FCC RF Test Report

APPLICANT	:	**Xiaomi Communications Co., Ltd.**
EQUIPMENT	:	**Mobile Phone**
BRAND NAME	:	**Redmi**
MODEL NAME	:	**2201116SR**
FCC ID	:	**2AFZZ16SR**
STANDARD	:	**47 CFR Part 2, 22(H), 24(E), 27(L), 27(F), 27(H)**
CLASSIFICATION	:	**PCS Licensed Transmitter Held to Ear (PCE)**
TEST DATE(S)	:	**Dec. 26, 2021 ~ Jan. 01, 2022**

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

Jason Jia

Reviewed by: Jason Jia / Supervisor

Alex wang

Approved by: Alex Wang / Manager

ACCREDITED
Cert #5145.02

Sporton International (Kunshan) Inc.

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 6
1.5 Modification of EUT 7
1.6 Re-use of Measured Data 7
1.7 Maximum ERP/EIRP Power and Emission Designator 8
1.8 Testing Location 9
1.9 Test Software 9
1.10 Applicable Standards 10

2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST **11**

2.1 Test Mode 11
2.2 Connection Diagram of Test System 13
2.3 Support Unit used in test configuration and system 13
2.4 Measurement Results Explanation Example 13
2.5 Frequency List of Low/Middle/High Channels 14

3 CONDUCTED TEST ITEMS **17**

3.1 Measuring Instruments 17
3.2 Test Setup 17
3.3 Test Result of Conducted Test 17
3.4 Conducted Output Power and ERP/EIRP 18
3.5 Peak-to-Average Ratio 19
3.6 Occupied Bandwidth 20
3.7 Conducted Band Edge 21
3.8 Conducted Spurious Emission 22
3.9 Frequency Stability 23

4 RADIATED TEST ITEMS **24**

4.1 Measuring Instruments 24
4.2 Test Setup 24
4.3 Test Result of Radiated Test 25
4.4 Radiated Spurious Emission 26

5 LIST OF MEASURING EQUIPMENT **27**

6 UNCERTAINTY OF EVALUATION **28**

APPENDIX A. TEST RESULTS OF CONDUCTED TEST

APPENDIX B. TEST RESULTS OF RADIATED TEST

APPENDIX C. TEST SETUP PHOTOGRAPHS

APPENDIX D. REFERENCE REPORT

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG1N1013-03B	Rev. 01	Initial issue of report	Jan. 06, 2022

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	-	Report Only	-
	§22.913(a)(5)	Effective Radiated Power (Band 5) (Band 26)	ERP < 7 Watt	PASS	-
	§27.50(b)(10) §27.50(c)(10)	Effective Radiated Power (Band 12) (Band 13) (Band 17)	ERP < 3 Watt		-
	§24.232(c)	Equivalent Isotropic Radiated Power (Band 2)	EIRP < 2Watt		-
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4)	EIRP < 1Watt		-
3.5	§24.232(d)	Peak-to-Average Ratio	<13 dB	PASS	-
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 §22.917(a) §24.238(a) §27.53(c)(2) §27.53(f) §27.53(g) §27.53(h)	Radiated Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 17) (Band 26)	< $43+10\log_{10}$(P[Watts])	PASS	Under limit 10.56 dB at 1560.000 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

Xiaomi Communications Co., Ltd.
#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

1.2 Manufacturer

Xiaomi Communications Co., Ltd.
#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	Redmi
Model Name	2201116SR
FCC ID	2AFZZ16SR
IMEI Code	Conducted: 861288050015360/861288050015378 Radiation: 861288050015741/861288050015758
HW Version	P1.1
SW Version	MIUI 13
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	LTE Band 2 : 1850 MHz ~ 1910 MHz LTE Band 4 : 1710 MHz ~ 1755 MHz LTE Band 5 : 824 MHz ~ 849 MHz LTE Band 12 : 699 MHz ~ 716 MHz LTE Band 13 : 777 MHz ~ 787 MHz LTE Band 17 : 704 MHz ~ 716 MHz LTE Band 26 : 824 MHz ~ 849 MHz
Rx Frequency	LTE Band 2 : 1930 MHz ~ 1990 MHz LTE Band 4 : 2110 MHz ~ 2155 MHz LTE Band 5 : 869 MHz ~ 894 MHz LTE Band 12 : 729 MHz ~ 746 MHz LTE Band 13 : 746 MHz ~ 756 MHz LTE Band 17 : 734 MHz ~ 746 MHz LTE Band 26 : 869 MHz ~ 894 MHz
Bandwidth	LTE Band 2 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 4 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 5 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 12 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 13 : 5MHz / 10MHz LTE Band 17 : 5MHz / 10MHz LTE Band 26 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz
Maximum Output Power to Antenna	**Ant. 0:** LTE Band 2 : 23.31 dBm LTE Band 4 : 23.67 dBm LTE Band 5 : 24.35 dBm LTE Band 12 : 24.69 dBm LTE Band 13 : 24.55 dBm LTE Band 17 : 24.68 dBm LTE Band 26 : 24.44 dBm **Ant. 4:** LTE Band 2 : 22.53 dBm LTE Band 4 : 23.46 dBm LTE Band 5 : 24.41 dBm LTE Band 12 : 24.76 dBm LTE Band 13 : 24.68 dBm LTE Band 17 : 24.74 dBm LTE Band 26 : 24.48 dBm
Antenna Gain	**Ant. 0:** LTE Band 2 : -3.7 dBi LTE Band 4 : -2.9 dBi LTE Band 5 : -4.7 dBi LTE Band 12 : -5.5 dBi LTE Band 13 : -5.7 dBi LTE Band 17 : -5.5 dBi LTE Band 26 : -4.7 dBi **Ant. 4:** LTE Band 2 : -4.0 dBi LTE Band 4 : -5.6 dBi LTE Band 5 : -5.5 dBi LTE Band 12 : -7.3 dBi LTE Band 13 : -7.0 dBi LTE Band 17 : -7.3 dBi LTE Band 26 : -5.5 dBi

Type of Modulation	QPSK / 16QAM / 64QAM / 256QAM(Downlink Only)

Note: The ERP/EIRP is calculated from Output power and antenna gain, so the maximum ERP/EIRP is shown in the report, LTE Band 2/4/5/12/13/17/26 for Antenna 0.

1.5 Modification of EUT

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

1.6 Re-use of Measured Data

1.6.1 Introduction Section

This application re-uses data collected on a similar device. The subject device of this application (Model: 2201116SR, FCC ID: 2AFZZ16SR) is electrically identical to the reference device (Model: 2201116SG, FCC ID: 2AFZZ16SG) for the portions of the circuitry corresponding to the data being re-used, as treated by KDB Publication 484596 D01.

1.6.2 Difference Section

The **main** difference between FCC ID: 2AFZZ16SG and FCC ID: 2AFZZ16SR is as below:

- Remove LTE Band 32/66 and 5G NR n66.
- Add LTE Band 42

Other differences and all the details of similarity and difference can be found in the confidential documents (2AFZZ16SR_Operational Description of Product Equality Declaration).

The re-used RF data includes the following bands provided in Appendix D (Sporton RF Report No. FG1N1013B for the reference device Model: 2201116SG, FCC ID: 2AFZZ16SG).

1.6.3 Reference detail Section:

Equipment Class	Reference FCC ID	Folder Test	Report Title/Section
PCE	2AFZZ16SG	Part22H.24E.27L.27F.27H (Report No. FG1N1013B)	All conducted test sections applicable for LTE Band 2/5/12/13/17/26

1.6.4 Spot Check Verification Data Section

In order to confirm hardware similarity of the subject device with the reference device, spot check measurements were performed on the subject device for the following test items, the test result were consistent with FCC ID: 2AFZZ16SG.

Assertions concerning the similarity of these devices are based on representations by the applicant. The applicant accepts full responsibility for the validity of the similarity claim, and for the determination

that verification test data are sufficient to support it.

Test Item	Mode	2AFZZ16SG Worst Result	2AFZZ16SR Worst Result	Difference (dB)
Average Conducted Power (dBm)	LTE Band 2_Ant0	23.31	23.31	0
	LTE Band 4_Ant0	24.25	23.67	0.58
	LTE Band 5_Ant0	24.35	24.35	0
	LTE Band 12_Ant0	24.69	24.69	0
	LTE Band 13_Ant0	24.55	24.55	0
	LTE Band 17_Ant0	24.68	24.68	0
	LTE Band 26_Ant0	24.44	24.44	0

Based on the spot check test result, the test data from the original model is representative for the variant model. The power level spot check are shown within expected level compliant to limit line.

We confirm that the test data reuse policy of FCC KDB 484596 D01 Referencing Test Data v01 has been followed and the test data as referenced from the parent model report represents compliance with new FCC ID.

1.7 Maximum ERP/EIRP Power and Emission Designator

LTE Band 2		QPSK		16QAM/64QAM	
BW (MHz)	**Frequency Range (MHz)**	**Maximum EIRP(W)**	**Emission Designator (99%OBW)**	**Maximum EIRP(W)**	**Emission Designator (99%OBW)**
20	1860.0 ~ 1900.0	0.0914	-	0.0764	-
LTE Band 4		**QPSK**		**16QAM/64QAM**	
BW (MHz)	**Frequency Range (MHz)**	**Maximum EIRP(W)**	**Emission Designator (99%OBW)**	**Maximum EIRP(W)**	**Emission Designator (99%OBW)**
20	1720.0 ~ 1745.0	0.1194	17M9G7D	0.0991	17M8W7D
LTE Band 5		**QPSK**		**16QAM/64QAM**	
BW (MHz)	**Frequency Range (MHz)**	**Maximum ERP(W)**	**Emission Designator (99%OBW)**	**Maximum ERP(W)**	**Emission Designator (99%OBW)**
10	829.0 ~ 844.0	0.0562	-	0.0452	-
LTE Band 12		**QPSK**		**16QAM/64QAM**	
BW (MHz)	**Frequency Range (MHz)**	**Maximum ERP(W)**	**Emission Designator (99%OBW)**	**Maximum ERP(W)**	**Emission Designator (99%OBW)**
10	704.0 ~ 711.0	0.0506	-	0.0417	-

LTE Band 13		QPSK		16QAM/64QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
10	782.0	0.0468	-	0.0383	-
LTE Band 17		QPSK		16QAM/64QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
10	709.0 ~ 711.0	0.0505	-	0.0448	-
LTE Band 26		QPSK		16QAM/64QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
15	831.5 ~ 841.5	0.0574	-	0.0484	-
CH26765	821.5	0.0565	-	0.0492	-

Note:

1. All modulations have been tested, and only the worst test results of PSK & QAM are shown in the report .
2. Based on engineering evaluation, only the maximum bandwidth and the worst modulation test results are shown in the report.

1.8 Testing Location

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

Test Firm	Sporton International (Kunshan) Inc.		
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.**
	03CH05-KS TH01-KS	CN1257	314309

1.9 Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH05-KS	AUDIX	E3	6.2009-8-24al

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, 22(H), 24(E), 27(L), 27(F), 27(H)
- 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

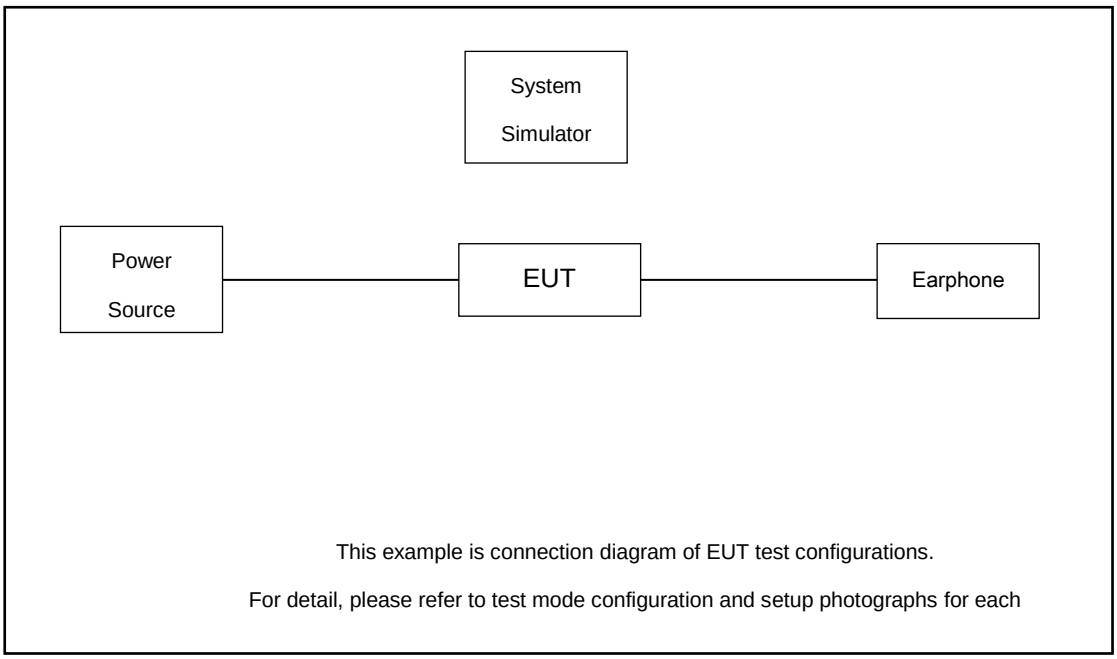
Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas License Digital Systems v03r01 with maximum output power.

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	16QAM	64QAM	1	Half	Full	L	M	H
Max. Output Power	2	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	4	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	5	v	v	v	v	-	-	v	v	v	v	v	v	v	v	v
	12	v	v	v	v	-	-	v	v	v	v	v	v	v	v	v
	13	-	-	v	v	-	-	v	v	v	v	v	v	v	v	v
	17	-	-	v	v	-	-	v	v	v	v	v	v	v	v	v
	26	v	v	v	v	v	-	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	4						v	v	v	v			v		v	
26dB and 99% Bandwidth	4						v	v	v				v		v	

Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Conducted BandEdge	4	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	
E.R.P / E.I.R.P	2	v	v	v	v	v	v	v	v	v	v			v	v	v
	4	v	v	v	v	v	v	v	v	v	v			v	v	v
	5	v	v	v	v	-	-	v	v	v	v			v	v	v
	12	v	v	v	v	-	-	v	v	v	v			v	v	v
	13	-	-	v	v	-	-	v	v	v	v			v	v	v
	17	-	-	v	v	-	-	v	v	v	v			v	v	v
	26	v	v	v	v	v	-	v	v	v	v			v	v	v
Radiated Spurious Emission	2	Worst Case													v	
	4	Worst Case													v	
	12	Worst Case													v	
	13	Worst Case													v	
	26	Worst Case													v	
Note	1. The mark "**v** " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. 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.	Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
3.	Earphone	MI	N/A	N/A	Unshielded,1.2m	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 5.5 dB.

Example :

Offset(dB) = RF cable loss(dB)

= 5.5 (dB)

2.5 Frequency List of Low/Middle/High Channels

LTE Band 2 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	18700	18900	19100
	Frequency	1860	1880	1900
15	Channel	18675	18900	19125
	Frequency	1857.5	1880	1902.5
10	Channel	18650	18900	19150
	Frequency	1855	1880	1905
5	Channel	18625	18900	19175
	Frequency	1852.5	1880	1907.5
3	Channel	18615	18900	19185
	Frequency	1851.5	1880	1908.5
1.4	Channel	18607	18900	19193
	Frequency	1850.7	1880	1909.3

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

LTE Band 5 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	20450	20525	20600
	Frequency	829	836.5	844
5	Channel	20425	20525	20625
	Frequency	826.5	836.5	846.5
3	Channel	20415	20525	20635
	Frequency	825.5	836.5	847.5
1.4	Channel	20407	20525	20643
	Frequency	824.7	836.5	848.3

LTE Band 12 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	23060	23095	23130
	Frequency	704	707.5	711
5	Channel	23035	23095	23155
	Frequency	701.5	707.5	713.5
3	Channel	23025	23095	23165
	Frequency	700.5	707.5	714.5
1.4	Channel	23017	23095	23173
	Frequency	699.7	707.5	715.3

LTE Band 13 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	-	23230	-
	Frequency	-	782	-
5	Channel	23205	23230	23255
	Frequency	779.5	782	784.5

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

LTE Band 26 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
15	Channel	26865	26915	26965
	Frequency	831.5	836.5	841.5
10	Channel	26840	26915	26990
	Frequency	829	836.5	844
5	Channel	26815	26915	27015
	Frequency	826.5	836.5	846.5
3	Channel	26805	26915	27025
	Frequency	825.5	836.5	847.5
1.4	Channel	26797	26915	27033
	Frequency	824.7	836.5	848.3

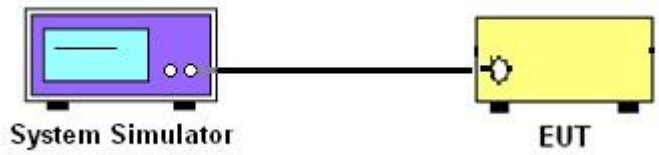
3 Conducted Test Items

3.1 Measuring Instruments

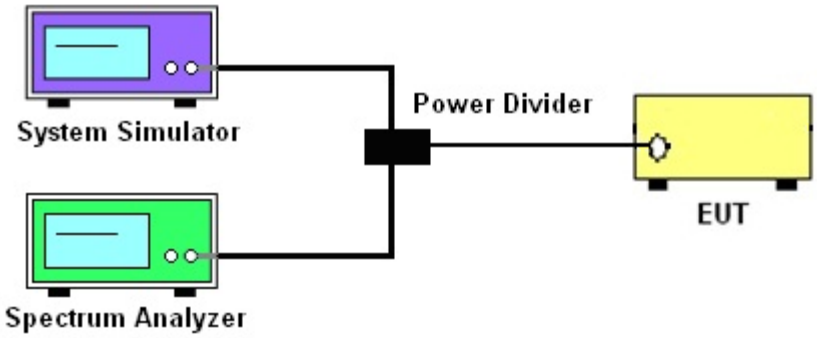
See list of measuring instruments of this test report.

3.2 Test Setup

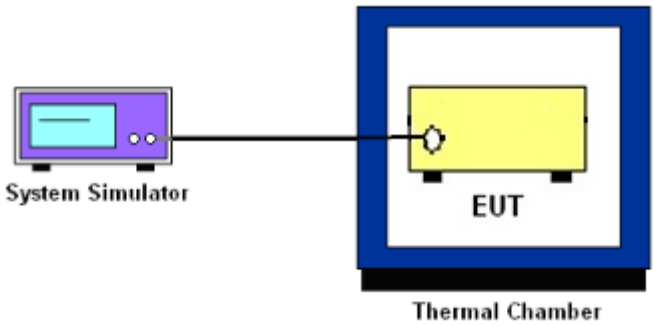
3.2.1 Conducted Output Power



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 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.

The ERP of mobile transmitters must not exceed 7 Watts for LTE Band 5 and Band 26.

The ERP of mobile transmitters must not exceed 3 Watts for LTE Band 12, Band 13 and Band 17.

The EIRP of mobile transmitters must not exceed 2 Watts for LTE Band 2.

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.
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 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.

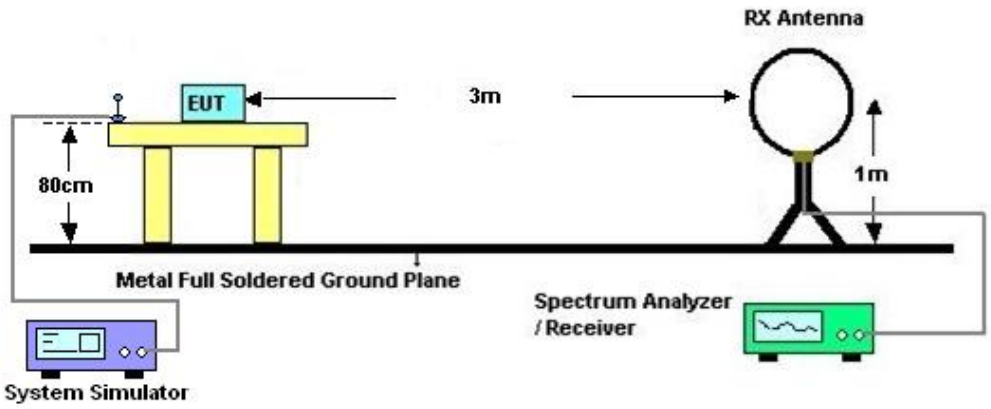
4 Radiated Test Items

4.1 Measuring Instruments

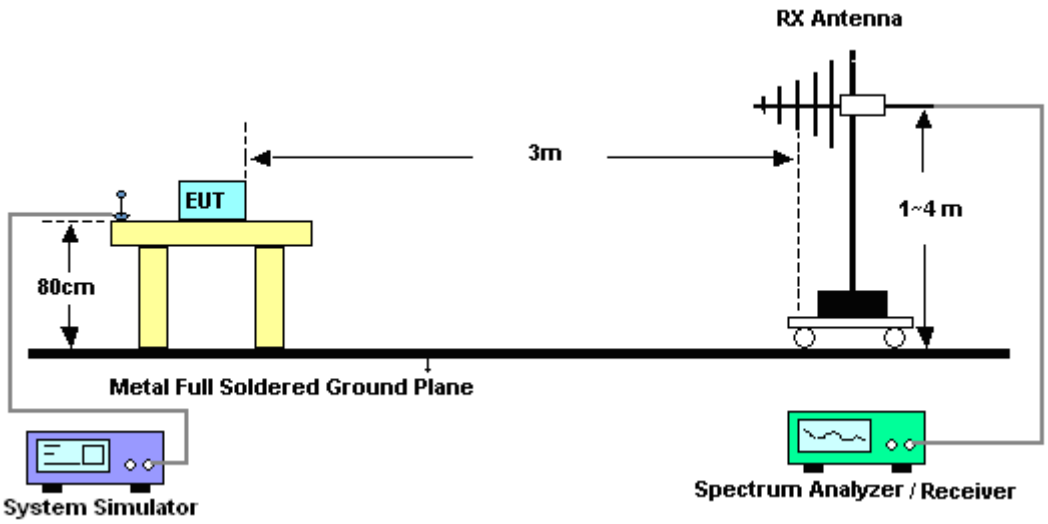
See list of measuring instruments of this test report.

