FCC RF Test Report

APPLICANT	:	Barking Labs Corp.
EQUIPMENT	:	Series 3 Smart Collar
BRAND NAME	:	Fi
MODEL NAME	:	FC3
FCC ID	:	2ARXN-FC3
STANDARD	:	47 CFR Part 2, 24(E), 27(L), 27(H)
CLASSIFICATION	:	PCS Licensed Transmitter (PCB)
TEST DATE(S)	:	Sep. 29, 2022 ~ Oct. 26, 2022

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

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

Jason Jia

Approved by: Jason Jia

ACCREDITED
Cert #5145.02

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

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APPENDIX A. TEST RESULTS OF CONDUCTED TEST

APPENDIX B. TEST RESULTS OF RADIATED TEST

APPENDIX C. TEST SETUP PHOTOGRAPHS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG292014	Rev. 01	Initial issue of report	Nov. 03, 2022

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	-	Report Only	-
	§27.50(c)(10)	Effective Radiated Power (Band 12)	ERP < 3 Watt	PASS	-
	§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 §24.238(a) §27.53(g) §27.53(h)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 12)	< 43+10log10(P[Watts])	PASS	-
3.8	§2.1051 §24.238(a) §27.53(g) §27.53(h)	Conducted Spurious Emission (Band 2) (Band 4) (Band 12)	< 43+10log10(P[Watts])	PASS	-
3.9	§2.1055 §24.235 §27.54	Frequency Stability Temperature & Voltage	Within Authorized Band	PASS	-
4.4	§2.1053 §24.238(a) §27.53(g) §27.53(h)	Radiated Spurious Emission (Band 2) (Band 4) (Band 12)	< 43+10$\log_{10}$(P[Watts])	PASS	Under limit 32.69 dB at 3744.000 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

Barking Labs Corp.
419 Lafayette St., Floor 2, New York, NY 10003

1.2 Manufacturer

Barking Labs Corp.
419 Lafayette St., Floor 2, New York, NY 10003

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Series 3 Smart Collar
Brand Name	Fi
Model Name	FC3
FCC ID	2ARXN-FC3
IMEI Code	Conducted: 350916064326971 Radiation: 350916064326070
HW Version	1
SW Version	v4.5.3
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 12 : 699 MHz ~ 716 MHz
Rx Frequency	LTE Band 2 : 1930 MHz ~ 1990 MHz LTE Band 4 : 2110 MHz ~ 2155 MHz LTE Band 12 : 729 MHz ~ 746 MHz
Bandwidth	LTE Band 2 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 4 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 12 : 1.4MHz / 3MHz / 5MHz / 10MHz
Maximum Output Power to Antenna	LTE Band 2 : 23.14 dBm LTE Band 4 : 23.05 dBm LTE Band 12 : 22.93 dBm
Antenna Gain	LTE Band 2 : -1.70 dBi LTE Band 4 : -0.09 dBi LTE Band 12 : -2.99 dBi
Type of Modulation	QPSK / 16QAM

1.5 Modification of EUT

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

1.6 Maximum ERP/EIRP and Emission Designator

LTE Band 2		QPSK		16QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
20	1860.0 ~ 1900.0	0.1393	1M12G7D	0.1358	1M04W7D
LTE Band 4		**QPSK**		**16QAM**	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
20	1720.0 ~ 1745.0	0.1977	1M16G7D	0.1936	959KW7D
LTE Band 12		**QPSK**		**16QAM**	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
10	704.0 ~ 711.0	0.0601	1M10G7D	0.0582	959KW7D

Note:

1. Based on engineering evaluation, only the maximum bandwidth test results are shown in the report.
2. For LTE Category M1 that the maximum UE channel bandwidth is restricted to maximum 6RB size.

1.7 Testing Location

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

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

1.8 Test Software

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

1.9 Applicable Standards

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

- 47 CFR Part 2, 24(E), 27(L), 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

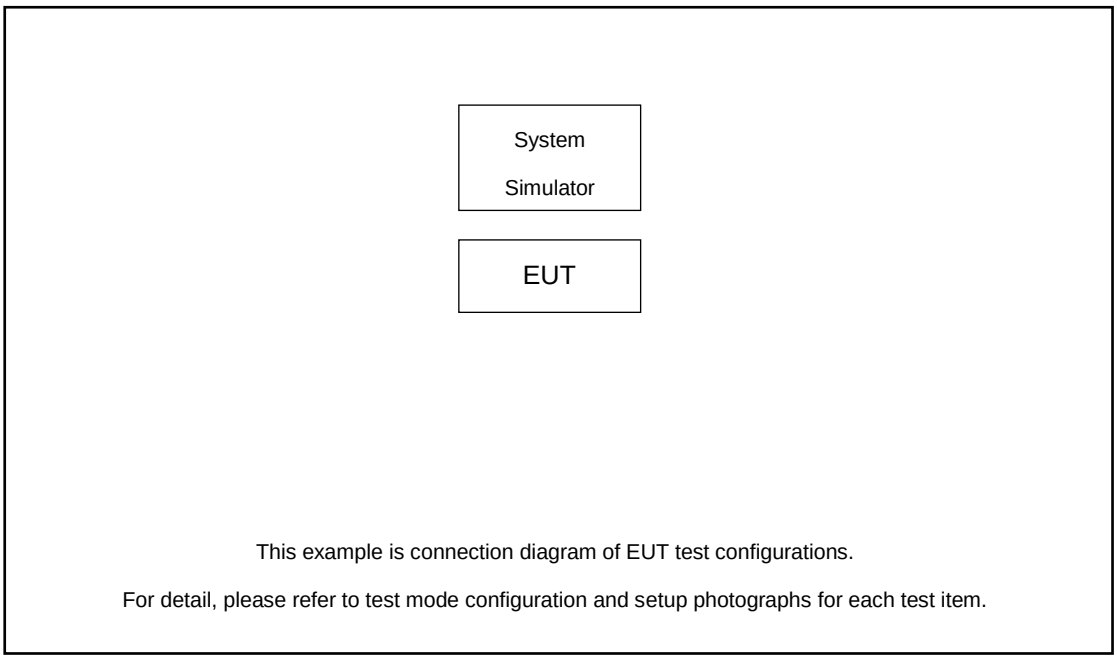
2.1 Test Mode

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.

For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y, Z plane) were recorded in this report.

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
	4	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
Peak-to-Average Ratio	2						v	v	v	-			v		v	
	4						v	v	v	-			v		v	
	12				v	-	-	v	v	-			v		v	
26dB and 99% Bandwidth	2						v	v	v	-			v		v	
	4						v	v	v	-			v		v	
	12				v	-	-	v	v	-			v		v	
Conducted Band Edge	2	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
	12	v	v	v	v	-	-	v	v	-	v		v	v		v
Conducted Spurious Emission	2	v	v	v	v	v	v	v		-	v			v	v	v
	4	v	v	v	v	v	v	v		-	v			v	v	v
	12	v	v	v	v	-	-	v		-	v			v	v	v
Frequency Stability	2				v			v		-			v		v	
	4				v			v		-			v		v	
	12				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
	12	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	
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 Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded,1.8m

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss.

Offset = RF cable loss.

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

Example :

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

= 5.4 (dB)

2.5 Frequency List of Low/Middle/High Channels

LTE Band 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 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

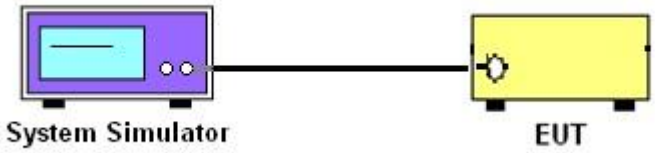
3 Conducted Test Items

3.1 Measuring Instruments

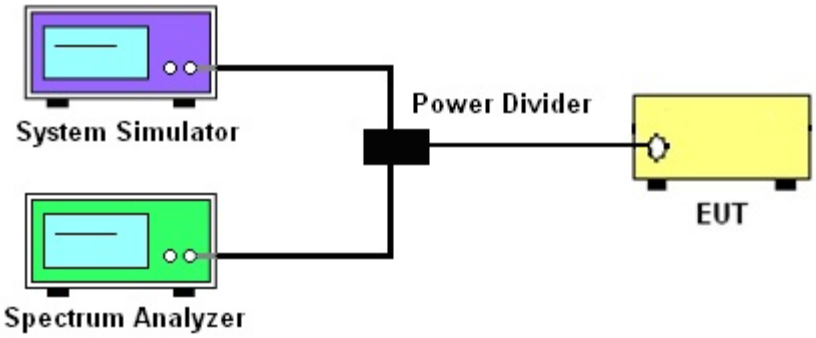
See list of measuring instruments of this test report.

3.2 Test Setup

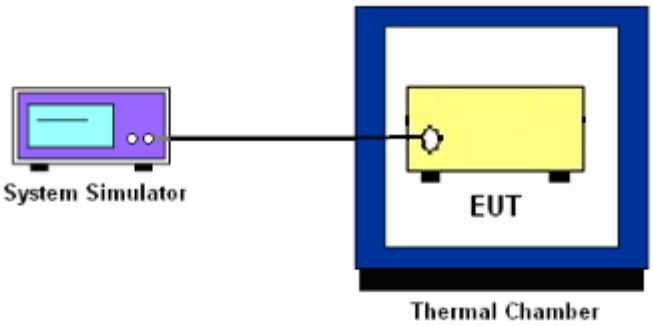
3.2.1 Conducted Output Power



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 3 Watts for LTE Band 12.

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

24.238 (a)

For operations in the 1850-1910 and 1930-1990 MHz band, the FCC limit is 43 + $10\log_{10}$(P[Watts]) dB below the transmitter power P(Watts) in a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

27.53 (g)

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

27.53 (h)

For operations in the 1710 – 1755 MHz band, 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.
9. When using the integration method, the starting frequency of the integration shall be centered at one-half of the RBW away from the band edge.

3.8 Conducted Spurious Emission

3.8.1 Description of Conducted Spurious Emission Measurement

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

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

3.8.2 Test Procedures

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

3.9 Frequency Stability

3.9.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block.

3.9.2 Test Procedures for Temperature Variation

1. The testing follows ANSI C63.26 section 5.6.4
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
4. With power OFF, the temperature was raised in 10°C step up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.9.3 Test Procedures for Voltage Variation

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

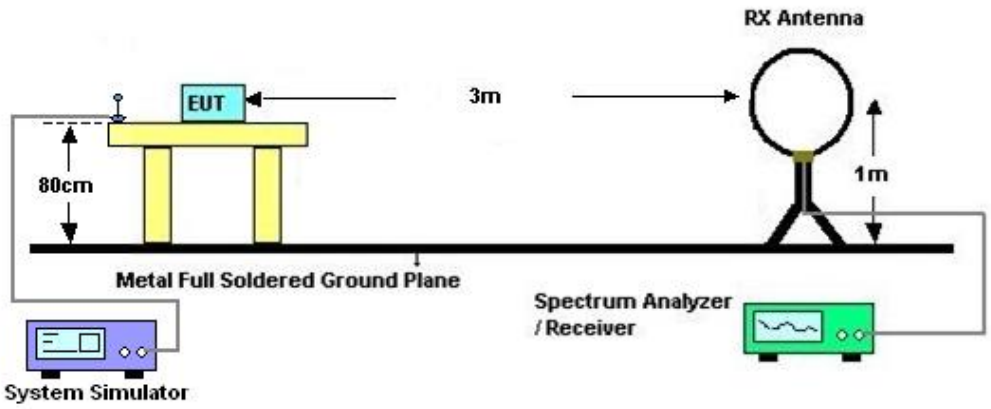
4 Radiated Test Items

4.1 Measuring Instruments

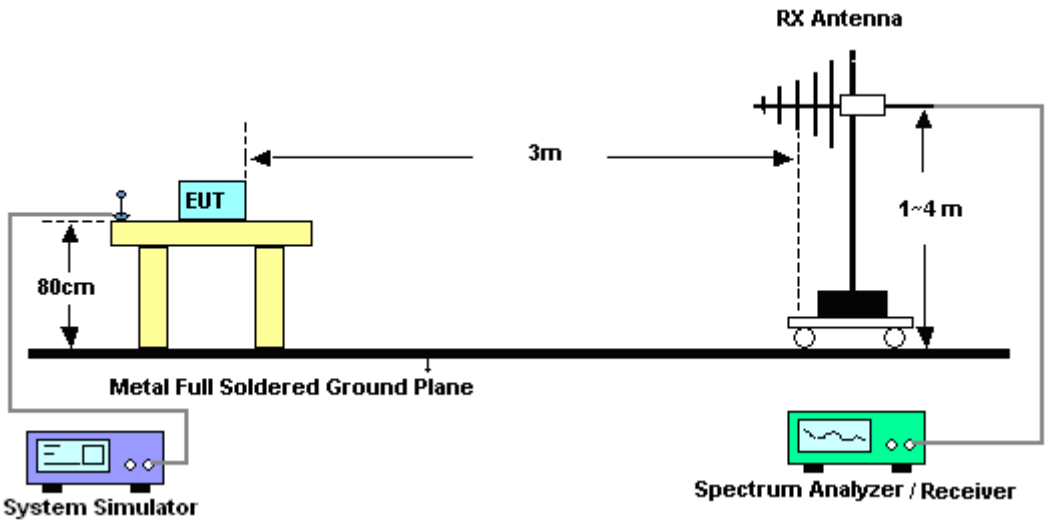
See list of measuring instruments of this test report.

4.2 Test Setup

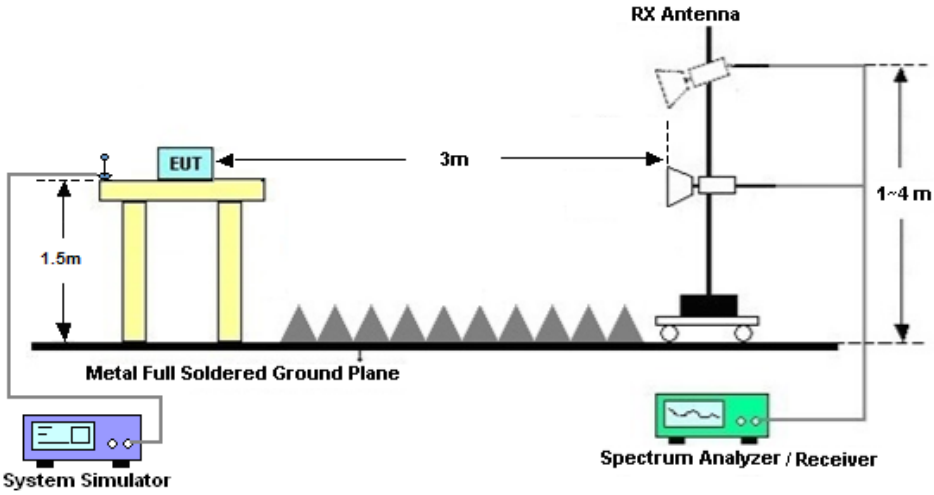
4.2.1 For radiated test below 30MHz



4.2.2 For radiated test from 30MHz to 1GHz



4.2.3 For radiated test above 1GHz



4.3 Test Result of Radiated Test

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

Please refer to Appendix B.

4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI C63.26. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

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

4.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.5
2. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
6. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
7. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
8. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
9. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
10. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
11. ERP (dBm) = EIRP - 2.15
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
    The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 12, 2022	Oct. 17, 2022~ Oct. 26, 2022	Oct. 11, 2023	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	Aug. 26, 2021	Oct. 17, 2022~ Oct. 26, 2022	Aug. 25, 2022	Conducted (TH01-KS)
Temperature & humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 15, 2022	Oct. 17, 2022~ Oct. 26, 2022	Jul. 14, 2023	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 14, 2021	Sep. 29, 2022	Oct. 13, 2022	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	May 24, 2022	Sep. 29, 2022	May 23, 2023	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1284	1GHz~18GHz	Jan. 05, 2022	Sep. 29, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2022	Sep. 29, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Jan. 05, 2022	Sep. 29, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18GA	060839	1Ghz-18Ghz	Oct. 14, 2021	Sep. 29, 2022	Oct. 13, 2022	Radiation (03CH04-KS)
Amplifier	Keysight	83017A	MY57280106	500MHz~26.5GHz	Oct. 13, 2021	Sep. 29, 2022	Oct. 12, 2022	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 05, 2022	Sep. 29, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Sep. 29, 2022	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Sep. 29, 2022	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Sep. 29, 2022	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

6 Uncertainty of Evaluation

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

Uncertainty of Conducted Measurement

Test Item	Uncertainty
Conducted Power	±1.34 dB
Conducted Emissions	±1.34 dB
Occupied Channel Bandwidth	±0.13 %

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

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

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

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

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

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

Appendix A. Test Results of Conducted Test

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

Conducted Output Power(Average power) and ERP/EIRP

LTE Band 2:

BW [MHz]	Modulation	RB Size	RB Offset	Index			Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP(W)		
Channel				L	M	H	18700	18900	19100			
Frequency (MHz)							1860	1880	1900	L	M	H
20	QPSK	1	0	0	0	15	23.02	23.14	22.98	0.1355	0.1393	0.1343
20	QPSK	1	5	0	0	15	23.01	23.12	22.98	0.1352	0.1387	0.1343
20	QPSK	6	0	0	0	15	23.08	23.11	23.05	0.1374	0.1384	0.1365
20	16QAM	1	0	0	0	15	22.99	23.03	22.96	0.1346	0.1358	0.1337
Channel				L	M	H	18675	18900	19125	EIRP(W)		
Frequency (MHz)							1857.5	1880	1902.5	L	M	H
15	QPSK	1	0	0	0	11	23.12	23.03	22.84	0.1387	0.1358	0.1300
15	16QAM	1	0	0	0	11	23.02	22.70	22.85	0.1355	0.1259	0.1303
Channel				L	M	H	18650	18900	19150	EIRP(W)		
Frequency (MHz)							1855	1880	1905	L	M	H
10	QPSK	1	0	0	0	7	22.71	22.96	22.79	0.1262	0.1337	0.1285
10	16QAM	1	0	0	0	7	22.76	22.51	22.57	0.1276	0.1205	0.1222
Channel				L	M	H	18625	18900	19175	EIRP(W)		
Frequency (MHz)							1852.5	1880	1907.5	L	M	H
5	QPSK	1	0	0	0	3	22.89	22.86	22.66	0.1315	0.1306	0.1247
5	16QAM	1	0	0	0	3	22.80	22.76	22.74	0.1288	0.1276	0.1271
Channel				L	M	H	18615	18900	19185	EIRP(W)		
Frequency (MHz)							1851.5	1880	1908.5	L	M	H
3	QPSK	1	0	0	0	1	22.48	22.61	22.21	0.1197	0.1233	0.1125
3	16QAM	1	0	0	0	1	22.37	22.19	22.50	0.1167	0.1119	0.1202
Channel				L	M	H	18607	18900	19193	EIRP(W)		
Frequency (MHz)							1850.7	1880	1909.3	L	M	H
1.4	QPSK	1	0	0	0	0	22.62	22.42	22.37	0.1236	0.1180	0.1167
1.4	16QAM	1	0	0	0	0	22.48	22.53	22.46	0.1197	0.1211	0.1191

LTE Band 4:

