FCC RF Test Report

APPLICANT	:	Motorola Solutions Inc.
EQUIPMENT 1	:	EVOLVE-i SMART HANDHELD W IS HICAP BATT
EQUIPMENT 2	:	1)EVOLVE SMART HANDHELD W STD BATTERY 2)EVOLVE SMART HANDHELD W HICAP BATT
BRAND NAME	:	Motorola Solutions
MODEL NAME 1	:	EVOLVE-i
MODEL NAME 2	:	EVOLVE
MODEL NUMBER 1	:	HK2137A
MODEL NUMBER 2	:	1)HK2136A 2)HK2156A
FCC ID	:	AZ489FT7134
STANDARD	:	47 CFR Part 2, 24(E)
CLASSIFICATION	:	PCS Licensed Transmitter Held to Ear (PCE)
TEST DATE(S)	:	Aug. 08, 2023 ~ Dec. 27, 2023

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

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

Jason Jia

Approved by: Jason Jia

ACCREDITED
Cert #5145.02

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

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APPENDIX A. TEST RESULTS OF CONDUCTED TEST

APPENDIX B. TEST RESULTS OF RADIATED TEST

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG052616-36	Rev. 01	Initial issue of report	Jun. 18, 2024
FG052616-36	Rev. 02	Updated the address of Applicant on Page 5	Jul. 01, 2024

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	-	Report Only	-
	§24.232(c)	Equivalent Isotropic Radiated Power (Band 2)	EIRP < 2Watt		-
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)	Conducted Band Edge Measurement (Band 2)	< 43+10log10(P[Watts])	PASS	-
3.8	§2.1051 §24.238(a)	Conducted Spurious Emission (Band 2)	< 43+10log10(P[Watts])	PASS	-
3.9	§2.1055 §24.235	Frequency Stability Temperature & Voltage	Within Authorized Band	PASS	-
4.4	§2.1053 §24.238(a)	Radiated Spurious Emission (Band 2)	< 43+10$\log_{10}$(P[Watts])	PASS	Under limit 30.68 dB at 5640.00 MHz

Remark : This is a variant report. The change note could be referred to the product equality declaration which is exhibit separately. Based on the similarity between current and previous project, only the related test cases from original report (Sporton Report Number FG052616B) were verified for the differences.

Conformity Assessment Condition:

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

Disclaimer:

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

1 General Description

1.1 Applicant

Motorola Solutions Inc.
Plot 2A, Medan Bayan Lepas, Mukim 12, S.W.D. 11900 Bayan Lepas, Penang, Malaysia.

1.2 Manufacturer

Motorola Solutions Malaysia Sdn. Bhd.
Plot 2A, Medan Bayan Lepas, Mukim 12, S.W.D. 11900 Bayan Lepas, Penang, Malaysia.

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment 1	EVOLVE-i SMART HANDHELD W IS HICAP BATT
Equipment 2	1)EVOLVE SMART HANDHELD W STD BATTERY 2)EVOLVE SMART HANDHELD W HICAP BATT
Brand Name	Motorola Solutions
Model Name 1	EVOLVE-i
Model Name 2	EVOLVE
Model Number 1	HK2137A
Model Number 2	1)HK2136A 2)HK2156A
FCC ID	AZ489FT7134
IMEI Code	Conducted: 354850210012191/354850215012196 Radiation: 354850210012076
SN Code	Conducted: 845DXC0071 Radiation: 845DXC0059
HW Version	PVT
SW Version	EVOLVE-userdebug 10 QKQ1.200623.002 D01.01.43 release-keys
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
Rx Frequency	LTE Band 2 : 1930 MHz ~ 1990 MHz
Bandwidth	LTE Band 2 :1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz
Maximum Output Power to Antenna	LTE Band 2 : 22.42 dBm
Antenna Type	Main Antenna: Fixed Stub Antenna DIV Antenna 1: IFA Antenna DIV Antenna 2: Loop Antenna
Antenna Gain	LTE Band 2 : 3.5 dBi
Type of Modulation	QPSK / 16QAM

1.5 Modification of EUT

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

1.6 Specification of Accessory

Accessories Information				
MUC Charger base	**Brand Name**	Motorola	**P/N**	PMPN4563A
AC Adapter 3 MUC(US）	**Brand Name**	Motorola	**P/N**	PS000150A11
	Power Rating	I/P: 100–240Vac, 1.3A, O/P: 15Vdc, 6A		
AC Adapter 1 (US) Micro-USB rapid-rate plug-in charger	**Brand Name**	Motorola	**P/N**	PS000150A11
	Power Rating	I/P: 100 - 240Vac, 0.25A, O/P: 5Vdc, 1.5A		
DC Adapter 2 Vehicular Power Adapter (VPA)	**Brand Name**	Motorola	**P/N**	PMPN4169A
	Power Rating	I/P: 10.8 – 33.0Vac, 1.1A, O/P: 5Vdc, 1.5A		
Wired Remote Speaker Mic	**Brand Name**	Motorola Solutions	**P/N**	PMMN4125B
	Signal Line	0.54 meter(normal), 2.5 meter (stretch) shielded cable, without ferrite core		
Bluetooth Wired Speaker Mic	**Brand Name**	Motorola Solutions	**P/N**	PMMN4127A
Bluetooth Earpiece 1	**Brand Name**	Motorola Solutions	**P/N**	PMLN7851A
Bluetooth Earpiece 2	**Brand Name**	Motorola Solutions	**P/N**	PMLN8123A
Earpiece	**Brand Name**	Motorola Solutions	**P/N**	PMLN8191A
	Signal Line	1.128meter, non-shielded cable, without ferrite core		
Battery 1	**Brand Name**	Motorola Solutions	**P/N**	BT000593A01
	Rated	5800mAh		
Battery 2	**Brand Name**	Motorola Solutions	**P/N**	BT000592A01
	Rated	2900mAh		
Battery 3	**Brand Name**	Motorola Solutions	**P/N**	BT000594A01
	Rated	5800mAh		
Belt Clip Holster	**Brand Name**	Motorola Solutions	**Model Name**	PMLN6970A
Belt Clip Holster (Long)	**Brand Name**	Motorola Solutions	**Model Name**	NTN8266B
Belt Clip Holster (Short)	**Brand Name**	Motorola Solutions	**Model Name**	PMLN7965A

1.7 Maximum EIRP Power 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)
1.4	1850.7 ~ 1909.3	0.3855	1M10G7D	0.3420	1M09W7D
3	1851.5 ~ 1908.5	0.3828	2M72G7D	0.3357	2M72W7D
5	1852.5 ~ 1907.5	0.3828	4M48G7D	0.3311	4M49W7D
10	1855.0 ~ 1905.0	0.3750	9M01G7D	0.3404	9M03W7D
15	1857.5 ~ 1902.5	0.3855	13M5G7D	0.3381	13M4W7D
20	1860.0 ~ 1900.0	0.3908	17M9G7D	0.3428	17M9W7D

Note: All modulations have been tested, and only the worst test results of PSK & QAM are shown in the report.