4.2 Test Setup

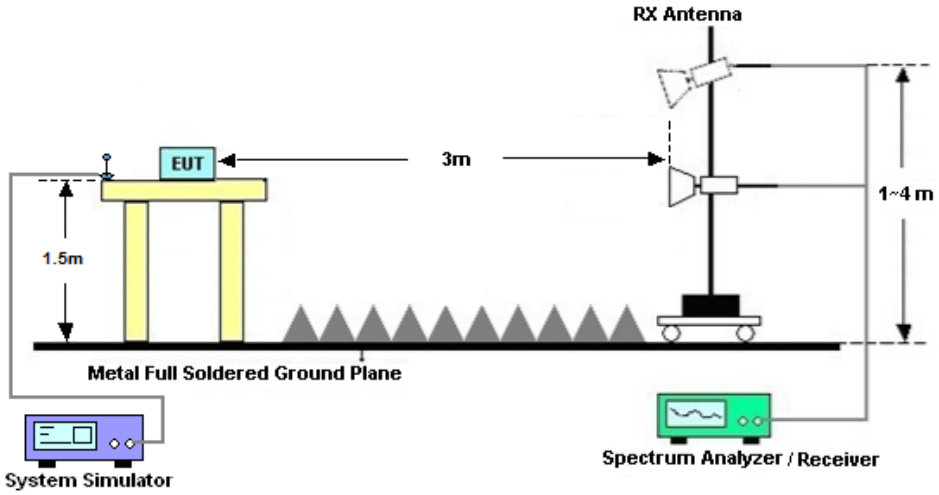
4.2.1 For radiated test below 30MHz



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.

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. 14, 2021	Dec. 26, 2021~ Dec. 27, 2021	Oct. 13, 2022	Conducted (TH01-KS)
Temperature & humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 12, 2021	Dec. 26, 2021~ Dec. 27, 2021	Jul. 11, 2022	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	Aug. 26, 2021	Dec. 26, 2021~ Dec. 27, 2021	Aug. 25, 2022	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz-44G,MAX 30dB	Apr. 13, 2021	Jan. 01, 2022	Apr. 12, 2022	Radiation (03CH05-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 30, 2021	Jan. 01, 2022	Oct. 29, 2022	Radiation (03CH05-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	Jun. 04, 2021	Jan. 01, 2022	Jun. 03, 2022	Radiation (03CH05-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00218652	1GHz~18GHz	Apr. 24, 2021	Jan. 01, 2022	Apr. 23, 2022	Radiation (03CH05-KS)
SHF-EHF Horn	Com-power	AH-840	101115	18GHz~40GHz	Nov. 09, 2021	Jan. 01, 2022	Nov. 08, 2022	Radiation (03CH05-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Apr. 12, 2021	Jan. 01, 2022	Apr. 11, 2022	Radiation (03CH05-KS)
Amplifier	MITEQ	EM18G40G GA	060728	18~40GHz	Jan. 07, 2021	Jan. 01, 2022	Jan. 06, 2022	Radiation (03CH05-KS)
high gain Amplifier	MITEQ	AMF-7D-00 101800-30-1 0P	2012228	1Ghz-18Ghz	Oct. 16, 2021	Jan. 01, 2022	Oct. 15, 2022	Radiation (03CH05-KS)
Amplifier	Keysight	83017A	MY53270316	500MHz~26.5GHz	Oct. 16, 2021	Jan. 01, 2022	Oct. 15, 2022	Radiation (03CH05-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jan. 01, 2022	NCR	Radiation (03CH05-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jan. 01, 2022	NCR	Radiation (03CH05-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jan. 01, 2022	NCR	Radiation (03CH05-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))	**2.5dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.1dB**

Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power) ERP/EIRP

LTE Band 2:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP(W)		
Channel				18700	18900	19100			
Frequency (MHz)				1860	1880	1900	L	M	H
20	QPSK	1	0	23.02	23.31	23.08	0.0855	0.0914	0.0867
20	QPSK	1	99	23.23	22.99	22.99	0.0897	0.0849	0.0849
20	QPSK	100	0	22.26	22.31	22.13	0.0718	0.0726	0.0697
20	16QAM	1	0	21.95	22.18	22.53	0.0668	0.0705	0.0764
20	64QAM	1	0	21.04	21.27	21.09	0.0542	0.0571	0.0548
Channel				18675	18900	19125	EIRP(W)		
Frequency (MHz)				1857.5	1880	1902.5	L	M	H
15	QPSK	1	0	23.16	23.28	23.18	0.0883	0.0908	0.0887
15	16QAM	1	0	22.45	22.34	22.39	0.0750	0.0731	0.0740
Channel				18650	18900	19150	EIRP(W)		
Frequency (MHz)				1855	1880	1905	L	M	H
10	QPSK	1	0	23.23	23.29	23.25	0.0897	0.0910	0.0902
10	16QAM	1	0	22.42	22.45	22.15	0.0745	0.0750	0.0700
Channel				18625	18900	19175	EIRP(W)		
Frequency (MHz)				1852.5	1880	1907.5	L	M	H
5	QPSK	1	0	23.30	22.92	23.02	0.0912	0.0836	0.0855
5	16QAM	1	0	22.31	22.26	22.45	0.0726	0.0718	0.0750
Channel				18615	18900	19185	EIRP(W)		
Frequency (MHz)				1851.5	1880	1908.5	L	M	H
3	QPSK	1	0	23.17	23.30	23.09	0.0885	0.0912	0.0869
3	16QAM	1	0	22.13	22.50	22.22	0.0697	0.0759	0.0711
Channel				18607	18900	19193	EIRP(W)		
Frequency (MHz)				1850.7	1880	1909.3	L	M	H
1.4	QPSK	1	0	23.15	23.20	23.30	0.0881	0.0891	0.0912
1.4	16QAM	1	0	22.41	22.35	22.07	0.0743	0.0733	0.0687

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	23.44	23.67	23.63	0.1132	0.1194	0.1183
20	QPSK	1	99	23.44	23.44	23.26	0.1132	0.1132	0.1086
20	QPSK	100	0	22.55	22.60	22.40	0.0923	0.0933	0.0891
20	16QAM	1	0	22.53	22.81	22.86	0.0918	0.0979	0.0991
20	64QAM	1	0	21.71	21.70	21.63	0.0760	0.0759	0.0746
Channel				20025	20175	20325	EIRP(W)		
Frequency (MHz)				1717.5	1732.5	1747.5	L	M	H
15	QPSK	1	0	23.47	23.53	23.43	0.1140	0.1156	0.1130
15	16QAM	1	0	22.70	22.54	22.57	0.0955	0.0920	0.0927
Channel				20000	20175	20350	EIRP(W)		
Frequency (MHz)				1715	1732.5	1750	L	M	H
10	QPSK	1	0	23.65	23.65	23.52	0.1189	0.1189	0.1153
10	16QAM	1	0	22.75	22.62	22.55	0.0966	0.0938	0.0923
Channel				19975	20175	20375	EIRP(W)		
Frequency (MHz)				1712.5	1732.5	1752.5	L	M	H
5	QPSK	1	0	23.63	23.64	23.36	0.1183	0.1186	0.1112
5	16QAM	1	0	22.81	22.71	22.86	0.0979	0.0957	0.0991
Channel				19965	20175	20385	EIRP(W)		
Frequency (MHz)				1711.5	1732.5	1753.5	L	M	H
3	QPSK	1	0	23.64	23.53	23.48	0.1186	0.1156	0.1143
3	16QAM	1	0	22.59	22.68	22.81	0.0931	0.0951	0.0979
Channel				19950	20175	20393	EIRP(W)		
Frequency (MHz)				1710	1732.5	1754.3	L	M	H
1.4	QPSK	1	0	23.44	23.65	23.47	0.1132	0.1189	0.1140
1.4	16QAM	1	0	22.69	22.76	22.58	0.0953	0.0968	0.0929

LTE Band 5:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel				20450	20525	20600			
Frequency (MHz)				829	836.5	844	L	M	H
10	QPSK	1	0	24.25	24.35	24.05	0.0550	0.0562	0.0525
10	QPSK	1	49	24.29	24.11	24.17	0.0555	0.0532	0.0540
10	QPSK	50	0	23.40	23.42	23.33	0.0452	0.0454	0.0445
10	16QAM	1	0	23.15	23.40	23.32	0.0427	0.0452	0.0444
10	64QAM	1	0	22.34	22.14	22.44	0.0354	0.0338	0.0362
Channel				20425	20525	20625	ERP(W)		
Frequency (MHz)				826.5	836.5	846.5	L	M	H
5	QPSK	1	0	24.34	24.09	24.20	0.0561	0.0530	0.0543
5	16QAM	1	0	23.35	23.10	23.18	0.0447	0.0422	0.0430
Channel				20415	20525	20635	ERP(W)		
Frequency (MHz)				825.5	836.5	847.5	L	M	H
3	QPSK	1	0	24.31	24.28	24.24	0.0557	0.0553	0.0548
3	16QAM	1	0	23.30	23.30	23.34	0.0442	0.0442	0.0446
Channel				20407	20525	20643	ERP(W)		
Frequency (MHz)				824.7	836.5	848.3	L	M	H
1.4	QPSK	1	0	24.32	24.20	24.00	0.0558	0.0543	0.0519
1.4	16QAM	1	0	23.18	23.10	23.40	0.0430	0.0422	0.0452

LTE Band 12:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel				23060	23095	23130			
Frequency (MHz)				704	707.5	711	L	M	H
10	QPSK	1	0	24.57	24.69	24.64	0.0492	0.0506	0.0500
10	QPSK	1	49	24.67	24.65	24.61	0.0504	0.0501	0.0497
10	QPSK	50	0	23.83	23.86	23.80	0.0415	0.0418	0.0412
10	16QAM	1	0	23.85	23.79	23.61	0.0417	0.0411	0.0394
10	64QAM	1	0	22.64	22.70	22.92	0.0316	0.0320	0.0337
Channel				23035	23095	23205	ERP(W)		
Frequency (MHz)				701.5	707.5	718.5	L	M	H
5	QPSK	1	0	24.68	24.58	24.44	0.0505	0.0493	0.0478
5	16QAM	1	0	23.48	23.75	23.71	0.0383	0.0407	0.0404
Channel				23025	23095	23195	ERP(W)		
Frequency (MHz)				700.5	707.5	717.5	L	M	H
3	QPSK	1	0	24.57	24.66	24.46	0.0492	0.0502	0.0480
3	16QAM	1	0	23.79	23.83	23.66	0.0411	0.0415	0.0399
Channel				23017	23095	23173	ERP(W)		
Frequency (MHz)				699.7	707.5	715.3	L	M	H
1.4	QPSK	1	0	24.47	24.65	24.51	0.0481	0.0501	0.0485
1.4	16QAM	1	0	23.56	23.84	23.68	0.0390	0.0416	0.0401

LTE Band 13:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel				23230					
Frequency (MHz)				782				M	
10	QPSK	1	0		24.55			0.0468	
10	QPSK	1	49		24.38			0.0450	
10	QPSK	50	0		23.56			0.0372	
10	16QAM	1	0		23.68			0.0383	
10	64QAM	1	0		22.76			0.0310	
Channel				23205	23230	23255	ERP(W)		
Frequency (MHz)				779.5	782	784.5	L	M	H
5	QPSK	1	0	24.31	24.52	24.24	0.0443	0.0465	0.0436
5	16QAM	1	0	23.57	23.50	23.49	0.0373	0.0367	0.0366

LTE Band 17:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel				23780	23790	23800			
Frequency (MHz)				709	710	711	L	M	H
10	QPSK	1	0	24.50	24.68	24.42	0.0484	0.0505	0.0475
10	QPSK	1	49	24.33	24.40	24.62	0.0466	0.0473	0.0498
10	QPSK	50	0	23.79	23.90	23.58	0.0411	0.0422	0.0392
10	16QAM	1	0	23.82	24.16	23.84	0.0414	0.0448	0.0416
10	64QAM	1	0	22.81	23.14	22.90	0.0328	0.0354	0.0335
Channel				23755	23790	23825	ERP(W)		
Frequency (MHz)				706.5	710	713.5	L	M	H
5	QPSK	1	0	24.67	24.67	24.56	0.0504	0.0504	0.0491
5	16QAM	1	0	23.84	23.86	23.98	0.0416	0.0418	0.0430

LTE Band 26:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)			
Channel				26765	26865	26915	26965				
Frequency (MHz)				821.5	831.5	836.5	841.5	L		M	H
15	QPSK	1	0	24.34	24.44	24.15	24.31	0.0561	0.0574	0.0537	0.0557
15	QPSK	1	74	24.37	24.33	24.10	24.18	0.0565	0.0560	0.0531	0.0541
15	QPSK	75	0	23.42	23.52	23.42	23.31	0.0454	0.0465	0.0454	0.0443
15	16QAM	1	0	23.77	23.70	23.51	23.64	0.0492	0.0484	0.0463	0.0478
15	64QAM	1	0	22.80	22.55	22.19	22.50	0.0394	0.0372	0.0342	0.0367
Channel					26840	26915	26990		ERP(W)		
Frequency (MHz)					829	836.5	844		L	M	H
10	QPSK	1	0		24.35	24.33	24.20		0.0562	0.0560	0.0543
10	16QAM	1	0		23.60	23.68	23.61		0.0473	0.0482	0.0474
Channel					26815	26915	27015		ERP(W)		
Frequency (MHz)					826.5	836.5	846.5		L	M	H
5	QPSK	1	0		24.40	24.32	24.20		0.0569	0.0558	0.0543
5	16QAM	1	0		23.64	23.67	23.54		0.0478	0.0481	0.0467
Channel					26815	26915	27025		ERP(W)		
Frequency (MHz)					825.5	836.5	847.5		L	M	H
3	QPSK	1	0		24.37	24.27	23.89		0.0565	0.0552	0.0506
3	16QAM	1	0		23.67	23.61	23.55		0.0481	0.0474	0.0468
Channel					26797	26915	27033		ERP(W)		
Frequency (MHz)					824.7	836.5	848.3		L	M	H
1.4	QPSK	1	0		24.33	24.28	24.16		0.0560	0.0553	0.0538
1.4	16QAM	1	0		23.61	23.64	23.48		0.0474	0.0478	0.0460

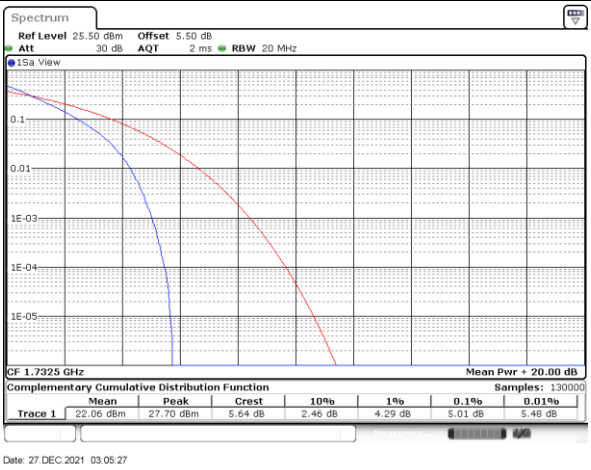
LTE Band 4

Peak-to-Average Ratio

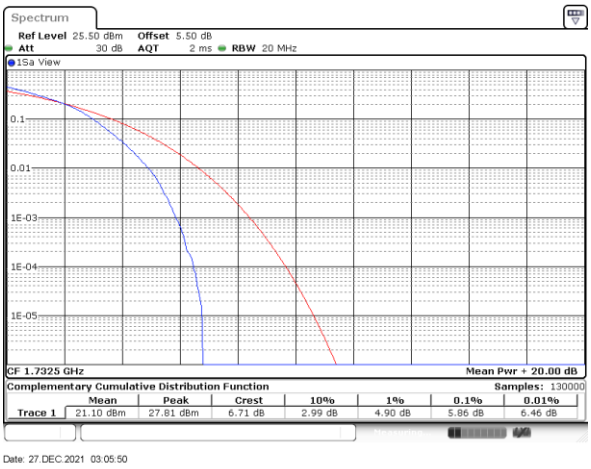
Mode	LTE Band 4 / 20MHz			
Mod.	QPSK	16QAM	64QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Result
Middle CH	5.01	5.86	5.91	PASS

LTE Band 4 / 20MHz

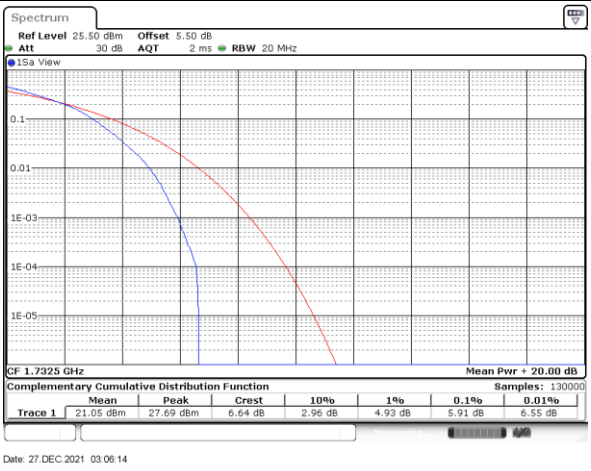
Middle Channel / Full RB/ QPSK



Middle Channel / Full RB/ 16QAM



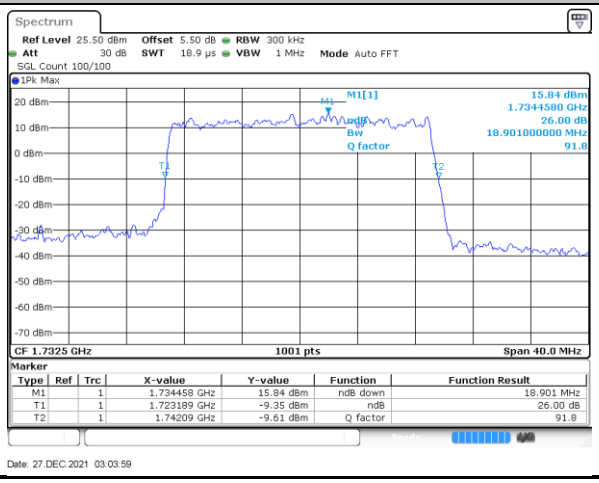
Middle Channel / Full RB/ 64QAM

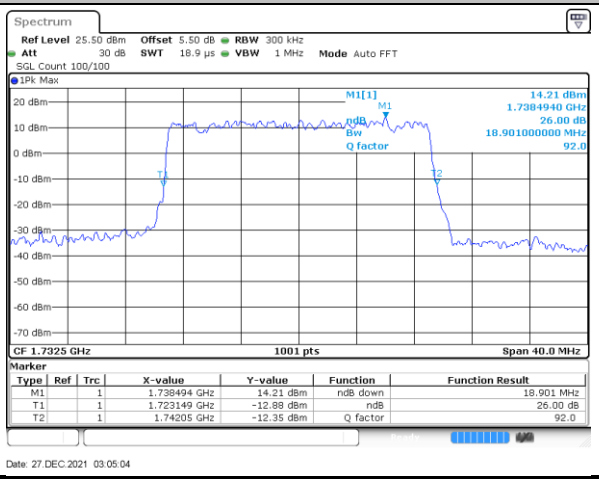


26dB Bandwidth

Mode	LTE Band 4 : 26dB BW(MHz)	
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	18.90	18.90

LTE Band 4	
Middle Channel / 20MHz / QPSK	Middle Channel / 20MHz / 16QAM

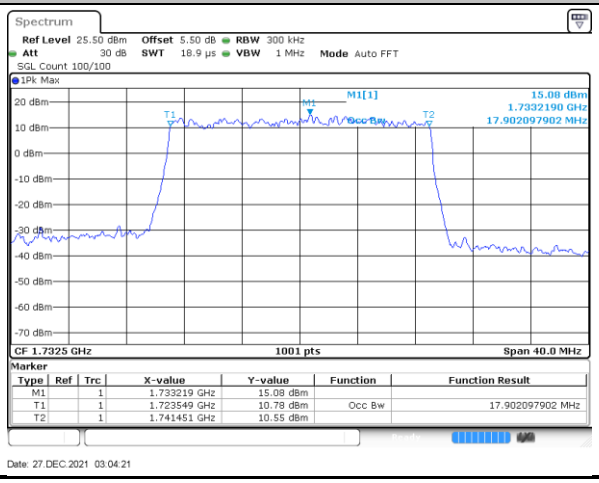


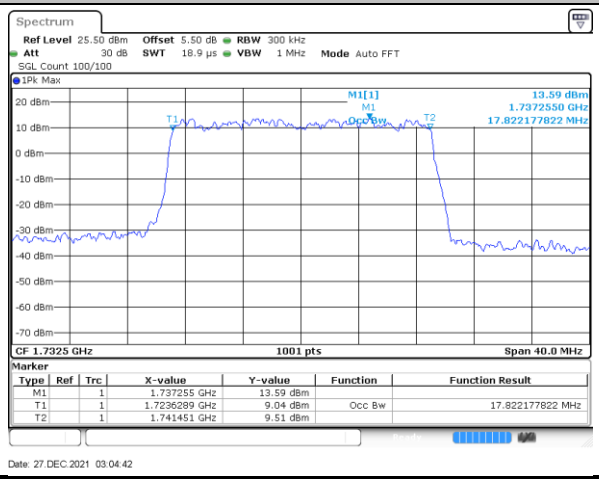


Occupied Bandwidth

Mode	LTE Band 4 : 99%OBW(MHz)	
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	17.90	17.82

