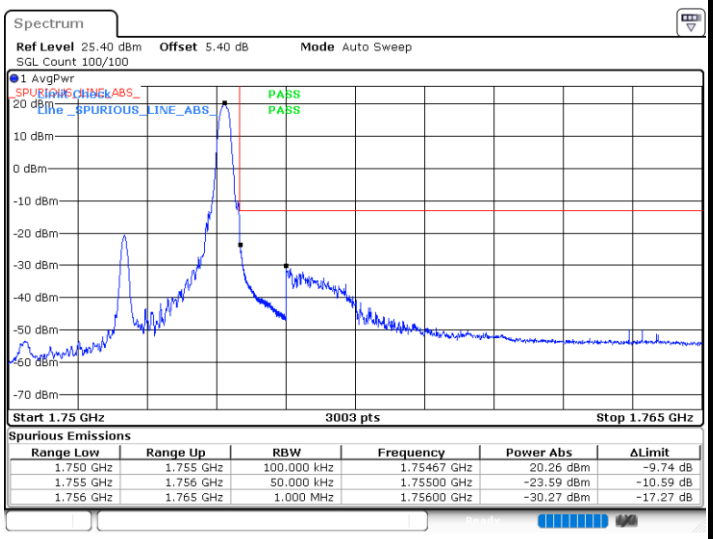


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70900 GHz	-31.78 dBm	-18.78 dB
1.709 GHz	1.710 GHz	50.000 kHz	1.70999 GHz	-22.88 dBm	-9.88 dB
1.710 GHz	1.715 GHz	100.000 kHz	1.71034 GHz	20.33 dBm	-9.67 dB

Date: 30.MAY.2023 23:02:36

Highest Band Edge / 1 RB

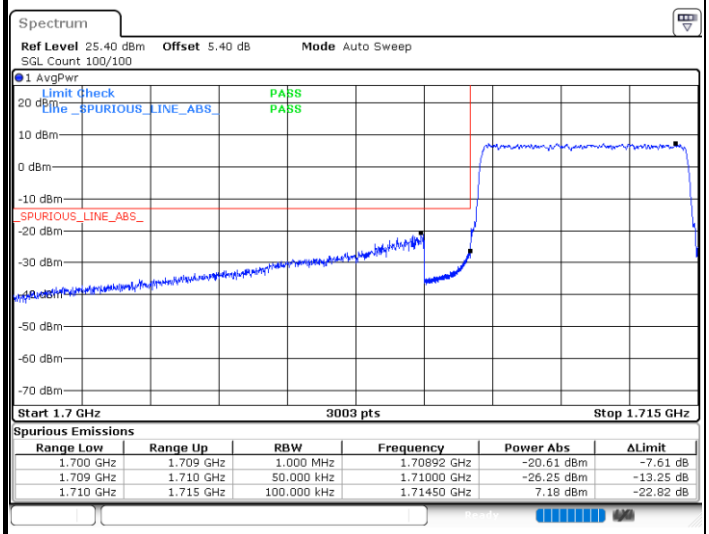


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.750 GHz	1.755 GHz	100.000 kHz	1.75467 GHz	20.26 dBm	-9.74 dB
1.755 GHz	1.756 GHz	50.000 kHz	1.75500 GHz	-23.59 dBm	-10.59 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75600 GHz	-30.27 dBm	-17.27 dB

Date: 30.MAY.2023 23:17:53

Lowest Band Edge / Full RB

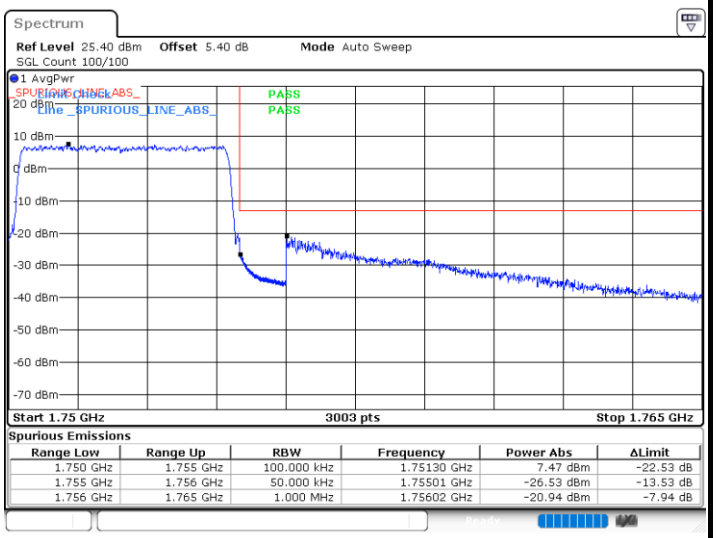


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70892 GHz	-20.61 dBm	-7.61 dB
1.709 GHz	1.710 GHz	50.000 kHz	1.71000 GHz	-26.25 dBm	-13.25 dB
1.710 GHz	1.715 GHz	100.000 kHz	1.71450 GHz	7.18 dBm	-22.82 dB

Date: 30.MAY.2023 23:07:19

Highest Band Edge / Full RB



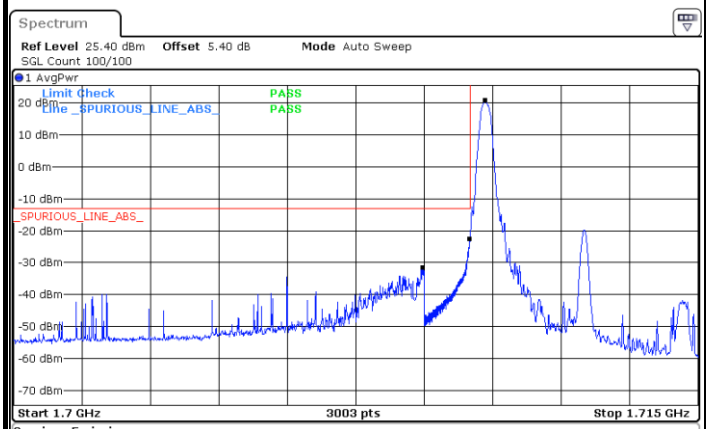
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.750 GHz	1.755 GHz	100.000 kHz	1.75130 GHz	7.47 dBm	-22.53 dB
1.755 GHz	1.756 GHz	50.000 kHz	1.75501 GHz	-26.53 dBm	-13.53 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75602 GHz	-20.94 dBm	-7.94 dB

Date: 30.MAY.2023 23:22:37

LTE Band 4 / 5MHz / 16QAM

Lowest Band Edge / 1RB

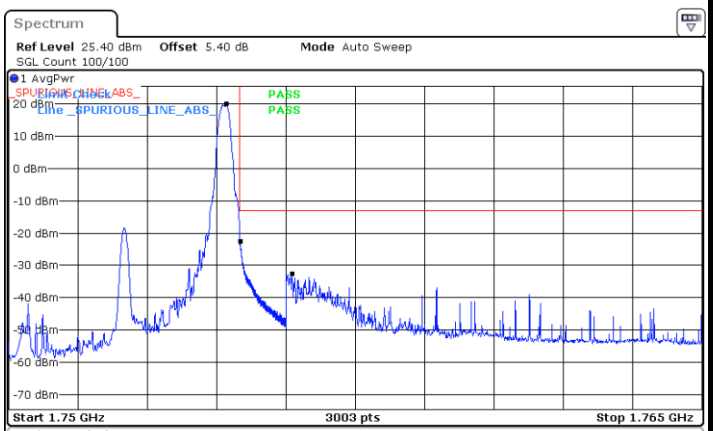


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70896 GHz	-31.61 dBm	-18.61 dB
1.709 GHz	1.710 GHz	50.000 kHz	1.71000 GHz	-22.70 dBm	-9.70 dB
1.710 GHz	1.715 GHz	100.000 kHz	1.71033 GHz	20.82 dBm	-9.18 dB