1.8 Testing Location

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

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

1.9 Test Software

Item	Site	Manufacture	Name	Version
1.	TH01-KS	SPORTON	FCC LTE_Ver2.0 Auto_china_210503	2.0
2.	03CH04-KS	AUDIX	E3	210616

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, 24(E)
- 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

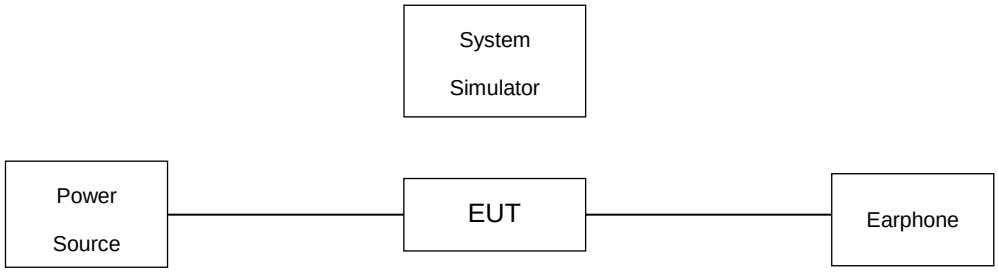
2.1 Test Mode

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. (Y Plane)

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
Peak-to-Average Ratio	2						v	v	v				v		v	
26dB and 99% Bandwidth	2	v	v	v	v	v	v	v	v				v		v	
Conducted Band Edge	2	v	v	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
Frequency Stability	2				v			v					v		v	
E.I.R.P	2	v	v	v	v	v	v	v	v		v		v	v	v	v
Radiated Spurious Emission	2	Worst Case												v	v	v
Note	1. The mark "**v** " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.															

2.2 Connection Diagram of Test System



This example is connection diagram of EUT test configurations.

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

2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	Power Supply	GWINSTEK	PSS-2002	N/A	N/A	Unshielded, 1.8 m
2.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
3.	Earphone	N/A	N/A	N/A	N/A	N/A

2.4 Measurement Results Explanation Example

For all conducted test items:

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

The spectrum analyzer offset is derived from RF cable loss

Offset = RF cable loss

Following shows an offset computation example with cable loss 5.50 dB

Example :

Offset(dB) = RF cable loss(dB)

= 5.50 (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

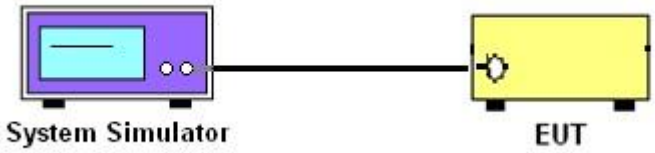
3 Conducted Test Items

3.1 Measuring Instruments

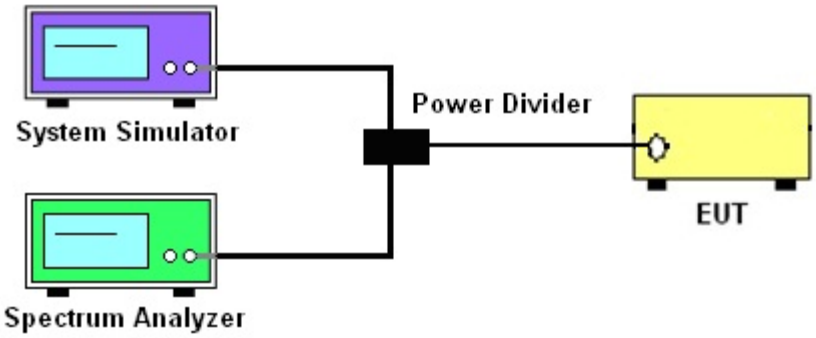
See list of measuring instruments of this test report.

3.2 Test Setup

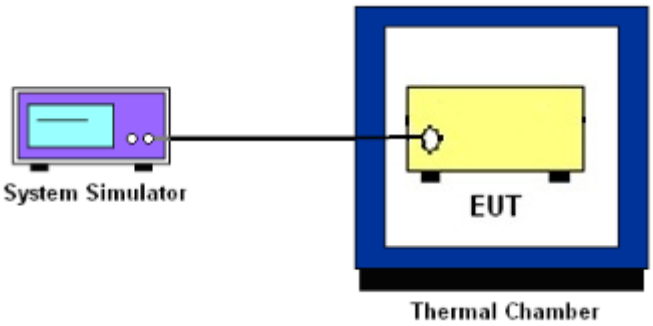
3.2.1 Conducted Output Power



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



3.2.3 Frequency Stability



3.3 Test Result of Conducted Test

Please refer to Appendix A.

3.4 Conducted Output Power and EIRP

3.4.1 Description of the Conducted Output Power Measurement and EIRP Measurement

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

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

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.

3.7.2 Test Procedures

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

   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.
8. When using the integration method, the starting frequency of the integration shall be centered at one-half of the RBW away from the band edge.

3.8 Conducted Spurious Emission

3.8.1 Description of Conducted Spurious Emission Measurement

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

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

3.8.2 Test Procedures

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

3.9 Frequency Stability

3.9.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency.