LTE Band 4	
Middle Channel / 20MHz / QPSK	Middle Channel / 20MHz / 16QAM

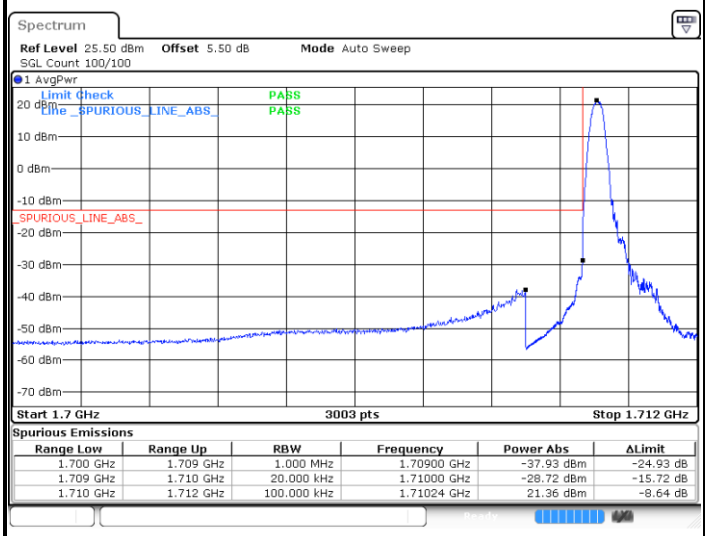




Conducted Band Edge

LTE Band 4 / 1.4MHz / QPSK

Lowest Band Edge / 1RB

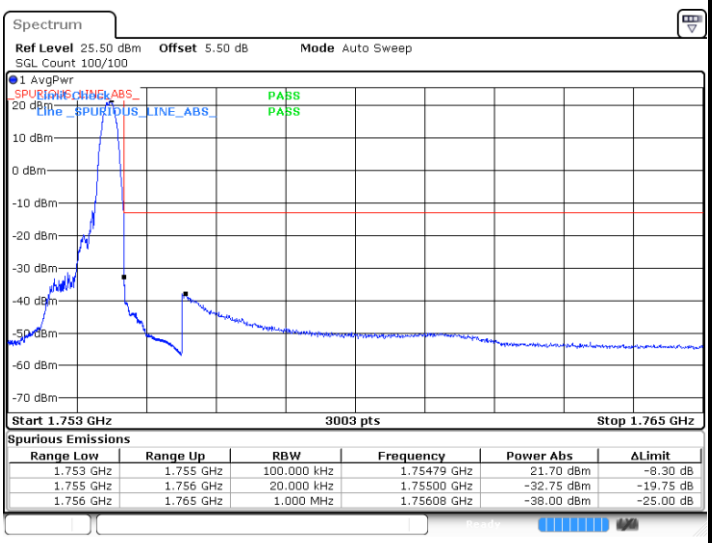


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70900 GHz	-37.93 dBm	-24.93 dB
1.709 GHz	1.710 GHz	20.000 kHz	1.71000 GHz	-28.72 dBm	-15.72 dB
1.710 GHz	1.712 GHz	100.000 kHz	1.71024 GHz	21.36 dBm	-8.64 dB

Date: 27.DEC.2021 00:24:06

Highest Band Edge / 1RB

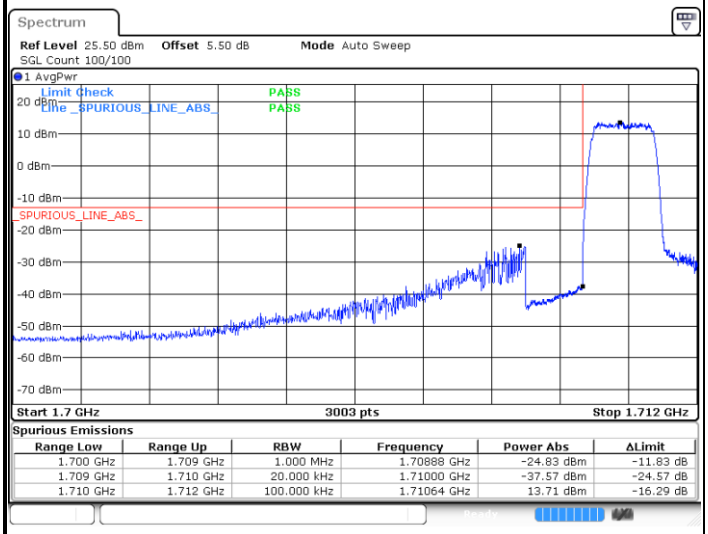


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.753 GHz	1.755 GHz	100.000 kHz	1.75479 GHz	21.70 dBm	-8.30 dB
1.755 GHz	1.756 GHz	20.000 kHz	1.75500 GHz	-32.75 dBm	-19.75 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75608 GHz	-38.00 dBm	-25.00 dB

Date: 27.DEC.2021 00:38:53

Lowest Band Edge / Full RB

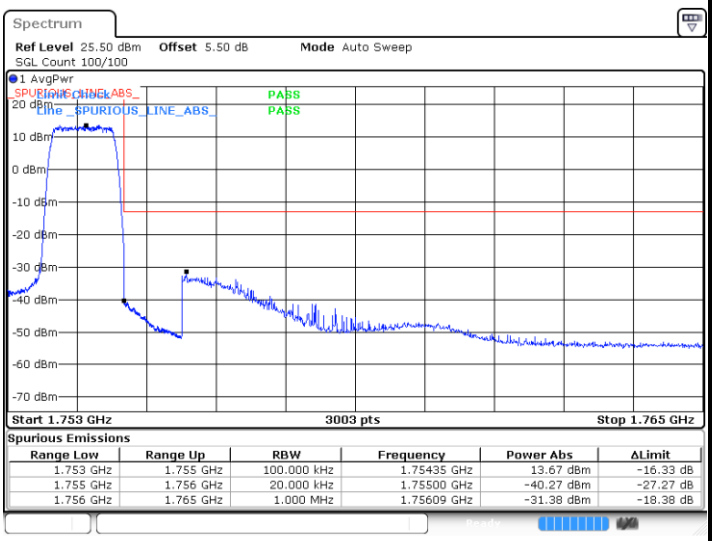


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70888 GHz	-24.83 dBm	-11.83 dB
1.709 GHz	1.710 GHz	20.000 kHz	1.71000 GHz	-37.57 dBm	-24.57 dB
1.710 GHz	1.712 GHz	100.000 kHz	1.71064 GHz	13.71 dBm	-16.29 dB

Date: 27.DEC.2021 00:32:30

Highest Band Edge / Full RB



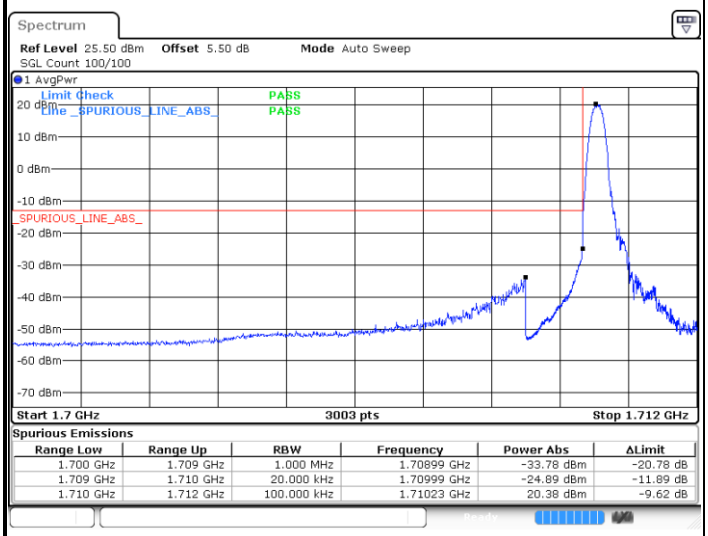
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.753 GHz	1.755 GHz	100.000 kHz	1.75435 GHz	13.67 dBm	-16.33 dB
1.755 GHz	1.756 GHz	20.000 kHz	1.75500 GHz	-40.27 dBm	-27.27 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75609 GHz	-31.38 dBm	-18.38 dB

Date: 27.DEC.2021 00:47:16

LTE Band 4 / 1.4MHz / 16QAM

Lowest Band Edge / 1 RB

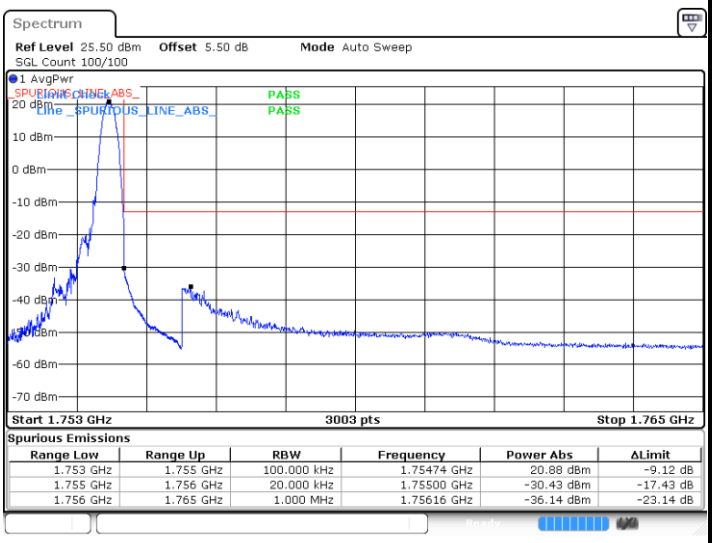


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70899 GHz	-33.78 dBm	-20.78 dB
1.709 GHz	1.710 GHz	20.000 kHz	1.70999 GHz	-24.89 dBm	-11.89 dB
1.710 GHz	1.712 GHz	100.000 kHz	1.71023 GHz	20.38 dBm	-9.62 dB

Date: 27.DEC.2021 00:25:47

Highest Band Edge / 1 RB

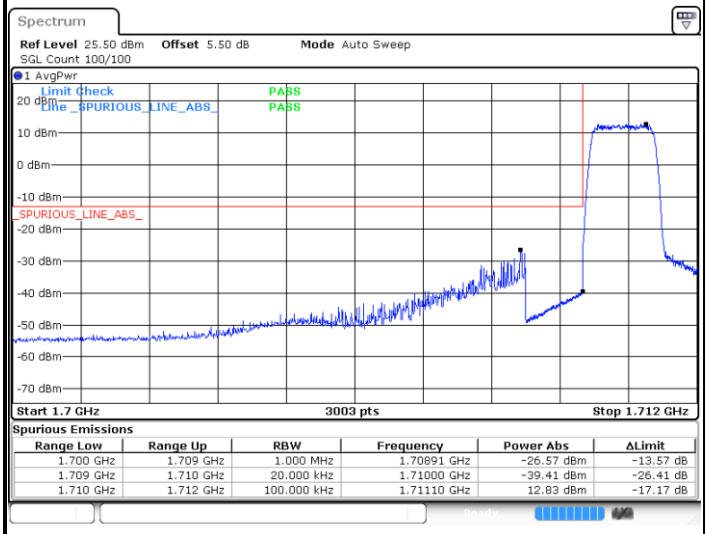


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.753 GHz	1.755 GHz	100.000 kHz	1.75474 GHz	20.88 dBm	-9.12 dB
1.755 GHz	1.756 GHz	20.000 kHz	1.75500 GHz	-30.43 dBm	-17.43 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75616 GHz	-36.14 dBm	-23.14 dB

Date: 27.DEC.2021 00:40:33

Lowest Band Edge / Full RB

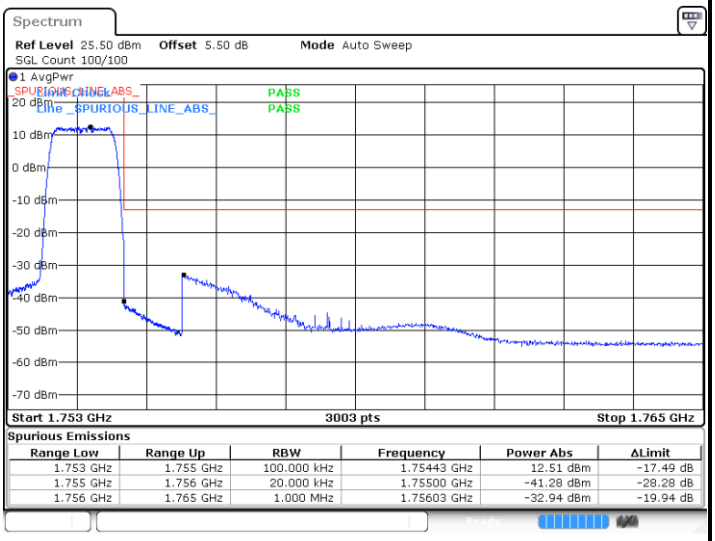


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70891 GHz	-26.57 dBm	-13.57 dB
1.709 GHz	1.710 GHz	20.000 kHz	1.71000 GHz	-39.41 dBm	-26.41 dB
1.710 GHz	1.712 GHz	100.000 kHz	1.71110 GHz	12.83 dBm	-17.17 dB

Date: 27.DEC.2021 00:30:49

Highest Band Edge / Full RB



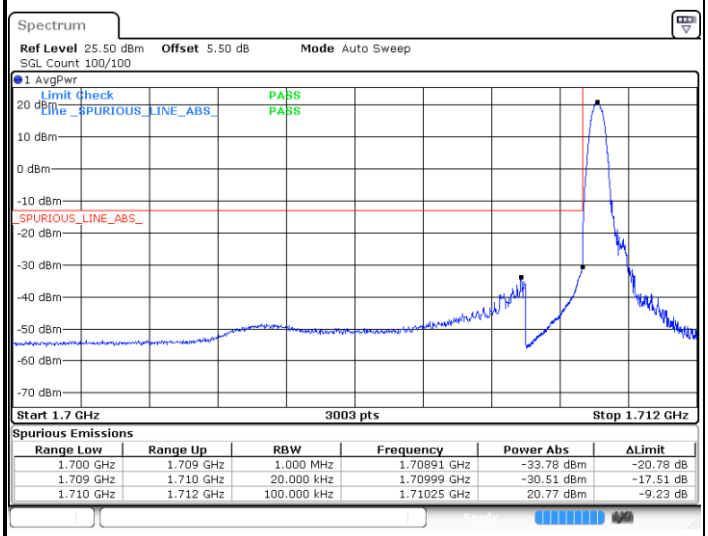
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.753 GHz	1.755 GHz	100.000 kHz	1.75443 GHz	12.51 dBm	-17.49 dB
1.755 GHz	1.756 GHz	20.000 kHz	1.75500 GHz	-41.28 dBm	-28.28 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75603 GHz	-32.94 dBm	-19.94 dB

Date: 27.DEC.2021 00:45:36

LTE Band 4 / 1.4MHz / 64QAM

Lowest Band Edge / 1 RB

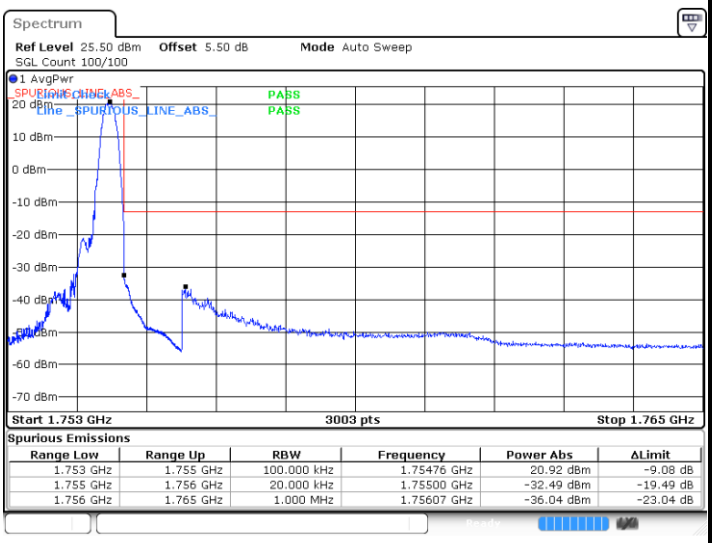


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70891 GHz	-33.78 dBm	-20.78 dB
1.709 GHz	1.710 GHz	20.000 kHz	1.70999 GHz	-30.51 dBm	-17.51 dB
1.710 GHz	1.712 GHz	100.000 kHz	1.71025 GHz	20.77 dBm	-9.23 dB

Date: 27.DEC.2021 00:27:28

Highest Band Edge / 1 RB

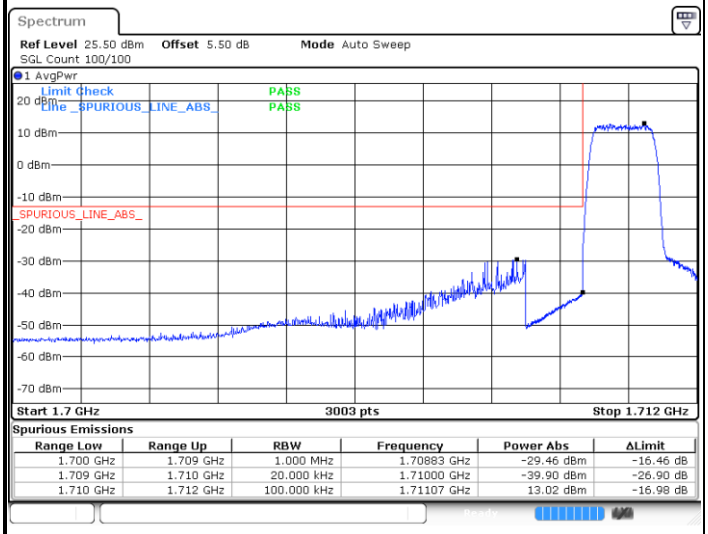


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.753 GHz	1.755 GHz	100.000 kHz	1.75476 GHz	20.92 dBm	-9.08 dB
1.755 GHz	1.756 GHz	20.000 kHz	1.75500 GHz	-32.49 dBm	-19.49 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75607 GHz	-36.04 dBm	-23.04 dB

Date: 27.DEC.2021 00:42:15

Lowest Band Edge / Full RB

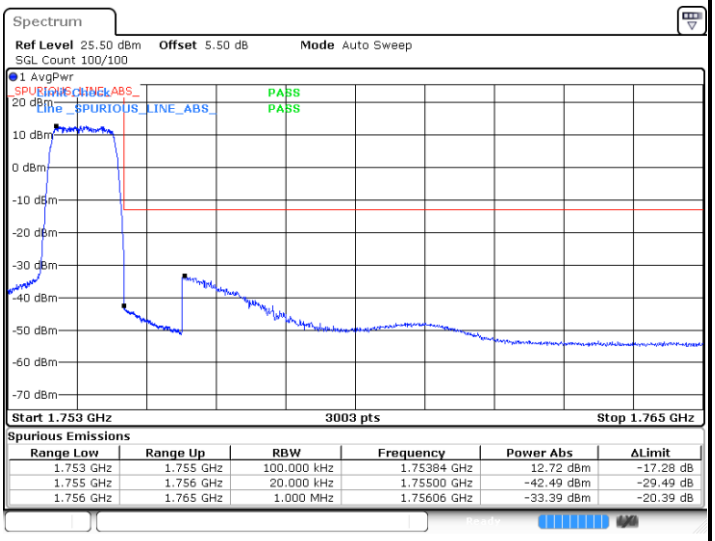


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70883 GHz	-29.46 dBm	-16.46 dB
1.709 GHz	1.710 GHz	20.000 kHz	1.71000 GHz	-39.90 dBm	-26.90 dB
1.710 GHz	1.712 GHz	100.000 kHz	1.71107 GHz	13.02 dBm	-16.98 dB

Date: 27.DEC.2021 00:29:09

Highest Band Edge / Full RB



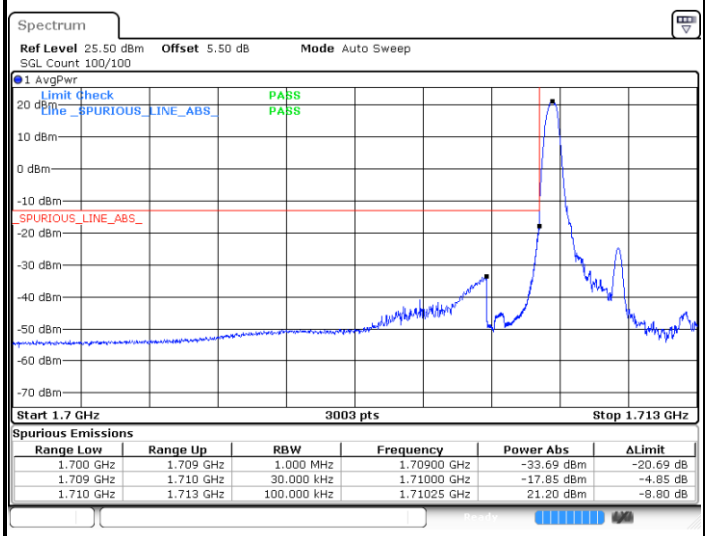
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.753 GHz	1.755 GHz	100.000 kHz	1.75384 GHz	12.72 dBm	-17.28 dB
1.755 GHz	1.756 GHz	20.000 kHz	1.75500 GHz	-42.49 dBm	-29.49 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75606 GHz	-33.39 dBm	-20.39 dB

Date: 27.DEC.2021 00:43:55

LTE Band 4 / 3MHz / QPSK

Lowest Band Edge / 1RB

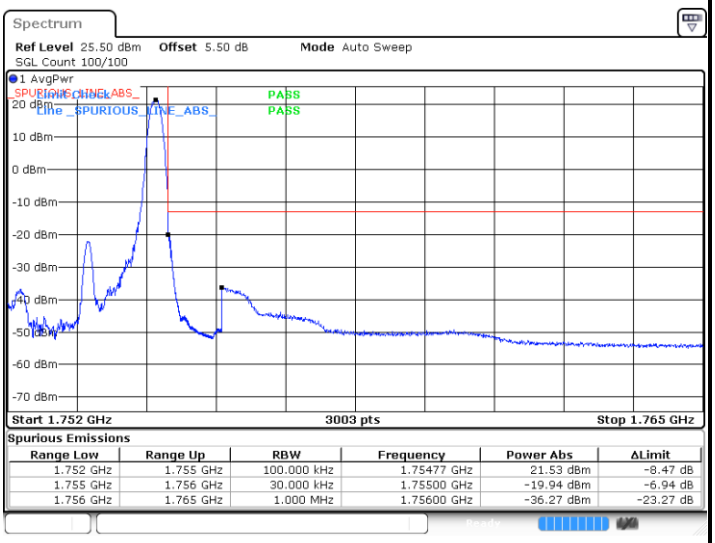


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70900 GHz	-33.69 dBm	-20.69 dB
1.709 GHz	1.710 GHz	30.000 kHz	1.71000 GHz	-17.85 dBm	-4.85 dB
1.710 GHz	1.713 GHz	100.000 kHz	1.71025 GHz	21.20 dBm	-8.80 dB

Date: 27.DEC.2021 00:51:19

Highest Band Edge / 1 RB

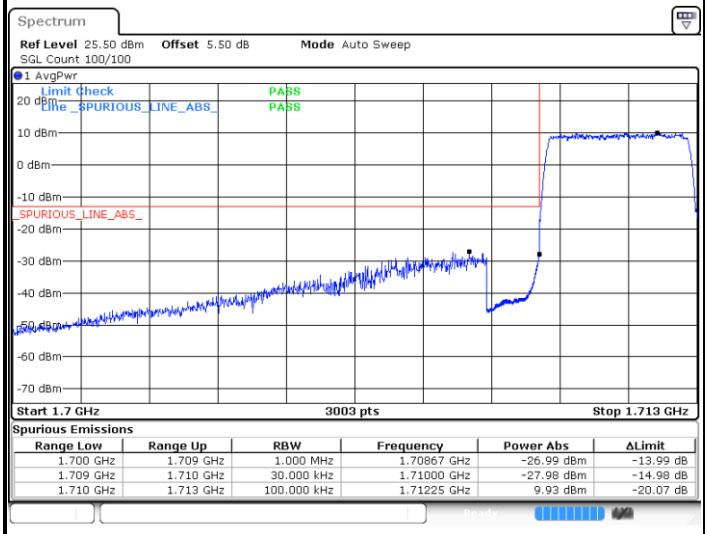


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.752 GHz	1.755 GHz	100.000 kHz	1.75477 GHz	21.53 dBm	-8.47 dB
1.755 GHz	1.756 GHz	30.000 kHz	1.75500 GHz	-19.94 dBm	-6.94 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75600 GHz	-36.27 dBm	-23.27 dB