Date: 30.MAY.2023 23:03:46

Highest Band Edge / 1 RB

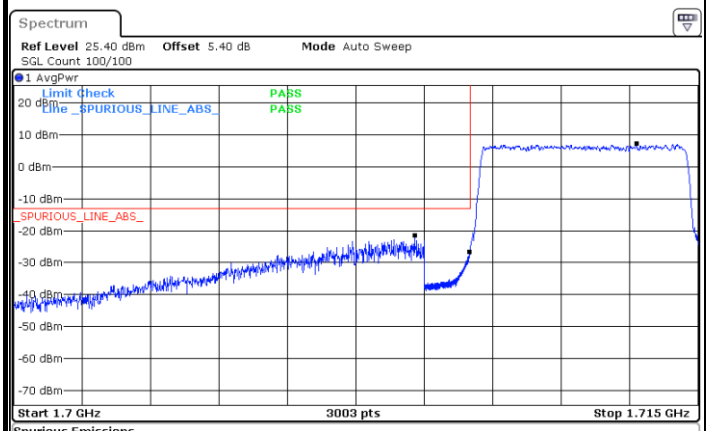


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.750 GHz	1.755 GHz	100.000 kHz	1.75470 GHz	19.92 dBm	-10.08 dB
1.755 GHz	1.756 GHz	50.000 kHz	1.75500 GHz	-22.50 dBm	-9.50 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75613 GHz	-32.53 dBm	-19.53 dB

Date: 30.MAY.2023 23:19:03

Lowest Band Edge / Full RB

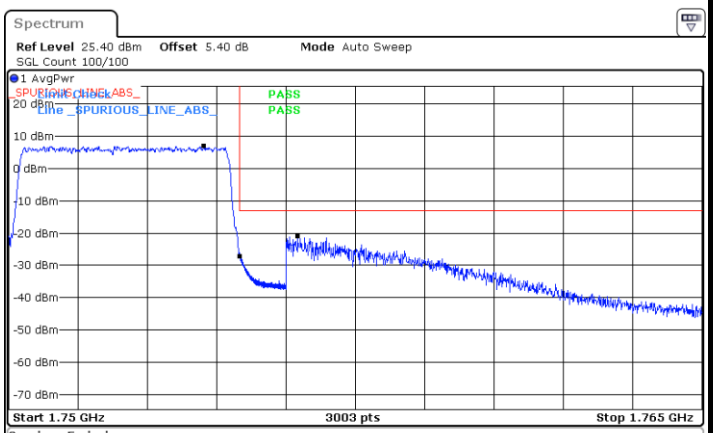


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70879 GHz	-21.48 dBm	-8.48 dB
1.709 GHz	1.710 GHz	50.000 kHz	1.70999 GHz	-26.71 dBm	-13.71 dB
1.710 GHz	1.715 GHz	100.000 kHz	1.71365 GHz	7.14 dBm	-22.86 dB

Date: 30.MAY.2023 23:08:29

Highest Band Edge / Full RB



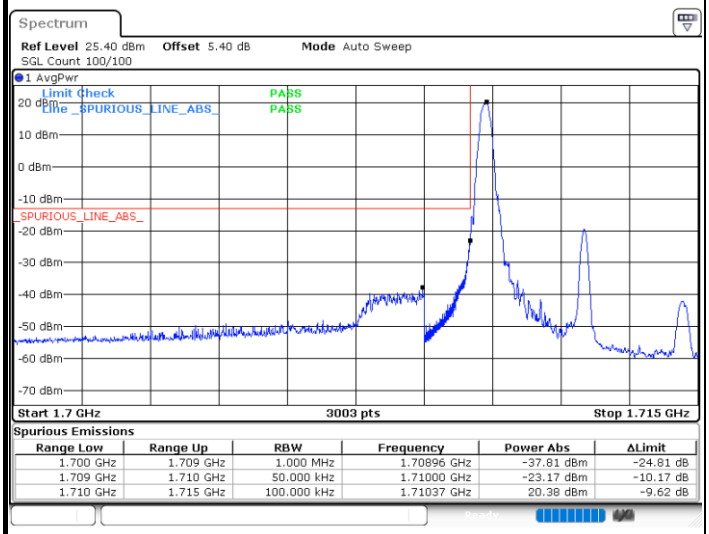
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.750 GHz	1.755 GHz	100.000 kHz	1.75422 GHz	6.93 dBm	-23.07 dB
1.755 GHz	1.756 GHz	50.000 kHz	1.75500 GHz	-27.10 dBm	-14.10 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75624 GHz	-20.91 dBm	-7.91 dB

Date: 30.MAY.2023 23:23:47

LTE Band 4 / 5MHz / 64QAM

Lowest Band Edge / 1RB

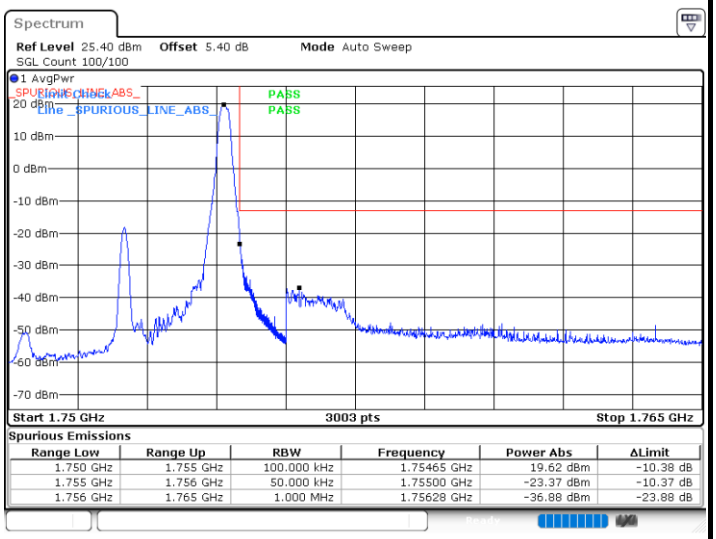


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70896 GHz	-37.81 dBm	-24.81 dB
1.709 GHz	1.710 GHz	50.000 kHz	1.71000 GHz	-23.17 dBm	-10.17 dB
1.710 GHz	1.715 GHz	100.000 kHz	1.71037 GHz	20.38 dBm	-9.62 dB