3.9.2 Test Procedures for Temperature Variation

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

3.9.3 Test Procedures for Voltage Variation

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

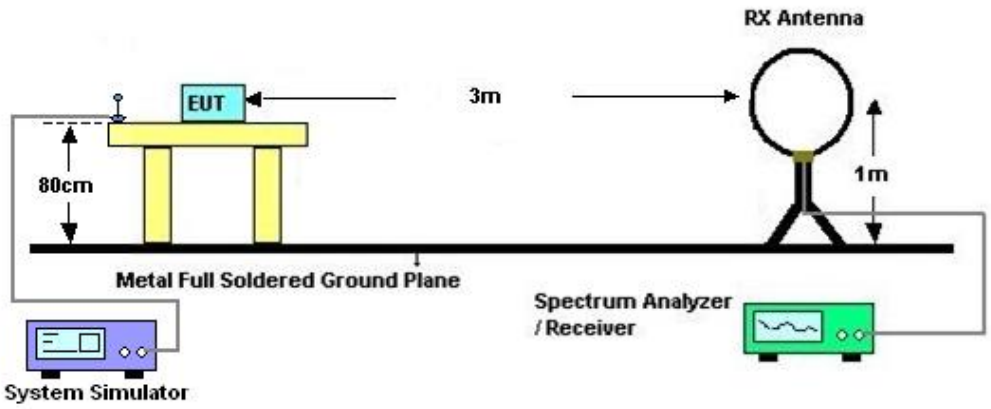
4 Radiated Test Items

4.1 Measuring Instruments

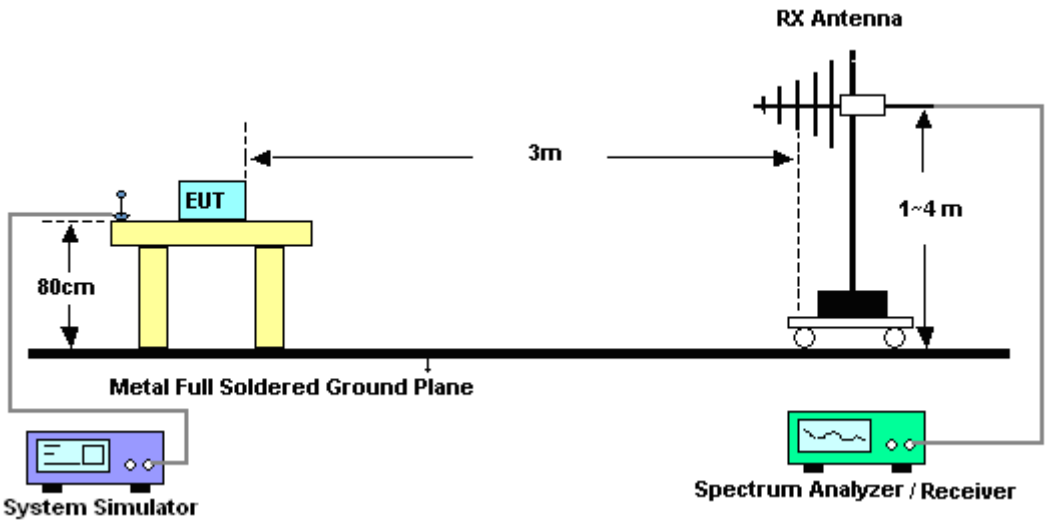
See list of measuring instruments of this test report.

4.2 Test Setup

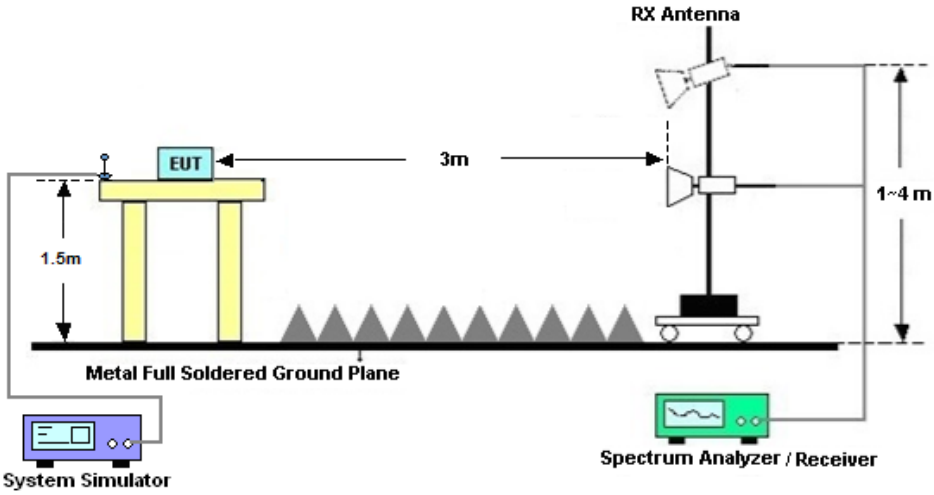
4.2.1 For radiated test below 30MHz



4.2.2 For radiated test from 30MHz to 1GHz



4.2.3 For radiated test above 1GHz



4.3 Test Result of Radiated Test

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

Please refer to Appendix B.

4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission

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

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

4.4.2 Test Procedures

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

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 12, 2022	Aug. 08, 2023~ Dec. 27, 2023	Oct. 11, 2023	Conducted (TH01-KS)
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 11, 2023		Oct. 10, 2024	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	NCR	Aug. 08, 2023~ Dec. 27, 2023	NCR	Conducted (TH01-KS)
Temperature & humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 06, 2023	Aug. 08, 2023~ Dec. 27, 2023	Jul. 05, 2024	Conducted (TH01-KS)
Loop Antenna	R&S	HFH2-Z2E	101125	9kHz~30MHz	Sep. 22, 2022	Aug. 29, 2023	Sep. 21, 2023	Radiation (03CH04-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 12, 2022	Aug. 29, 2023	Oct. 11, 2023	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	Apr. 09, 2023	Aug. 29, 2023	Apr. 08, 2024	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1284	1GHz~18GHz	Oct. 16, 2022	Aug. 29, 2023	Oct. 15, 2023	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 08, 2023	Aug. 29, 2023	Jan. 07, 2024	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	380827	9KHz-1GHz	Jul. 06, 2023	Aug. 29, 2023	Jul. 05, 2024	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 05, 2023	Aug. 29, 2023	Jan. 04, 2024	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18GA	060840	1Ghz-18Ghz	Oct. 12, 2022	Aug. 29, 2023	Oct. 11, 2023	Radiation (03CH04-KS)
Amplifier	Agilent	8449B	3008A02370	1Ghz-18Ghz	Oct. 12, 2022	Aug. 29, 2023	Oct. 11, 2023	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Aug. 29, 2023	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Aug. 29, 2023	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Aug. 29, 2023	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

6 Measurement Uncertainty

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

Uncertainty of Conducted Measurement

Test Item	Uncertainty
Conducted Power	±0.46 dB
Conducted Emissions	±2.26 dB
Occupied Channel Bandwidth	±0.1 %