Date: 27.DEC.2021 01:06:05

Lowest Band Edge / Full RB

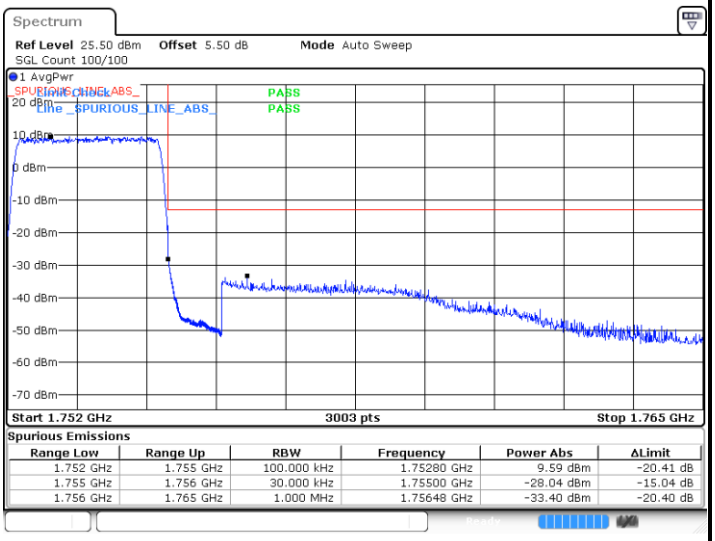


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70867 GHz	-26.99 dBm	-13.99 dB
1.709 GHz	1.710 GHz	30.000 kHz	1.71000 GHz	-27.98 dBm	-14.98 dB
1.710 GHz	1.713 GHz	100.000 kHz	1.71225 GHz	9.93 dBm	-20.07 dB

Date: 27.DEC.2021 00:59:42

Highest Band Edge / Full RB



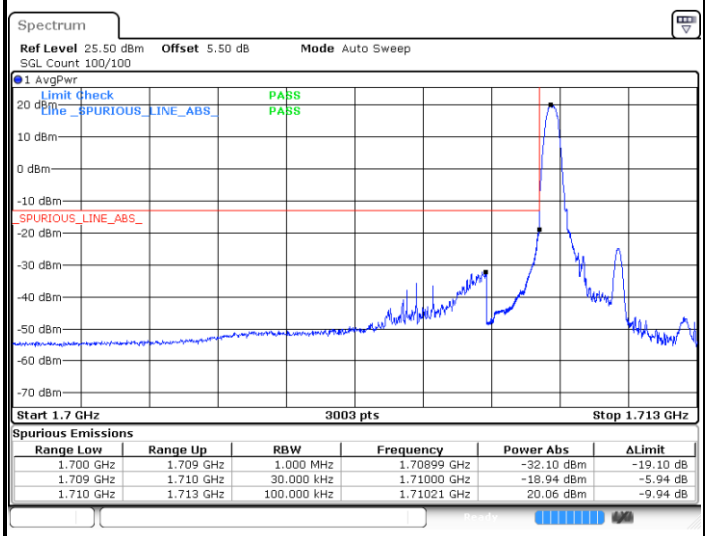
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.752 GHz	1.755 GHz	100.000 kHz	1.75280 GHz	9.59 dBm	-20.41 dB
1.755 GHz	1.756 GHz	30.000 kHz	1.75500 GHz	-28.04 dBm	-15.04 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75648 GHz	-33.40 dBm	-20.40 dB

Date: 27.DEC.2021 01:14:27

LTE Band 4 / 3MHz / 16QAM

Lowest Band Edge / 1 RB

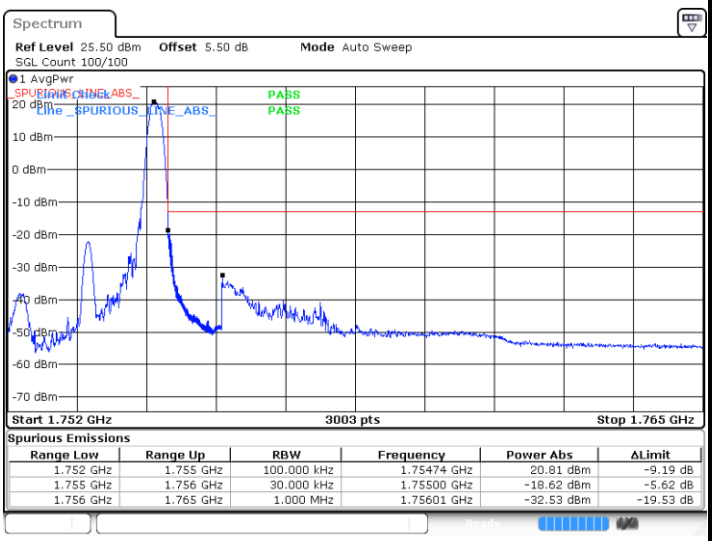


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70899 GHz	-32.10 dBm	-19.10 dB
1.709 GHz	1.710 GHz	30.000 kHz	1.71000 GHz	-18.94 dBm	-5.94 dB
1.710 GHz	1.713 GHz	100.000 kHz	1.71021 GHz	20.06 dBm	-9.94 dB

Date: 27.DEC.2021 00:52:59

Highest Band Edge /1 RB

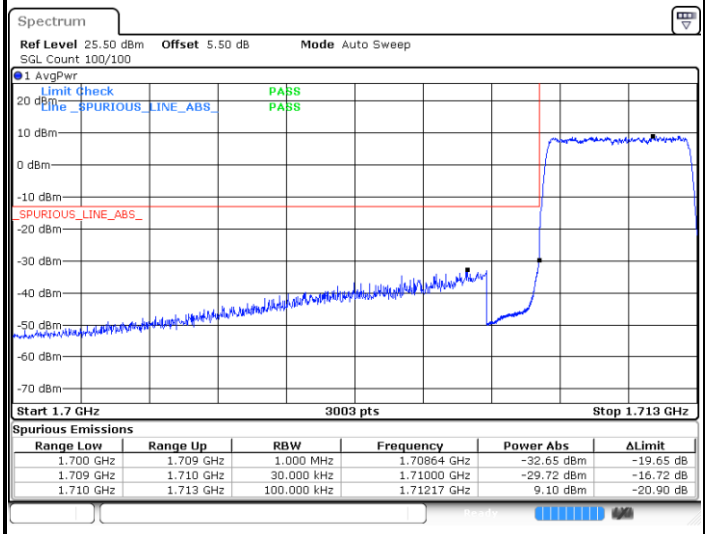


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.752 GHz	1.755 GHz	100.000 kHz	1.75474 GHz	20.81 dBm	-9.19 dB
1.755 GHz	1.756 GHz	30.000 kHz	1.75500 GHz	-18.62 dBm	-5.62 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75601 GHz	-32.53 dBm	-19.53 dB

Date: 27.DEC.2021 01:07:45

Lowest Band Edge / Full RB

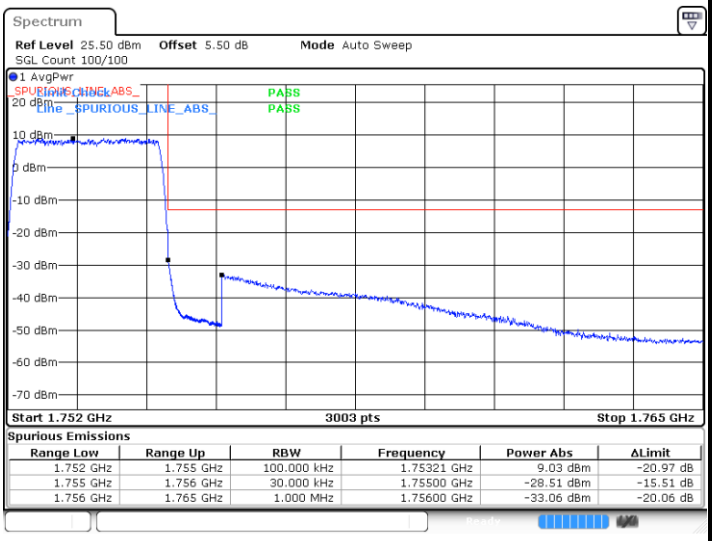


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70864 GHz	-32.65 dBm	-19.65 dB
1.709 GHz	1.710 GHz	30.000 kHz	1.71000 GHz	-29.72 dBm	-16.72 dB
1.710 GHz	1.713 GHz	100.000 kHz	1.71217 GHz	9.10 dBm	-20.90 dB

Date: 27.DEC.2021 00:58:01

Highest Band Edge / Full RB



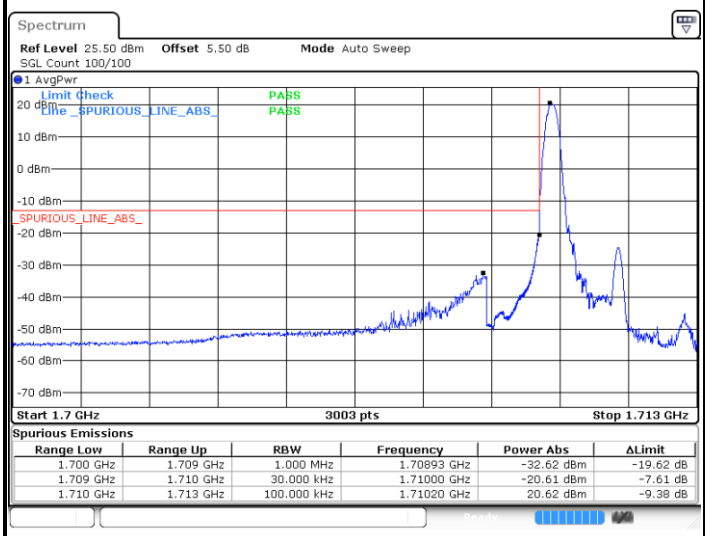
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.752 GHz	1.755 GHz	100.000 kHz	1.75321 GHz	9.03 dBm	-20.97 dB
1.755 GHz	1.756 GHz	30.000 kHz	1.75500 GHz	-28.51 dBm	-15.51 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75600 GHz	-33.06 dBm	-20.06 dB

Date: 27.DEC.2021 01:12:47

LTE Band 4 / 3MHz / 64QAM

Lowest Band Edge / 1 RB

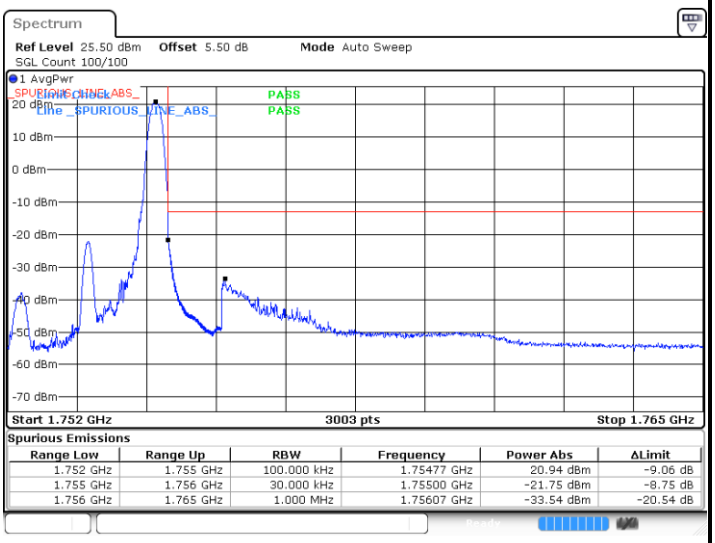


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70893 GHz	-32.62 dBm	-19.62 dB
1.709 GHz	1.710 GHz	30.000 kHz	1.71000 GHz	-20.61 dBm	-7.61 dB
1.710 GHz	1.713 GHz	100.000 kHz	1.71020 GHz	20.62 dBm	-9.38 dB

Date: 27.DEC.2021 00:54:39

Highest Band Edge /1 RB

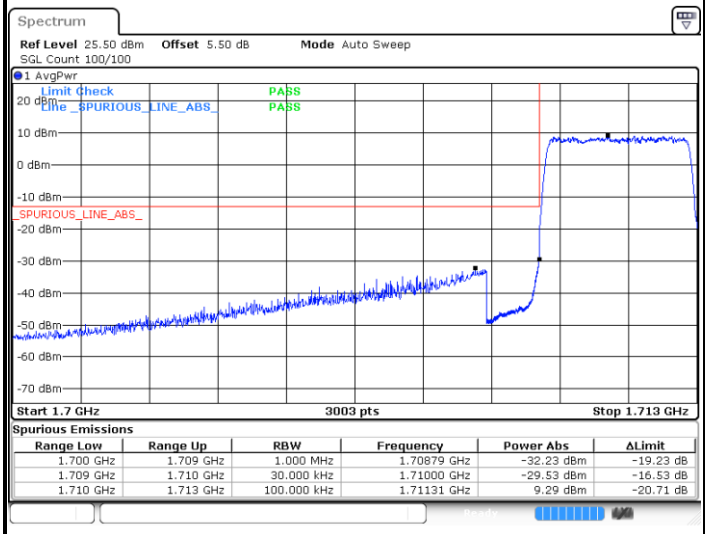


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.752 GHz	1.755 GHz	100.000 kHz	1.75477 GHz	20.94 dBm	-9.06 dB
1.755 GHz	1.756 GHz	30.000 kHz	1.75500 GHz	-21.75 dBm	-8.75 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75607 GHz	-33.54 dBm	-20.54 dB

Date: 27.DEC.2021 01:09:26

Lowest Band Edge / Full RB

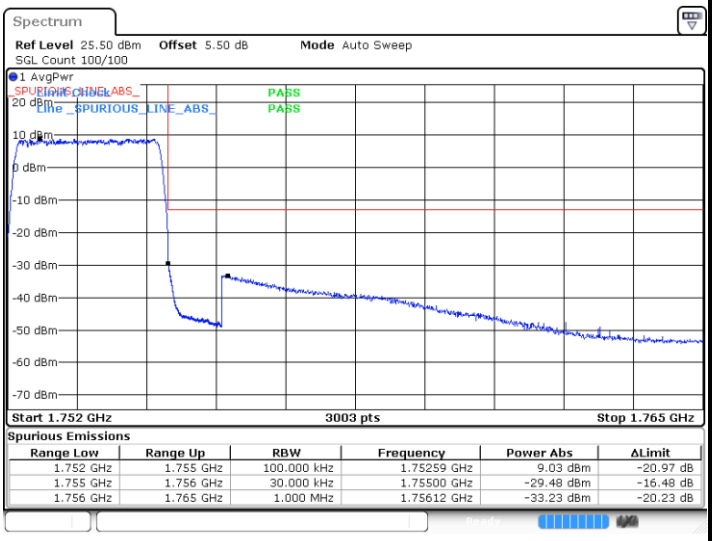


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70879 GHz	-32.23 dBm	-19.23 dB
1.709 GHz	1.710 GHz	30.000 kHz	1.71000 GHz	-29.53 dBm	-16.53 dB
1.710 GHz	1.713 GHz	100.000 kHz	1.71131 GHz	9.29 dBm	-20.71 dB

Date: 27.DEC.2021 00:56:20

Highest Band Edge / Full RB



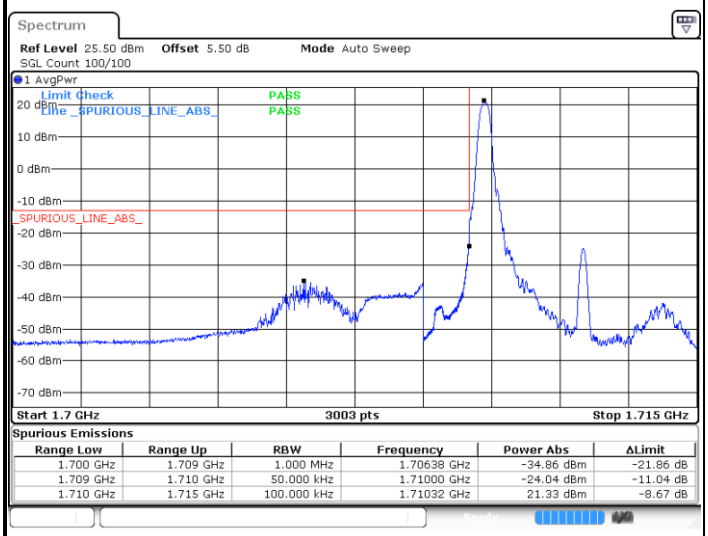
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.752 GHz	1.755 GHz	100.000 kHz	1.75259 GHz	9.03 dBm	-20.97 dB
1.755 GHz	1.756 GHz	30.000 kHz	1.75500 GHz	-29.48 dBm	-16.48 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75612 GHz	-33.23 dBm	-20.23 dB

Date: 27.DEC.2021 01:11:06

LTE Band 4 / 5MHz / QPSK

Lowest Band Edge / 1 RB

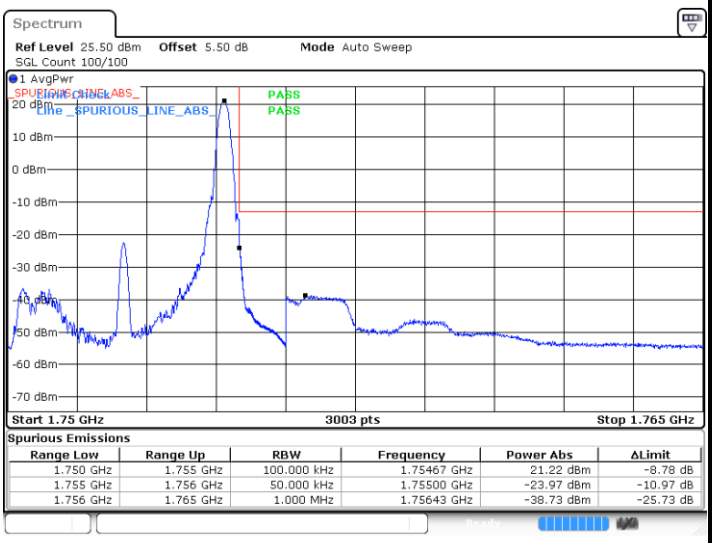


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70638 GHz	-34.86 dBm	-21.86 dB
1.709 GHz	1.710 GHz	50.000 kHz	1.71000 GHz	-24.04 dBm	-11.04 dB
1.710 GHz	1.715 GHz	100.000 kHz	1.71032 GHz	21.33 dBm	-8.67 dB

Date: 27.DEC.2021 01:18:30

Highest Band Edge / 1 RB

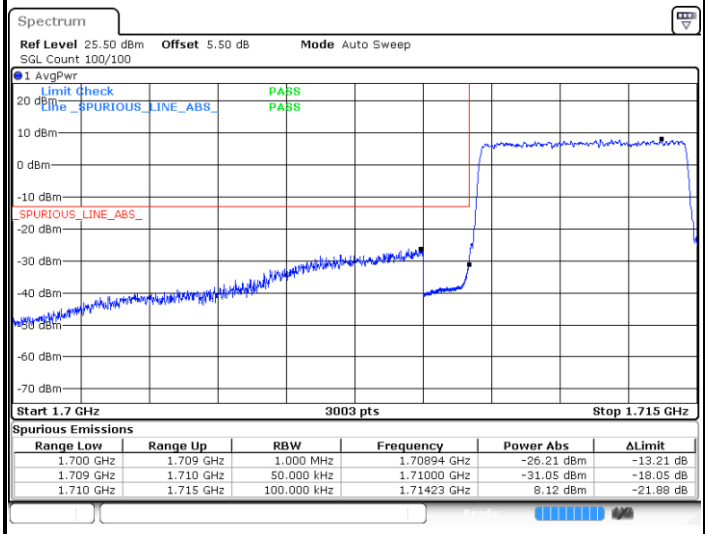


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.750 GHz	1.755 GHz	100.000 kHz	1.75467 GHz	21.22 dBm	-8.78 dB
1.755 GHz	1.756 GHz	50.000 kHz	1.75500 GHz	-23.97 dBm	-10.97 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75643 GHz	-38.73 dBm	-25.73 dB

Date: 27.DEC.2021 01:33:17

Lowest Band Edge / Full RB

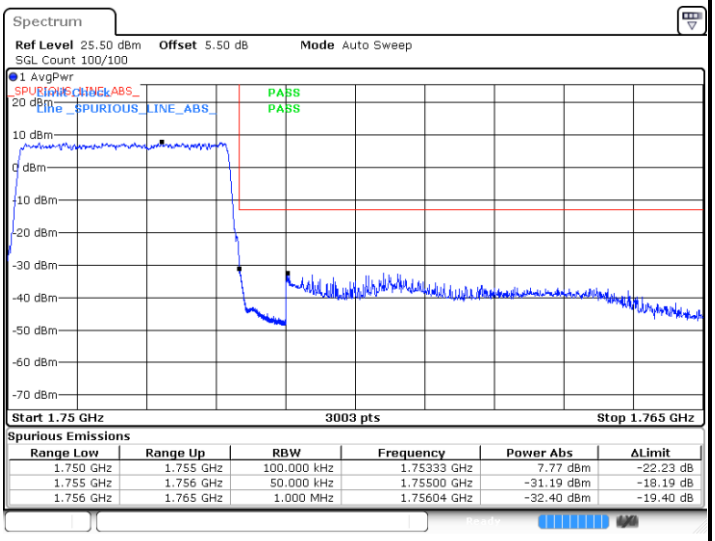


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70894 GHz	-26.21 dBm	-13.21 dB
1.709 GHz	1.710 GHz	50.000 kHz	1.71000 GHz	-31.05 dBm	-18.05 dB
1.710 GHz	1.715 GHz	100.000 kHz	1.71423 GHz	8.12 dBm	-21.88 dB