Date: 30.MAY.2023 23:04:56

Highest Band Edge / 1 RB

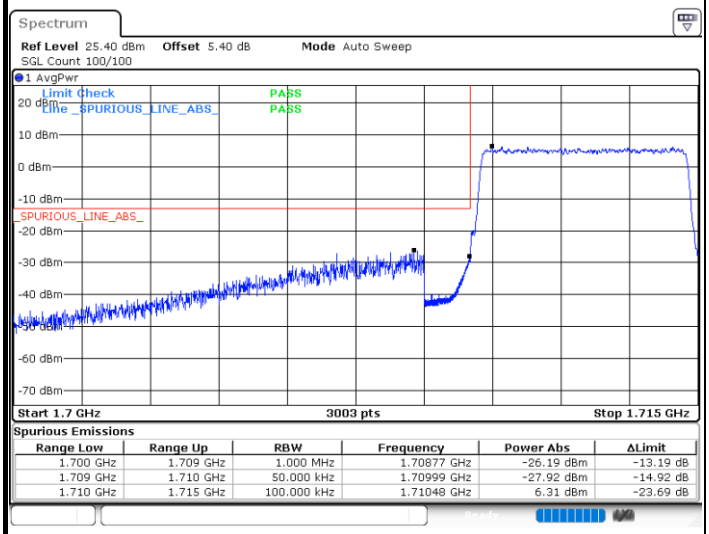


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.750 GHz	1.755 GHz	100.000 kHz	1.75465 GHz	19.62 dBm	-10.38 dB
1.755 GHz	1.756 GHz	50.000 kHz	1.75500 GHz	-23.37 dBm	-10.37 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75628 GHz	-36.88 dBm	-23.88 dB

Date: 30.MAY.2023 23:20:14

Lowest Band Edge / Full RB

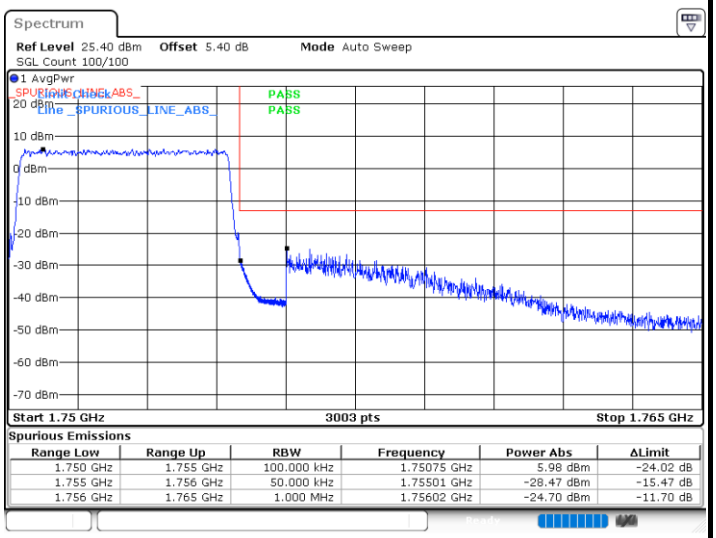


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70877 GHz	-26.19 dBm	-13.19 dB
1.709 GHz	1.710 GHz	50.000 kHz	1.70999 GHz	-27.92 dBm	-14.92 dB
1.710 GHz	1.715 GHz	100.000 kHz	1.71048 GHz	6.31 dBm	-23.69 dB

Date: 30.MAY.2023 23:09:39

Highest Band Edge / Full RB



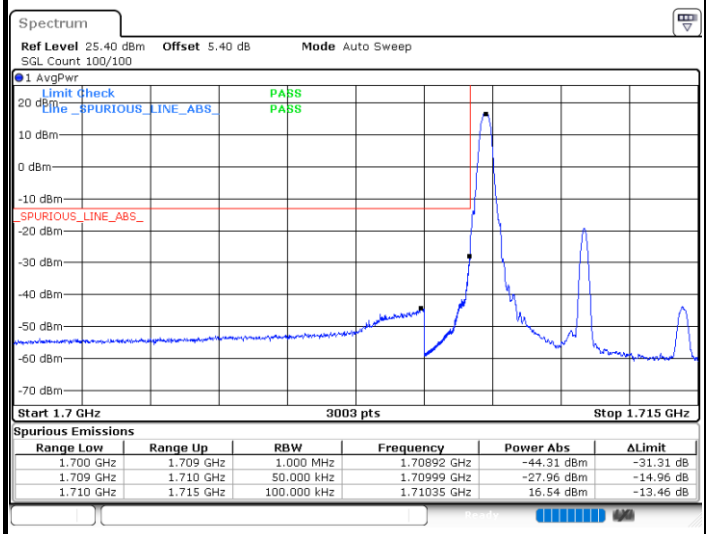
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.750 GHz	1.755 GHz	100.000 kHz	1.75075 GHz	5.98 dBm	-24.02 dB
1.755 GHz	1.756 GHz	50.000 kHz	1.75501 GHz	-28.47 dBm	-15.47 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75602 GHz	-24.70 dBm	-11.70 dB

Date: 30.MAY.2023 23:24:57

LTE Band 4 / 5MHz /256QAM

Lowest Band Edge / 1RB

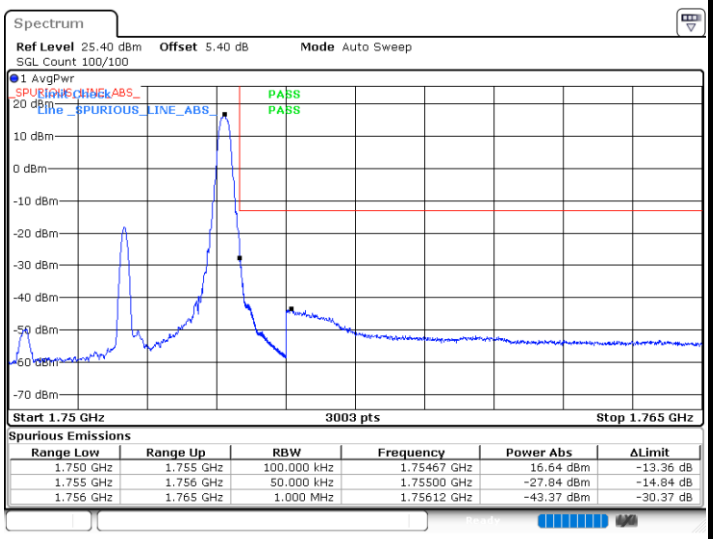


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70892 GHz	-44.31 dBm	-31.31 dB
1.709 GHz	1.710 GHz	50.000 kHz	1.70999 GHz	-27.96 dBm	-14.96 dB
1.710 GHz	1.715 GHz	100.000 kHz	1.71035 GHz	16.54 dBm	-13.46 dB

Date: 30.MAY.2023 23:06:06

Highest Band Edge / 1 RB

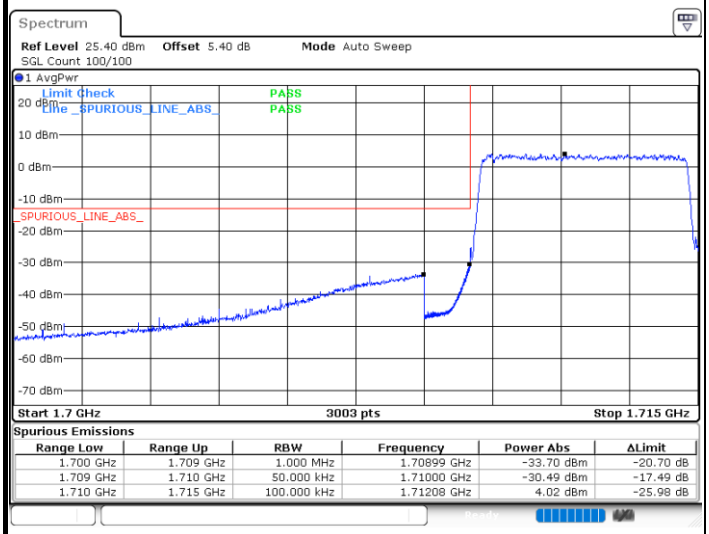


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.750 GHz	1.755 GHz	100.000 kHz	1.75467 GHz	16.64 dBm	-13.36 dB
1.755 GHz	1.756 GHz	50.000 kHz	1.75500 GHz	-27.84 dBm	-14.84 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75612 GHz	-43.37 dBm	-30.37 dB