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

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

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

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

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

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

---------- THE END ----------

Appendix A. Test Results of Conducted Test

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

Conducted Output Power(Average power) and 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	22.24	22.42	22.23	0.3750	0.3908	0.3741
20	QPSK	1	99	22.11	22.19	22.12	0.3639	0.3707	0.3648
20	QPSK	100	0	21.22	21.26	21.21	0.2965	0.2992	0.2958
20	16QAM	1	0	21.67	21.85	21.56	0.3289	0.3428	0.3206
Channel				18675	18900	19125	EIRP(W)		
Frequency (MHz)				1857.5	1880	1902.5	L	M	H
15	QPSK	1	0	22.11	22.33	22.36	0.3639	0.3828	0.3855
15	16QAM	1	0	21.79	21.76	21.69	0.3381	0.3357	0.3304
Channel				18650	18900	19150	EIRP(W)		
Frequency (MHz)				1855	1880	1905	L	M	H
10	QPSK	1	0	22.23	22.24	22.23	0.3741	0.3750	0.3741
10	16QAM	1	0	21.82	21.67	21.82	0.3404	0.3289	0.3404
Channel				18625	18900	19175	EIRP(W)		
Frequency (MHz)				1852.5	1880	1907.5	L	M	H
5	QPSK	1	0	22.02	22.24	22.33	0.3565	0.3750	0.3828
5	16QAM	1	0	21.70	21.67	21.66	0.3311	0.3289	0.3281
Channel				18615	18900	19185	EIRP(W)		
Frequency (MHz)				1851.5	1880	1908.5	L	M	H
3	QPSK	1	0	22.21	22.33	22.20	0.3724	0.3828	0.3715
3	16QAM	1	0	21.58	21.76	21.53	0.3221	0.3357	0.3184
Channel				18607	18900	19193	EIRP(W)		
Frequency (MHz)				1850.7	1880	1909.3	L	M	H
1.4	QPSK	1	0	22.11	22.23	22.36	0.3639	0.3741	0.3855
1.4	16QAM	1	0	21.79	21.84	21.69	0.3381	0.3420	0.3304

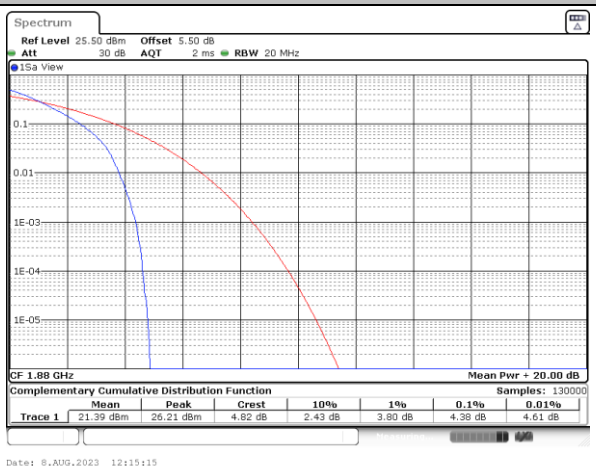
LTE Band 2

Peak-to-Average Ratio

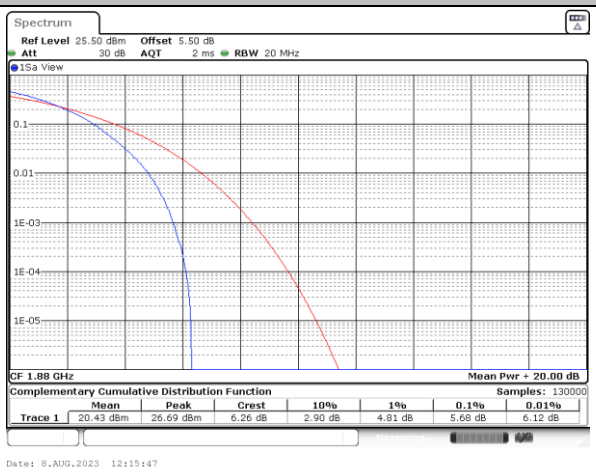
Mode	LTE Band 2 / 20MHz		
Mod.	QPSK	16QAM	Limit: 13dB
RB Size	Full RB	Full RB	Result
Middle CH	4.38	5.68	PASS

LTE Band 2 / 20MHz

Middle Channel / Full RB/ QPSK



Middle Channel / Full RB/ 16QAM

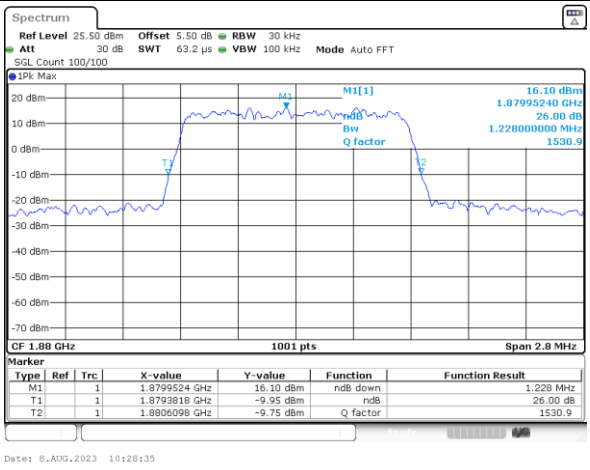


26dB Bandwidth

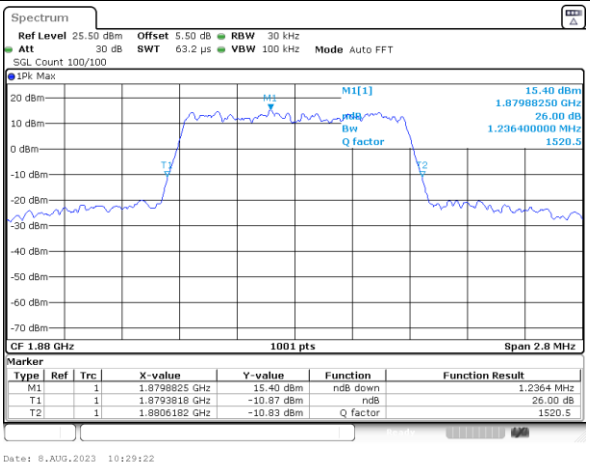
Mode	LTE Band 2 : 26dB BW(MHz)	
BW	1.4MHz	
Mod.	QPSK	16QAM
Middle CH	1.23	1.24
BW	3MHz	
Mod.	QPSK	16QAM
Middle CH	2.98	3.00
BW	5MHz	
Mod.	QPSK	16QAM
Middle CH	4.92	4.92
BW	10MHz	
Mod.	QPSK	16QAM
Middle CH	9.67	9.79
BW	15MHz	
Mod.	QPSK	16QAM
Middle CH	14.60	14.66
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	18.86	18.98