Date: 27.DEC.2021 01:26:53

Highest Band Edge / Full RB



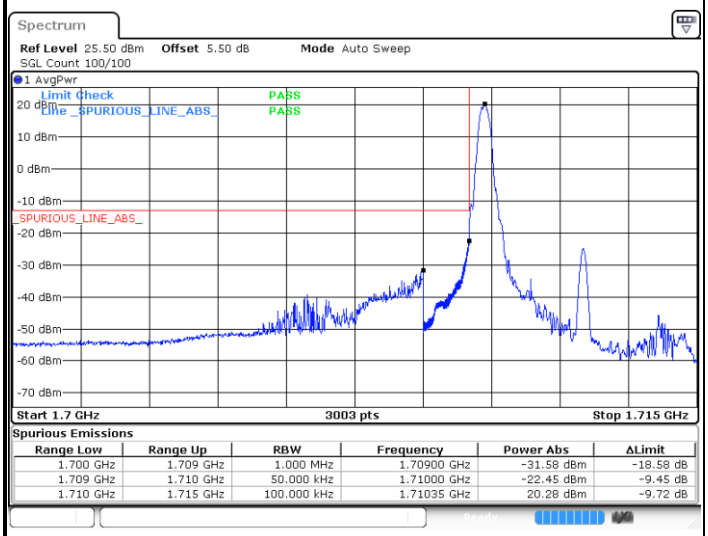
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.750 GHz	1.755 GHz	100.000 kHz	1.75333 GHz	7.77 dBm	-22.23 dB
1.755 GHz	1.756 GHz	50.000 kHz	1.75500 GHz	-31.19 dBm	-18.19 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75604 GHz	-32.40 dBm	-19.40 dB

Date: 27.DEC.2021 01:41:50

LTE Band 4 / 5MHz / 16QAM

Lowest Band Edge / 1RB

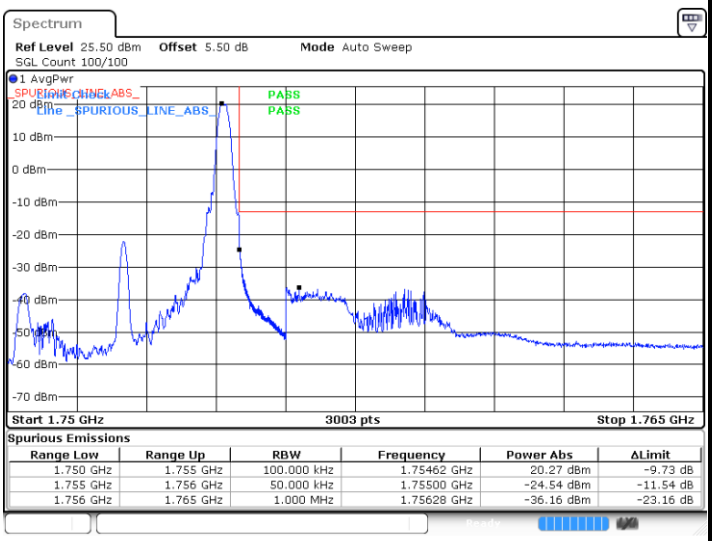


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70900 GHz	-31.58 dBm	-18.58 dB
1.709 GHz	1.710 GHz	50.000 kHz	1.71000 GHz	-22.45 dBm	-9.45 dB
1.710 GHz	1.715 GHz	100.000 kHz	1.71035 GHz	20.28 dBm	-9.72 dB

Date: 27.DEC.2021 01:20:10

Highest Band Edge / 1 RB

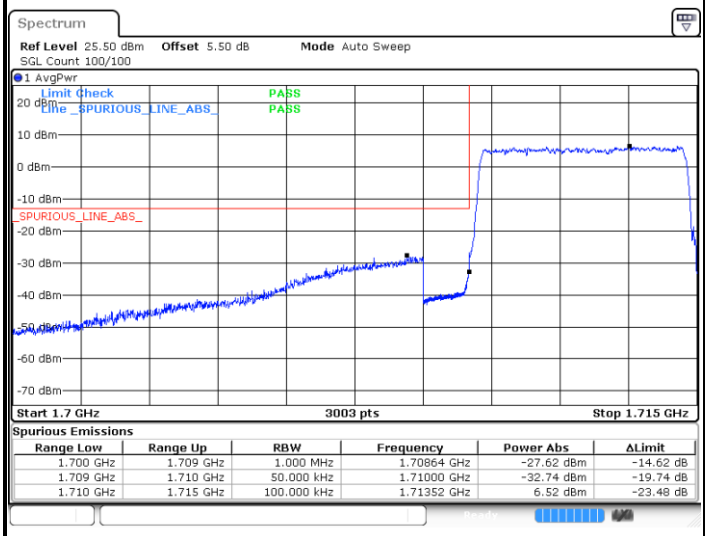


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.750 GHz	1.755 GHz	100.000 kHz	1.75462 GHz	20.27 dBm	-9.73 dB
1.755 GHz	1.756 GHz	50.000 kHz	1.75500 GHz	-24.54 dBm	-11.54 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75628 GHz	-36.16 dBm	-23.16 dB

Date: 27.DEC.2021 01:34:58

Lowest Band Edge / Full RB

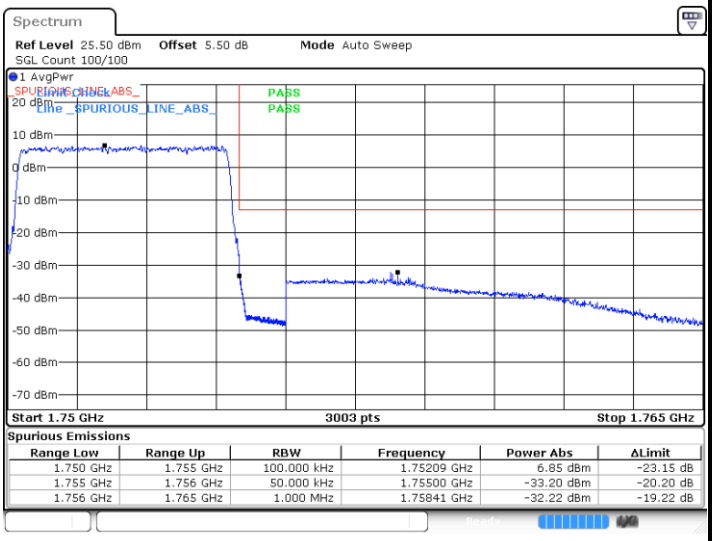


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70864 GHz	-27.62 dBm	-14.62 dB
1.709 GHz	1.710 GHz	50.000 kHz	1.71000 GHz	-32.74 dBm	-19.74 dB
1.710 GHz	1.715 GHz	100.000 kHz	1.71352 GHz	6.52 dBm	-23.48 dB

Date: 27.DEC.2021 01:25:13

Highest Band Edge / Full RB



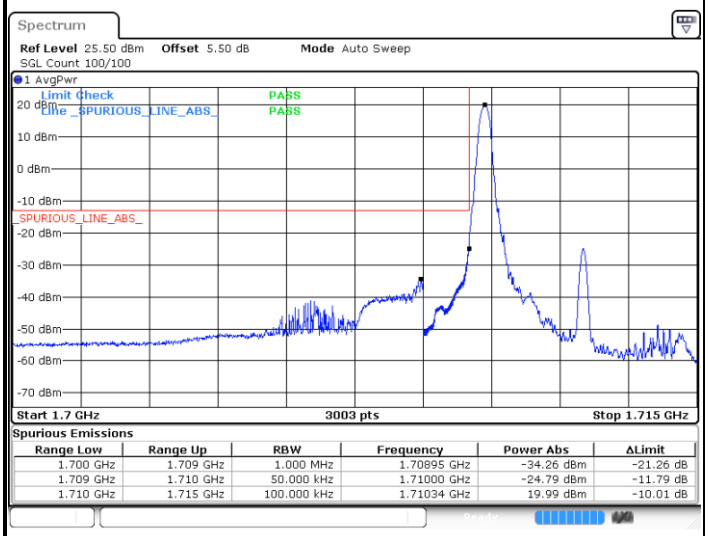
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.750 GHz	1.755 GHz	100.000 kHz	1.75209 GHz	6.85 dBm	-23.15 dB
1.755 GHz	1.756 GHz	50.000 kHz	1.75500 GHz	-33.20 dBm	-20.20 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75841 GHz	-32.22 dBm	-19.22 dB

Date: 27.DEC.2021 01:40:08

LTE Band 4 / 5MHz / 64QAM

Lowest Band Edge / 1RB

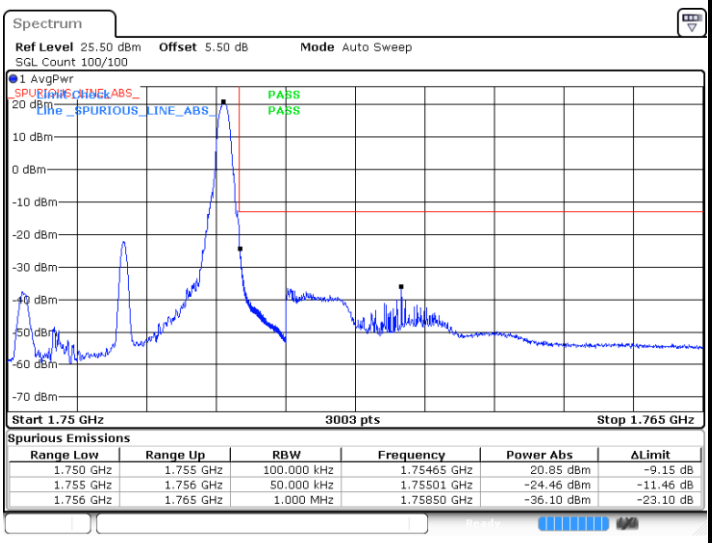


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70895 GHz	-34.26 dBm	-21.26 dB
1.709 GHz	1.710 GHz	50.000 kHz	1.71000 GHz	-24.79 dBm	-11.79 dB
1.710 GHz	1.715 GHz	100.000 kHz	1.71034 GHz	19.99 dBm	-10.01 dB

Date: 27.DEC.2021 01:21:51

Highest Band Edge / 1 RB

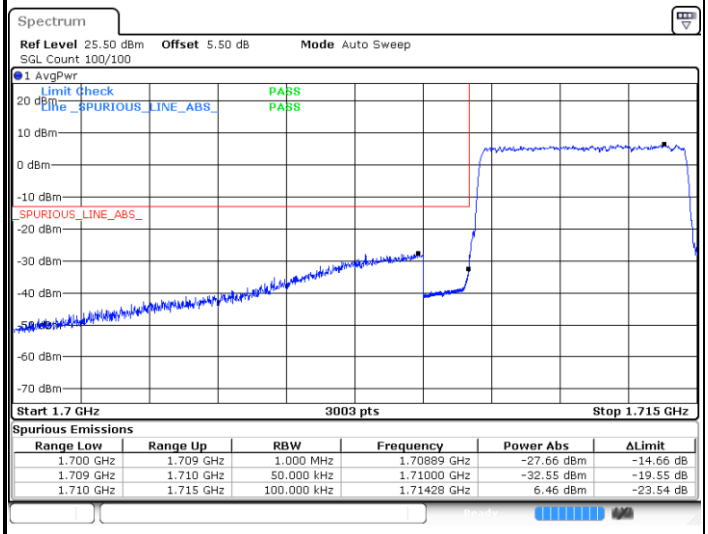


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.750 GHz	1.755 GHz	100.000 kHz	1.75465 GHz	20.85 dBm	-9.15 dB
1.755 GHz	1.756 GHz	50.000 kHz	1.75501 GHz	-24.46 dBm	-11.46 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75850 GHz	-36.10 dBm	-23.10 dB

Date: 27.DEC.2021 01:36:38

Lowest Band Edge / Full RB

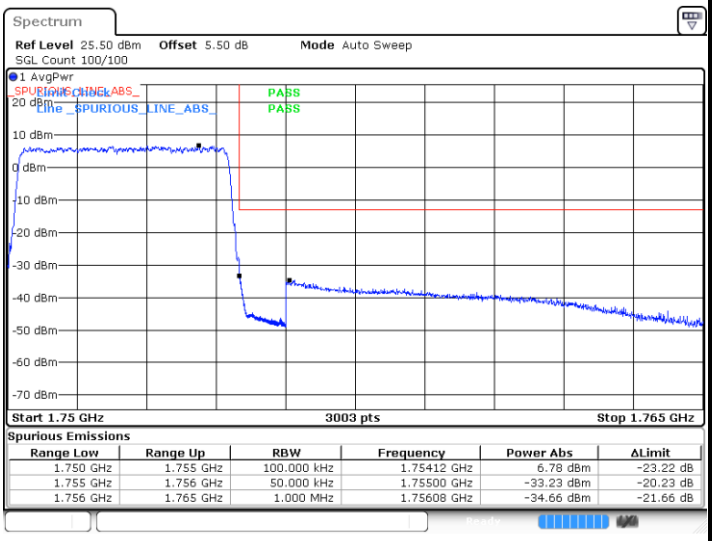


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70889 GHz	-27.66 dBm	-14.66 dB
1.709 GHz	1.710 GHz	50.000 kHz	1.71000 GHz	-32.55 dBm	-19.55 dB
1.710 GHz	1.715 GHz	100.000 kHz	1.71428 GHz	6.46 dBm	-23.54 dB

Date: 27.DEC.2021 01:23:32

Highest Band Edge / Full RB



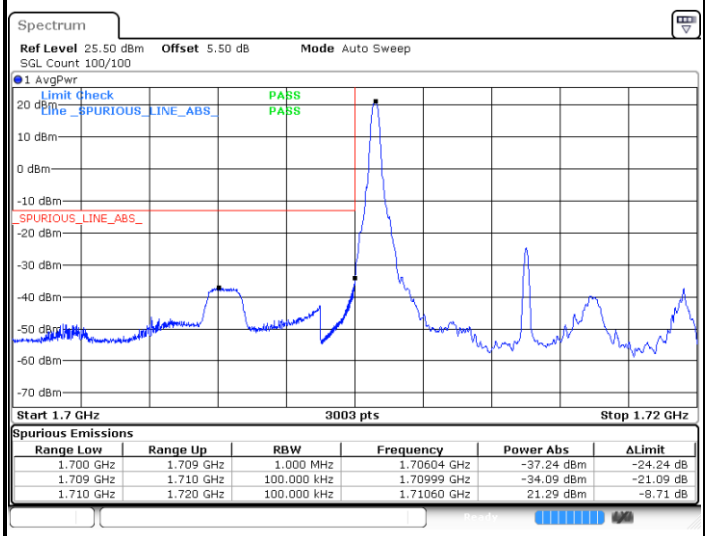
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.750 GHz	1.755 GHz	100.000 kHz	1.75412 GHz	6.78 dBm	-23.22 dB
1.755 GHz	1.756 GHz	50.000 kHz	1.75500 GHz	-33.23 dBm	-20.23 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75608 GHz	-34.66 dBm	-21.66 dB

Date: 27.DEC.2021 01:38:28

LTE Band 4 / 10MHz / QPSK

Lowest Band Edge / 1 RB

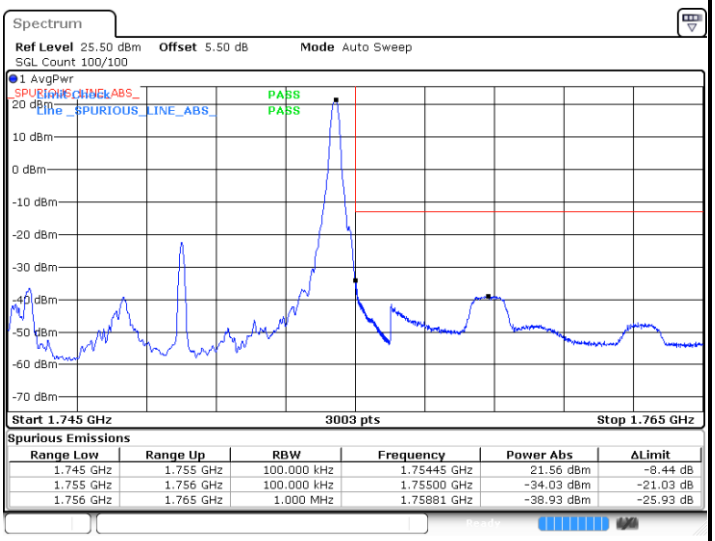


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70604 GHz	-37.24 dBm	-24.24 dB
1.709 GHz	1.710 GHz	100.000 kHz	1.70999 GHz	-34.09 dBm	-21.09 dB
1.710 GHz	1.720 GHz	100.000 kHz	1.71060 GHz	21.29 dBm	-8.71 dB

Date: 27.DEC.2021 01:45:52

Highest Band Edge / 1 RB

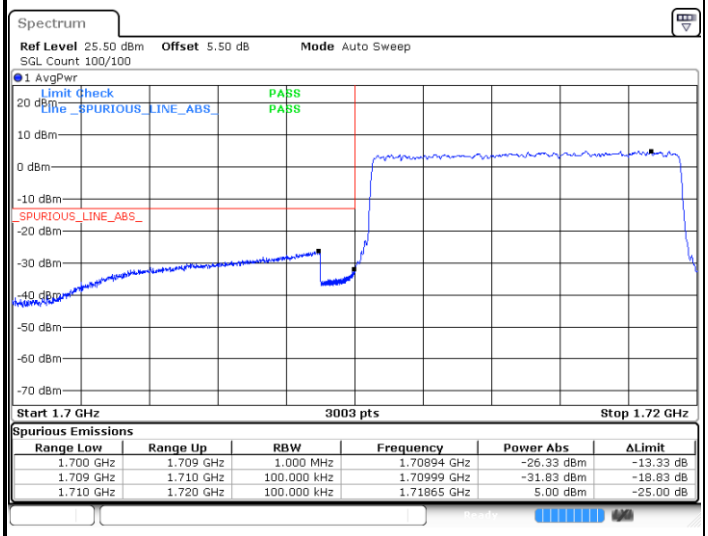


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.745 GHz	1.755 GHz	100.000 kHz	1.75445 GHz	21.56 dBm	-8.44 dB
1.755 GHz	1.756 GHz	100.000 kHz	1.75500 GHz	-34.03 dBm	-21.03 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75881 GHz	-38.93 dBm	-25.93 dB

Date: 27.DEC.2021 02:00:39

Lowest Band Edge / Full RB

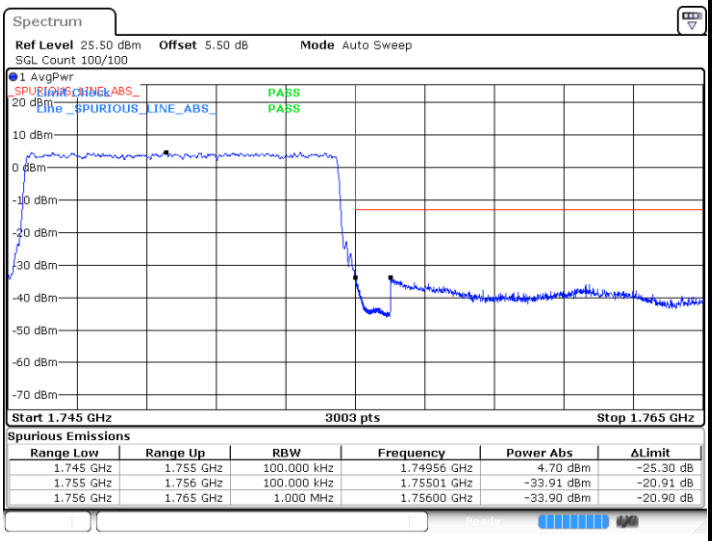


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70894 GHz	-26.33 dBm	-13.33 dB
1.709 GHz	1.710 GHz	100.000 kHz	1.70999 GHz	-31.83 dBm	-18.83 dB
1.710 GHz	1.720 GHz	100.000 kHz	1.71865 GHz	5.00 dBm	-25.00 dB

Date: 27.DEC.2021 01:54:16

Highest Band Edge / Full RB



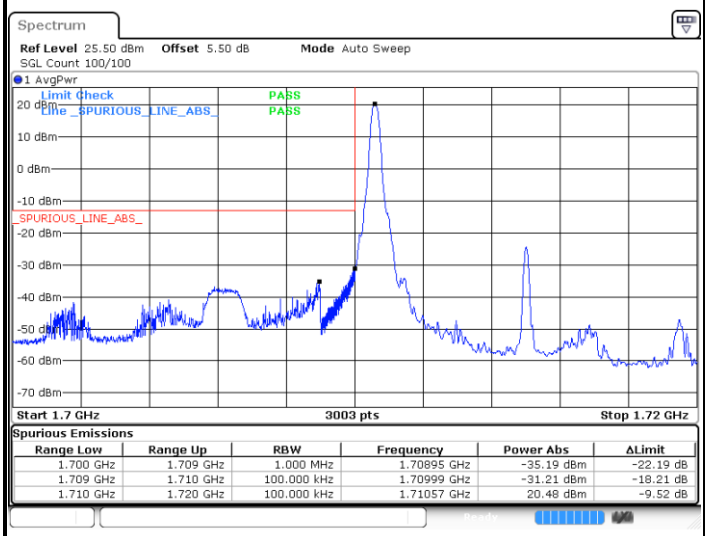
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.745 GHz	1.755 GHz	100.000 kHz	1.74956 GHz	4.70 dBm	-25.30 dB
1.755 GHz	1.756 GHz	100.000 kHz	1.75501 GHz	-33.91 dBm	-20.91 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75600 GHz	-33.90 dBm	-20.90 dB

Date: 27.DEC.2021 02:09:02

LTE Band 4 / 10MHz / 16QAM

Lowest Band Edge / 1 RB

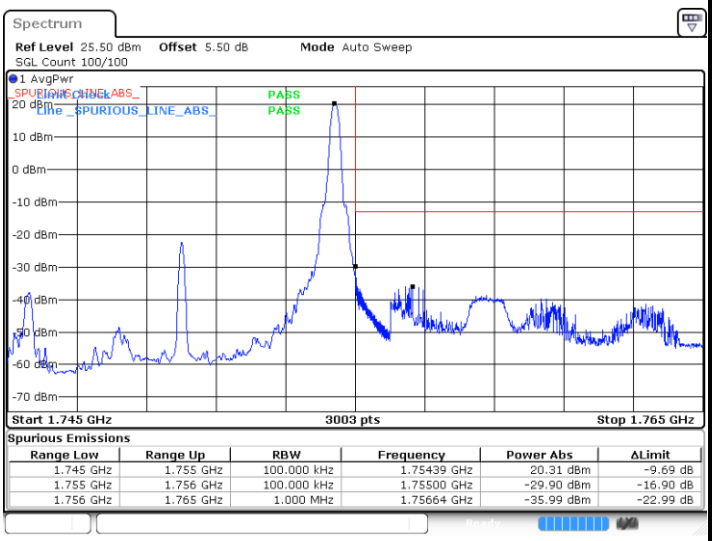


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70895 GHz	-35.19 dBm	-22.19 dB
1.709 GHz	1.710 GHz	100.000 kHz	1.70999 GHz	-31.21 dBm	-18.21 dB
1.710 GHz	1.720 GHz	100.000 kHz	1.71057 GHz	20.48 dBm	-9.52 dB