Date: 30.MAY.2023 23:21:24

Lowest Band Edge / Full RB

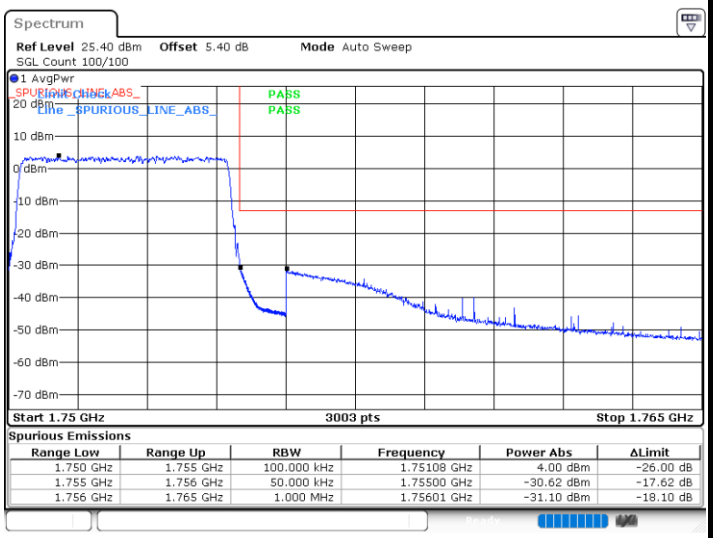


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70899 GHz	-33.70 dBm	-20.70 dB
1.709 GHz	1.710 GHz	50.000 kHz	1.71000 GHz	-30.49 dBm	-17.49 dB
1.710 GHz	1.715 GHz	100.000 kHz	1.71208 GHz	4.02 dBm	-25.98 dB

Date: 30.MAY.2023 23:10:49

Highest Band Edge / Full RB



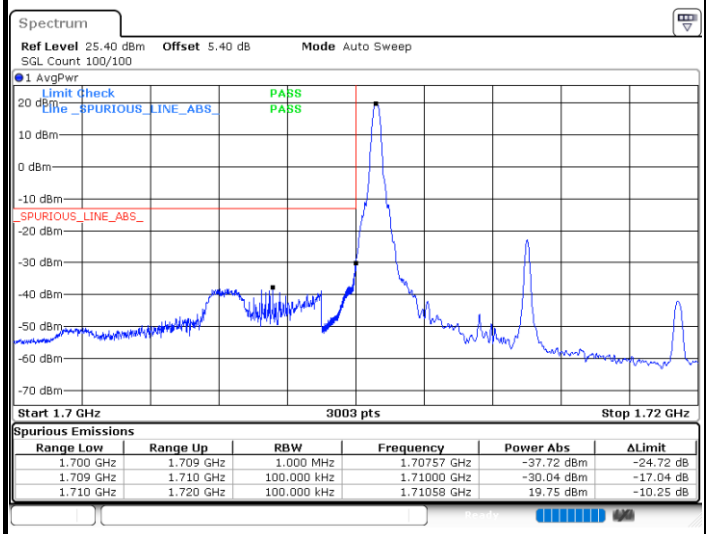
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.750 GHz	1.755 GHz	100.000 kHz	1.75108 GHz	4.00 dBm	-26.00 dB
1.755 GHz	1.756 GHz	50.000 kHz	1.75500 GHz	-30.62 dBm	-17.62 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75601 GHz	-31.10 dBm	-18.10 dB

Date: 30.MAY.2023 23:26:07

LTE Band 4 / 10MHz / QPSK

Lowest Band Edge / 1 RB

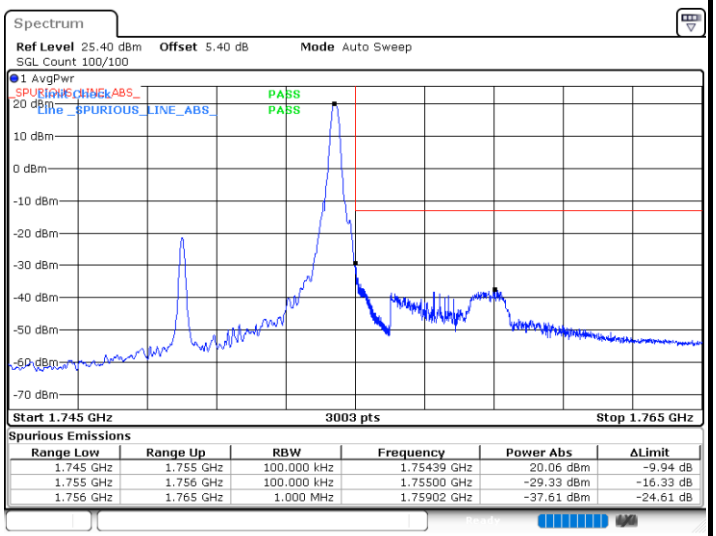


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70757 GHz	-37.72 dBm	-24.72 dB
1.709 GHz	1.710 GHz	100.000 kHz	1.71000 GHz	-30.04 dBm	-17.04 dB
1.710 GHz	1.720 GHz	100.000 kHz	1.71058 GHz	19.75 dBm	-10.25 dB

Date: 30.MAY.2023 23:30:06

Highest Band Edge / 1 RB

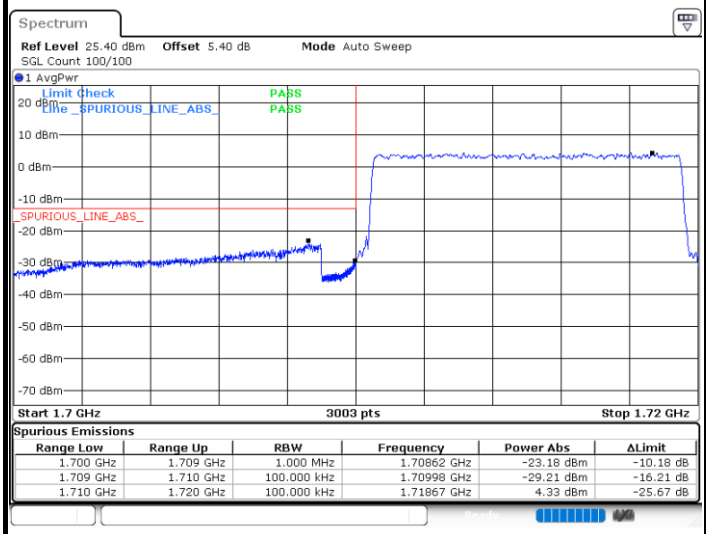


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.745 GHz	1.755 GHz	100.000 kHz	1.75439 GHz	20.06 dBm	-9.94 dB
1.755 GHz	1.756 GHz	100.000 kHz	1.75500 GHz	-29.33 dBm	-16.33 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75902 GHz	-37.61 dBm	-24.61 dB