BW [MHz]	Modulation	RB Size	RB Offset	Index			Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP(W)		
Channel				L	M	H	20050	20175	20300			
Frequency (MHz)							1720	1732.5	1745	L	M	H
20	QPSK	1	0	0	0	15	22.94	23.05	22.86	0.1928	0.1977	0.1892
20	QPSK	1	5	0	0	15	22.77	22.98	22.99	0.1854	0.1945	0.1950
20	QPSK	6	0	0	0	15	22.93	22.97	22.81	0.1923	0.1941	0.1871
20	16QAM	1	0	0	0	15	22.91	22.96	22.78	0.1914	0.1936	0.1858
Channel				L	M	H	20025	20175	20325	EIRP(W)		
Frequency (MHz)							1717.5	1732.5	1747.5	L	M	H
15	QPSK	1	0	0	0	11	22.96	22.93	22.81	0.1936	0.1923	0.1871
15	16QAM	1	0	0	0	11	22.92	22.96	22.88	0.1919	0.1936	0.1901
Channel				L	M	H	20000	20175	20350	EIRP(W)		
Frequency (MHz)							1715	1732.5	1750	L	M	H
10	QPSK	1	0	0	0	7	22.57	22.86	22.96	0.1770	0.1892	0.1936
10	16QAM	1	0	0	0	7	22.89	22.71	22.68	0.1905	0.1828	0.1816
Channel				L	M	H	19975	20175	20375	EIRP(W)		
Frequency (MHz)							1712.5	1732.5	1752.5	L	M	H
5	QPSK	1	0	0	0	3	22.85	22.72	22.53	0.1888	0.1832	0.1754
5	16QAM	1	0	0	0	3	22.51	22.68	22.81	0.1746	0.1816	0.1871
Channel				L	M	H	19965	20175	20385	EIRP(W)		
Frequency (MHz)							1711.5	1732.5	1753.5	L	M	H
3	QPSK	1	0	0	0	1	22.36	22.64	22.75	0.1687	0.1799	0.1845
3	16QAM	1	0	0	0	1	22.61	22.48	22.59	0.1786	0.1734	0.1778
Channel				L	M	H	19950	20175	20393	EIRP(W)		
Frequency (MHz)							1710	1732.5	1754.3	L	M	H
1.4	QPSK	1	0	0	0	0	22.12	22.42	22.65	0.1596	0.1710	0.1803
1.4	16QAM	1	0	0	0	0	22.61	22.46	22.24	0.1786	0.1726	0.1641

LTE Band 12:

BW [MHz]	Modulation	RB Size	RB Offset	Index			Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel				L	M	H	23060	23095	23130			
Frequency (MHz)							704	707.5	711	L	M	H
10	QPSK	1	0	0	0	7	22.85	22.93	22.73	0.0590	0.0601	0.0574
10	QPSK	1	5	0	0	7	22.71	22.77	22.53	0.0571	0.0579	0.0548
10	QPSK	6	0	0	0	7	22.63	22.91	22.61	0.0561	0.0598	0.0558
10	16QAM	1	0	0	0	7	22.51	22.79	22.57	0.0546	0.0582	0.0553
Channel				L	M	H	23035	23095	23155	ERP(W)		
Frequency (MHz)							701.5	707.5	713.5	L	M	H
5	QPSK	1	0	0	0	3	22.68	22.86	22.72	0.0568	0.0592	0.0573
5	16QAM	1	0	0	0	3	22.55	22.77	22.64	0.0551	0.0579	0.0562
Channel				L	M	H	23025	23095	23165	ERP(W)		
Frequency (MHz)							700.5	707.5	714.5	L	M	H
3	QPSK	1	0	0	0	1	22.26	22.47	22.30	0.0515	0.0541	0.0520
3	16QAM	1	0	0	0	1	22.27	22.53	22.25	0.0516	0.0548	0.0514
Channel				L	M	H	23017	23095	23173	ERP(W)		
Frequency (MHz)							699.7	707.5	715.3	L	M	H
1.4	QPSK	1	0	0	0	0	22.57	22.34	22.21	0.0553	0.0525	0.0509
1.4	16QAM	1	0	0	0	0	22.23	22.57	22.37	0.0512	0.0553	0.0528

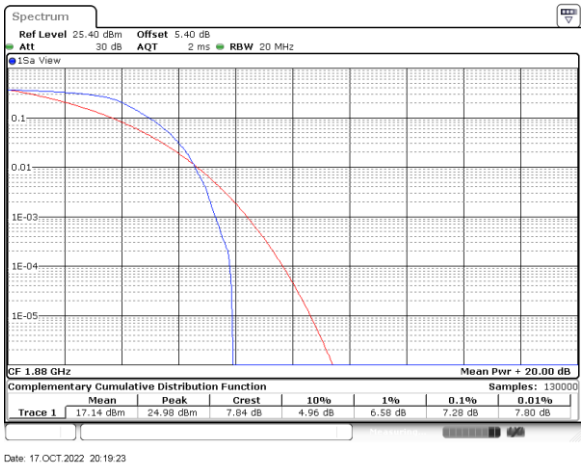
LTE Band 2

Peak-to-Average Ratio

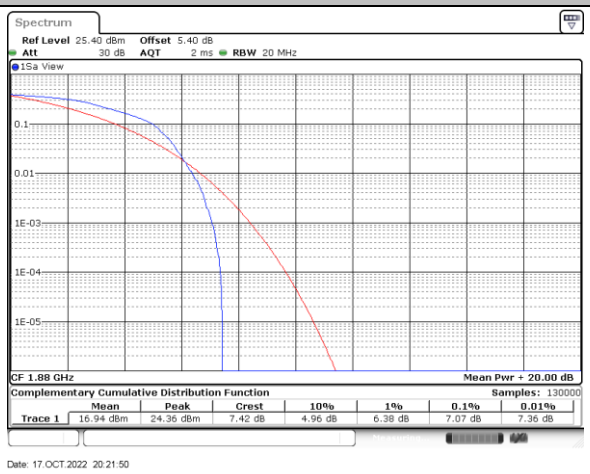
Mode	LTE Band 2 / 20MHz				
Mod.	QPSK	16QAM			Limit: 13dB
RB Size	Full RB	Full RB			Result
Middle CH	7.28	7.07			PASS

LTE Band 2 / 20MHz

Middle Channel / Full RB/ QPSK



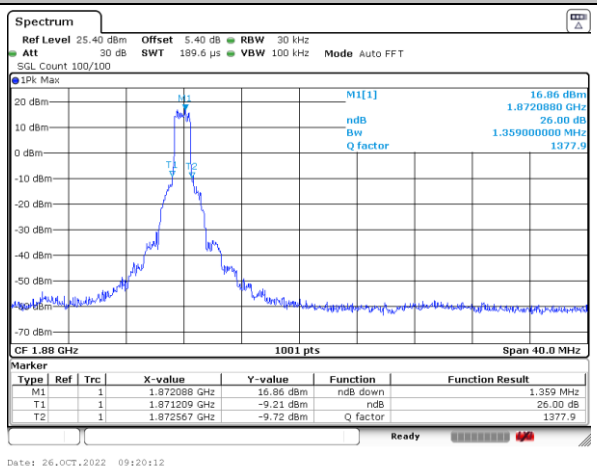
Middle Channel / Full RB/ 16QAM

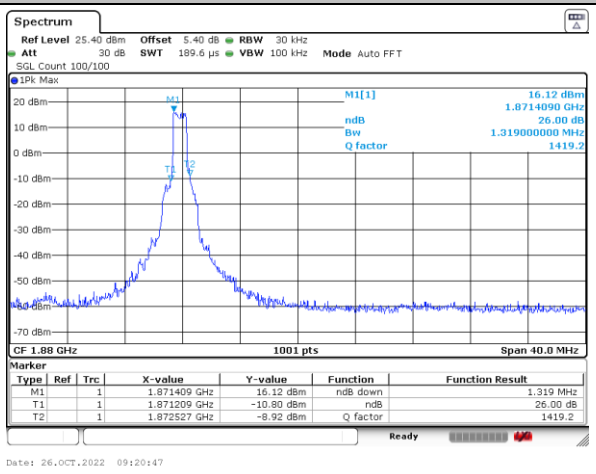


26dB Bandwidth

Mode	LTE Band 2 : 26dB BW(MHz)	
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	1.359	1.319

LTE Band 2	
Middle Channel / 20MHz / QPSK	Middle Channel / 20MHz / 16QAM

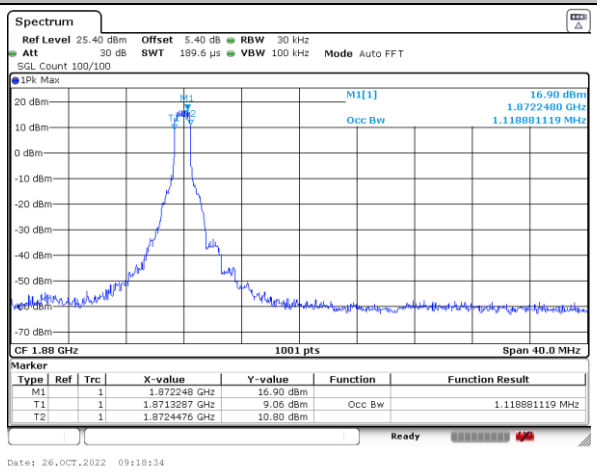


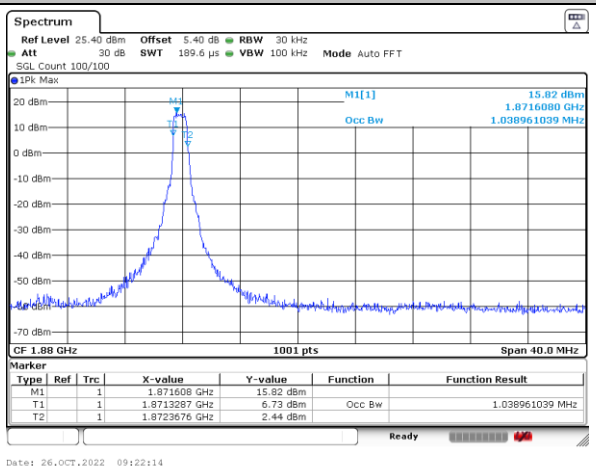


Occupied Bandwidth

Mode	LTE Band 2 : 99%OBW(MHz)	
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	1.119	1.039

LTE Band 2	
Middle Channel / 20MHz / QPSK	Middle Channel / 20MHz / 16QAM

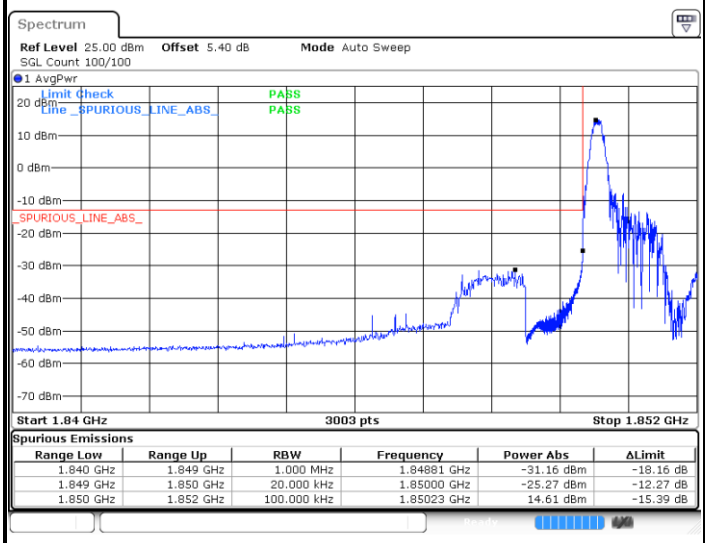




Conducted Band Edge

LTE Band 2 / 1.4MHz / QPSK

Lowest Band Edge / 1RB

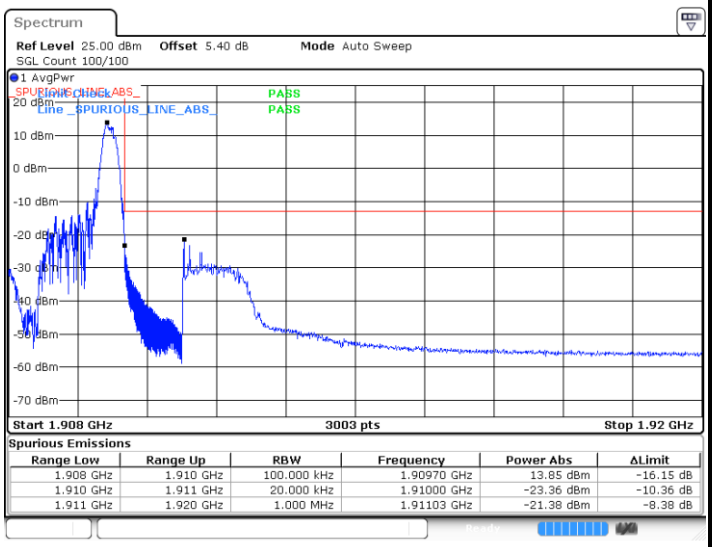


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84881 GHz	-31.16 dBm	-18.16 dB
1.849 GHz	1.850 GHz	20.000 kHz	1.85000 GHz	-25.27 dBm	-12.27 dB
1.850 GHz	1.852 GHz	100.000 kHz	1.85023 GHz	14.61 dBm	-15.39 dB

Date: 17.OCT.2022 18:08:11

Highest Band Edge / 1RB

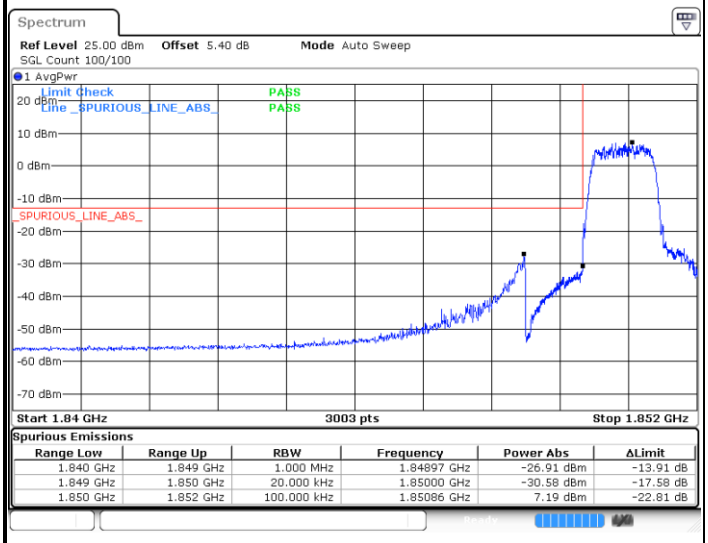


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.908 GHz	1.910 GHz	100.000 kHz	1.90970 GHz	13.85 dBm	-16.15 dB
1.910 GHz	1.911 GHz	20.000 kHz	1.91000 GHz	-23.36 dBm	-10.36 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91103 GHz	-21.38 dBm	-8.38 dB

Date: 17.OCT.2022 18:23:07

Lowest Band Edge / Full RB

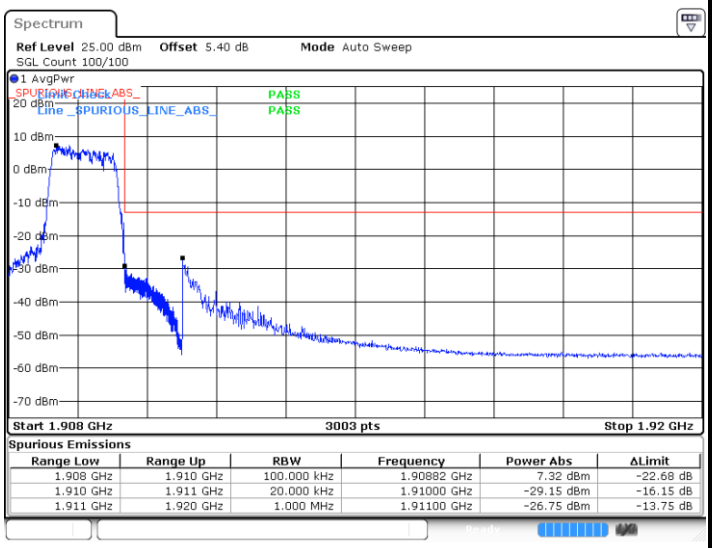


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84897 GHz	-26.91 dBm	-13.91 dB
1.849 GHz	1.850 GHz	20.000 kHz	1.85000 GHz	-30.58 dBm	-17.58 dB
1.850 GHz	1.852 GHz	100.000 kHz	1.85086 GHz	7.19 dBm	-22.81 dB

Date: 17.OCT.2022 18:14:36

Highest Band Edge / Full RB



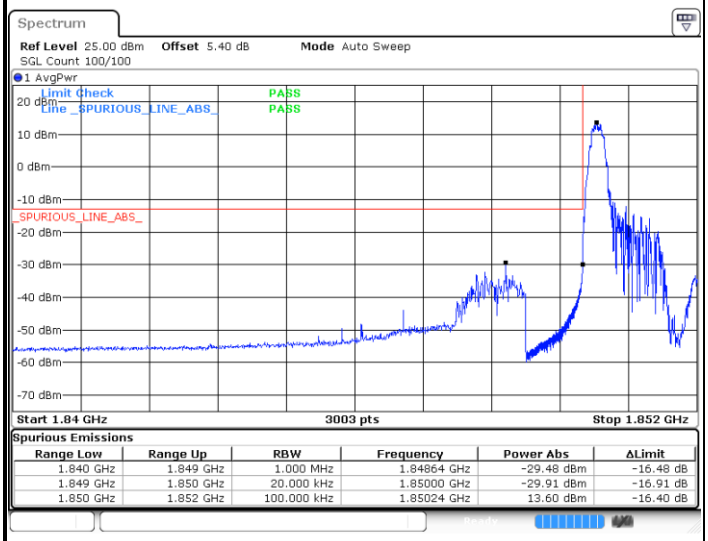
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.908 GHz	1.910 GHz	100.000 kHz	1.90882 GHz	7.32 dBm	-22.68 dB
1.910 GHz	1.911 GHz	20.000 kHz	1.91000 GHz	-29.15 dBm	-16.15 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91100 GHz	-26.75 dBm	-13.75 dB

Date: 17.OCT.2022 18:16:38

LTE Band 2 / 1.4MHz / 16QAM

Lowest Band Edge / 1 RB

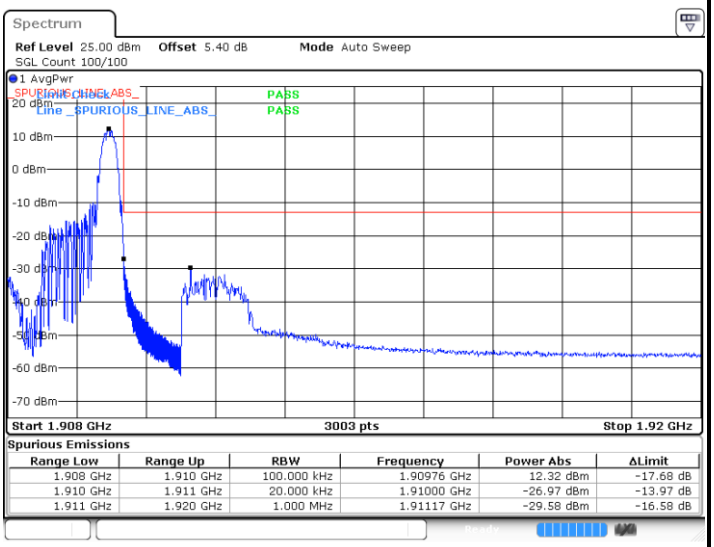


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84864 GHz	-29.48 dBm	-16.48 dB
1.849 GHz	1.850 GHz	20.000 kHz	1.85000 GHz	-29.91 dBm	-16.91 dB
1.850 GHz	1.852 GHz	100.000 kHz	1.85024 GHz	13.60 dBm	-16.40 dB