Date: 27.DEC.2021 01:47:33

Highest Band Edge / 1 RB

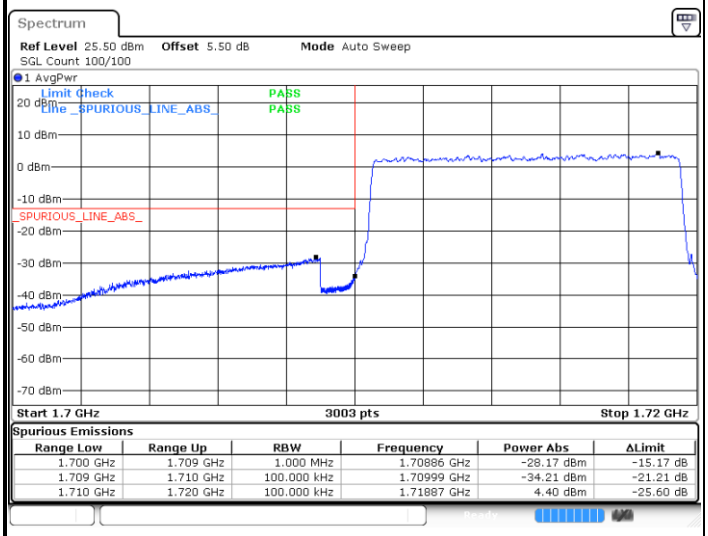


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.745 GHz	1.755 GHz	100.000 kHz	1.75439 GHz	20.31 dBm	-9.69 dB
1.755 GHz	1.756 GHz	100.000 kHz	1.75500 GHz	-29.90 dBm	-16.90 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75664 GHz	-35.99 dBm	-22.99 dB

Date: 27.DEC.2021 02:02:20

Lowest Band Edge / Full RB

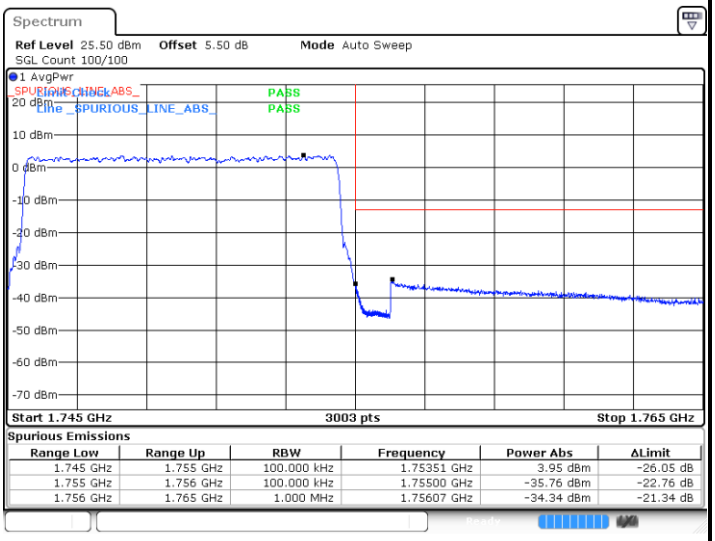


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70886 GHz	-28.17 dBm	-15.17 dB
1.709 GHz	1.710 GHz	100.000 kHz	1.70999 GHz	-34.21 dBm	-21.21 dB
1.710 GHz	1.720 GHz	100.000 kHz	1.71887 GHz	4.40 dBm	-25.60 dB

Date: 27.DEC.2021 01:52:35

Highest Band Edge / Full RB



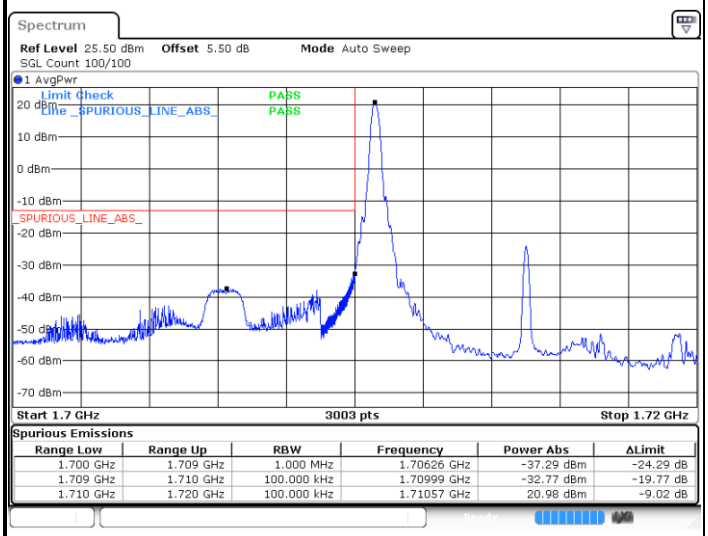
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.745 GHz	1.755 GHz	100.000 kHz	1.75351 GHz	3.95 dBm	-26.05 dB
1.755 GHz	1.756 GHz	100.000 kHz	1.75500 GHz	-35.76 dBm	-22.76 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75607 GHz	-34.34 dBm	-21.34 dB

Date: 27.DEC.2021 02:07:22

LTE Band 4 / 10MHz / 64QAM

Lowest Band Edge / 1 RB

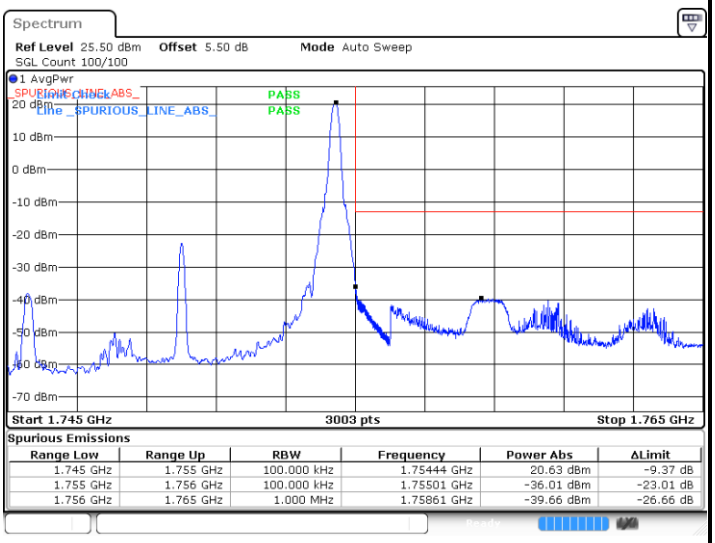


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70626 GHz	-37.29 dBm	-24.29 dB
1.709 GHz	1.710 GHz	100.000 kHz	1.70999 GHz	-32.77 dBm	-19.77 dB
1.710 GHz	1.720 GHz	100.000 kHz	1.71057 GHz	20.98 dBm	-9.02 dB

Date: 27.DEC.2021 01:49:13

Highest Band Edge / 1 RB

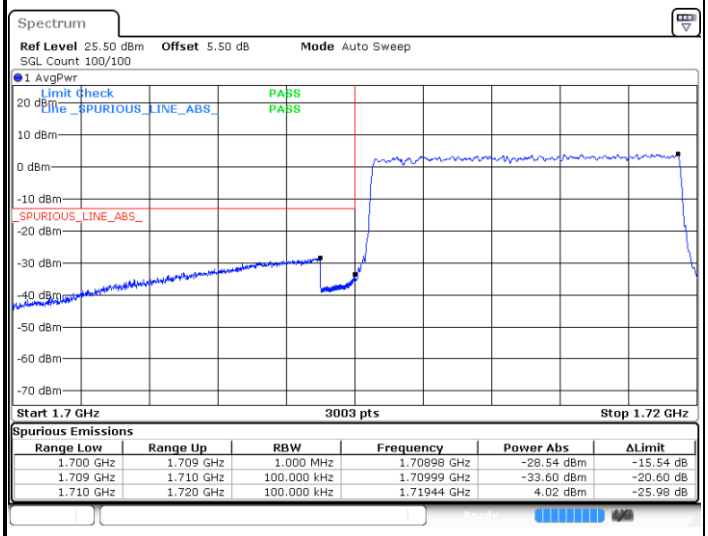


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.745 GHz	1.755 GHz	100.000 kHz	1.75444 GHz	20.63 dBm	-9.37 dB
1.755 GHz	1.756 GHz	100.000 kHz	1.75501 GHz	-36.01 dBm	-23.01 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75861 GHz	-39.66 dBm	-26.66 dB

Date: 27.DEC.2021 02:04:00

Lowest Band Edge / Full RB

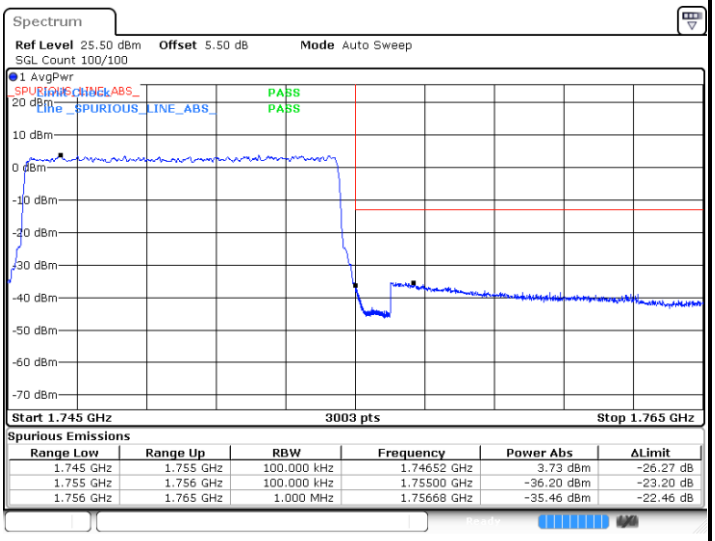


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70898 GHz	-28.54 dBm	-15.54 dB
1.709 GHz	1.710 GHz	100.000 kHz	1.70999 GHz	-33.60 dBm	-20.60 dB
1.710 GHz	1.720 GHz	100.000 kHz	1.71944 GHz	4.02 dBm	-25.98 dB

Date: 27.DEC.2021 01:50:54

Highest Band Edge / Full RB



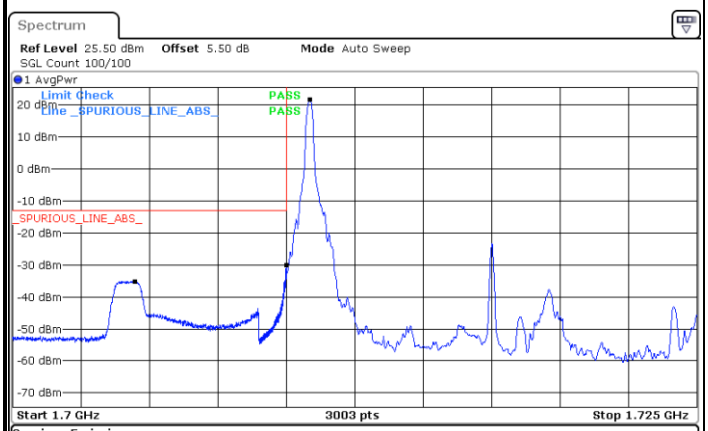
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.745 GHz	1.755 GHz	100.000 kHz	1.74652 GHz	3.73 dBm	-26.27 dB
1.755 GHz	1.756 GHz	100.000 kHz	1.75500 GHz	-36.20 dBm	-23.20 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75668 GHz	-35.46 dBm	-22.46 dB

Date: 27.DEC.2021 02:05:41

LTE Band 4 / 15MHz / QPSK

Lowest Band Edge / 1 RB

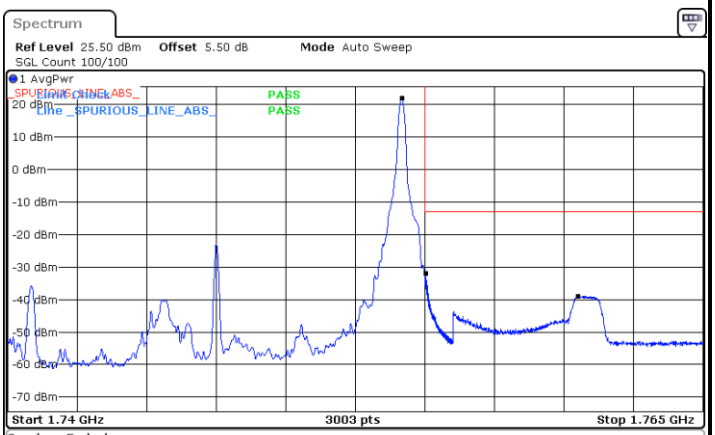


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70447 GHz	-35.12 dBm	-22.12 dB
1.709 GHz	1.710 GHz	150.000 kHz	1.71000 GHz	-30.02 dBm	-17.02 dB
1.710 GHz	1.725 GHz	100.000 kHz	1.71086 GHz	21.83 dBm	-8.17 dB

Date: 27.DEC.2021 02:13:05

Highest Band Edge / 1 RB

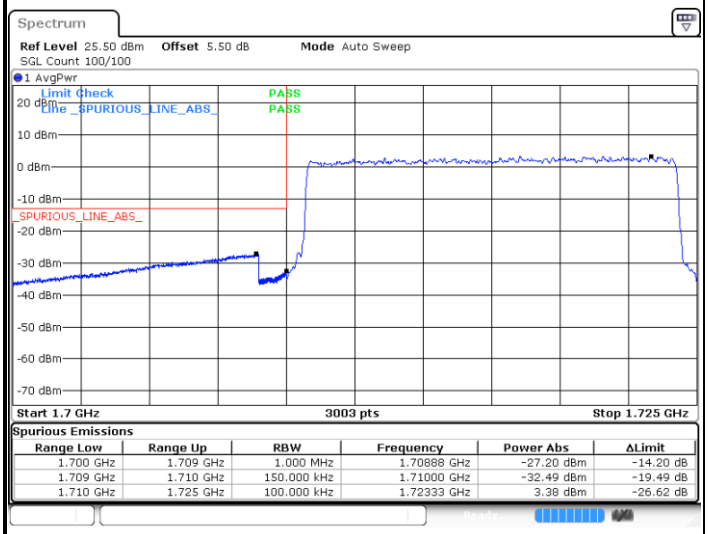


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.740 GHz	1.755 GHz	100.000 kHz	1.75417 GHz	21.84 dBm	-8.16 dB
1.755 GHz	1.756 GHz	150.000 kHz	1.75502 GHz	-31.98 dBm	-18.98 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.76051 GHz	-38.88 dBm	-25.88 dB

Date: 27.DEC.2021 02:27:51

Lowest Band Edge / Full RB

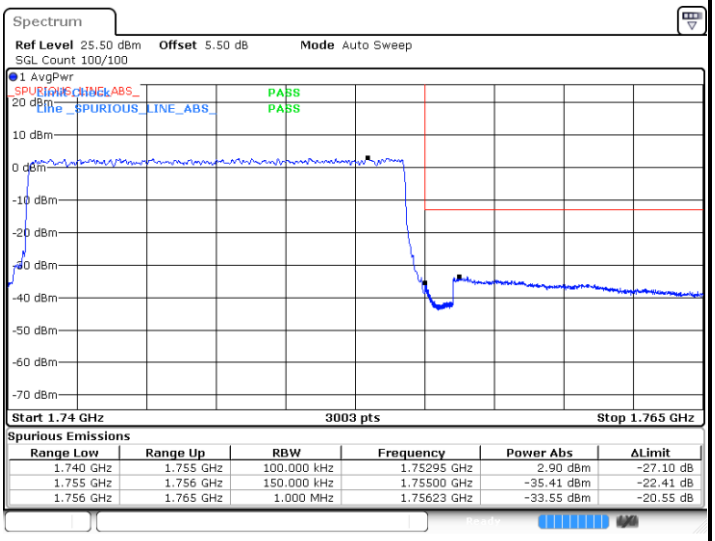


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70888 GHz	-27.20 dBm	-14.20 dB
1.709 GHz	1.710 GHz	150.000 kHz	1.71000 GHz	-32.49 dBm	-19.49 dB
1.710 GHz	1.725 GHz	100.000 kHz	1.72333 GHz	3.38 dBm	-26.62 dB

Date: 27.DEC.2021 02:21:27

Highest Band Edge / Full RB



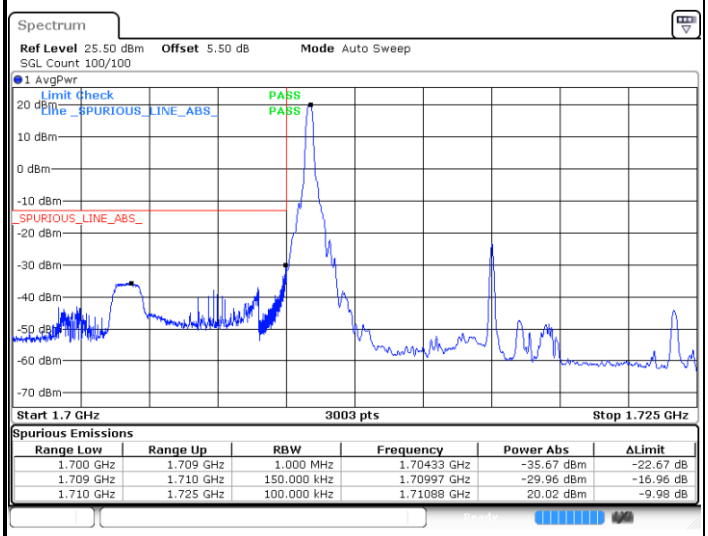
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.740 GHz	1.755 GHz	100.000 kHz	1.75295 GHz	2.90 dBm	-27.10 dB
1.755 GHz	1.756 GHz	150.000 kHz	1.75500 GHz	-35.41 dBm	-22.41 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75623 GHz	-33.55 dBm	-20.55 dB

Date: 27.DEC.2021 02:36:13

LTE Band 4 / 15MHz / 16QAM

Lowest Band Edge / 1 RB

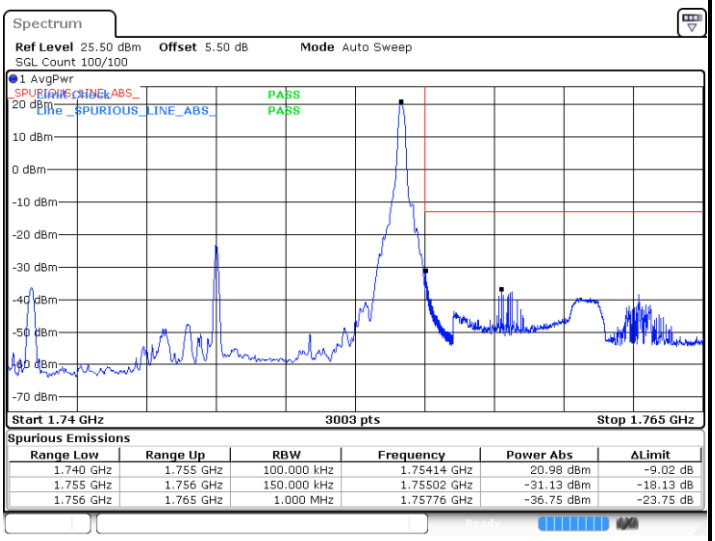


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70433 GHz	-35.67 dBm	-22.67 dB
1.709 GHz	1.710 GHz	150.000 kHz	1.70997 GHz	-29.96 dBm	-16.96 dB
1.710 GHz	1.725 GHz	100.000 kHz	1.71088 GHz	20.02 dBm	-9.98 dB

Date: 27.DEC.2021 02:14:45

Highest Band Edge / 1 RB

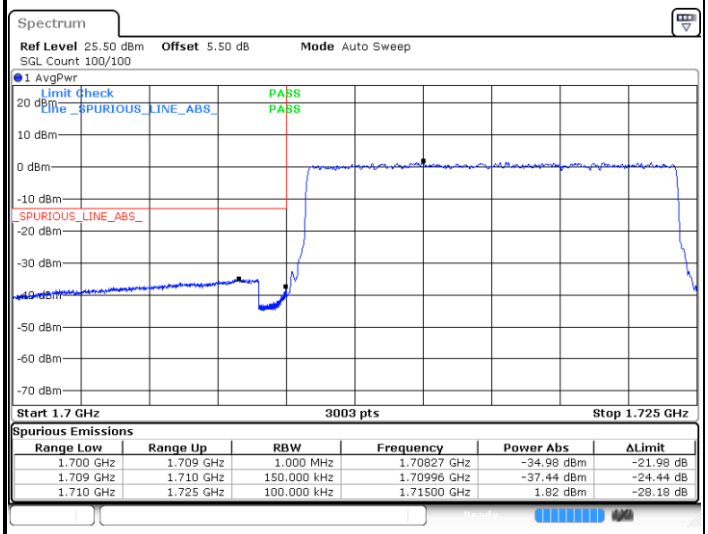


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.740 GHz	1.755 GHz	100.000 kHz	1.75414 GHz	20.98 dBm	-9.02 dB
1.755 GHz	1.756 GHz	150.000 kHz	1.75502 GHz	-31.13 dBm	-18.13 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75776 GHz	-36.75 dBm	-23.75 dB

Date: 27.DEC.2021 02:29:31

Lowest Band Edge / Full RB

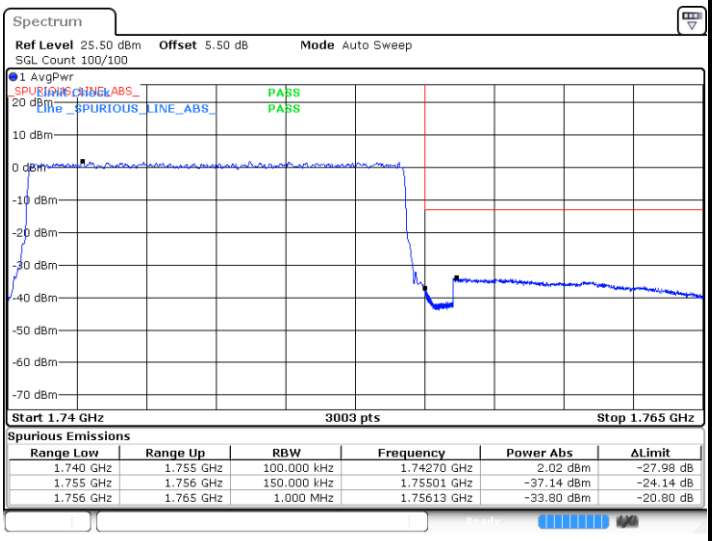


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70827 GHz	-34.98 dBm	-21.98 dB
1.709 GHz	1.710 GHz	150.000 kHz	1.70996 GHz	-37.44 dBm	-24.44 dB
1.710 GHz	1.725 GHz	100.000 kHz	1.71500 GHz	1.82 dBm	-28.18 dB