Date: 30.MAY.2023 23:42:53

Lowest Band Edge / Full RB

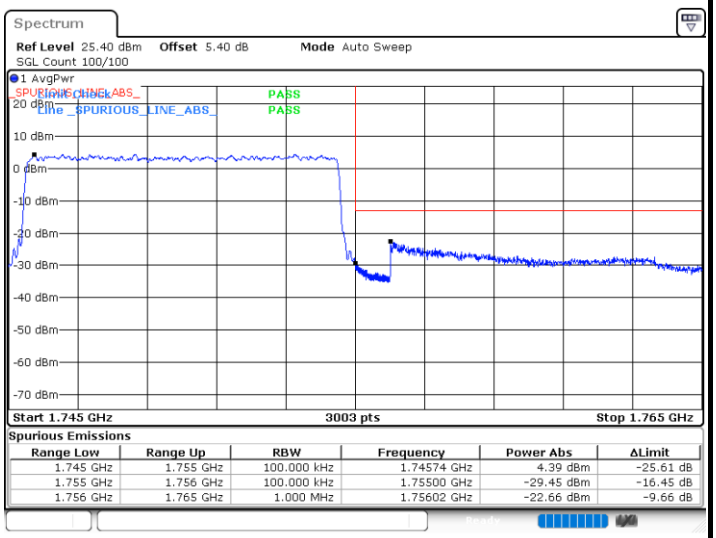


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70862 GHz	-23.18 dBm	-10.18 dB
1.709 GHz	1.710 GHz	100.000 kHz	1.70998 GHz	-29.21 dBm	-16.21 dB
1.710 GHz	1.720 GHz	100.000 kHz	1.71867 GHz	4.33 dBm	-25.67 dB

Date: 30.MAY.2023 23:33:58

Highest Band Edge / Full RB



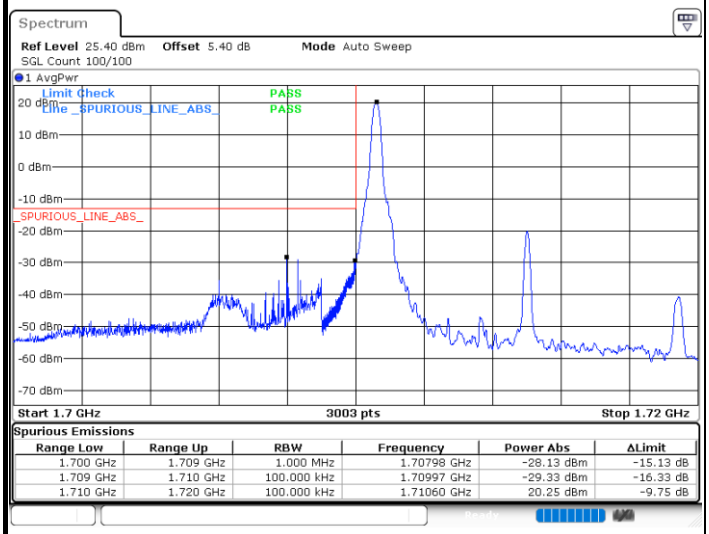
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.745 GHz	1.755 GHz	100.000 kHz	1.74574 GHz	4.39 dBm	-25.61 dB
1.755 GHz	1.756 GHz	100.000 kHz	1.75500 GHz	-29.45 dBm	-16.45 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75602 GHz	-22.66 dBm	-9.66 dB

Date: 30.MAY.2023 23:45:42

LTE Band 4 / 10MHz / 16QAM

Lowest Band Edge / 1 RB

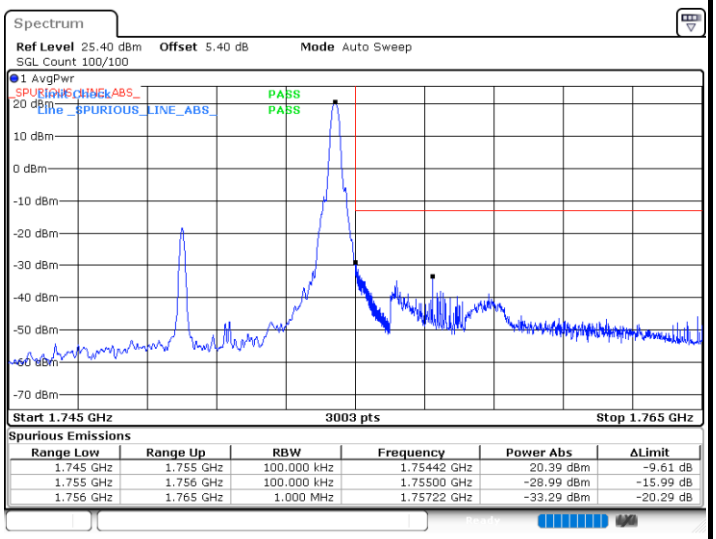


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70798 GHz	-28.13 dBm	-15.13 dB
1.709 GHz	1.710 GHz	100.000 kHz	1.70997 GHz	-29.33 dBm	-16.33 dB
1.710 GHz	1.720 GHz	100.000 kHz	1.71060 GHz	20.25 dBm	-9.75 dB

Date: 30.MAY.2023 23:31:15

Highest Band Edge / 1 RB

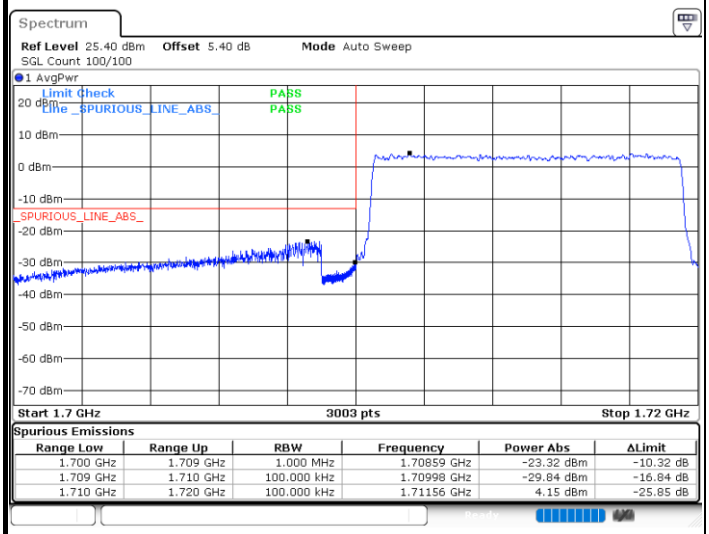


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.745 GHz	1.755 GHz	100.000 kHz	1.75442 GHz	20.39 dBm	-9.61 dB
1.755 GHz	1.756 GHz	100.000 kHz	1.75500 GHz	-28.99 dBm	-15.99 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75722 GHz	-33.29 dBm	-20.29 dB