Date: 17.OCT.2022 18:10:01

Highest Band Edge / 1 RB

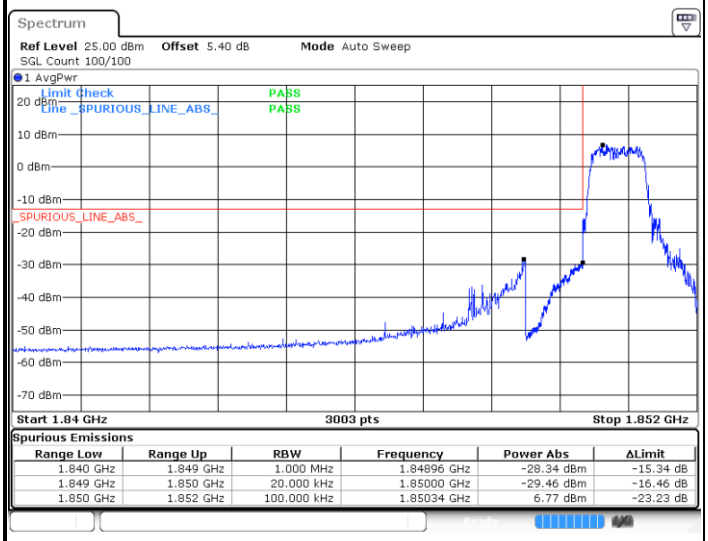


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.908 GHz	1.910 GHz	100.000 kHz	1.90976 GHz	12.32 dBm	-17.68 dB
1.910 GHz	1.911 GHz	20.000 kHz	1.91000 GHz	-26.97 dBm	-13.97 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91117 GHz	-29.58 dBm	-16.58 dB

Date: 17.OCT.2022 18:21:24

Lowest Band Edge / Full RB

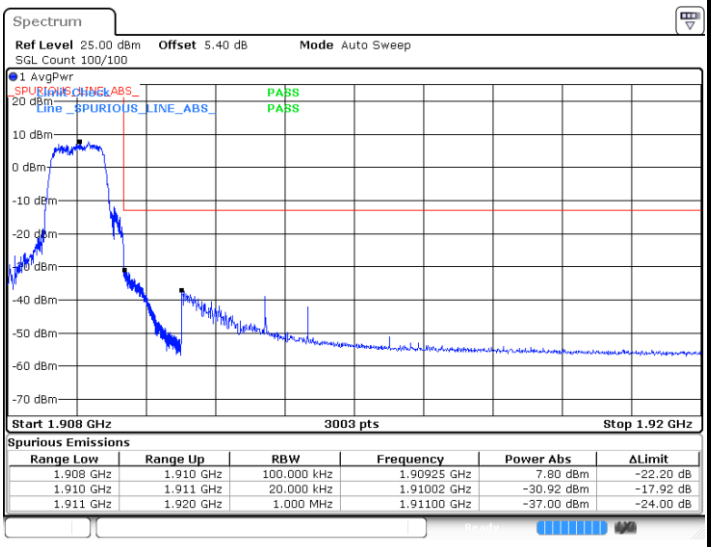


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84896 GHz	-28.34 dBm	-15.34 dB
1.849 GHz	1.850 GHz	20.000 kHz	1.85000 GHz	-29.46 dBm	-16.46 dB
1.850 GHz	1.852 GHz	100.000 kHz	1.85034 GHz	6.77 dBm	-23.23 dB

Date: 17.OCT.2022 18:12:59

Highest Band Edge / Full RB



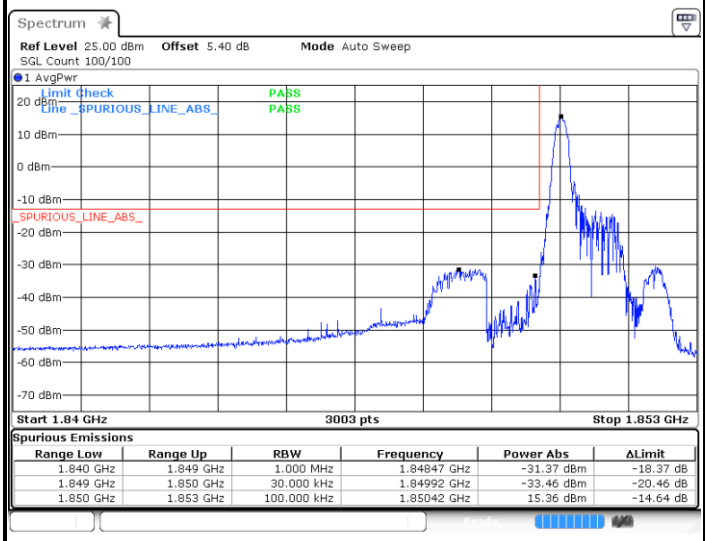
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.908 GHz	1.910 GHz	100.000 kHz	1.90925 GHz	7.80 dBm	-22.20 dB
1.910 GHz	1.911 GHz	20.000 kHz	1.91002 GHz	-30.92 dBm	-17.92 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91100 GHz	-37.00 dBm	-24.00 dB

Date: 17.OCT.2022 18:18:39

LTE Band 2 / 3MHz / QPSK

Lowest Band Edge / 1RB

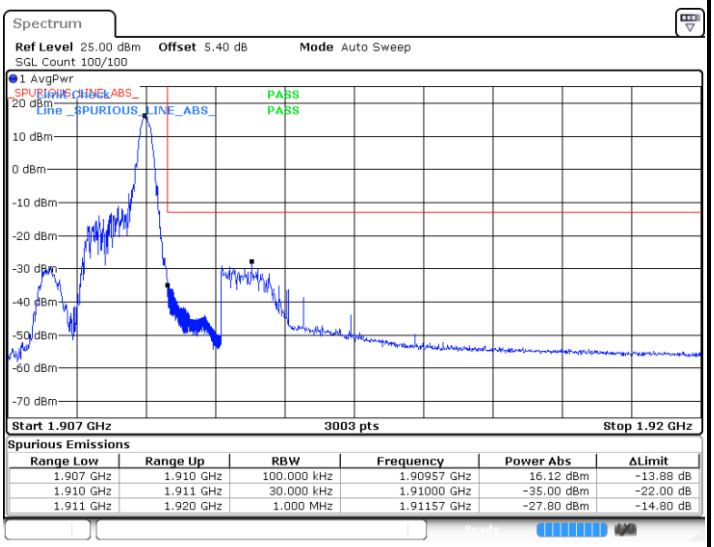


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84847 GHz	-31.37 dBm	-18.37 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.84992 GHz	-33.46 dBm	-20.46 dB
1.850 GHz	1.853 GHz	100.000 kHz	1.85042 GHz	15.36 dBm	-14.64 dB

Date: 17.OCT.2022 18:30:29

Highest Band Edge / 1 RB

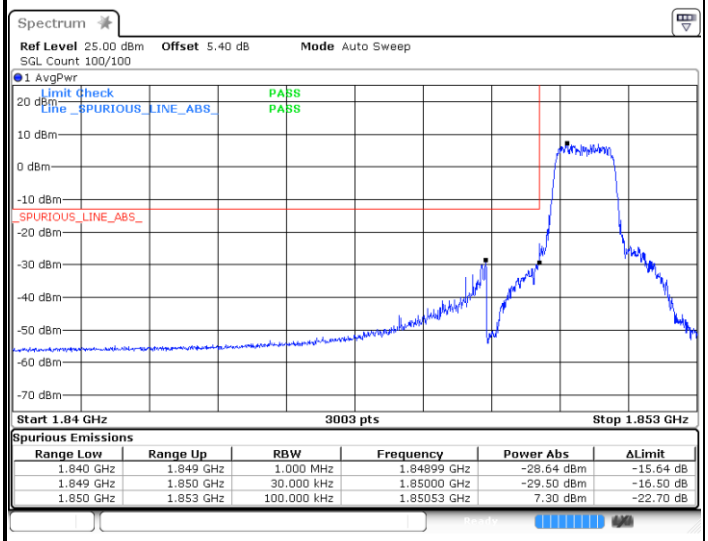


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.907 GHz	1.910 GHz	100.000 kHz	1.90957 GHz	16.12 dBm	-13.88 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91000 GHz	-35.00 dBm	-22.00 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91157 GHz	-27.80 dBm	-14.80 dB

Date: 17.OCT.2022 19:13:51

Lowest Band Edge / Full RB

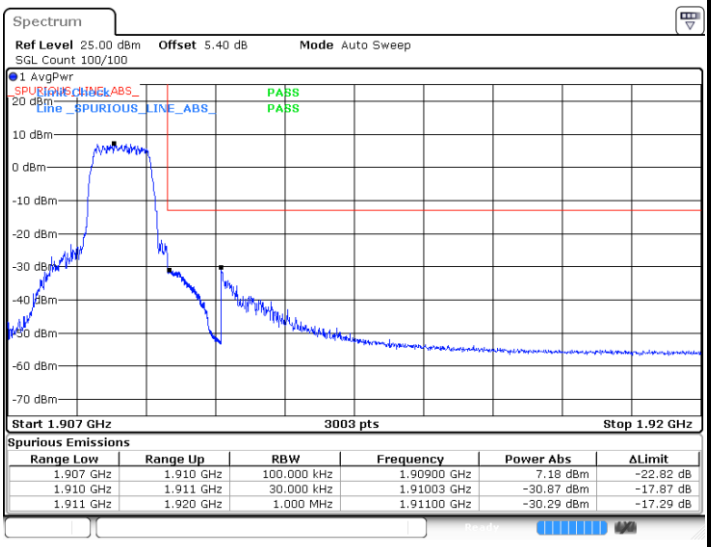


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84899 GHz	-28.64 dBm	-15.64 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.85000 GHz	-29.50 dBm	-16.50 dB
1.850 GHz	1.853 GHz	100.000 kHz	1.85053 GHz	7.30 dBm	-22.70 dB

Date: 17.OCT.2022 18:36:30

Highest Band Edge / Full RB



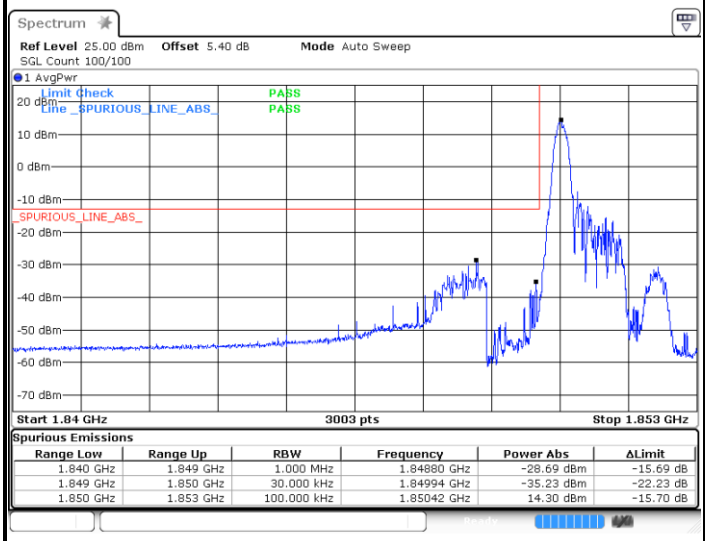
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.907 GHz	1.910 GHz	100.000 kHz	1.90900 GHz	7.18 dBm	-22.82 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91003 GHz	-30.87 dBm	-17.87 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91100 GHz	-30.29 dBm	-17.29 dB

Date: 17.OCT.2022 19:18:58

LTE Band 2 / 3MHz / 16QAM

Lowest Band Edge / 1 RB

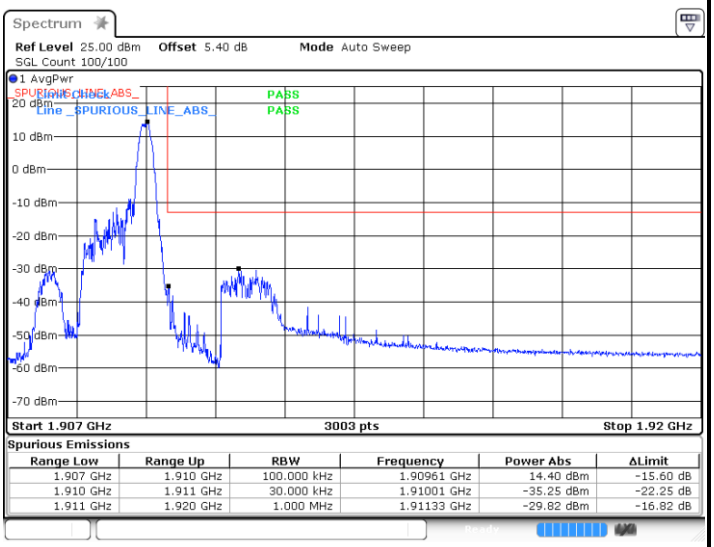


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84880 GHz	-28.69 dBm	-15.69 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.84994 GHz	-35.23 dBm	-22.23 dB
1.850 GHz	1.853 GHz	100.000 kHz	1.85042 GHz	14.30 dBm	-15.70 dB

Date: 17.OCT.2022 18:33:53

Highest Band Edge /1 RB

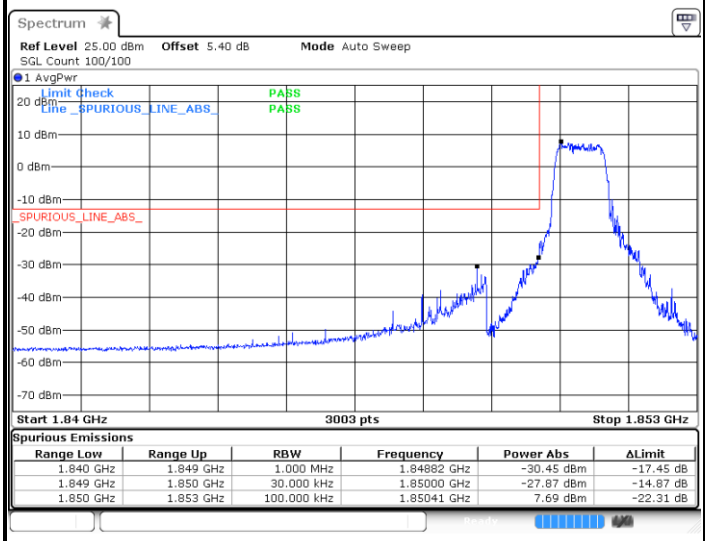


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.907 GHz	1.910 GHz	100.000 kHz	1.90961 GHz	14.40 dBm	-15.60 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91001 GHz	-35.25 dBm	-22.25 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91133 GHz	-29.82 dBm	-16.82 dB

Date: 17.OCT.2022 19:16:34

Lowest Band Edge / Full RB

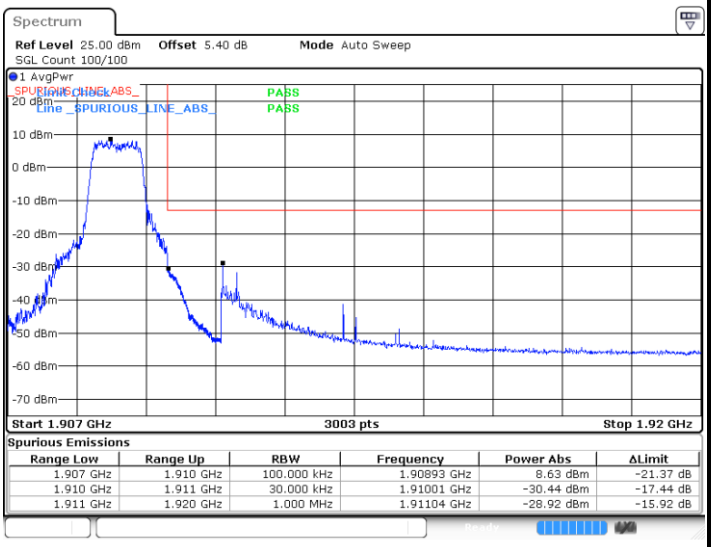


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84882 GHz	-30.45 dBm	-17.45 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.85000 GHz	-27.87 dBm	-14.87 dB
1.850 GHz	1.853 GHz	100.000 kHz	1.85041 GHz	7.69 dBm	-22.31 dB

Date: 17.OCT.2022 18:35:41

Highest Band Edge / Full RB



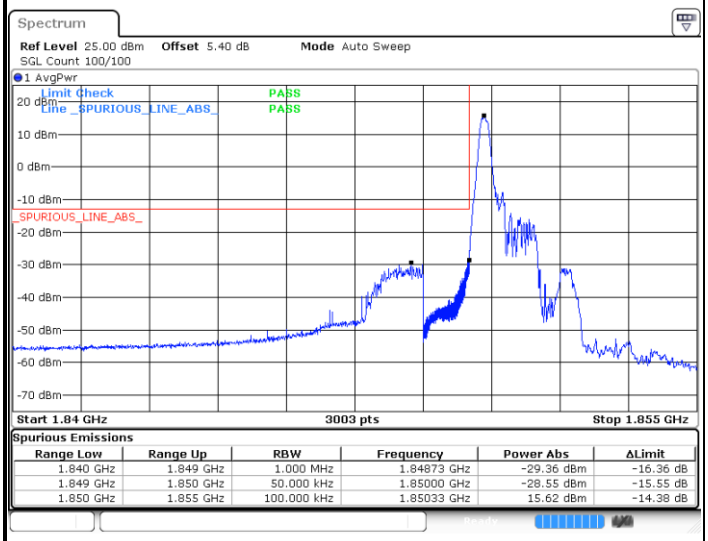
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.907 GHz	1.910 GHz	100.000 kHz	1.90893 GHz	8.63 dBm	-21.37 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91001 GHz	-30.44 dBm	-17.44 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91104 GHz	-28.92 dBm	-15.92 dB

Date: 17.OCT.2022 19:18:03

LTE Band 2 / 5MHz / QPSK

Lowest Band Edge / 1 RB

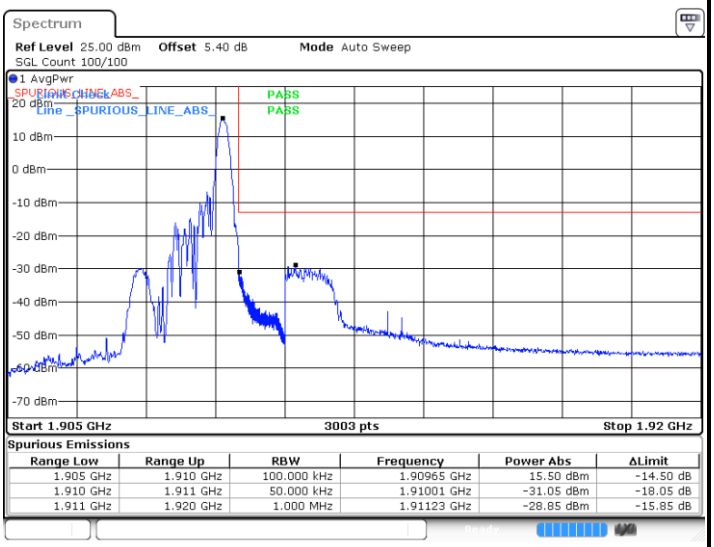


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84873 GHz	-29.36 dBm	-16.36 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.85000 GHz	-28.55 dBm	-15.55 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85033 GHz	15.62 dBm	-14.38 dB