LTE Band 2

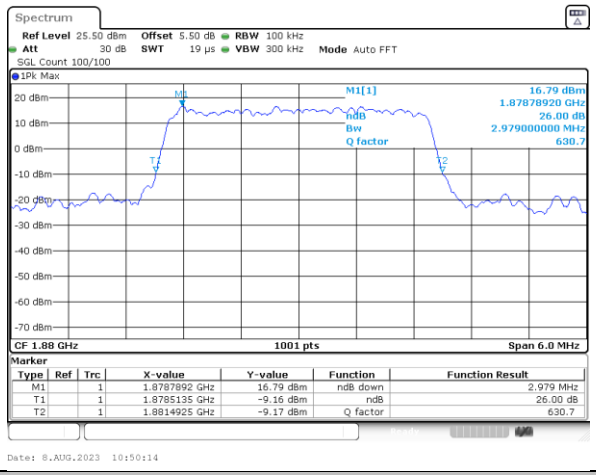
Middle Channel / 1.4MHz / QPSK



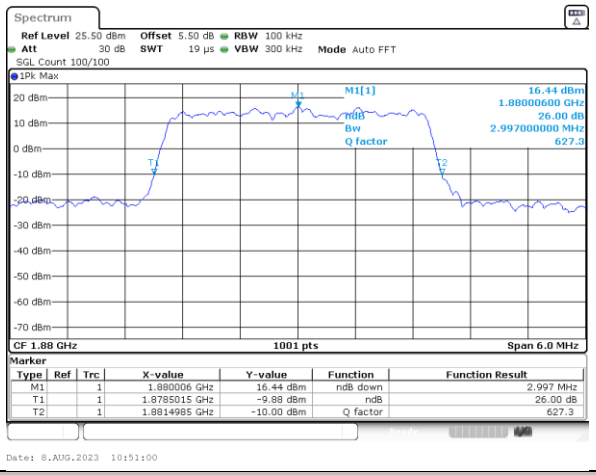
Middle Channel / 1.4MHz / 16QAM



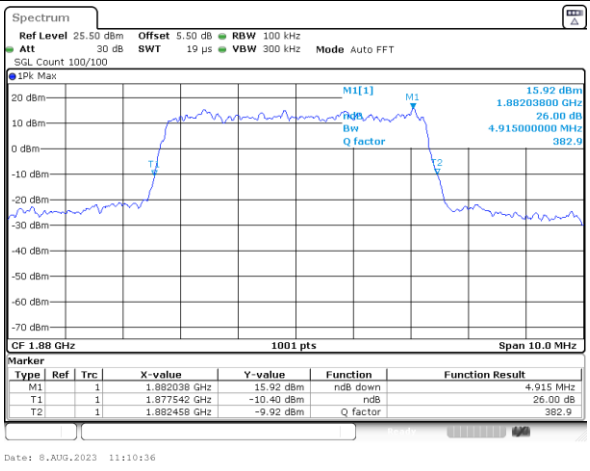
Middle Channel / 3MHz / QPSK



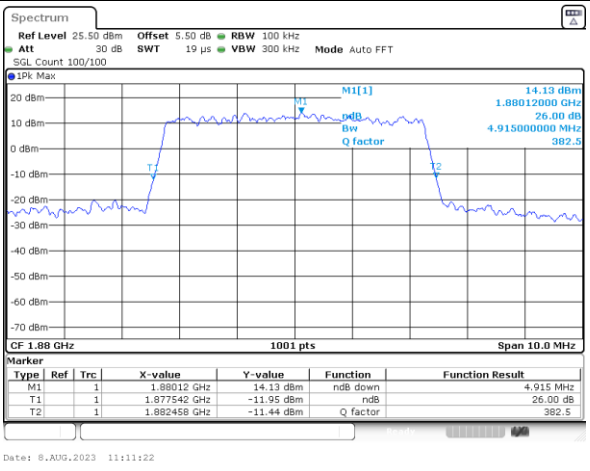
Middle Channel / 3MHz / 16QAM



Middle Channel / 5MHz / QPSK

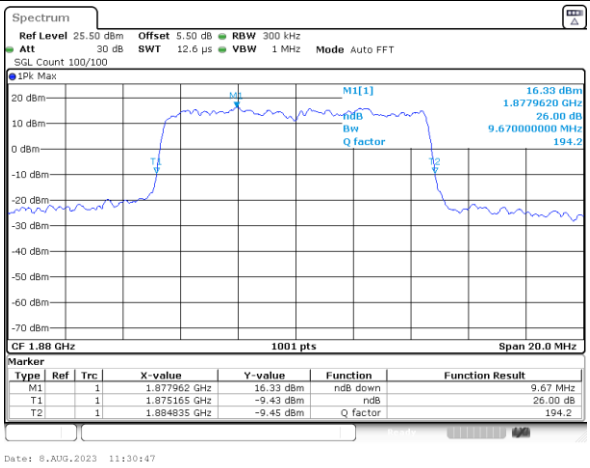


Middle Channel / 5MHz / 16QAM

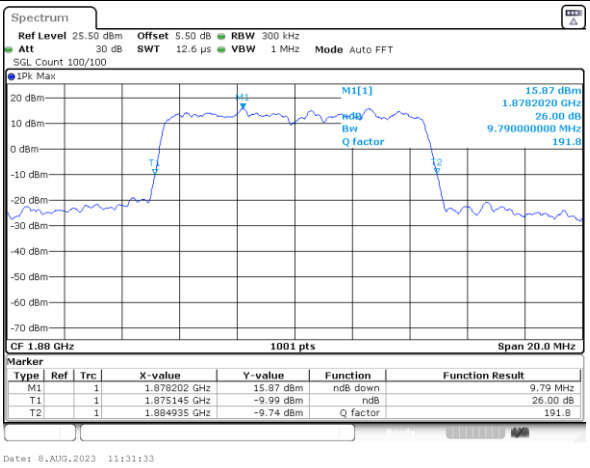


LTE Band 2

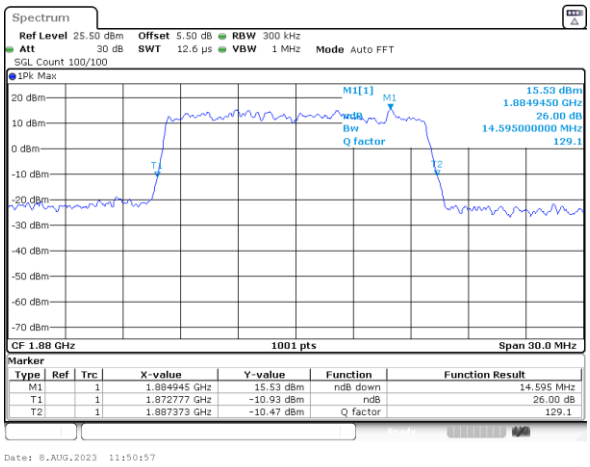
Middle Channel / 10MHz / QPSK



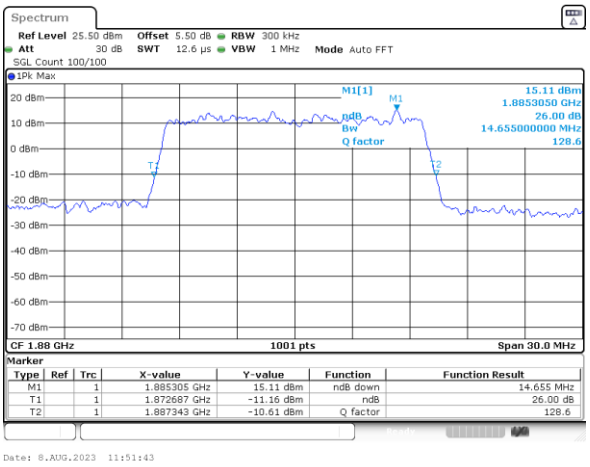
Middle Channel / 10MHz / 16QAM