Date: 27.DEC.2021 02:19:47

Highest Band Edge / Full RB



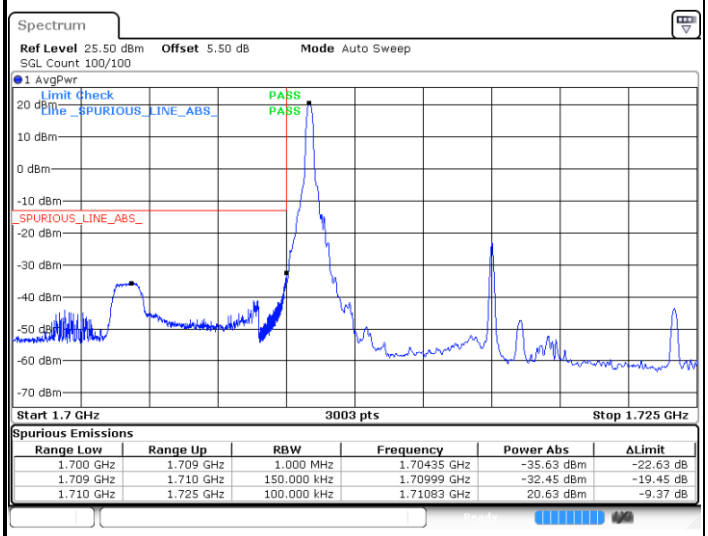
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.740 GHz	1.755 GHz	100.000 kHz	1.74270 GHz	2.02 dBm	-27.98 dB
1.755 GHz	1.756 GHz	150.000 kHz	1.75501 GHz	-37.14 dBm	-24.14 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75613 GHz	-33.80 dBm	-20.80 dB

Date: 27.DEC.2021 02:34:33

LTE Band 4 / 15MHz / 64QAM

Lowest Band Edge / 1 RB

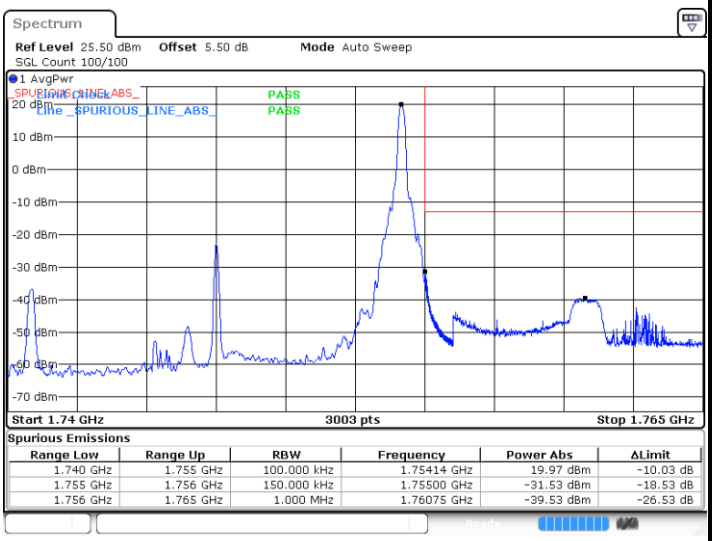


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70435 GHz	-35.63 dBm	-22.63 dB
1.709 GHz	1.710 GHz	150.000 kHz	1.70999 GHz	-32.45 dBm	-19.45 dB
1.710 GHz	1.725 GHz	100.000 kHz	1.71083 GHz	20.63 dBm	-9.37 dB

Date: 27.DEC.2021 02:16:26

Highest Band Edge / 1 RB

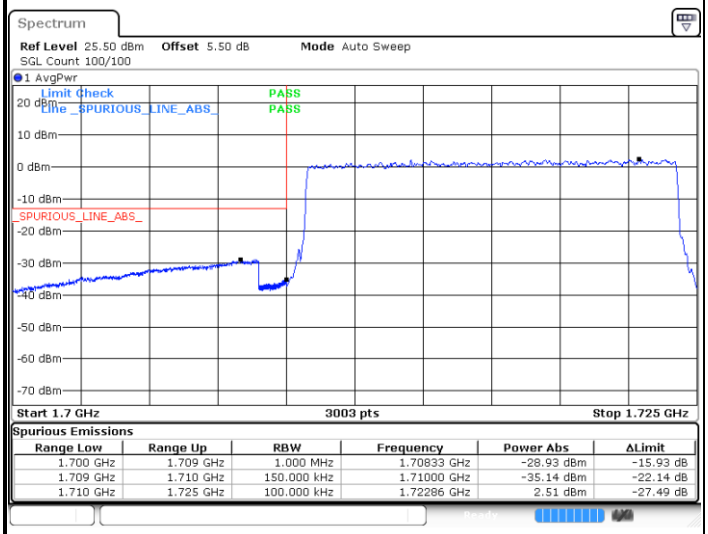


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.740 GHz	1.755 GHz	100.000 kHz	1.75414 GHz	19.97 dBm	-10.03 dB
1.755 GHz	1.756 GHz	150.000 kHz	1.75500 GHz	-31.53 dBm	-18.53 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.76075 GHz	-39.53 dBm	-26.53 dB

Date: 27.DEC.2021 02:31:11

Lowest Band Edge / Full RB

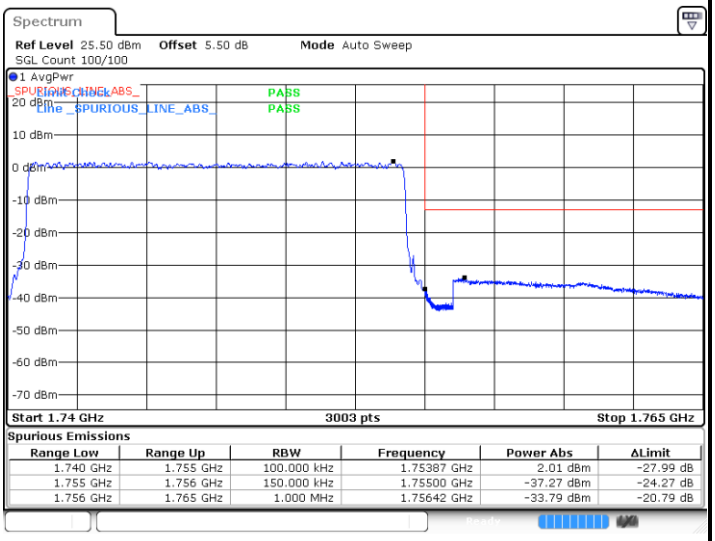


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70833 GHz	-28.93 dBm	-15.93 dB
1.709 GHz	1.710 GHz	150.000 kHz	1.71000 GHz	-35.14 dBm	-22.14 dB
1.710 GHz	1.725 GHz	100.000 kHz	1.72286 GHz	2.51 dBm	-27.49 dB

Date: 27.DEC.2021 02:18:06

Highest Band Edge / Full RB



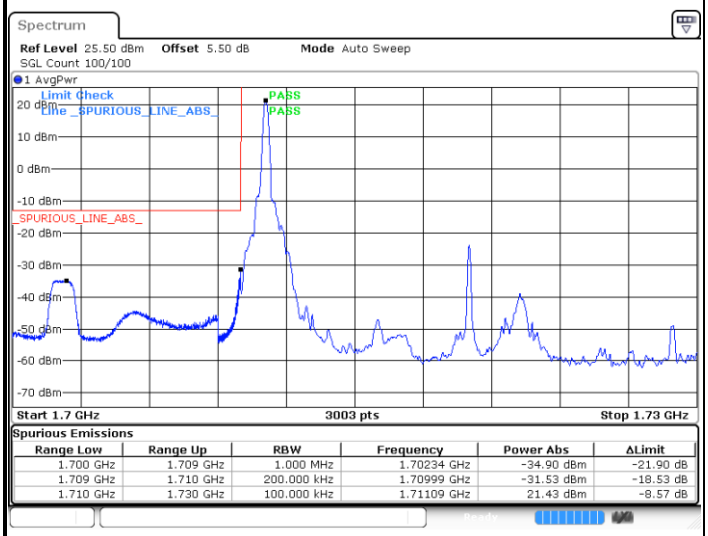
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.740 GHz	1.755 GHz	100.000 kHz	1.75387 GHz	2.01 dBm	-27.99 dB
1.755 GHz	1.756 GHz	150.000 kHz	1.75500 GHz	-37.27 dBm	-24.27 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75642 GHz	-33.79 dBm	-20.79 dB

Date: 27.DEC.2021 02:32:52

LTE Band 4 / 20MHz / QPSK

Lowest Band Edge / 1 RB

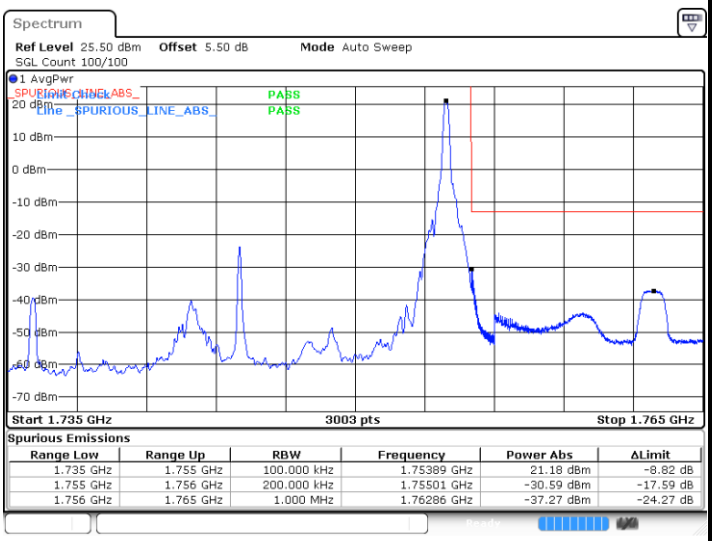


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70234 GHz	-34.90 dBm	-21.90 dB
1.709 GHz	1.710 GHz	200.000 kHz	1.70999 GHz	-31.53 dBm	-18.53 dB
1.710 GHz	1.730 GHz	100.000 kHz	1.71109 GHz	21.43 dBm	-8.57 dB

Date: 27.DEC.2021 02:40:16

Highest Band Edge / 1 RB

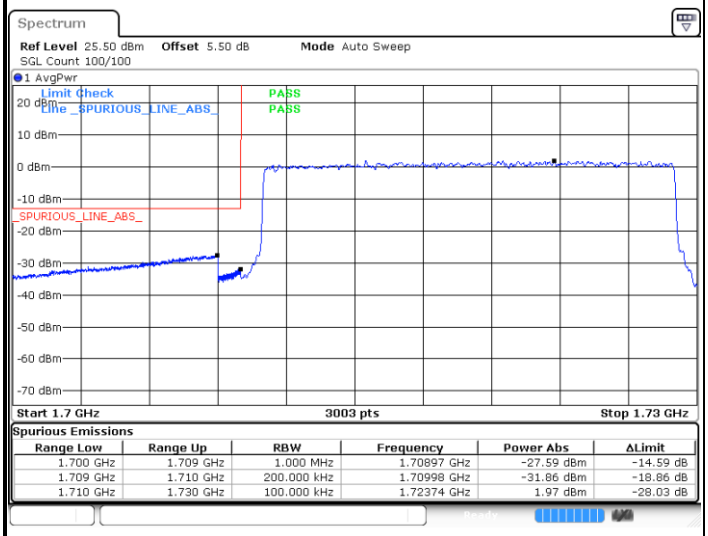


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.735 GHz	1.755 GHz	100.000 kHz	1.75389 GHz	21.18 dBm	-8.82 dB
1.755 GHz	1.756 GHz	200.000 kHz	1.75501 GHz	-30.59 dBm	-17.59 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.76286 GHz	-37.27 dBm	-24.27 dB

Date: 27.DEC.2021 02:55:02

Lowest Band Edge / Full RB

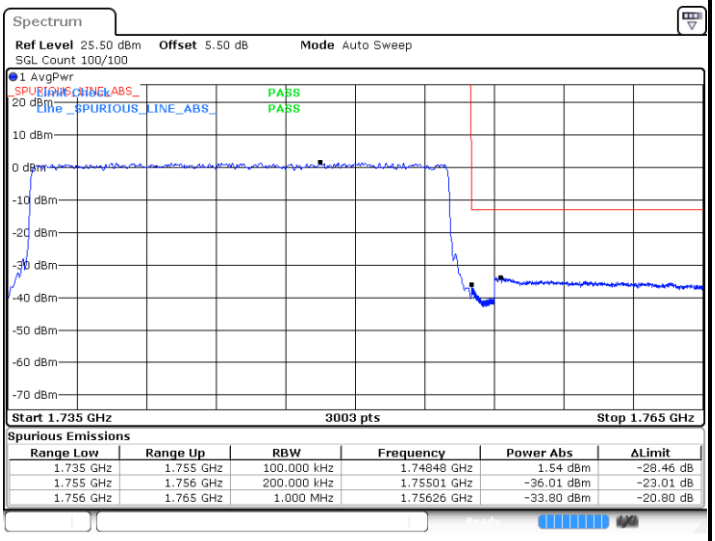


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70897 GHz	-27.59 dBm	-14.59 dB
1.709 GHz	1.710 GHz	200.000 kHz	1.70998 GHz	-31.86 dBm	-18.86 dB
1.710 GHz	1.730 GHz	100.000 kHz	1.72374 GHz	1.97 dBm	-28.03 dB

Date: 27.DEC.2021 02:48:39

Highest Band Edge / Full RB



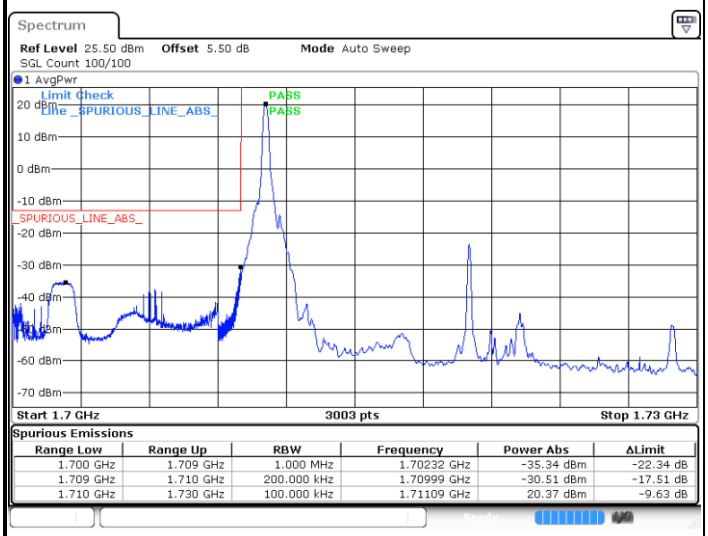
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.735 GHz	1.755 GHz	100.000 kHz	1.74848 GHz	1.54 dBm	-28.46 dB
1.755 GHz	1.756 GHz	200.000 kHz	1.75501 GHz	-36.01 dBm	-23.01 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75626 GHz	-33.80 dBm	-20.80 dB

Date: 27.DEC.2021 03:03:27

LTE Band 4 / 20MHz / 16QAM

Lowest Band Edge / 1 RB

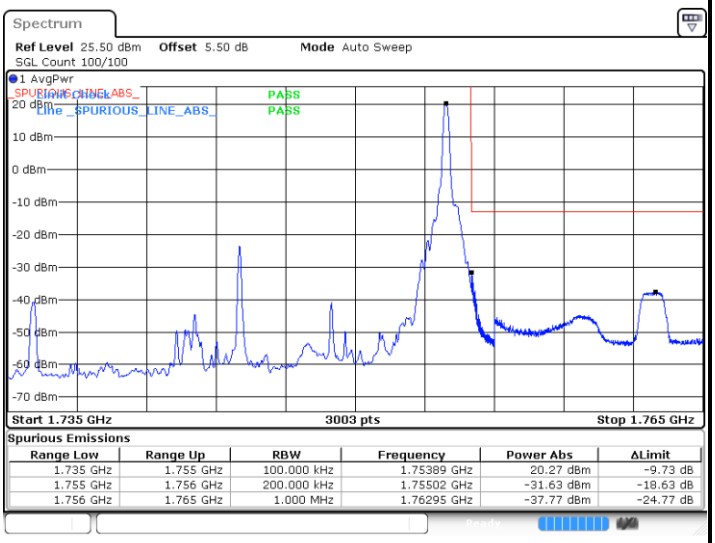


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70232 GHz	-35.34 dBm	-22.34 dB
1.709 GHz	1.710 GHz	200.000 kHz	1.70999 GHz	-30.51 dBm	-17.51 dB
1.710 GHz	1.730 GHz	100.000 kHz	1.71109 GHz	20.37 dBm	-9.63 dB

Date: 27.DEC.2021 02:41:57

Highest Band Edge / 1 RB

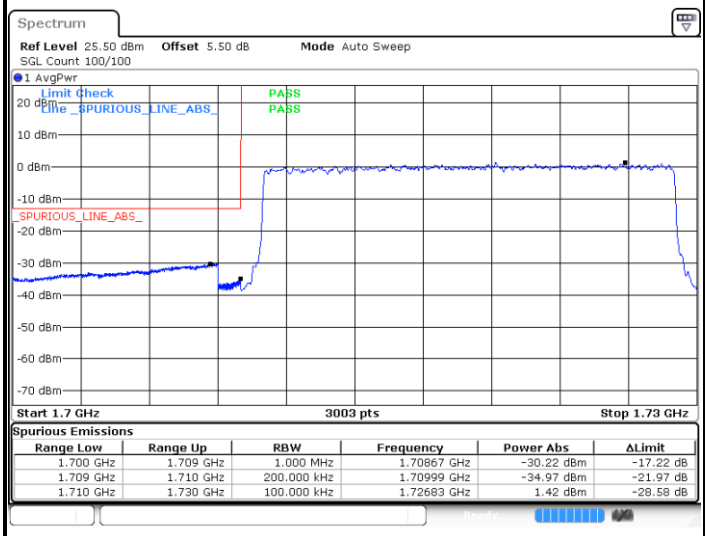


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.735 GHz	1.755 GHz	100.000 kHz	1.75389 GHz	20.27 dBm	-9.73 dB
1.755 GHz	1.756 GHz	200.000 kHz	1.75502 GHz	-31.63 dBm	-18.63 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.76295 GHz	-37.77 dBm	-24.77 dB

Date: 27.DEC.2021 02:56:44

Lowest Band Edge / Full RB

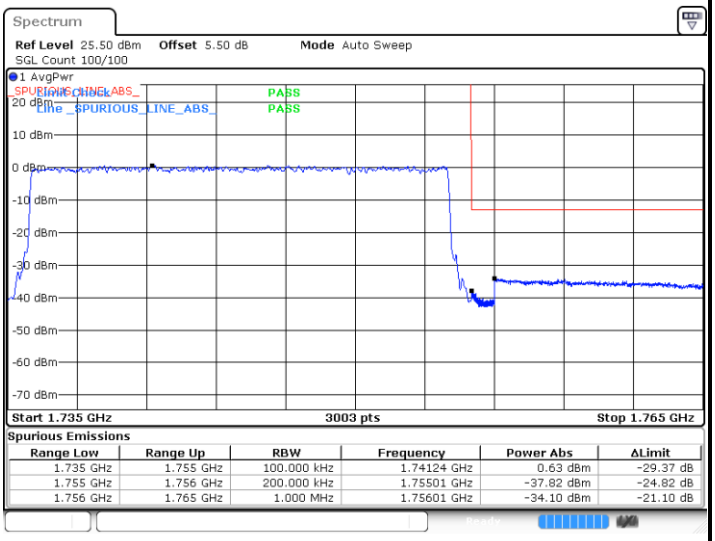


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70867 GHz	-30.22 dBm	-17.22 dB
1.709 GHz	1.710 GHz	200.000 kHz	1.70999 GHz	-34.97 dBm	-21.97 dB
1.710 GHz	1.730 GHz	100.000 kHz	1.72683 GHz	1.42 dBm	-28.58 dB

Date: 27.DEC.2021 02:46:58

Highest Band Edge / Full RB



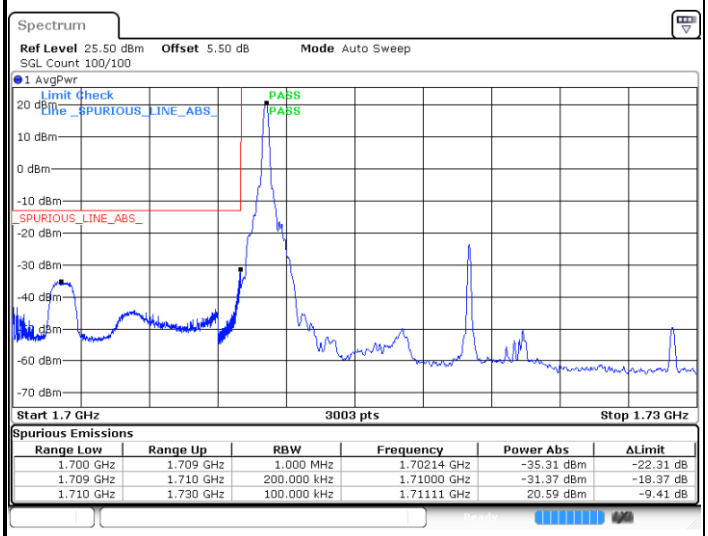
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.735 GHz	1.755 GHz	100.000 kHz	1.74124 GHz	0.63 dBm	-29.37 dB
1.755 GHz	1.756 GHz	200.000 kHz	1.75501 GHz	-37.82 dBm	-24.82 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75601 GHz	-34.10 dBm	-21.10 dB