Date: 30.MAY.2023 23:43:39

Lowest Band Edge / Full RB

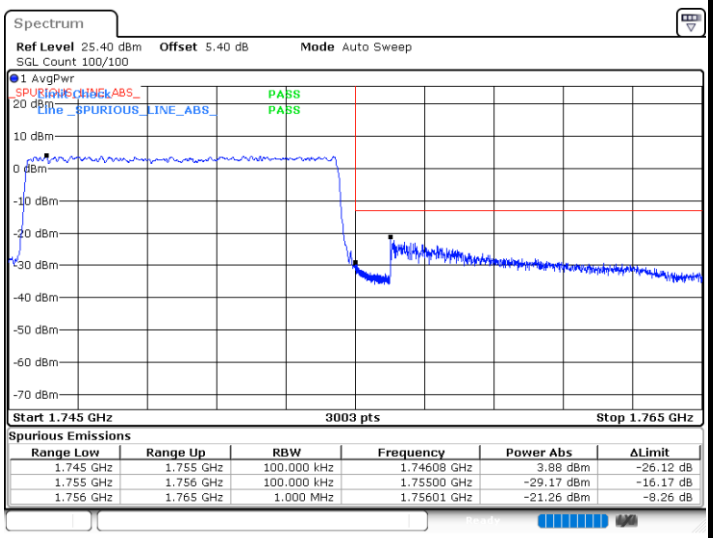


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70859 GHz	-23.32 dBm	-10.32 dB
1.709 GHz	1.710 GHz	100.000 kHz	1.70998 GHz	-29.84 dBm	-16.84 dB
1.710 GHz	1.720 GHz	100.000 kHz	1.71156 GHz	4.15 dBm	-25.85 dB

Date: 30.MAY.2023 23:34:43

Highest Band Edge / Full RB



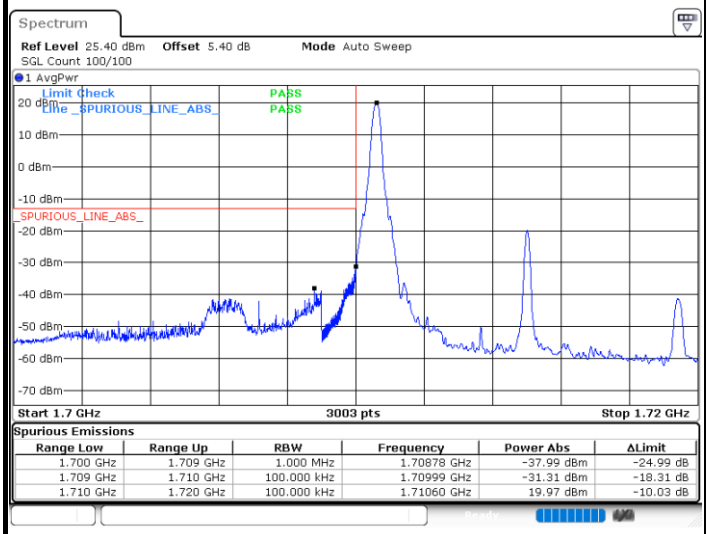
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.745 GHz	1.755 GHz	100.000 kHz	1.74608 GHz	3.88 dBm	-26.12 dB
1.755 GHz	1.756 GHz	100.000 kHz	1.75500 GHz	-29.17 dBm	-16.17 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75601 GHz	-21.26 dBm	-8.26 dB

Date: 30.MAY.2023 23:46:22

LTE Band 4 / 10MHz / 64QAM

Lowest Band Edge / 1 RB

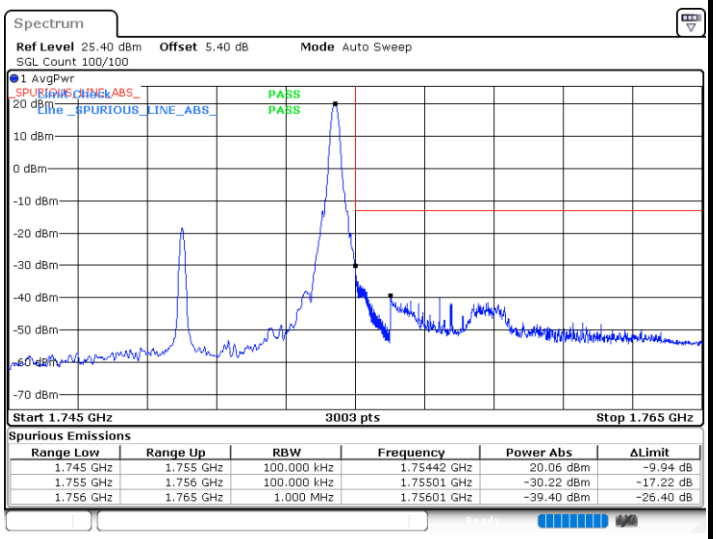


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70878 GHz	-37.99 dBm	-24.99 dB
1.709 GHz	1.710 GHz	100.000 kHz	1.70999 GHz	-31.31 dBm	-18.31 dB
1.710 GHz	1.720 GHz	100.000 kHz	1.71060 GHz	19.97 dBm	-10.03 dB

Date: 30.MAY.2023 23:32:25

Highest Band Edge / 1 RB

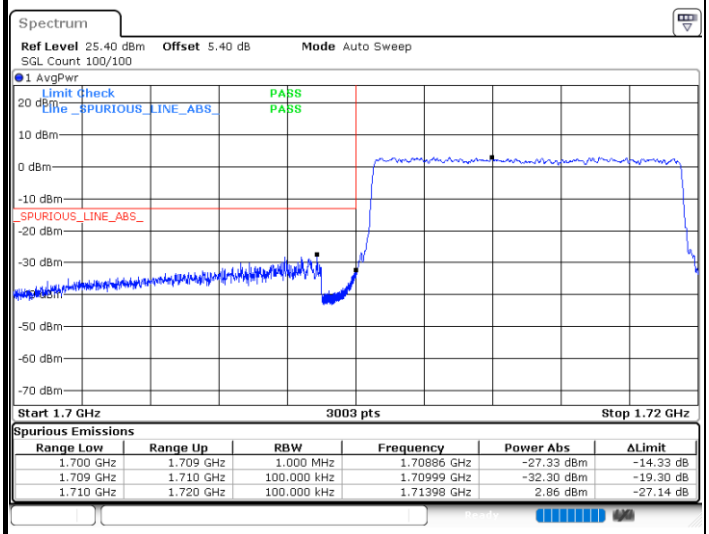


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.745 GHz	1.755 GHz	100.000 kHz	1.75442 GHz	20.06 dBm	-9.94 dB
1.755 GHz	1.756 GHz	100.000 kHz	1.75501 GHz	-30.22 dBm	-17.22 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75601 GHz	-39.40 dBm	-26.40 dB

Date: 30.MAY.2023 23:44:19

Lowest Band Edge / Full RB

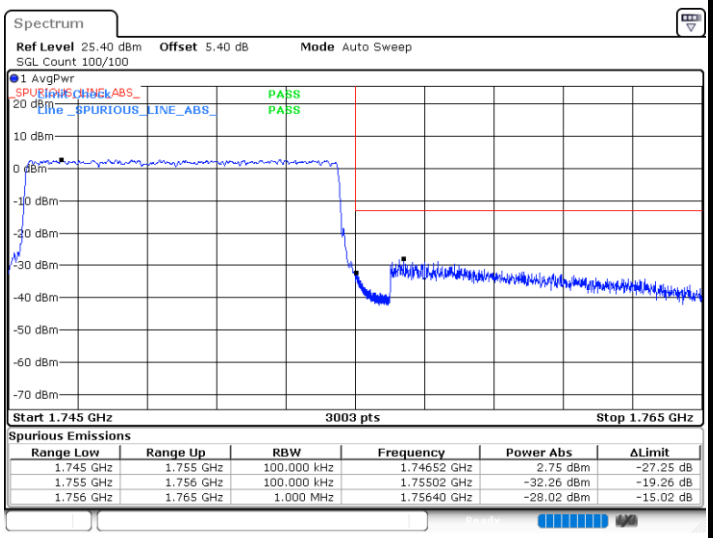


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70886 GHz	-27.33 dBm	-14.33 dB
1.709 GHz	1.710 GHz	100.000 kHz	1.70999 GHz	-32.30 dBm	-19.30 dB
1.710 GHz	1.720 GHz	100.000 kHz	1.71398 GHz	2.86 dBm	-27.14 dB