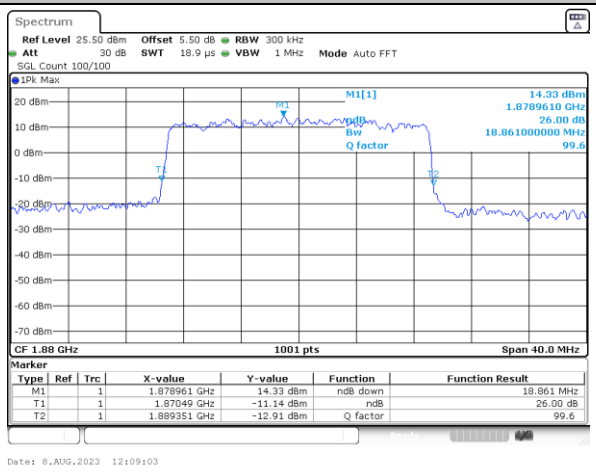
Middle Channel / 15MHz / QPSK



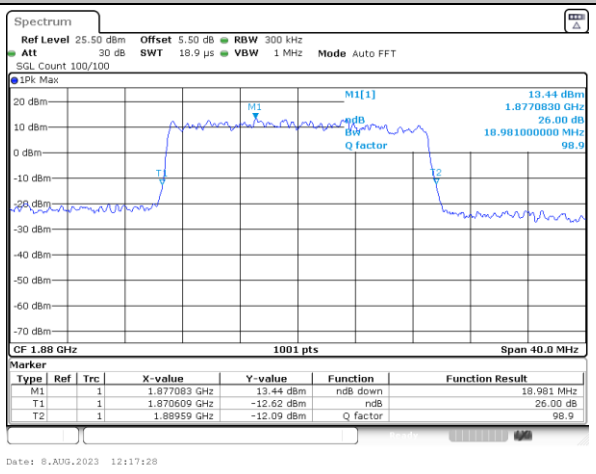
Middle Channel / 15MHz / 16QAM



Middle Channel / 20MHz / QPSK



Middle Channel / 20MHz / 16QAM

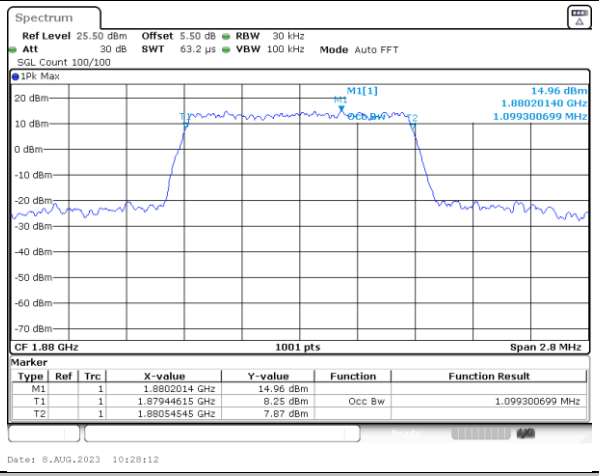


Occupied Bandwidth

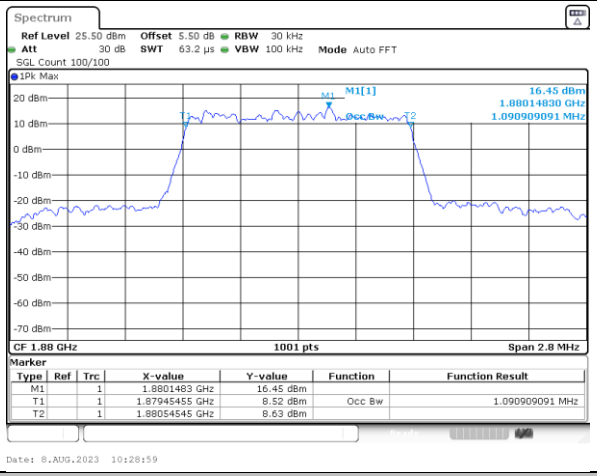
Mode	LTE Band 2 : 99%OBW(MHz)	
BW	1.4MHz	
Mod.	QPSK	16QAM
Middle CH	1.10	1.09
BW	3MHz	
Mod.	QPSK	16QAM
Middle CH	2.72	2.72
BW	5MHz	
Mod.	QPSK	16QAM
Middle CH	4.48	4.49
BW	10MHz	
Mod.	QPSK	16QAM
Middle CH	9.01	9.03
BW	15MHz	
Mod.	QPSK	16QAM
Middle CH	13.46	13.43
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	17.90	17.94