Date: 27.DEC.2021 03:01:46

LTE Band 4 / 20MHz / 64QAM

Lowest Band Edge / 1 RB

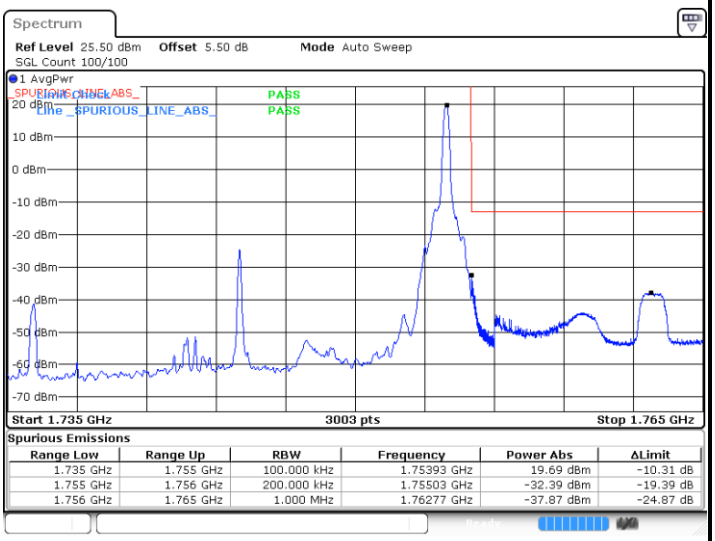


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70214 GHz	-35.31 dBm	-22.31 dB
1.709 GHz	1.710 GHz	200.000 kHz	1.71000 GHz	-31.37 dBm	-18.37 dB
1.710 GHz	1.730 GHz	100.000 kHz	1.71111 GHz	20.59 dBm	-9.41 dB

Date: 27.DEC.2021 02:43:37

Highest Band Edge / 1 RB

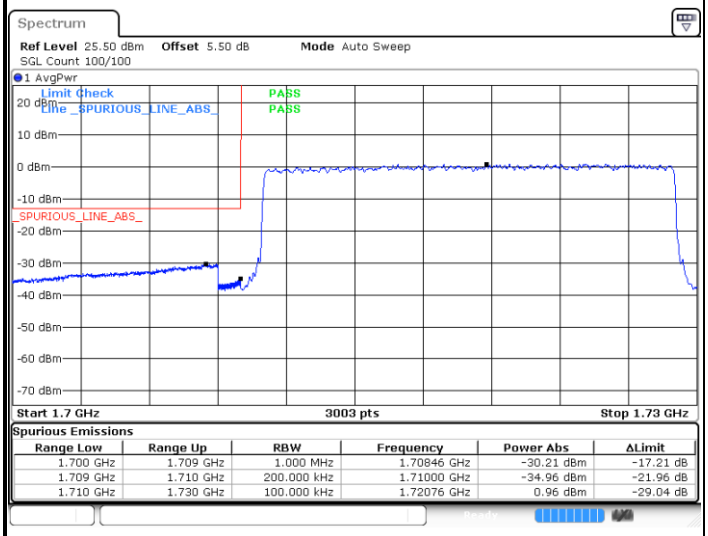


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.735 GHz	1.755 GHz	100.000 kHz	1.75393 GHz	19.69 dBm	-10.31 dB
1.755 GHz	1.756 GHz	200.000 kHz	1.75503 GHz	-32.39 dBm	-19.39 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.76277 GHz	-37.87 dBm	-24.87 dB

Date: 27.DEC.2021 02:58:24

Lowest Band Edge / Full RB

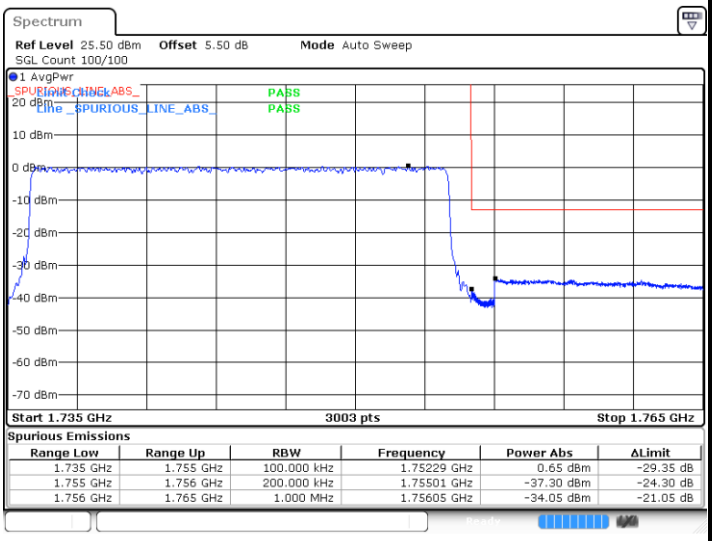


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70846 GHz	-30.21 dBm	-17.21 dB
1.709 GHz	1.710 GHz	200.000 kHz	1.71000 GHz	-34.96 dBm	-21.96 dB
1.710 GHz	1.730 GHz	100.000 kHz	1.72076 GHz	0.96 dBm	-29.04 dB

Date: 27.DEC.2021 02:45:17

Highest Band Edge / Full RB



Spurious Emissions

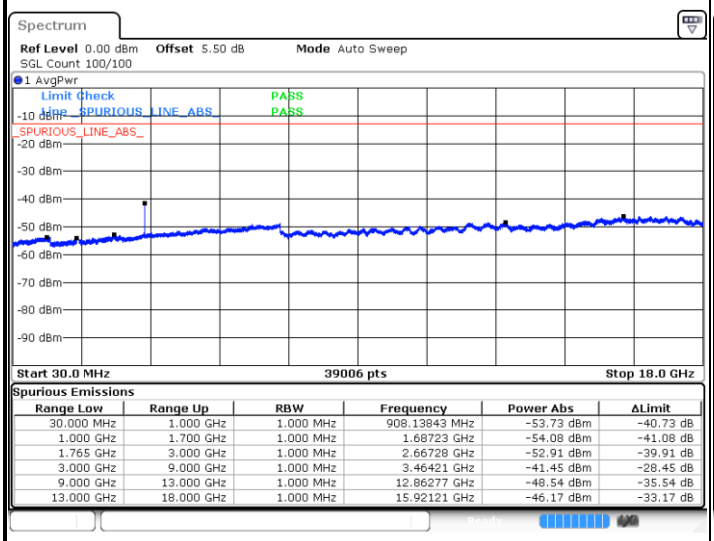
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.735 GHz	1.755 GHz	100.000 kHz	1.75229 GHz	0.65 dBm	-29.35 dB
1.755 GHz	1.756 GHz	200.000 kHz	1.75501 GHz	-37.30 dBm	-24.30 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75605 GHz	-34.05 dBm	-21.05 dB

Date: 27.DEC.2021 03:00:06

Conducted Spurious Emission

LTE Band 4 / 1.4MHz

Lowest Channel / QPSK

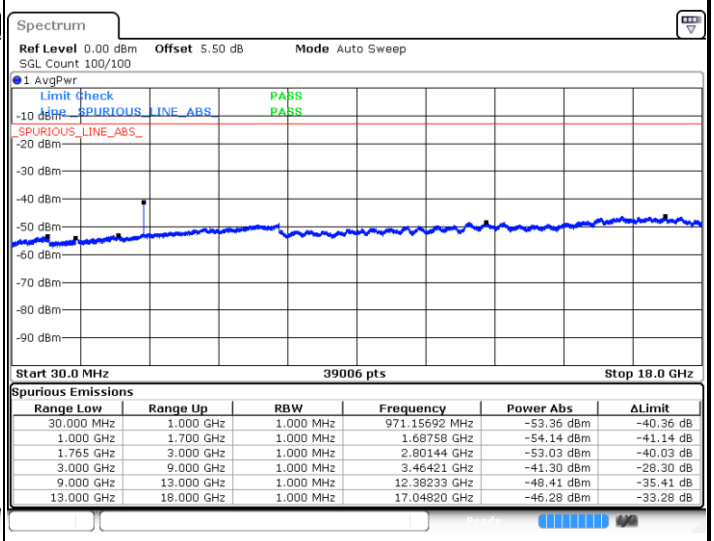


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	908.13843 MHz	-53.73 dBm	-40.73 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.68723 GHz	-54.08 dBm	-41.08 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.66728 GHz	-52.91 dBm	-39.91 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.46421 GHz	-41.45 dBm	-28.45 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.86277 GHz	-48.54 dBm	-35.54 dB
13.000 GHz	18.000 GHz	1.000 MHz	15.92121 GHz	-46.17 dBm	-33.17 dB

Date: 27.DEC.2021 00:22:25

Middle Channel / QPSK

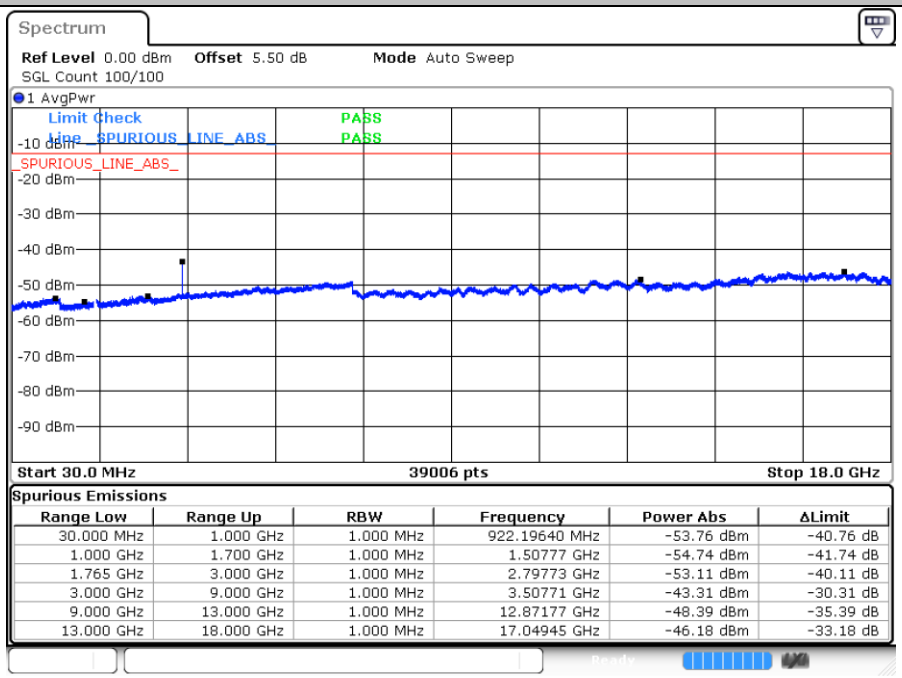


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	971.15692 MHz	-53.36 dBm	-40.36 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.68758 GHz	-54.14 dBm	-41.14 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.80144 GHz	-53.03 dBm	-40.03 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.46421 GHz	-41.30 dBm	-28.30 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.38233 GHz	-48.41 dBm	-35.41 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.04820 GHz	-46.28 dBm	-33.28 dB

Date: 27.DEC.2021 00:34:51

Highest Channel / QPSK



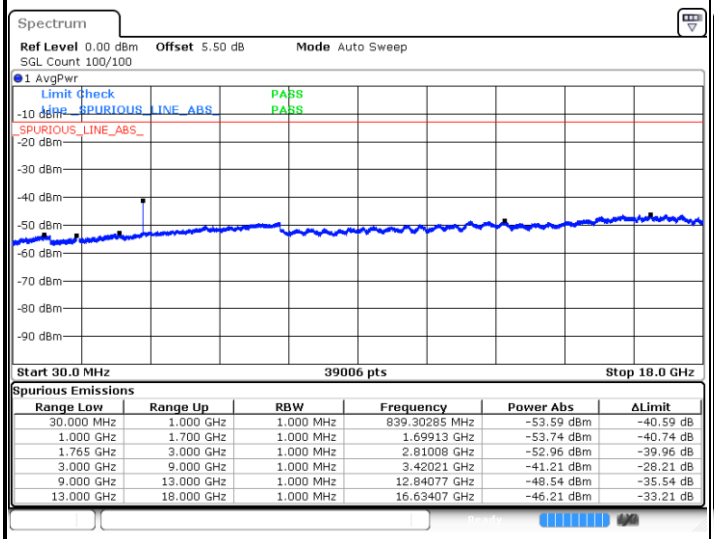
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	922.19640 MHz	-53.76 dBm	-40.76 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.50777 GHz	-54.74 dBm	-41.74 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.79773 GHz	-53.11 dBm	-40.11 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.50771 GHz	-43.31 dBm	-30.31 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.87177 GHz	-48.39 dBm	-35.39 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.04945 GHz	-46.18 dBm	-33.18 dB

Date: 27.DEC.2021 00:37:12

LTE Band 4 / 3MHz

Lowest Channel / QPSK

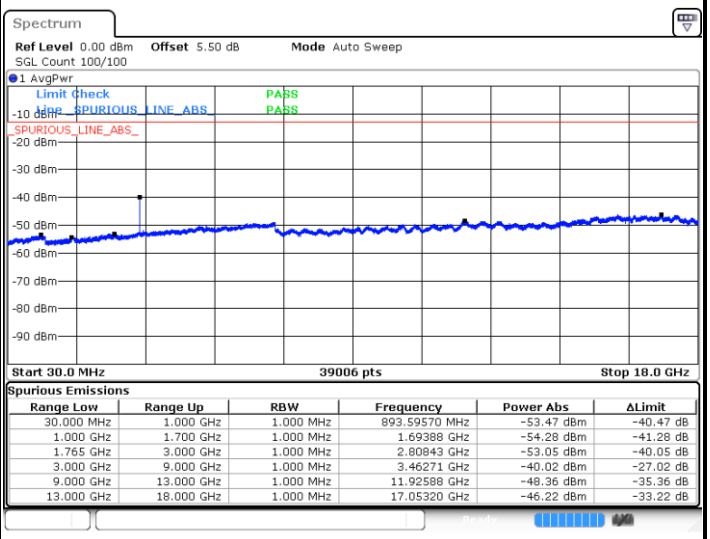


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	839.30285 MHz	-53.59 dBm	-40.59 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.69913 GHz	-53.74 dBm	-40.74 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.81008 GHz	-52.96 dBm	-39.96 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.42021 GHz	-41.21 dBm	-28.21 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.84077 GHz	-48.54 dBm	-35.54 dB
13.000 GHz	18.000 GHz	1.000 MHz	16.63407 GHz	-46.21 dBm	-33.21 dB

Date: 27.DEC.2021 00:49:38

Middle Channel / QPSK

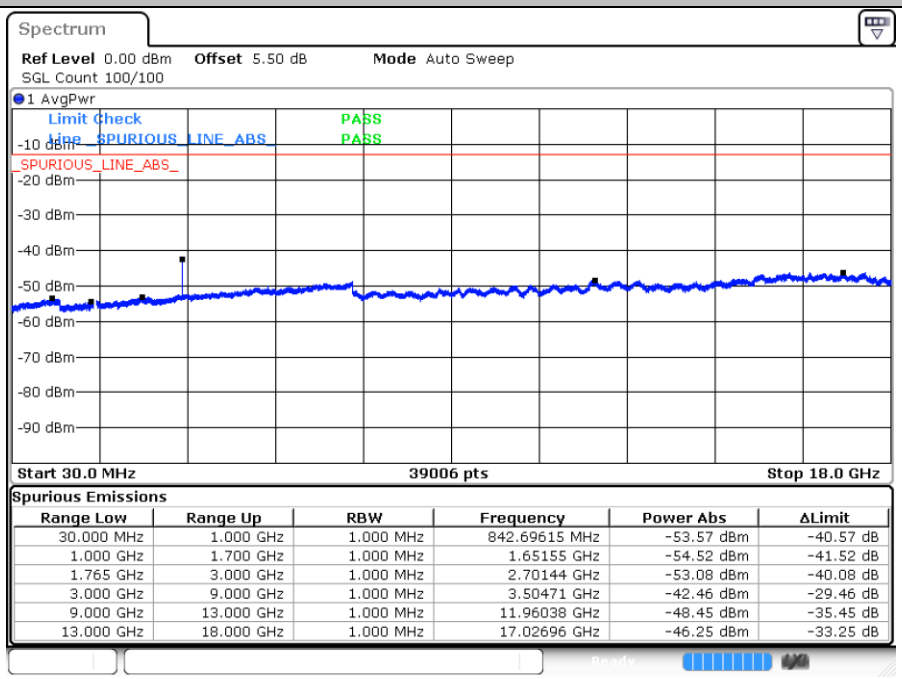


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	893.59570 MHz	-53.47 dBm	-40.47 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.69388 GHz	-54.28 dBm	-41.28 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.80843 GHz	-53.05 dBm	-40.05 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.46271 GHz	-40.02 dBm	-27.02 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.92588 GHz	-48.36 dBm	-35.36 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.05320 GHz	-46.22 dBm	-33.22 dB

Date: 27.DEC.2021 01:02:03

Highest Channel / QPSK



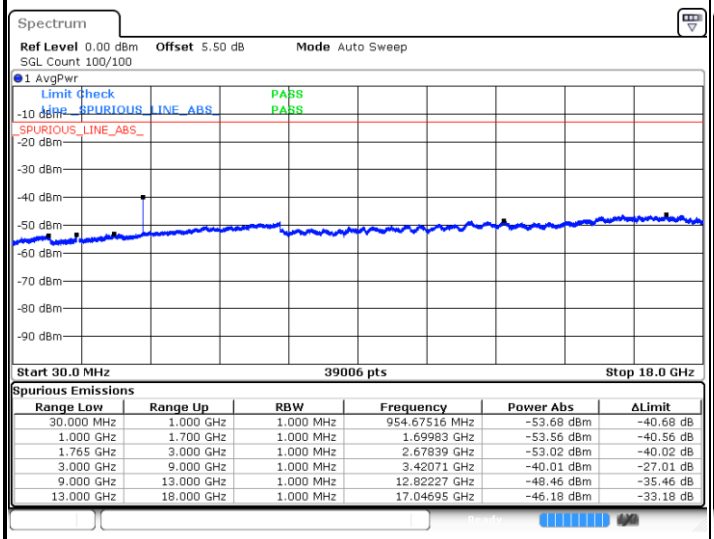
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	842.69615 MHz	-53.57 dBm	-40.57 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.65155 GHz	-54.52 dBm	-41.52 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.70144 GHz	-53.08 dBm	-40.08 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.50471 GHz	-42.46 dBm	-29.46 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.96038 GHz	-48.45 dBm	-35.45 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.02696 GHz	-46.25 dBm	-33.25 dB

Date: 27.DEC.2021 01:04:24

LTE Band 4 / 5MHz

Lowest Channel / QPSK

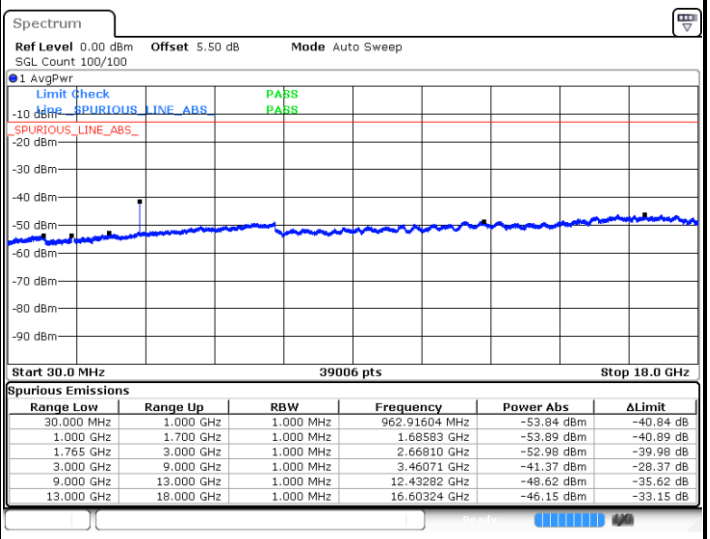


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	954.67516 MHz	-53.68 dBm	-40.68 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.69983 GHz	-53.56 dBm	-40.56 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.67839 GHz	-53.02 dBm	-40.02 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.42071 GHz	-40.01 dBm	-27.01 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.82227 GHz	-48.46 dBm	-35.46 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.04695 GHz	-46.18 dBm	-33.18 dB

Date: 27.DEC.2021 01:16:49

Middle Channel / QPSK

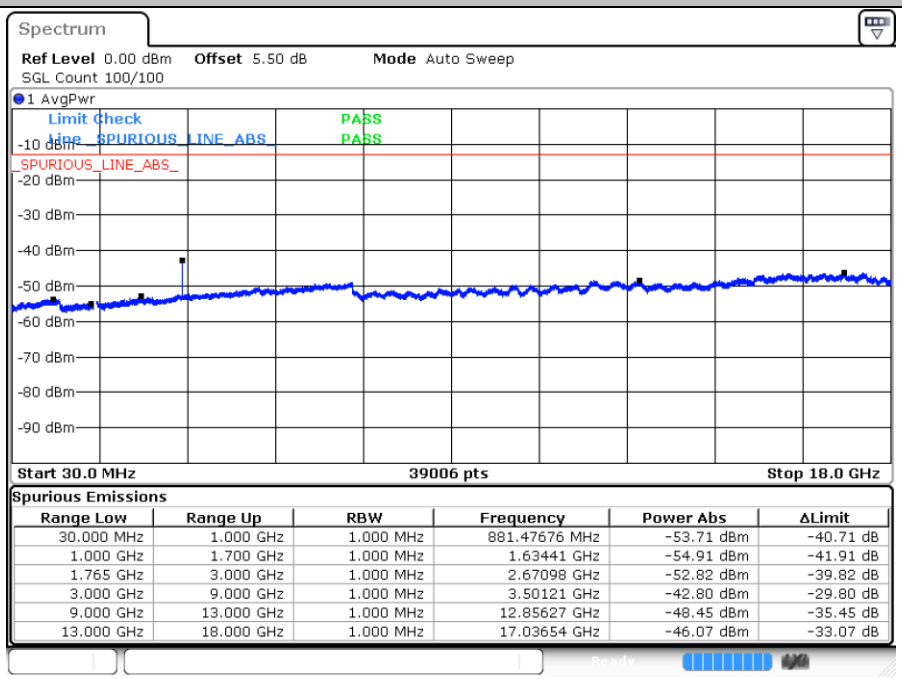


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	962.91604 MHz	-53.84 dBm	-40.84 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.68583 GHz	-53.89 dBm	-40.89 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.66810 GHz	-52.98 dBm	-39.98 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.46071 GHz	-41.37 dBm	-28.37 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.43282 GHz	-48.62 dBm	-35.62 dB
13.000 GHz	18.000 GHz	1.000 MHz	16.60324 GHz	-46.15 dBm	-33.15 dB

Date: 27.DEC.2021 01:29:15

Highest Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	881.47676 MHz	-53.71 dBm	-40.71 dB
1.000 GHz	1.700 GHz	1.000 MHz	1.63441 GHz	-54.91 dBm	-41.91 dB
1.765 GHz	3.000 GHz	1.000 MHz	2.67098 GHz	-52.82 dBm	-39.82 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.50121 GHz	-42.80 dBm	-29.80 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.85627 GHz	-48.45 dBm	-35.45 dB
13.000 GHz	18.000 GHz	1.000 MHz	17.03654 GHz	-46.07 dBm	-33.07 dB

Date: 27.DEC.2021 01:31:36