Date: 30.MAY.2023 23:35:28

Highest Band Edge / Full RB



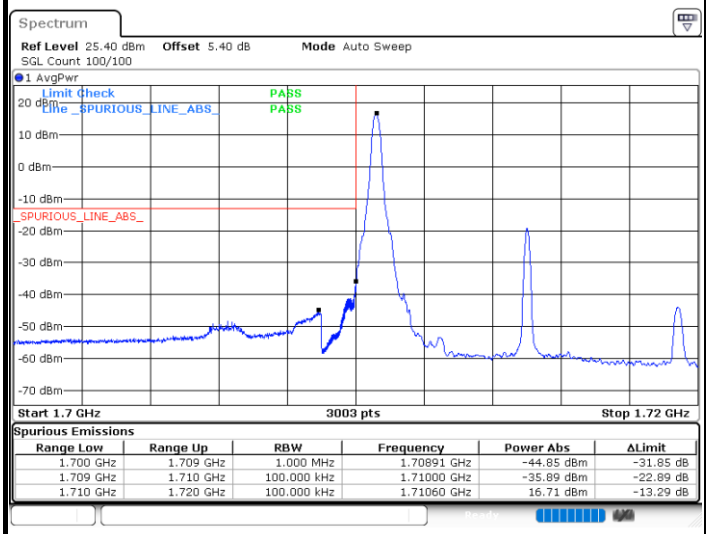
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.745 GHz	1.755 GHz	100.000 kHz	1.74652 GHz	2.75 dBm	-27.25 dB
1.755 GHz	1.756 GHz	100.000 kHz	1.75502 GHz	-32.26 dBm	-19.26 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75640 GHz	-28.02 dBm	-15.02 dB

Date: 30.MAY.2023 23:47:02

LTE Band 4 / 10MHz / 256QAM

Lowest Band Edge / 1 RB

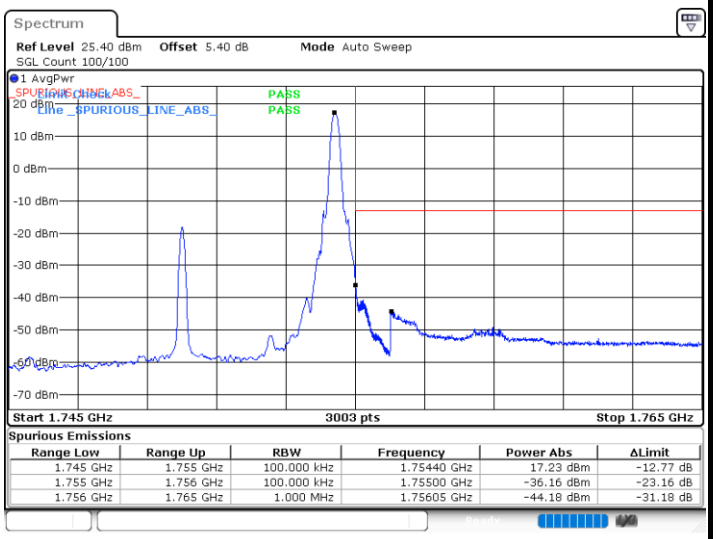


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70891 GHz	-44.85 dBm	-31.85 dB
1.709 GHz	1.710 GHz	100.000 kHz	1.71000 GHz	-35.89 dBm	-22.89 dB
1.710 GHz	1.720 GHz	100.000 kHz	1.71060 GHz	16.71 dBm	-13.29 dB

Date: 30.MAY.2023 23:33:10

Highest Band Edge / 1 RB

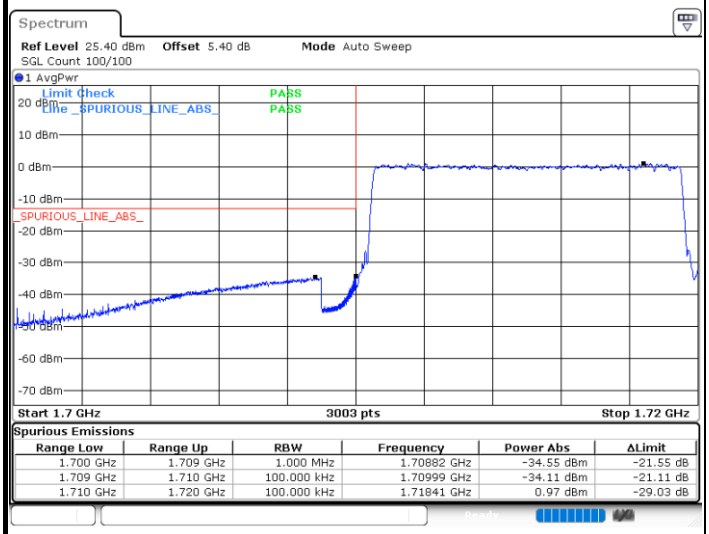


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.745 GHz	1.755 GHz	100.000 kHz	1.75440 GHz	17.23 dBm	-12.77 dB
1.755 GHz	1.756 GHz	100.000 kHz	1.75500 GHz	-36.16 dBm	-23.16 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75605 GHz	-44.18 dBm	-31.18 dB

Date: 30.MAY.2023 23:44:59

Lowest Band Edge / Full RB

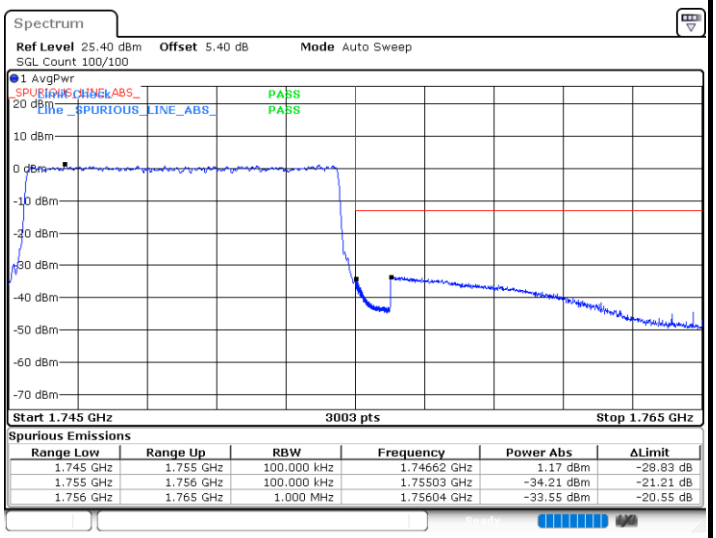


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70882 GHz	-34.55 dBm	-21.55 dB
1.709 GHz	1.710 GHz	100.000 kHz	1.70999 GHz	-34.11 dBm	-21.11 dB
1.710 GHz	1.720 GHz	100.000 kHz	1.71841 GHz	0.97 dBm	-29.03 dB