Date: 17.OCT.2022 19:27:33

Highest Band Edge / 1 RB

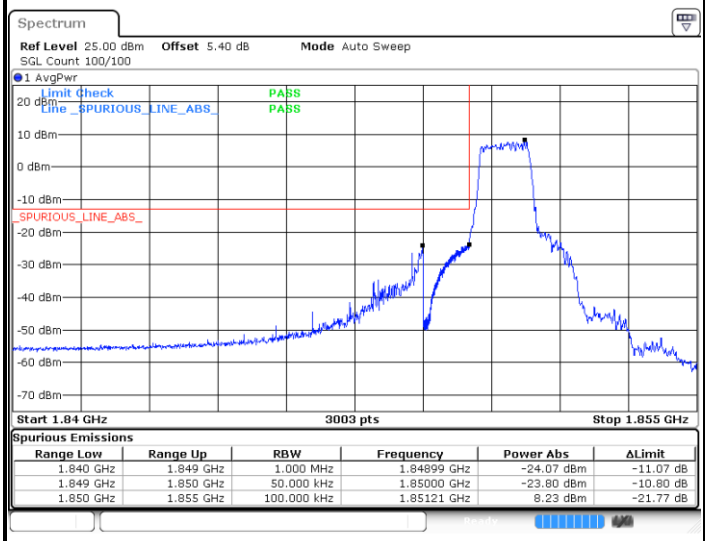


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90965 GHz	15.50 dBm	-14.50 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91001 GHz	-31.05 dBm	-18.05 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91123 GHz	-28.85 dBm	-15.85 dB

Date: 17.OCT.2022 19:32:03

Lowest Band Edge / Full RB

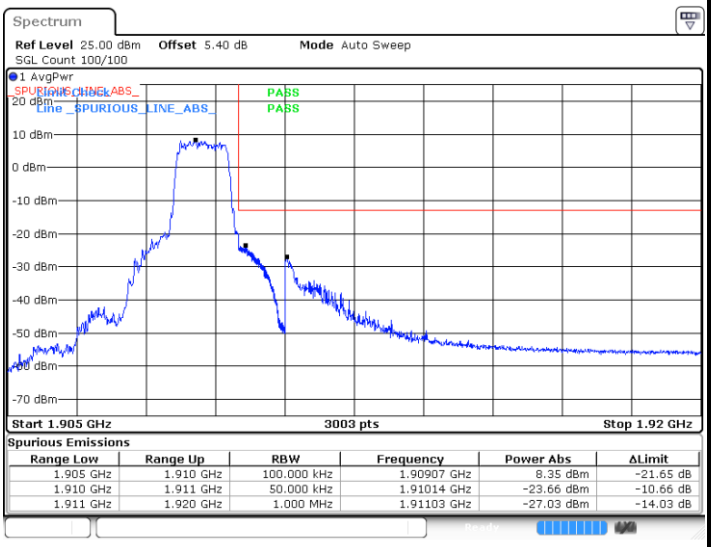


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84899 GHz	-24.07 dBm	-11.07 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.85000 GHz	-23.80 dBm	-10.80 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85121 GHz	8.23 dBm	-21.77 dB

Date: 17.OCT.2022 19:23:34

Highest Band Edge / Full RB



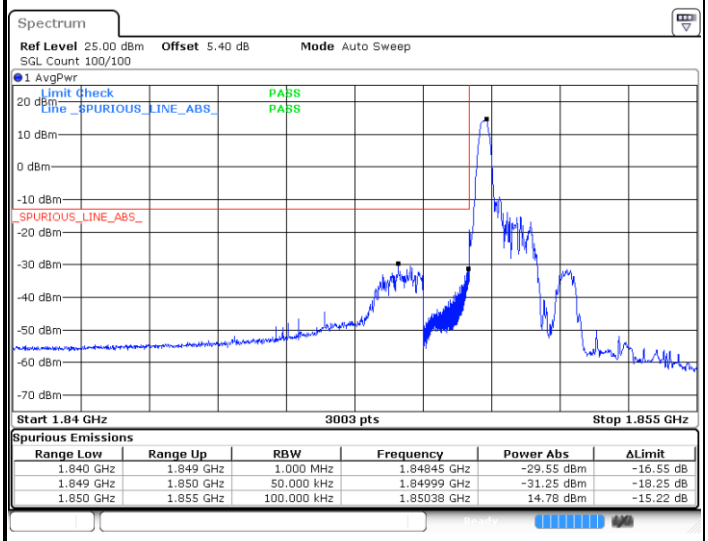
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90907 GHz	8.35 dBm	-21.65 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91014 GHz	-23.66 dBm	-10.66 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91103 GHz	-27.03 dBm	-14.03 dB

Date: 17.OCT.2022 19:34:55

LTE Band 2 / 5MHz / 16QAM

Lowest Band Edge / 1RB

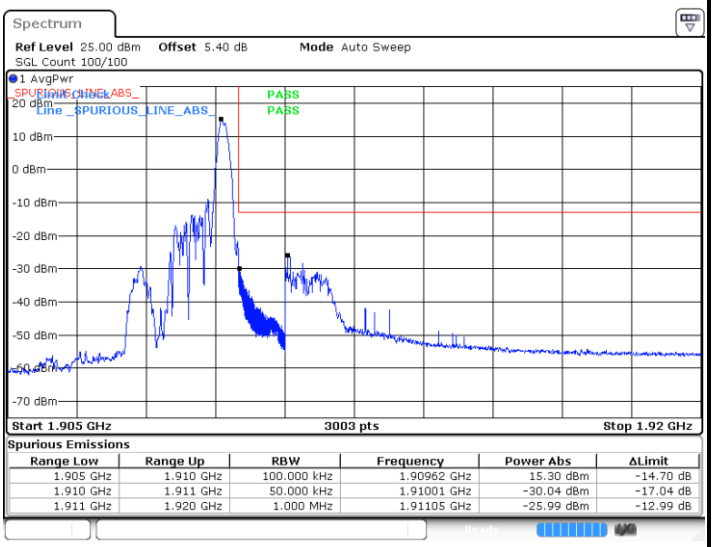


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84845 GHz	-29.55 dBm	-16.55 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.84999 GHz	-31.25 dBm	-18.25 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85038 GHz	14.78 dBm	-15.22 dB

Date: 17.OCT.2022 19:26:56

Highest Band Edge / 1 RB

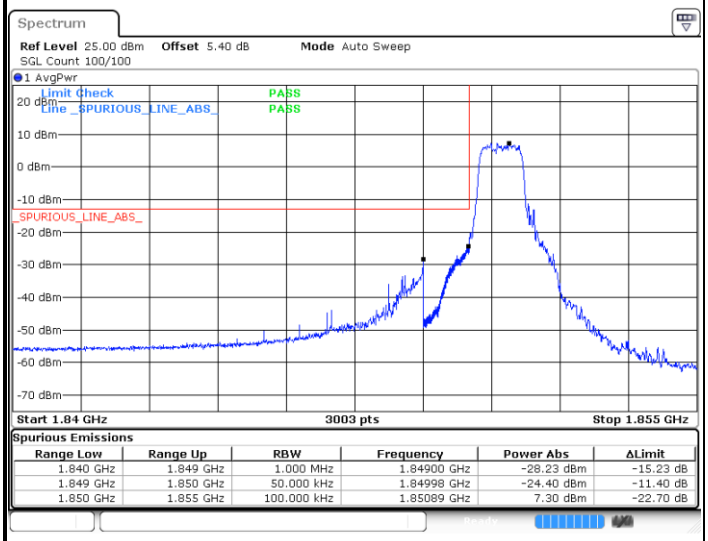


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90962 GHz	15.30 dBm	-14.70 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91001 GHz	-30.04 dBm	-17.04 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91105 GHz	-25.99 dBm	-12.99 dB

Date: 17.OCT.2022 19:33:00

Lowest Band Edge / Full RB

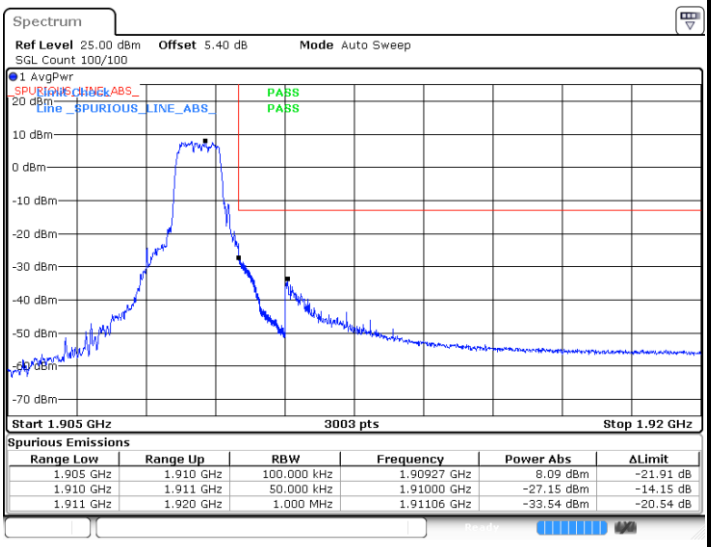


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84900 GHz	-28.23 dBm	-15.23 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.84998 GHz	-24.40 dBm	-11.40 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85089 GHz	7.30 dBm	-22.70 dB

Date: 17.OCT.2022 19:25:39

Highest Band Edge / Full RB



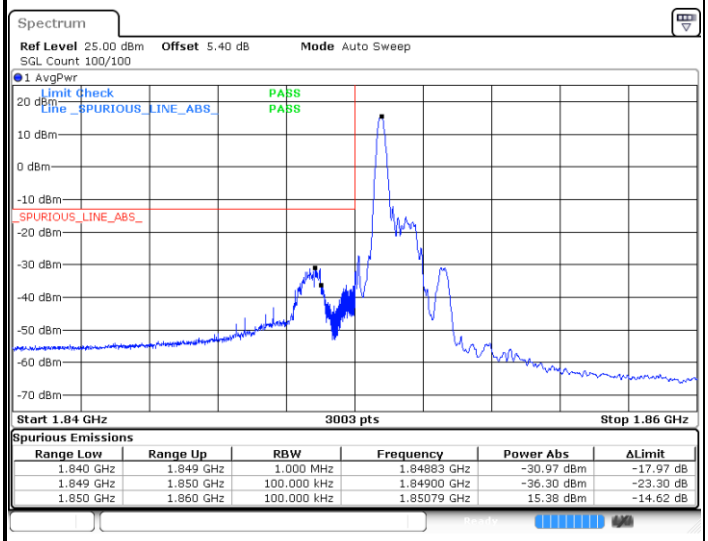
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90927 GHz	8.09 dBm	-21.91 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91000 GHz	-27.15 dBm	-14.15 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91106 GHz	-33.54 dBm	-20.54 dB

Date: 17.OCT.2022 19:34:03

LTE Band 2 / 10MHz / QPSK

Lowest Band Edge / 1 RB

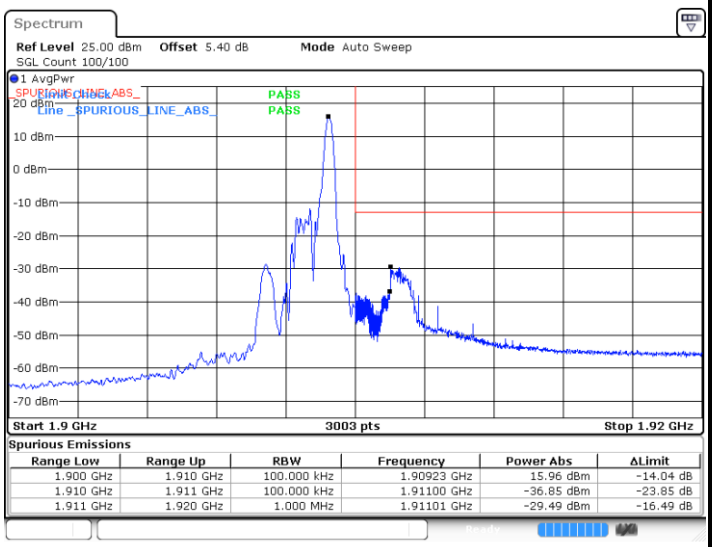


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84883 GHz	-30.97 dBm	-17.97 dB
1.849 GHz	1.850 GHz	100.000 kHz	1.84900 GHz	-36.30 dBm	-23.30 dB
1.850 GHz	1.860 GHz	100.000 kHz	1.85079 GHz	15.38 dBm	-14.62 dB

Date: 17.OCT.2022 19:43:02

Highest Band Edge / 1 RB

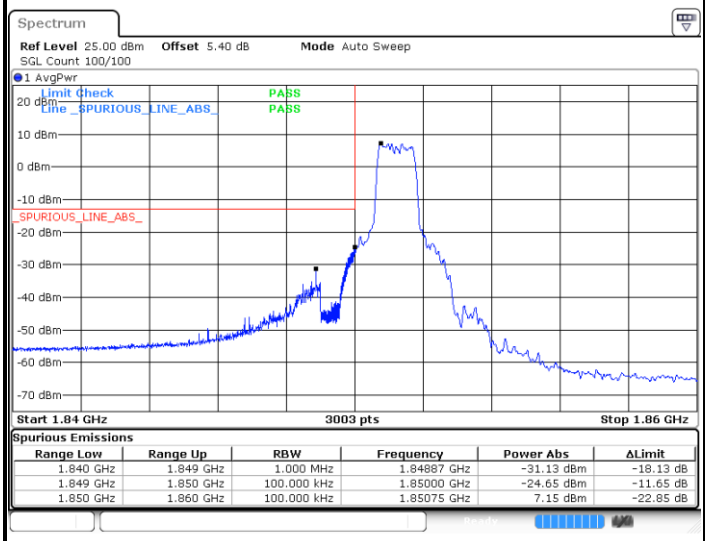


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.900 GHz	1.910 GHz	100.000 kHz	1.90923 GHz	15.96 dBm	-14.04 dB
1.910 GHz	1.911 GHz	100.000 kHz	1.91100 GHz	-36.85 dBm	-23.85 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91101 GHz	-29.49 dBm	-16.49 dB

Date: 17.OCT.2022 19:46:53

Lowest Band Edge / Full RB

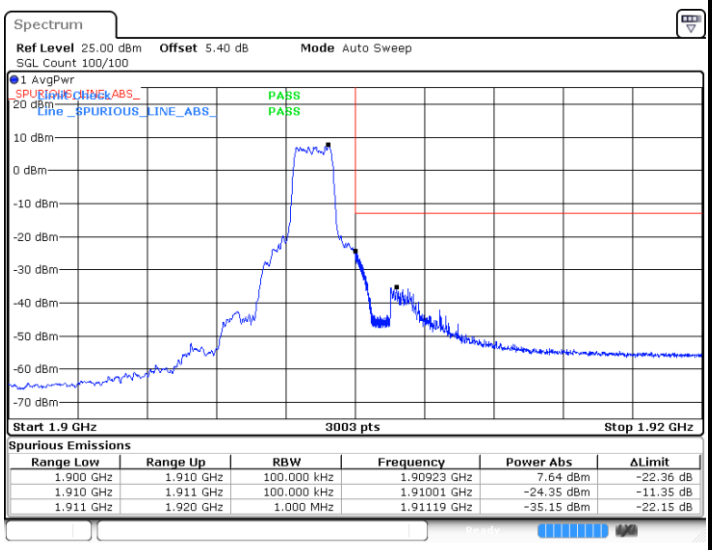


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84887 GHz	-31.13 dBm	-18.13 dB
1.849 GHz	1.850 GHz	100.000 kHz	1.85000 GHz	-24.65 dBm	-11.65 dB
1.850 GHz	1.860 GHz	100.000 kHz	1.85075 GHz	7.15 dBm	-22.85 dB

Date: 17.OCT.2022 19:38:05

Highest Band Edge / Full RB



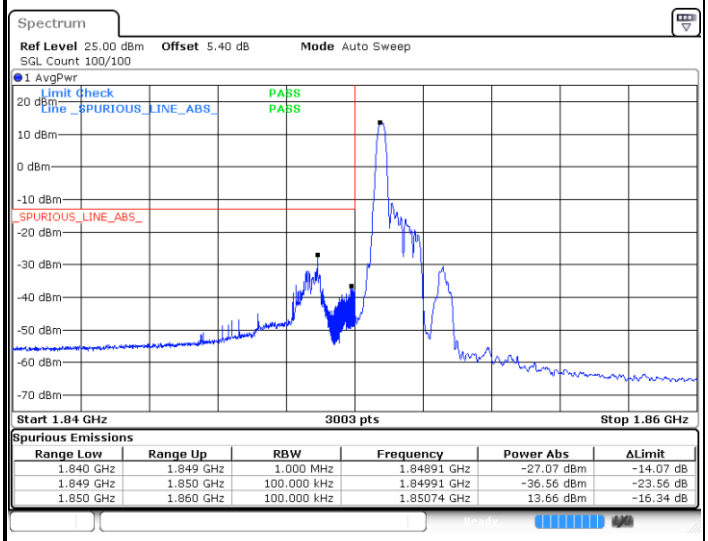
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.900 GHz	1.910 GHz	100.000 kHz	1.90923 GHz	7.64 dBm	-22.36 dB
1.910 GHz	1.911 GHz	100.000 kHz	1.91001 GHz	-24.35 dBm	-11.35 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91119 GHz	-35.15 dBm	-22.15 dB

Date: 17.OCT.2022 19:49:53

LTE Band 2 / 10MHz / 16QAM

Lowest Band Edge / 1 RB

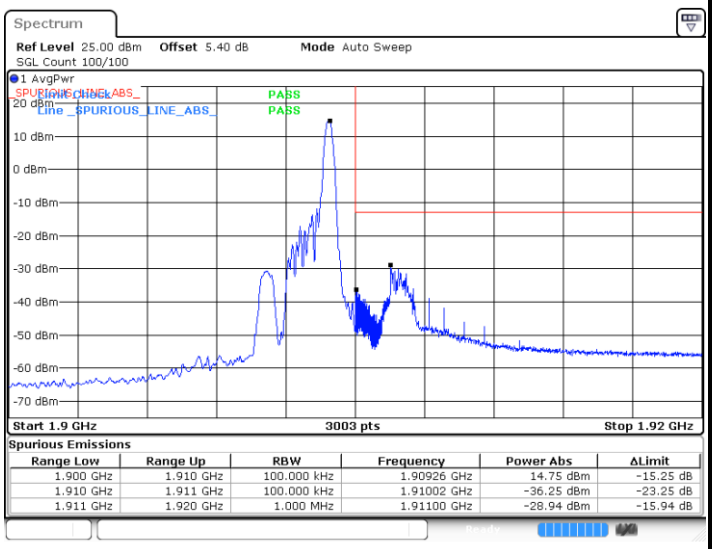


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84891 GHz	-27.07 dBm	-14.07 dB
1.849 GHz	1.850 GHz	100.000 kHz	1.84991 GHz	-36.56 dBm	-23.56 dB
1.850 GHz	1.860 GHz	100.000 kHz	1.85074 GHz	13.66 dBm	-16.34 dB