LTE Band 2

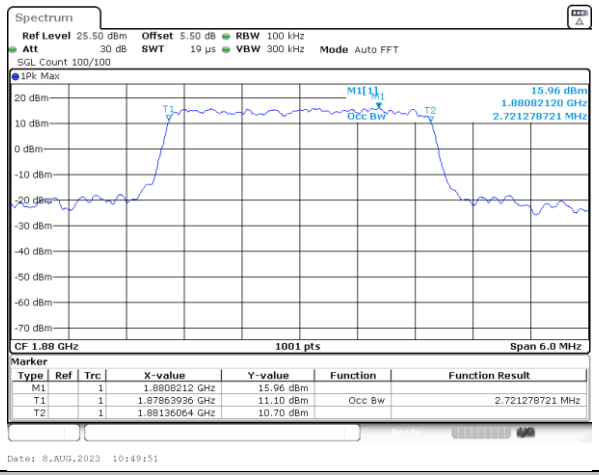
Middle Channel / 1.4MHz / QPSK



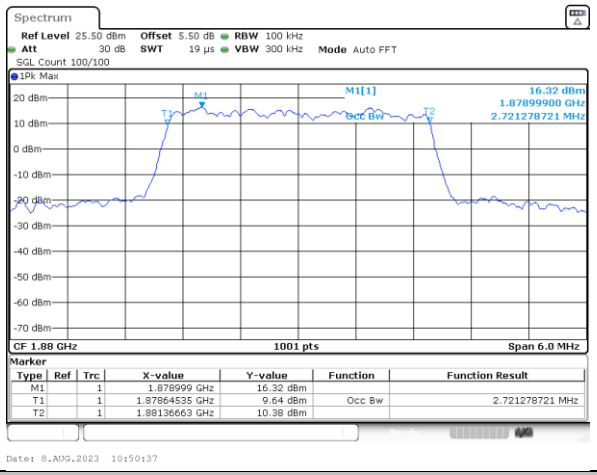
Middle Channel / 1.4MHz / 16QAM



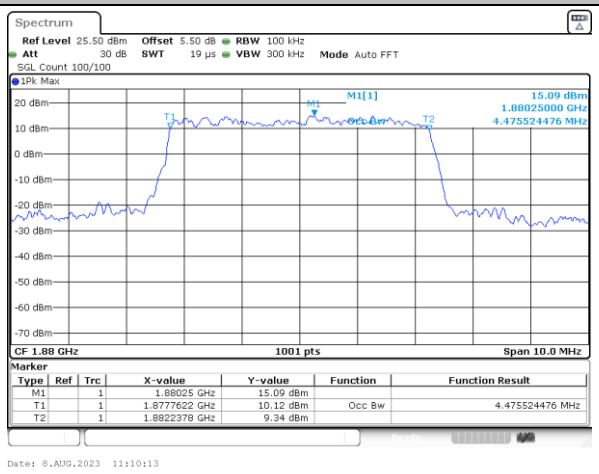
Middle Channel / 3MHz / QPSK



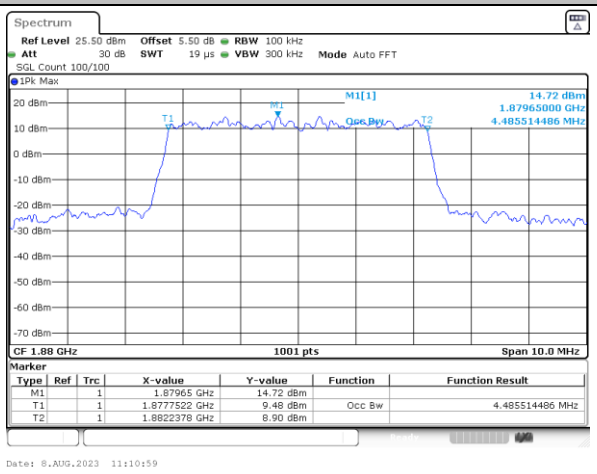
Middle Channel / 3MHz / 16QAM



Middle Channel / 5MHz / QPSK

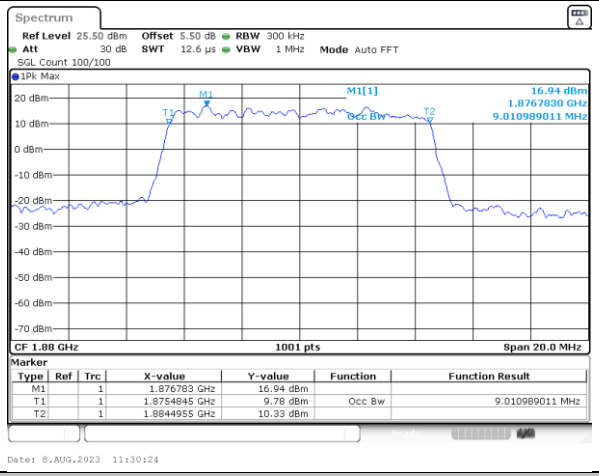


Middle Channel / 5MHz / 16QAM

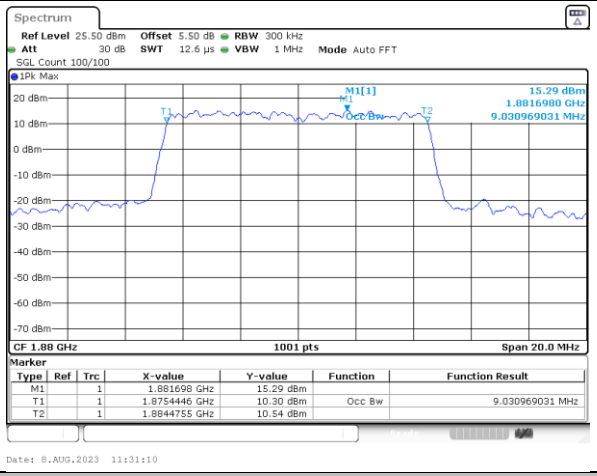


LTE Band 2

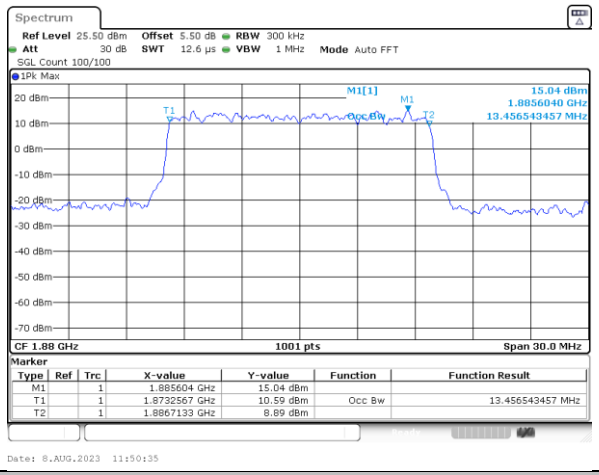
Middle Channel / 10MHz / QPSK



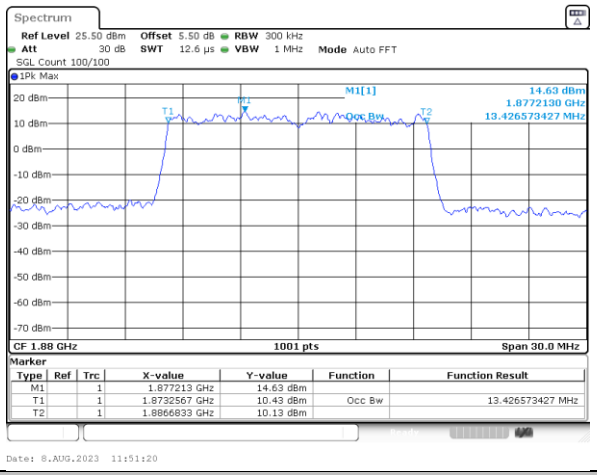
Middle Channel / 10MHz / 16QAM