Date: 30.MAY.2023 23:36:13

Highest Band Edge / Full RB



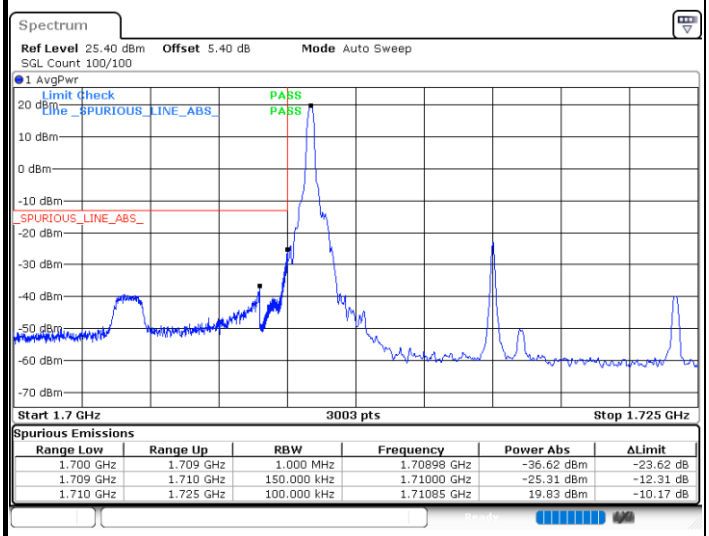
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.745 GHz	1.755 GHz	100.000 kHz	1.74662 GHz	1.17 dBm	-28.83 dB
1.755 GHz	1.756 GHz	100.000 kHz	1.75503 GHz	-34.21 dBm	-21.21 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75604 GHz	-33.55 dBm	-20.55 dB

Date: 30.MAY.2023 23:47:42

LTE Band 4 / 15MHz / QPSK

Lowest Band Edge / 1 RB

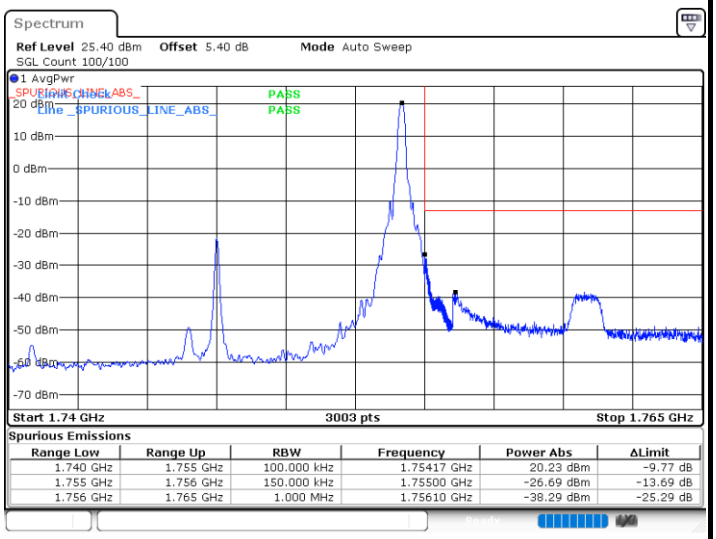


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70898 GHz	-36.62 dBm	-23.62 dB
1.709 GHz	1.710 GHz	150.000 kHz	1.71000 GHz	-25.31 dBm	-12.31 dB
1.710 GHz	1.725 GHz	100.000 kHz	1.71085 GHz	19.83 dBm	-10.17 dB

Date: 30.MAY.2023 23:50:52

Highest Band Edge / 1 RB

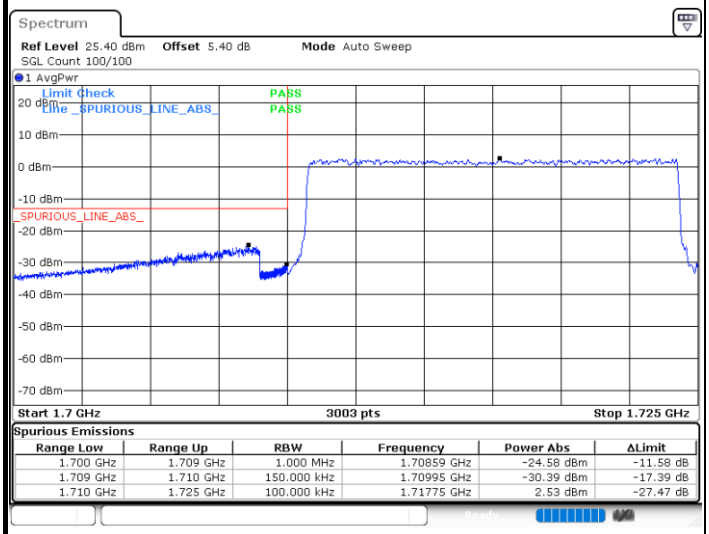


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.740 GHz	1.755 GHz	100.000 kHz	1.75417 GHz	20.23 dBm	-9.77 dB
1.755 GHz	1.756 GHz	150.000 kHz	1.75500 GHz	-26.69 dBm	-13.69 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75610 GHz	-38.29 dBm	-25.29 dB

Date: 31.MAY.2023 00:02:10

Lowest Band Edge / Full RB

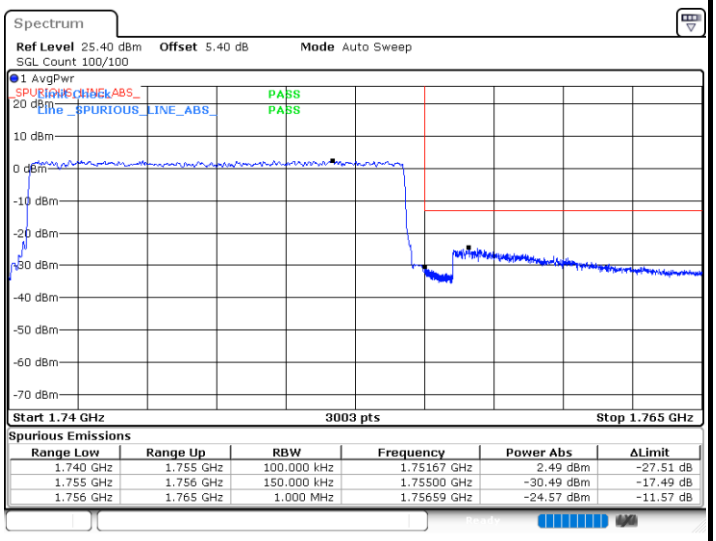


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70859 GHz	-24.58 dBm	-11.58 dB
1.709 GHz	1.710 GHz	150.000 kHz	1.70995 GHz	-30.39 dBm	-17.39 dB
1.710 GHz	1.725 GHz	100.000 kHz	1.71775 GHz	2.53 dBm	-27.47 dB

Date: 30.MAY.2023 23:53:35

Highest Band Edge / Full RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.740 GHz	1.755 GHz	100.000 kHz	1.75167 GHz	2.49 dBm	-27.51 dB
1.755 GHz	1.756 GHz	150.000 kHz	1.75500 GHz	-30.49 dBm	-17.49 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75659 GHz	-24.57 dBm	-11.57 dB

Date: 31.MAY.2023 00:04:53