Date: 17.OCT.2022 19:42:10

Highest Band Edge / 1 RB

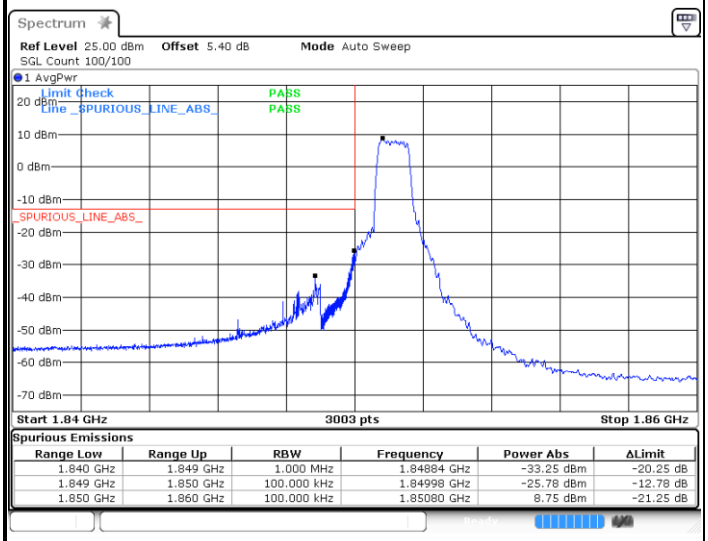


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.900 GHz	1.910 GHz	100.000 kHz	1.90926 GHz	14.75 dBm	-15.25 dB
1.910 GHz	1.911 GHz	100.000 kHz	1.91002 GHz	-36.25 dBm	-23.25 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91100 GHz	-28.94 dBm	-15.94 dB

Date: 17.OCT.2022 19:48:23

Lowest Band Edge / Full RB

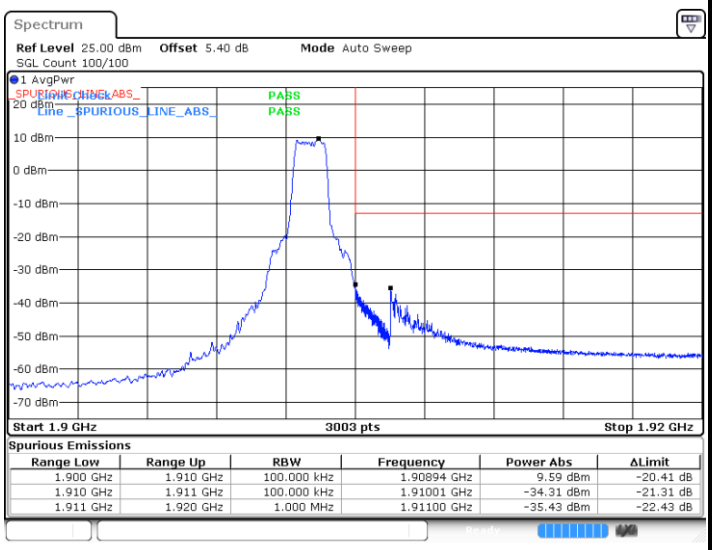


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84884 GHz	-33.25 dBm	-20.25 dB
1.849 GHz	1.850 GHz	100.000 kHz	1.84998 GHz	-25.78 dBm	-12.78 dB
1.850 GHz	1.860 GHz	100.000 kHz	1.85080 GHz	8.75 dBm	-21.25 dB

Date: 17.OCT.2022 19:39:48

Highest Band Edge / Full RB



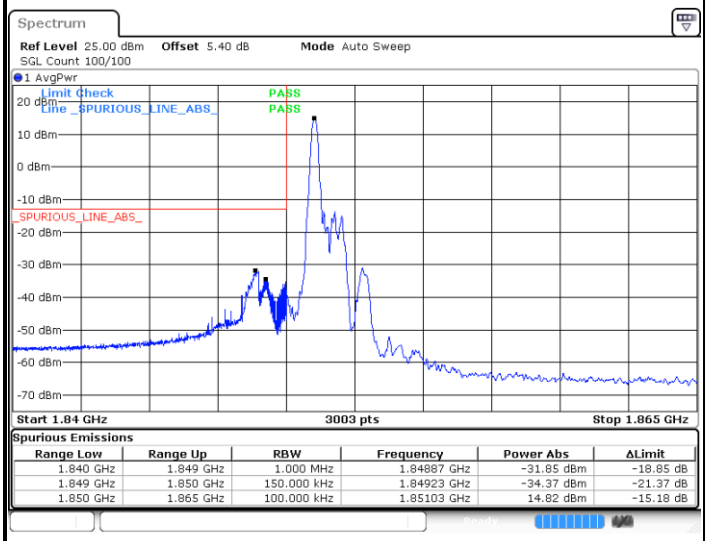
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.900 GHz	1.910 GHz	100.000 kHz	1.90894 GHz	9.59 dBm	-20.41 dB
1.910 GHz	1.911 GHz	100.000 kHz	1.91001 GHz	-34.31 dBm	-21.31 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91100 GHz	-35.43 dBm	-22.43 dB

Date: 17.OCT.2022 19:51:15

LTE Band 2 / 15MHz / QPSK

Lowest Band Edge / 1 RB

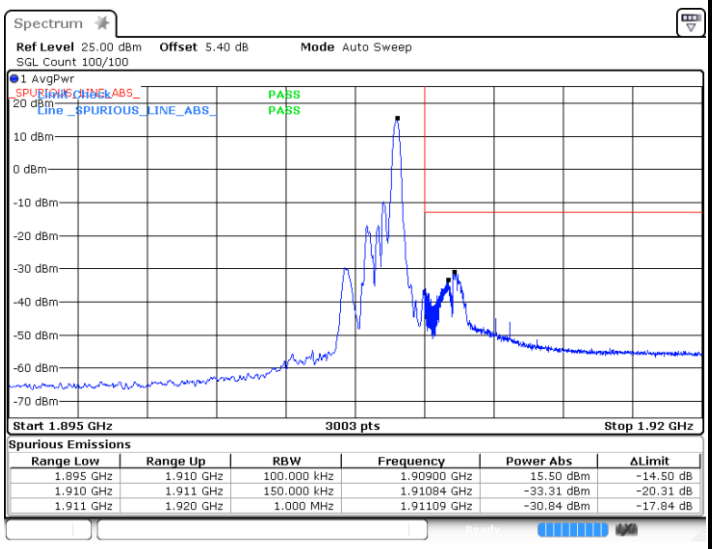


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84887 GHz	-31.85 dBm	-18.85 dB
1.849 GHz	1.850 GHz	150.000 kHz	1.84923 GHz	-34.37 dBm	-21.37 dB
1.850 GHz	1.865 GHz	100.000 kHz	1.85103 GHz	14.82 dBm	-15.18 dB

Date: 17.OCT.2022 19:54:08

Highest Band Edge / 1 RB

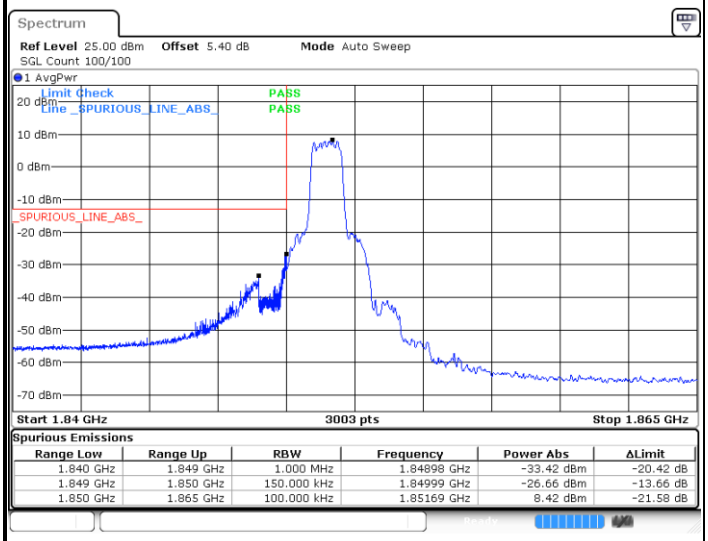


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.895 GHz	1.910 GHz	100.000 kHz	1.90900 GHz	15.50 dBm	-14.50 dB
1.910 GHz	1.911 GHz	150.000 kHz	1.91084 GHz	-33.31 dBm	-20.31 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91109 GHz	-30.84 dBm	-17.84 dB

Date: 17.OCT.2022 19:59:21

Lowest Band Edge / Full RB

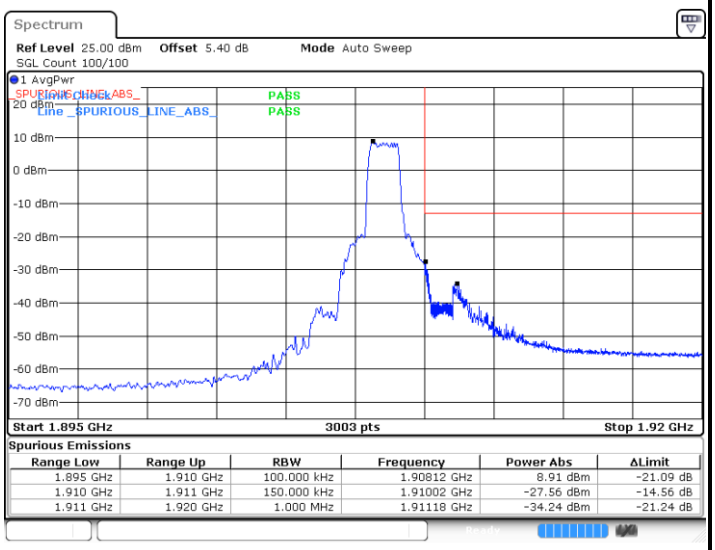


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84898 GHz	-33.42 dBm	-20.42 dB
1.849 GHz	1.850 GHz	150.000 kHz	1.84999 GHz	-26.66 dBm	-13.66 dB
1.850 GHz	1.865 GHz	100.000 kHz	1.85169 GHz	8.42 dBm	-21.58 dB

Date: 17.OCT.2022 19:52:08

Highest Band Edge / Full RB



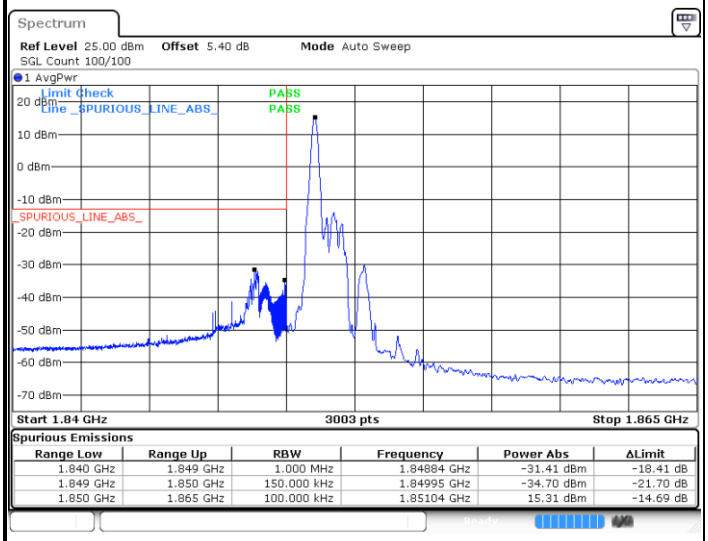
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.895 GHz	1.910 GHz	100.000 kHz	1.90812 GHz	8.91 dBm	-21.09 dB
1.910 GHz	1.911 GHz	150.000 kHz	1.91002 GHz	-27.56 dBm	-14.56 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91118 GHz	-34.24 dBm	-21.24 dB

Date: 17.OCT.2022 20:02:05

LTE Band 2 / 15MHz / 16QAM

Lowest Band Edge / 1 RB

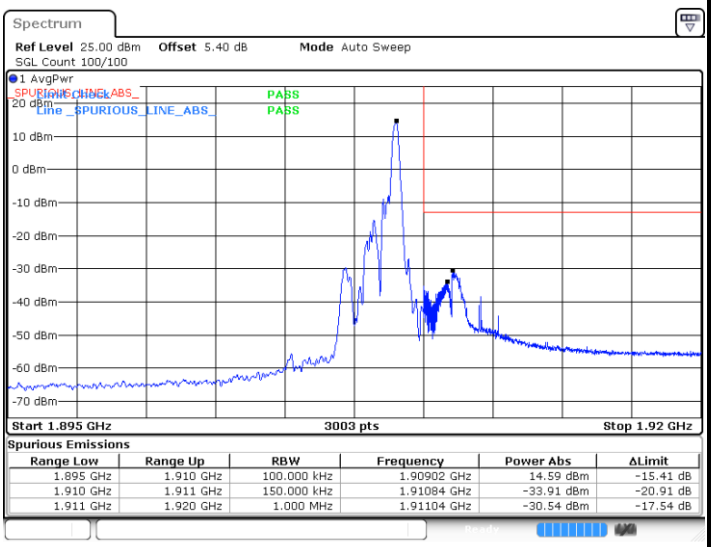


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84884 GHz	-31.41 dBm	-18.41 dB
1.849 GHz	1.850 GHz	150.000 kHz	1.84995 GHz	-34.70 dBm	-21.70 dB
1.850 GHz	1.865 GHz	100.000 kHz	1.85104 GHz	15.31 dBm	-14.69 dB

Date: 17.OCT.2022 19:53:26

Highest Band Edge / 1 RB

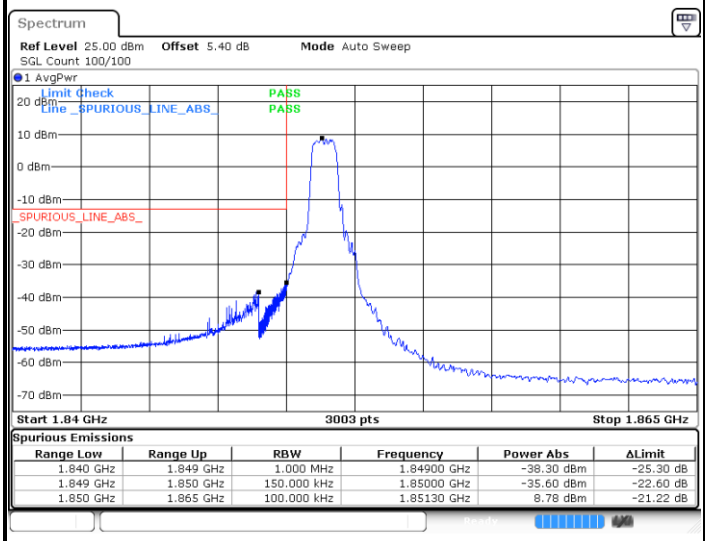


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.895 GHz	1.910 GHz	100.000 kHz	1.90902 GHz	14.59 dBm	-15.41 dB
1.910 GHz	1.911 GHz	150.000 kHz	1.91084 GHz	-33.91 dBm	-20.91 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91104 GHz	-30.54 dBm	-17.54 dB

Date: 17.OCT.2022 19:59:58

Lowest Band Edge / Full RB

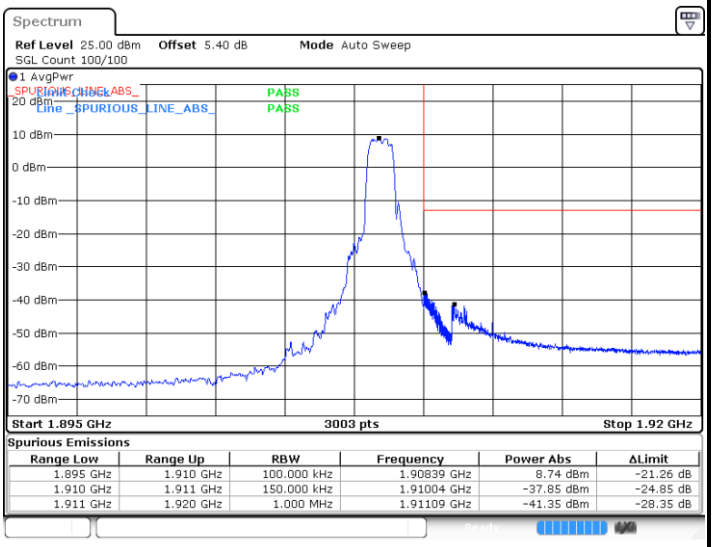


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84900 GHz	-38.30 dBm	-25.30 dB
1.849 GHz	1.850 GHz	150.000 kHz	1.85000 GHz	-35.60 dBm	-22.60 dB
1.850 GHz	1.865 GHz	100.000 kHz	1.85130 GHz	8.78 dBm	-21.22 dB

Date: 17.OCT.2022 19:52:38

Highest Band Edge / Full RB



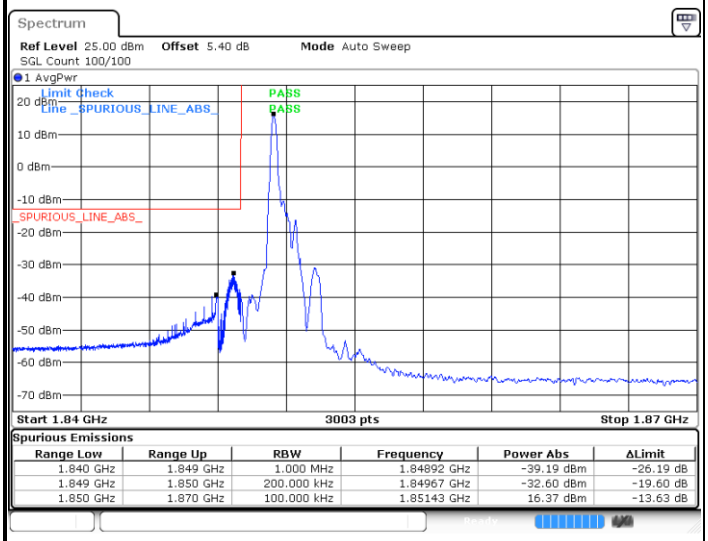
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.895 GHz	1.910 GHz	100.000 kHz	1.90839 GHz	8.74 dBm	-21.26 dB
1.910 GHz	1.911 GHz	150.000 kHz	1.91004 GHz	-37.85 dBm	-24.85 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91109 GHz	-41.35 dBm	-28.35 dB

Date: 17.OCT.2022 20:01:31

LTE Band 2 / 20MHz / QPSK

Lowest Band Edge / 1 RB

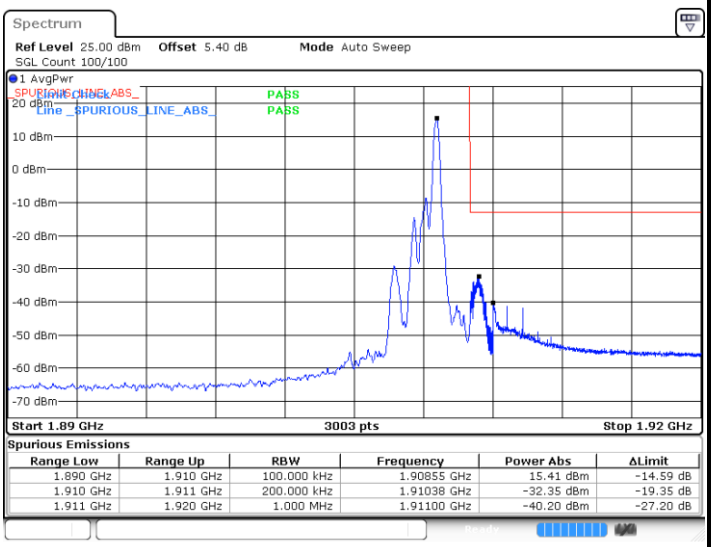


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84892 GHz	-39.19 dBm	-26.19 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84967 GHz	-32.60 dBm	-19.60 dB
1.850 GHz	1.870 GHz	100.000 kHz	1.85143 GHz	16.37 dBm	-13.63 dB

Date: 17.OCT.2022 20:07:06

Highest Band Edge / 1 RB

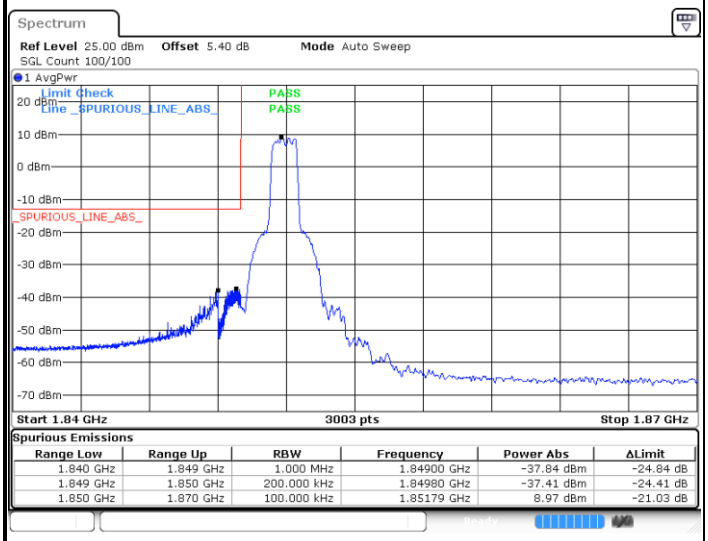


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.890 GHz	1.910 GHz	100.000 kHz	1.90855 GHz	15.41 dBm	-14.59 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91038 GHz	-32.35 dBm	-19.35 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91100 GHz	-40.20 dBm	-27.20 dB

Date: 17.OCT.2022 20:11:37

Lowest Band Edge / Full RB

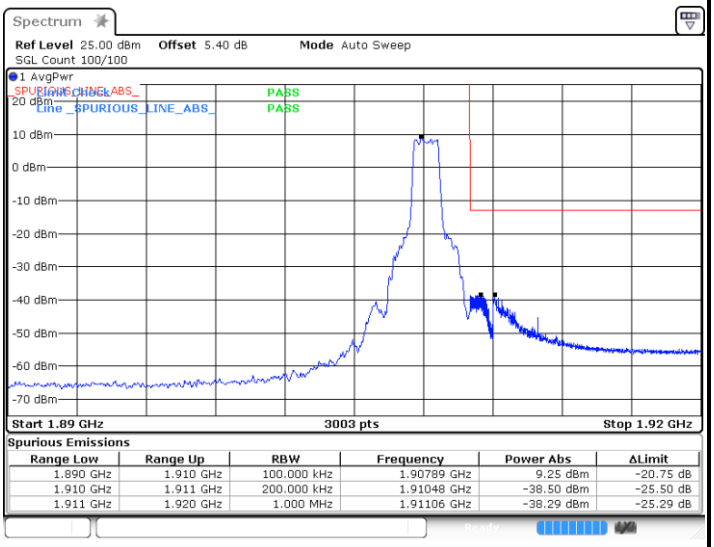


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84900 GHz	-37.84 dBm	-24.84 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84980 GHz	-37.41 dBm	-24.41 dB
1.850 GHz	1.870 GHz	100.000 kHz	1.85179 GHz	8.97 dBm	-21.03 dB

Date: 17.OCT.2022 20:03:23

Highest Band Edge / Full RB



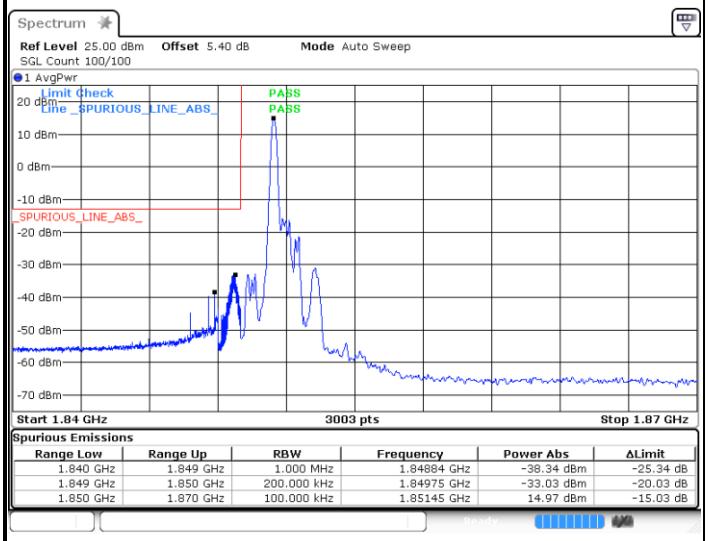
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.890 GHz	1.910 GHz	100.000 kHz	1.90789 GHz	9.25 dBm	-20.75 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91048 GHz	-38.50 dBm	-25.50 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91106 GHz	-38.29 dBm	-25.29 dB

Date: 17.OCT.2022 20:14:02

LTE Band 2 / 20MHz / 16QAM

Lowest Band Edge / 1 RB

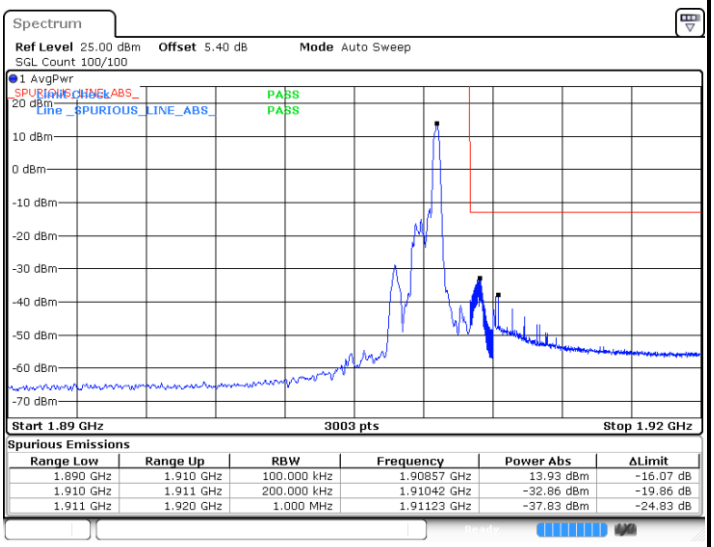


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84884 GHz	-38.34 dBm	-25.34 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84975 GHz	-33.03 dBm	-20.03 dB
1.850 GHz	1.870 GHz	100.000 kHz	1.85145 GHz	14.97 dBm	-15.03 dB

Date: 17.OCT.2022 20:06:43

Highest Band Edge / 1 RB

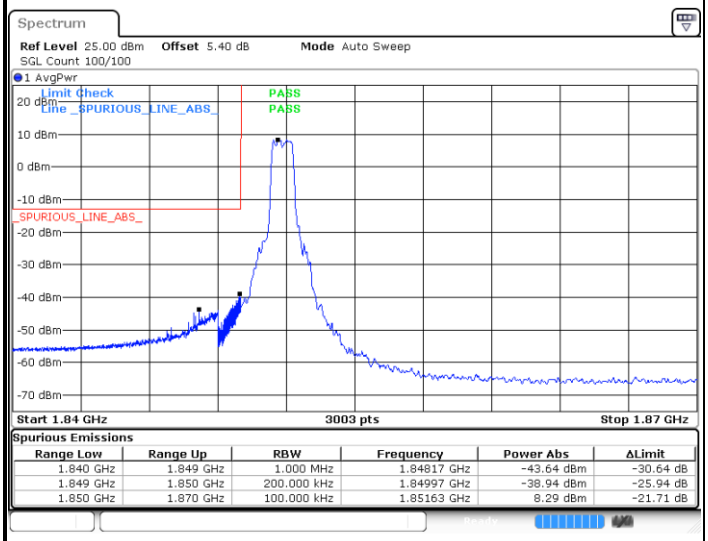


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.890 GHz	1.910 GHz	100.000 kHz	1.90857 GHz	13.93 dBm	-16.07 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91042 GHz	-32.86 dBm	-19.86 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91123 GHz	-37.83 dBm	-24.83 dB

Date: 17.OCT.2022 20:12:07

Lowest Band Edge / Full RB

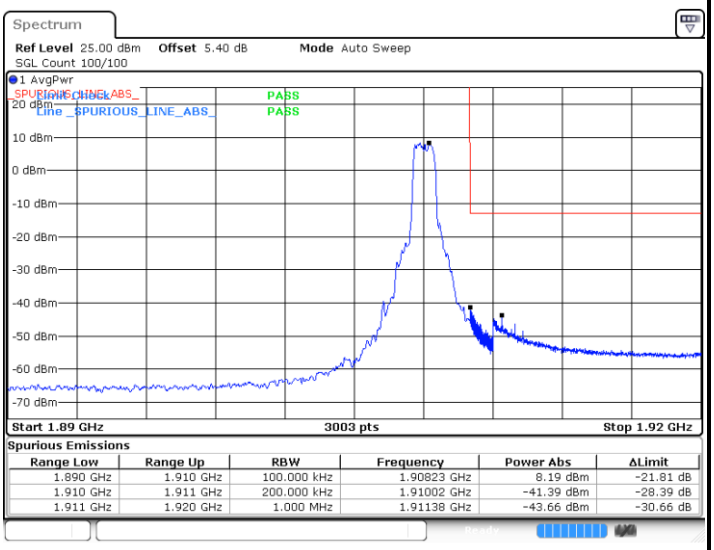


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84817 GHz	-43.64 dBm	-30.64 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84997 GHz	-38.94 dBm	-25.94 dB
1.850 GHz	1.870 GHz	100.000 kHz	1.85163 GHz	8.29 dBm	-21.71 dB

Date: 17.OCT.2022 20:06:02

Highest Band Edge / Full RB



Spurious Emissions

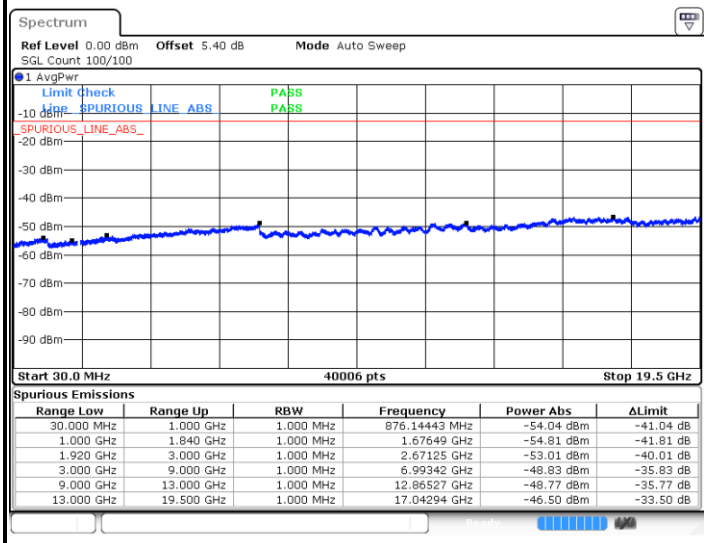
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.890 GHz	1.910 GHz	100.000 kHz	1.90823 GHz	8.19 dBm	-21.81 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91002 GHz	-41.39 dBm	-28.39 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91138 GHz	-43.66 dBm	-30.66 dB

Date: 17.OCT.2022 20:12:54

Conducted Spurious Emission

LTE Band 2 / 1.4MHz

Lowest Channel / QPSK

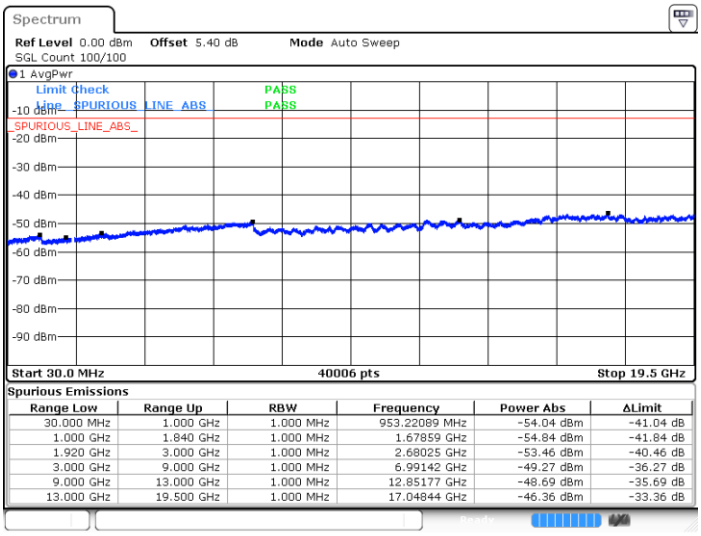


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	876.14443 MHz	-54.04 dBm	-41.04 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.67649 GHz	-54.81 dBm	-41.81 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.67125 GHz	-53.01 dBm	-40.01 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.99342 GHz	-48.83 dBm	-35.83 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.86527 GHz	-48.77 dBm	-35.77 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.04294 GHz	-46.50 dBm	-33.50 dB

Date: 17.OCT.2022 18:27:50

Middle Channel / QPSK

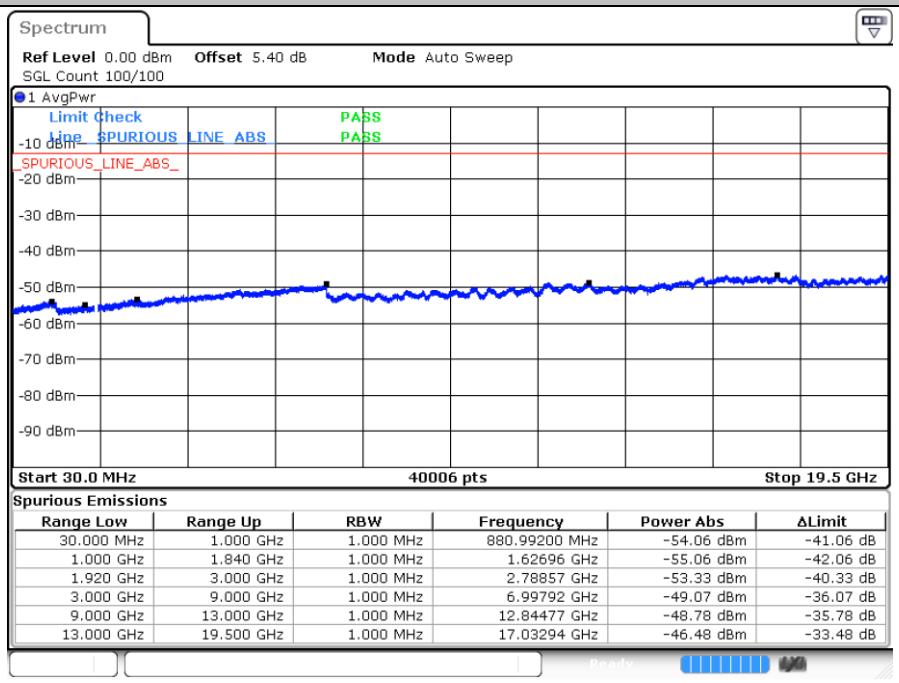


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	953.22089 MHz	-54.04 dBm	-41.04 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.67859 GHz	-54.84 dBm	-41.84 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.68025 GHz	-53.46 dBm	-40.46 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.99142 GHz	-49.27 dBm	-36.27 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.85177 GHz	-48.69 dBm	-35.69 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.04844 GHz	-46.36 dBm	-33.36 dB

Date: 17.OCT.2022 18:26:23

Highest Channel / QPSK



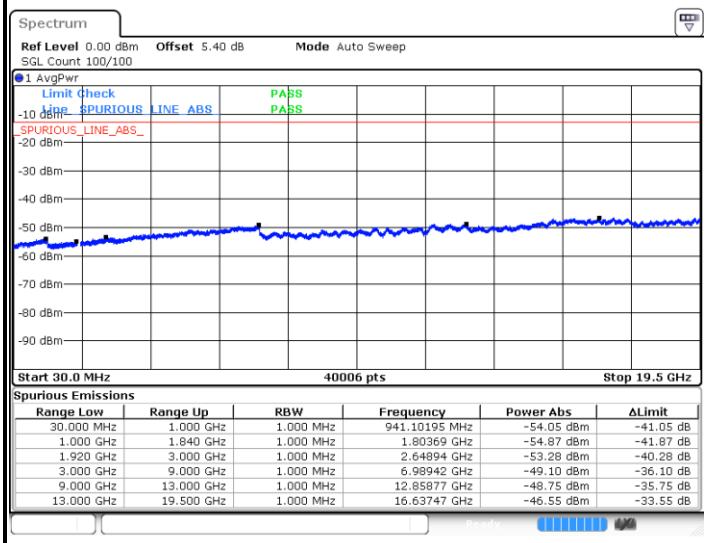
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	880.99200 MHz	-54.06 dBm	-41.06 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.62696 GHz	-55.06 dBm	-42.06 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.78857 GHz	-53.33 dBm	-40.33 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.99792 GHz	-49.07 dBm	-36.07 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.84477 GHz	-48.78 dBm	-35.78 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.03294 GHz	-46.48 dBm	-33.48 dB

Date: 17.OCT.2022 18:24:48

LTE Band 2 / 3MHz

Lowest Channel / QPSK

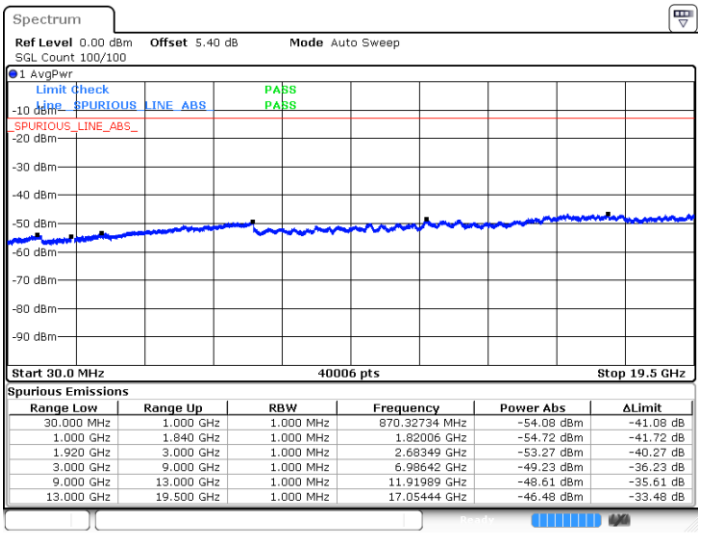


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	941.10195 MHz	-54.05 dBm	-41.05 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.80369 GHz	-54.87 dBm	-41.87 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.64894 GHz	-53.28 dBm	-40.28 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.98942 GHz	-49.10 dBm	-36.10 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.85877 GHz	-48.75 dBm	-35.75 dB
13.000 GHz	19.500 GHz	1.000 MHz	16.63747 GHz	-46.55 dBm	-33.55 dB

Date: 17.OCT.2022 18:32:05

Middle Channel / QPSK

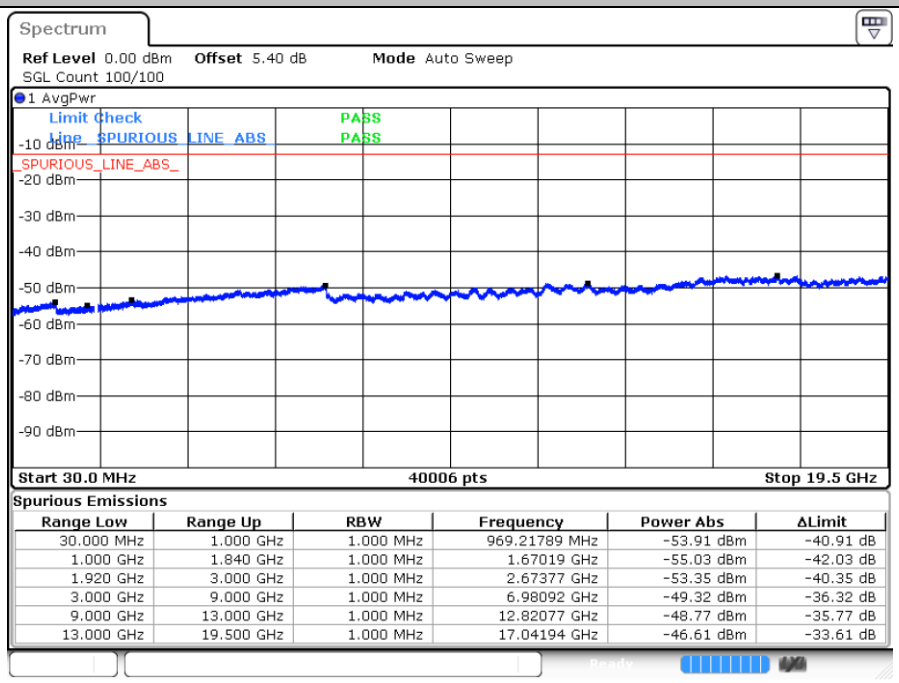


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	870.32734 MHz	-54.08 dBm	-41.08 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.82006 GHz	-54.72 dBm	-41.72 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.68349 GHz	-53.27 dBm	-40.27 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.98642 GHz	-49.23 dBm	-36.23 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.91989 GHz	-48.61 dBm	-35.61 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.05444 GHz	-46.48 dBm	-33.48 dB

Date: 17.OCT.2022 18:37:52

Highest Channel / QPSK



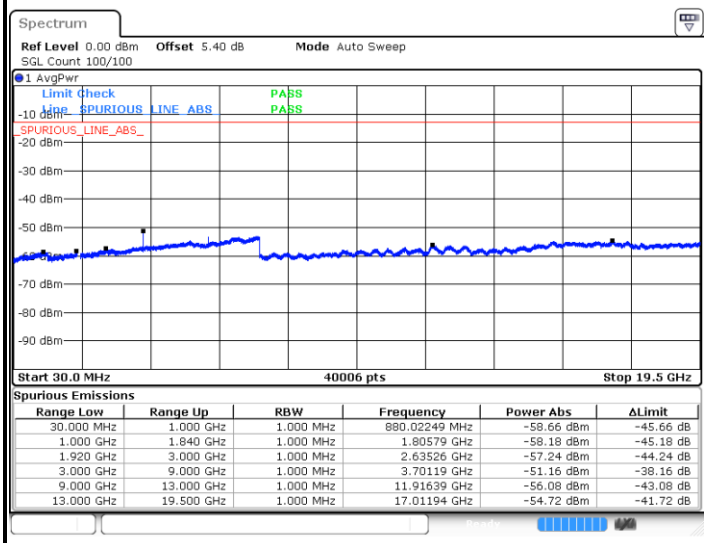
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	969.21789 MHz	-53.91 dBm	-40.91 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.67019 GHz	-55.03 dBm	-42.03 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.67377 GHz	-53.35 dBm	-40.35 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.98092 GHz	-49.32 dBm	-36.32 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.82077 GHz	-48.77 dBm	-35.77 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.04194 GHz	-46.61 dBm	-33.61 dB

Date: 17.OCT.2022 19:21:03

LTE Band 2 / 5MHz

Lowest Channel / QPSK

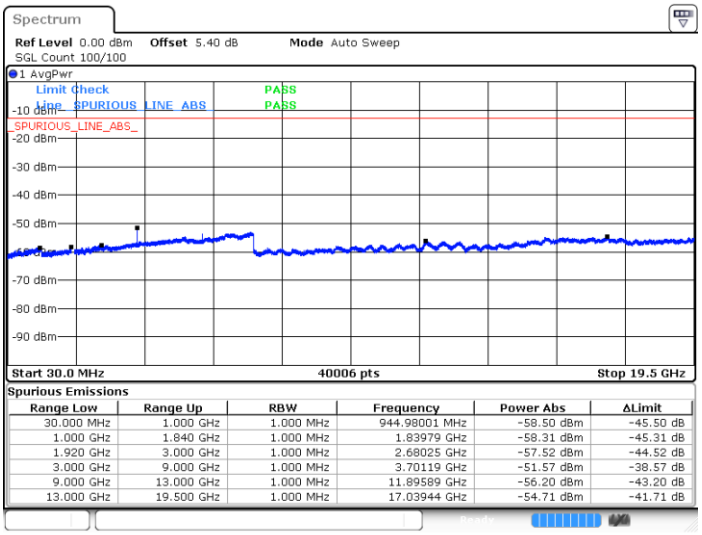


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	880.02249 MHz	-58.66 dBm	-45.66 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.80579 GHz	-58.18 dBm	-45.18 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.63526 GHz	-57.24 dBm	-44.24 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70119 GHz	-51.16 dBm	-38.16 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.91639 GHz	-56.08 dBm	-43.08 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.01194 GHz	-54.72 dBm	-41.72 dB

Date: 17.OCT.2022 19:28:49

Middle Channel / QPSK

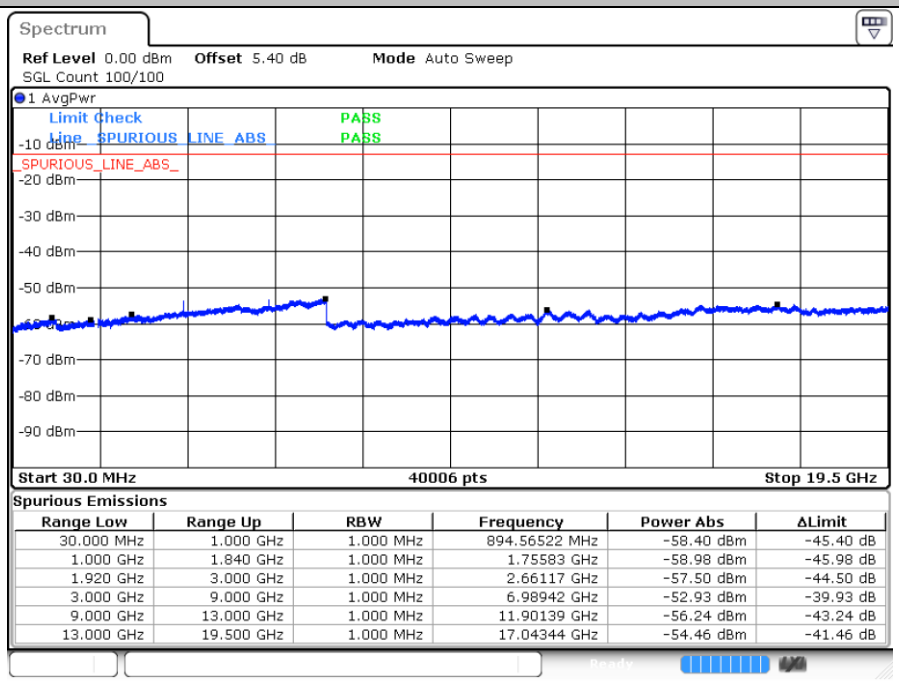


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	944.98001 MHz	-58.50 dBm	-45.50 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83979 GHz	-58.31 dBm	-45.31 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.68025 GHz	-57.52 dBm	-44.52 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70119 GHz	-51.57 dBm	-38.57 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.89589 GHz	-56.20 dBm	-43.20 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.03944 GHz	-54.71 dBm	-41.71 dB

Date: 17.OCT.2022 19:30:24

Highest Channel / QPSK



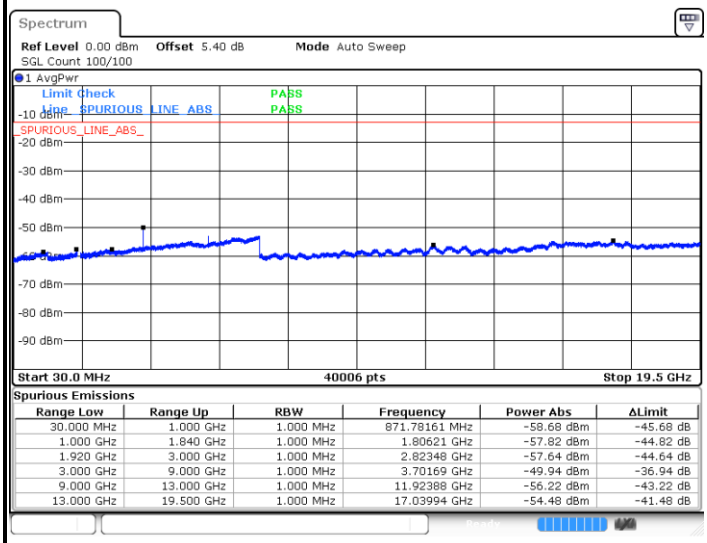
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	894.56522 MHz	-58.40 dBm	-45.40 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.75583 GHz	-58.98 dBm	-45.98 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.66117 GHz	-57.50 dBm	-44.50 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.98942 GHz	-52.93 dBm	-39.93 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.90139 GHz	-56.24 dBm	-43.24 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.04344 GHz	-54.46 dBm	-41.46 dB

Date: 17.OCT.2022 19:31:21

LTE Band 2 / 10MHz

Lowest Channel / QPSK

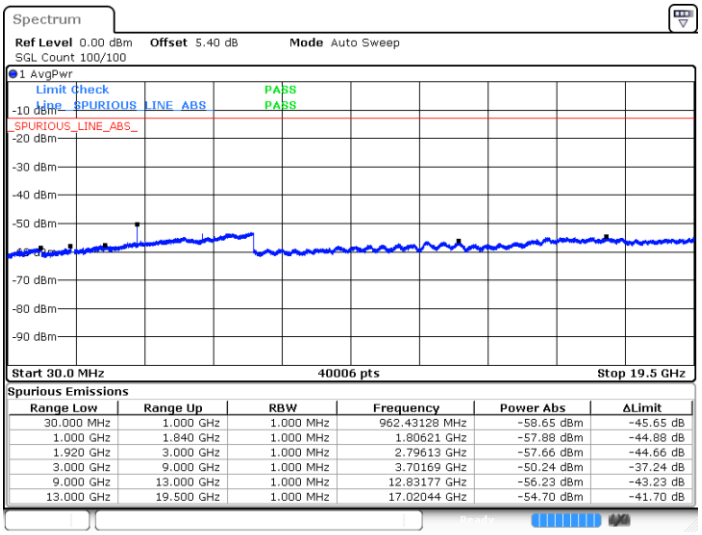


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	871.78161 MHz	-58.68 dBm	-45.68 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.80621 GHz	-57.82 dBm	-44.82 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.82348 GHz	-57.64 dBm	-44.64 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70169 GHz	-49.94 dBm	-36.94 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.92388 GHz	-56.22 dBm	-43.22 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.03994 GHz	-54.48 dBm	-41.48 dB

Date: 17.OCT.2022 19:44:01

Middle Channel / QPSK

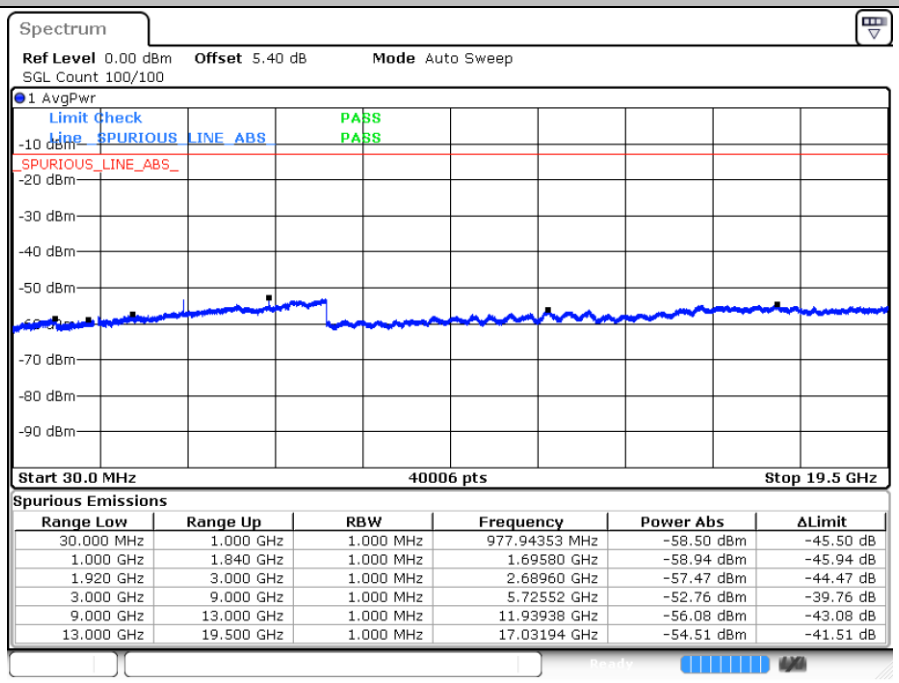


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	962.43128 MHz	-58.65 dBm	-45.65 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.80621 GHz	-57.88 dBm	-44.88 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.79613 GHz	-57.66 dBm	-44.66 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70169 GHz	-50.24 dBm	-37.24 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.83177 GHz	-56.23 dBm	-43.23 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.02044 GHz	-54.70 dBm	-41.70 dB

Date: 17.OCT.2022 19:44:50

Highest Channel / QPSK



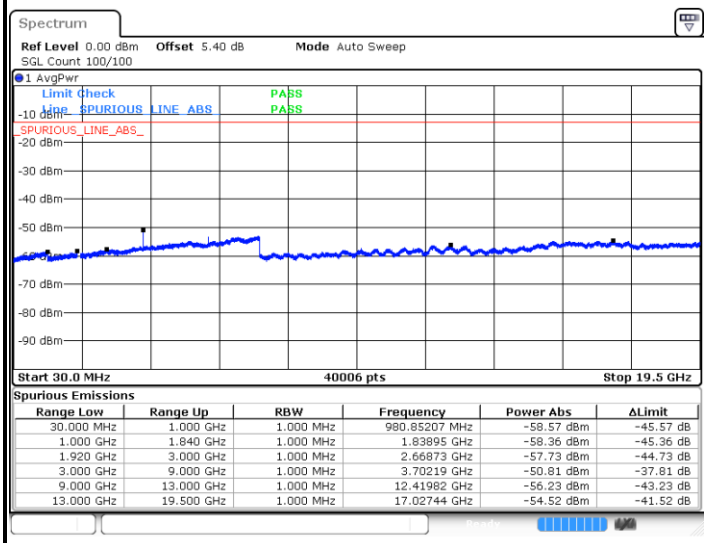
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	977.94353 MHz	-58.50 dBm	-45.50 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.69580 GHz	-58.94 dBm	-45.94 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.68960 GHz	-57.47 dBm	-44.47 dB
3.000 GHz	9.000 GHz	1.000 MHz	5.72552 GHz	-52.76 dBm	-39.76 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.93938 GHz	-56.08 dBm	-43.08 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.03194 GHz	-54.51 dBm	-41.51 dB

Date: 17.OCT.2022 19:46:19

LTE Band 2 / 15MHz

Lowest Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	980.85207 MHz	-58.57 dBm	-45.57 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83895 GHz	-58.36 dBm	-45.36 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.66873 GHz	-57.73 dBm	-44.73 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70219 GHz	-50.81 dBm	-37.81 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.41982 GHz	-56.23 dBm	-43.23 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.02744 GHz	-54.52 dBm	-41.52 dB

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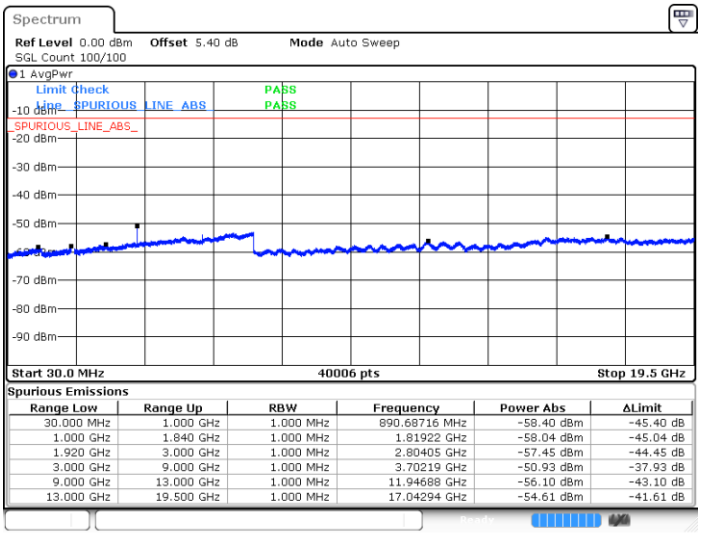
Middle Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	890.68716 MHz	-58.40 dBm	-45.40 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.81922 GHz	-58.04 dBm	-45.04 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.80405 GHz	-57.45 dBm	-44.45 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70219 GHz	-50.93 dBm	-37.93 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.94688 GHz	-56.10 dBm	-43.10 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.04294 GHz	-54.61 dBm	-41.61 dB

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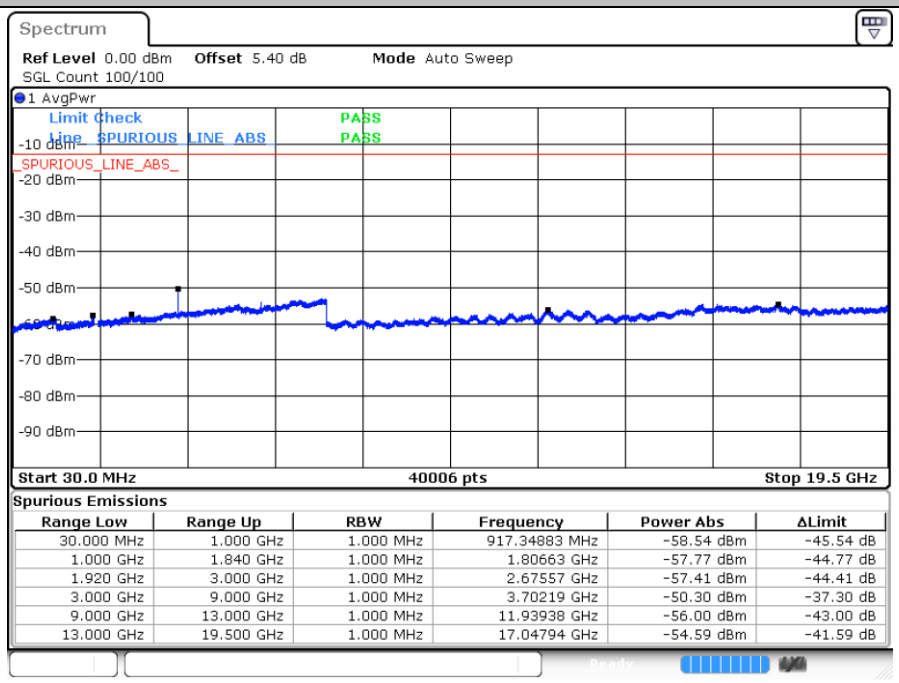
Highest Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	917.34883 MHz	-58.54 dBm	-45.54 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.80663 GHz	-57.77 dBm	-44.77 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.67557 GHz	-57.41 dBm	-44.41 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70219 GHz	-50.30 dBm	-37.30 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.93938 GHz	-56.00 dBm	-43.00 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.04794 GHz	-54.59 dBm	-41.59 dB

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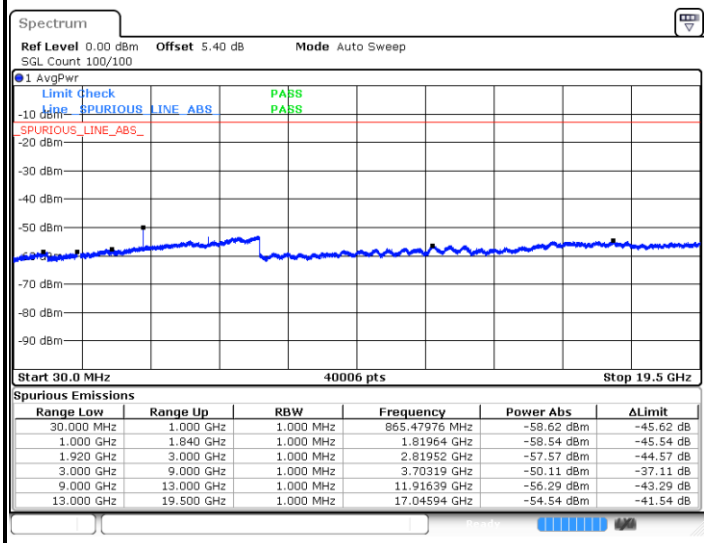
LTE Band 2 / 20MHz

Lowest Channel / QPSK

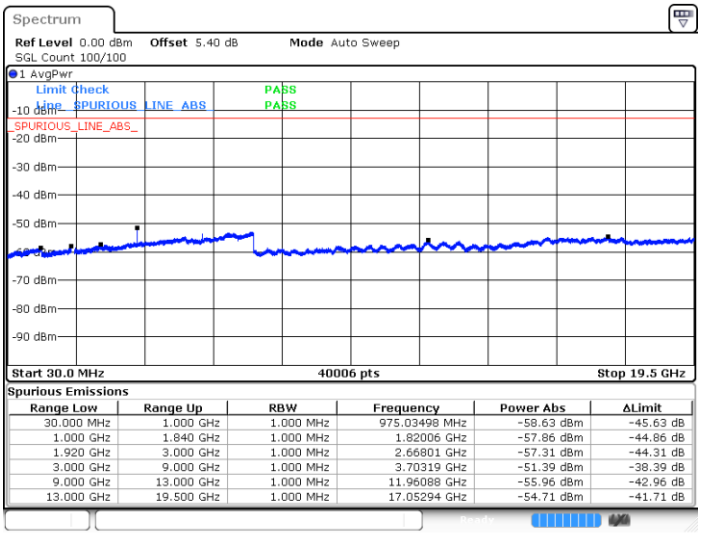


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	865.47976 MHz	-58.62 dBm	-45.62 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.81964 GHz	-58.54 dBm	-45.54 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.81952 GHz	-57.57 dBm	-44.57 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70319 GHz	-50.11 dBm	-37.11 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.91639 GHz	-56.29 dBm	-43.29 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.04594 GHz	-54.54 dBm	-41.54 dB

Date: 17.OCT.2022 20:08:15

Middle Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	975.03498 MHz	-58.63 dBm	-45.63 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.82006 GHz	-57.86 dBm	-44.86 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.66801 GHz	-57.31 dBm	-44.31 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70319 GHz	-51.39 dBm	-38.39 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.96088 GHz	-55.96 dBm	-42.96 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.05294 GHz	-54.71 dBm	-41.71 dB

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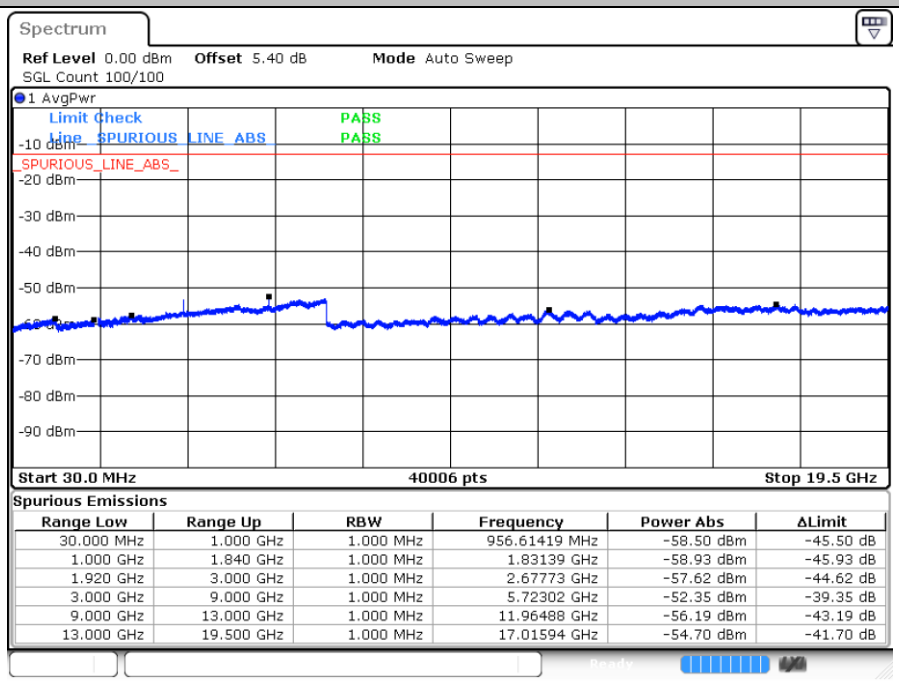
Highest Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	956.61419 MHz	-58.50 dBm	-45.50 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83139 GHz	-58.93 dBm	-45.93 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.67773 GHz	-57.62 dBm	-44.62 dB
3.000 GHz	9.000 GHz	1.000 MHz	5.72302 GHz	-52.35 dBm	-39.35 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.96488 GHz	-56.19 dBm	-43.19 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.01594 GHz	-54.70 dBm	-41.70 dB

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Frequency Stability

Test Conditions		LTE Band 2 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0012	PASS
40	Normal Voltage	0.0017	
30	Normal Voltage	0.0009	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0021	
0	Normal Voltage	0.0016	
-10	Normal Voltage	0.0013	
-20	Normal Voltage	0.0027	
-30	Normal Voltage	0.0021	
20	Maximum Voltage	0.0025	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0017	

Note:

1. Normal Voltage =3.8 V. ; Battery End Point (BEP) =3.0 V. ; Maximum Voltage =4.35 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

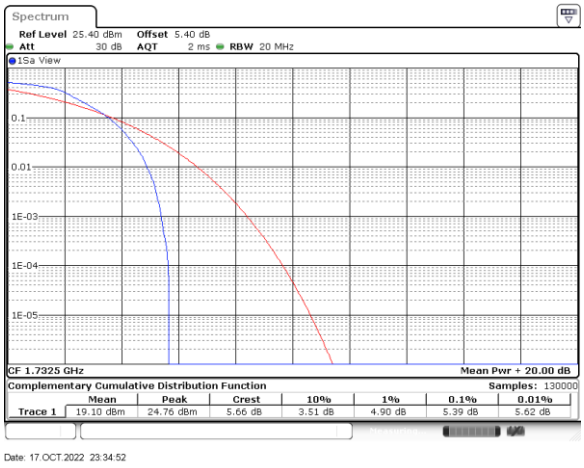
LTE Band 4

Peak-to-Average Ratio

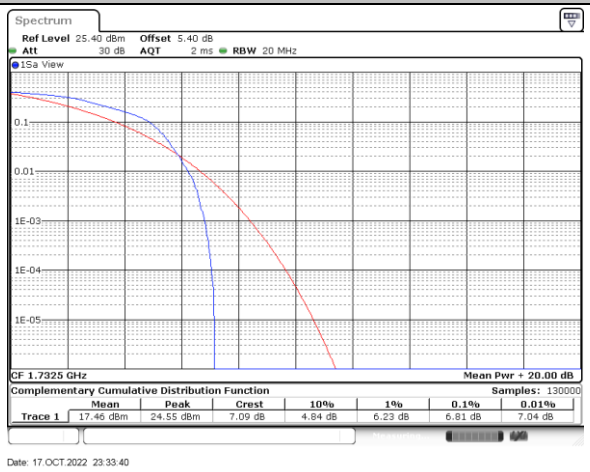
Mode	LTE Band 4 / 20MHz			
Mod.	QPSK	16QAM		Limit: 13dB
RB Size	Full RB	Full RB		Result
Middle CH	5.39	6.81		PASS

LTE Band 4 / 20MHz

Middle Channel / Full RB/ QPSK



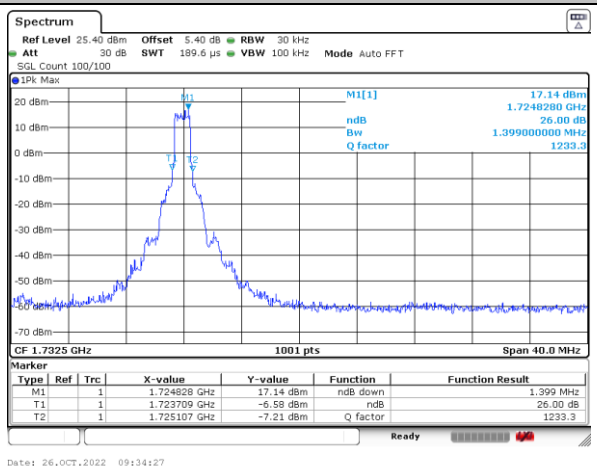
Middle Channel / Full RB/ 16QAM

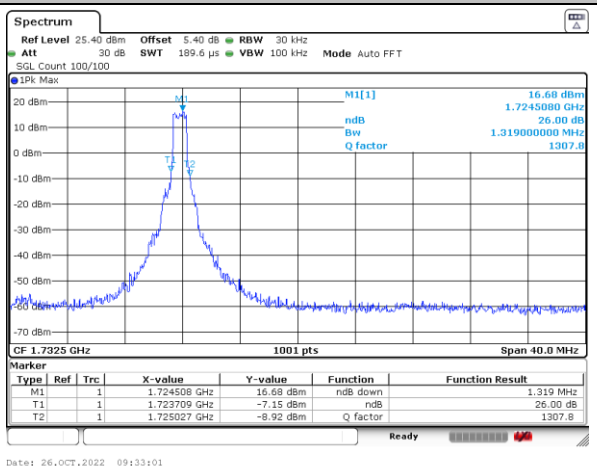


26dB Bandwidth

Mode	LTE Band 4 : 26dB BW(MHz)	
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	1.399	1.319

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

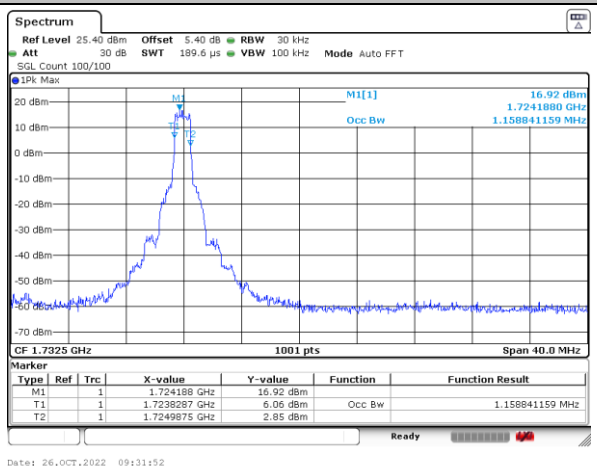


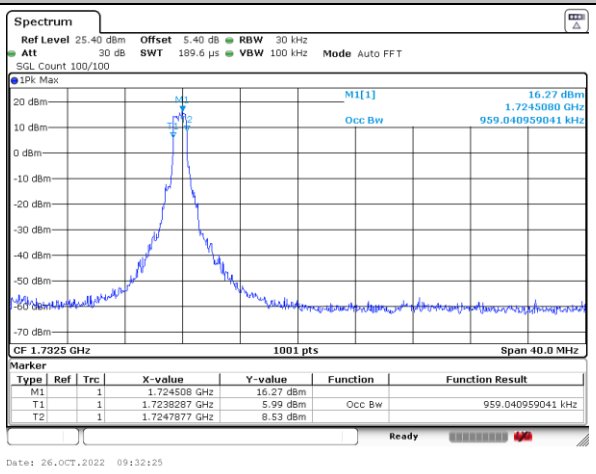


Occupied Bandwidth

Mode	LTE Band 4 : 99%OBW(MHz)	
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	1.159	0.959

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

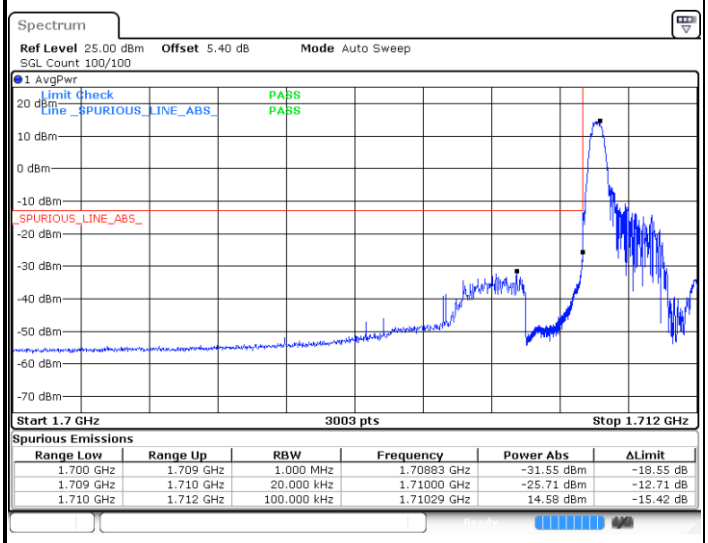




Conducted Band Edge

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	1.70883 GHz	-31.55 dBm	-18.55 dB
1.709 GHz	1.710 GHz	20.000 kHz	1.71000 GHz	-25.71 dBm	-12.71 dB
1.710 GHz	1.712 GHz	100.000 kHz	1.71029 GHz	14.58 dBm	-15.42 dB

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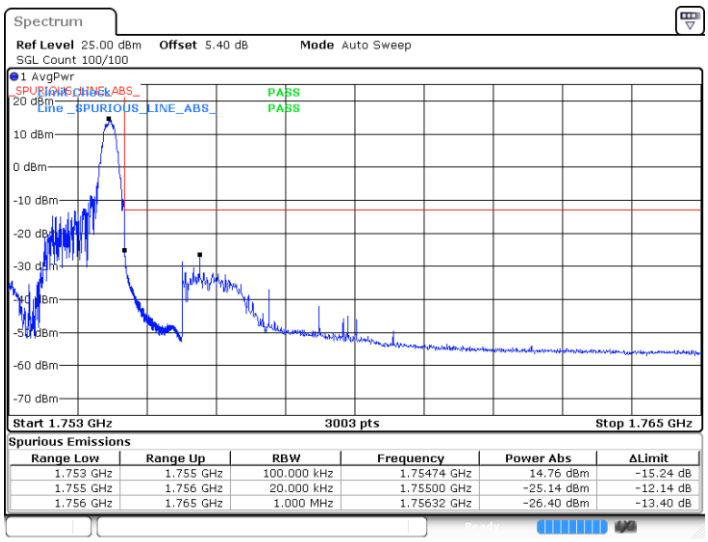
Highest Band Edge / 1RB



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.753 GHz	1.755 GHz	100.000 kHz	1.75474 GHz	14.76 dBm	-15.24 dB
1.755 GHz	1.756 GHz	20.000 kHz	1.75500 GHz	-25.14 dBm	-12.14 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75632 GHz	-26.40 dBm	-13.40 dB

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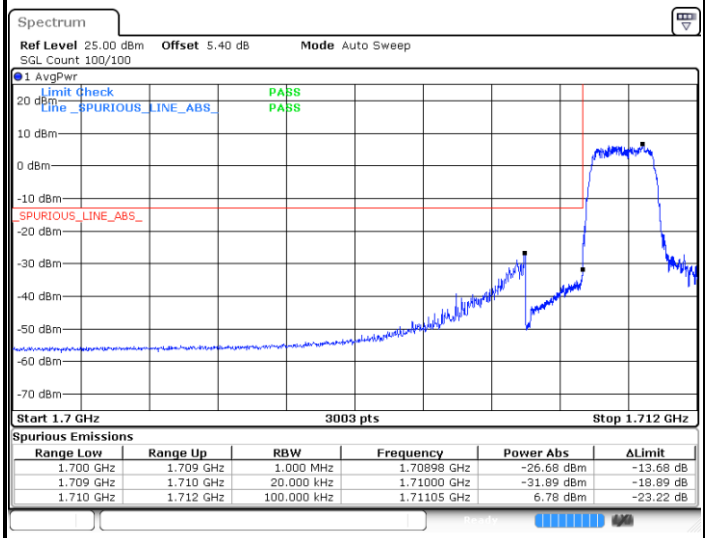
Lowest Band Edge / Full RB

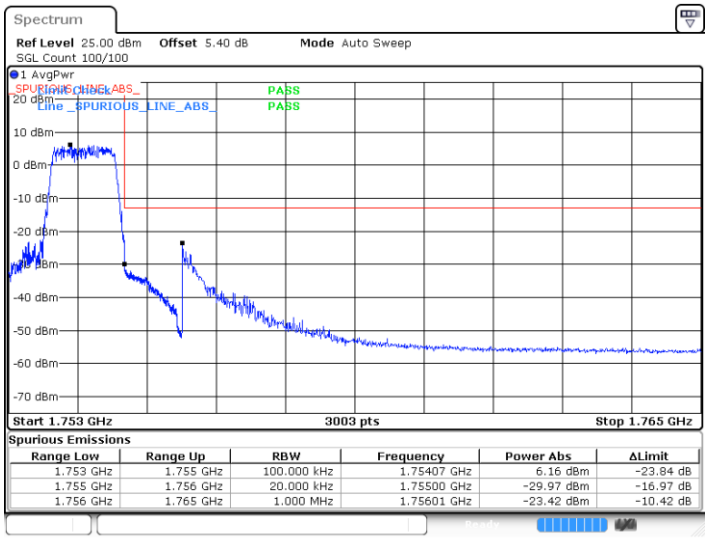


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.700 GHz	1.709 GHz	1.000 MHz	1.70898 GHz	-26.68 dBm	-13.68 dB
1.709 GHz	1.710 GHz	20.000 kHz	1.71000 GHz	-31.89 dBm	-18.89 dB
1.710 GHz	1.712 GHz	100.000 kHz	1.71105 GHz	6.78 dBm	-23.22 dB

Date: 17.OCT.2022 20:26:07

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	1.75407 GHz	6.16 dBm	-23.84 dB
1.755 GHz	1.756 GHz	20.000 kHz	1.75500 GHz	-29.97 dBm	-16.97 dB
1.756 GHz	1.765 GHz	1.000 MHz	1.75601 GHz	-23.42 dBm	-10.42 dB

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