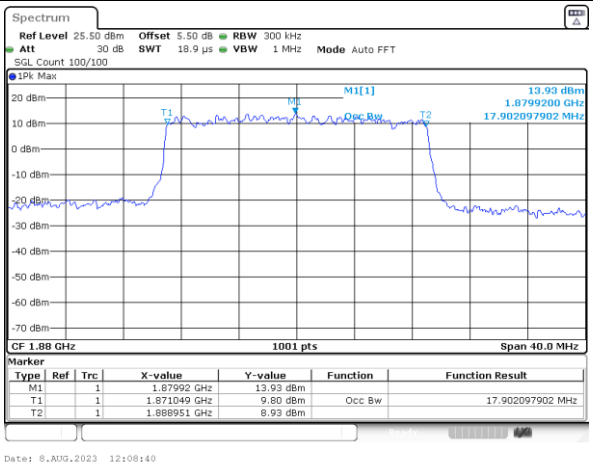
Middle Channel / 15MHz / QPSK



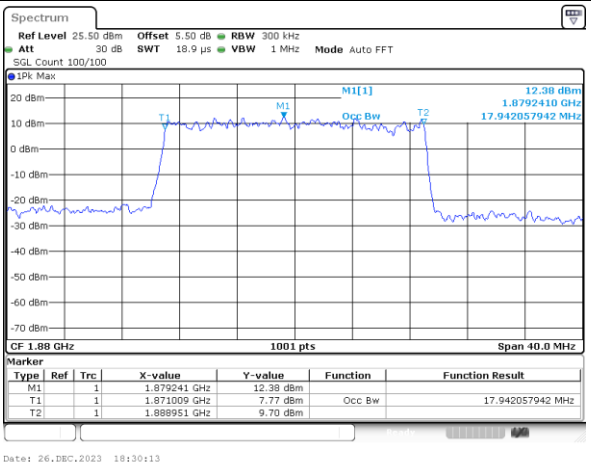
Middle Channel / 15MHz / 16QAM



Middle Channel / 20MHz / QPSK



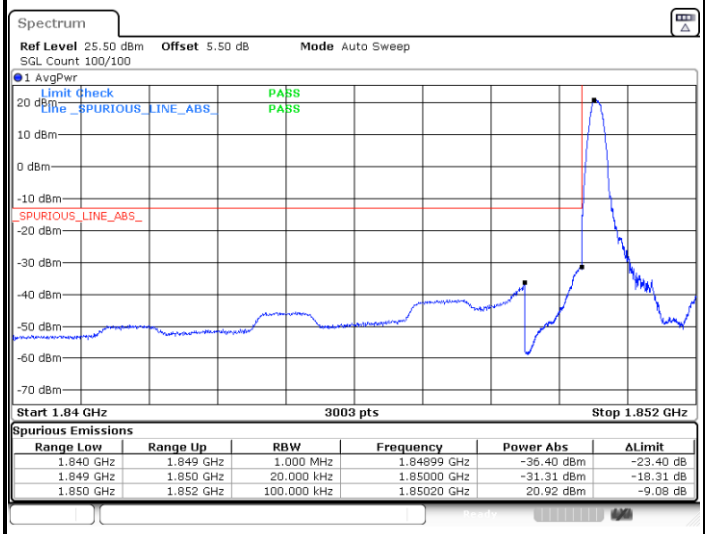
Middle Channel / 20MHz / 16QAM



Conducted Band Edge

LTE Band 2 / 1.4MHz / QPSK

Lowest Band Edge / 1RB

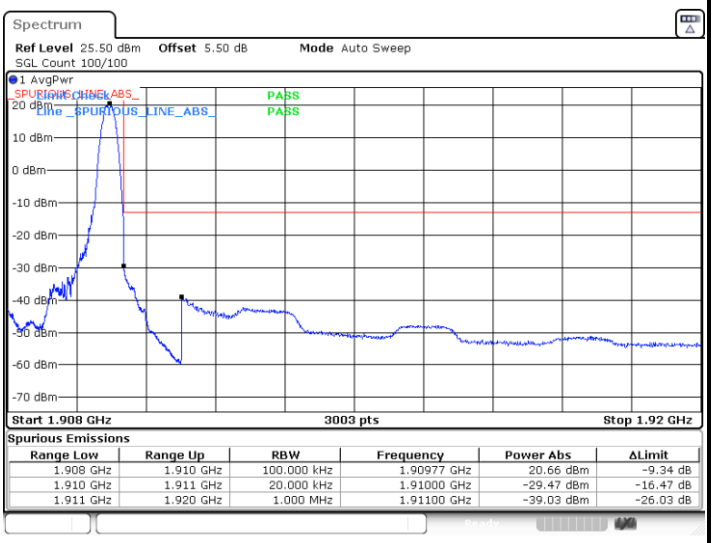


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84899 GHz	-36.40 dBm	-23.40 dB
1.849 GHz	1.850 GHz	20.000 kHz	1.85000 GHz	-31.31 dBm	-18.31 dB
1.850 GHz	1.852 GHz	100.000 kHz	1.85020 GHz	20.92 dBm	-9.08 dB

Date: 8.AUG.2023 10:00:35

Highest Band Edge / 1RB

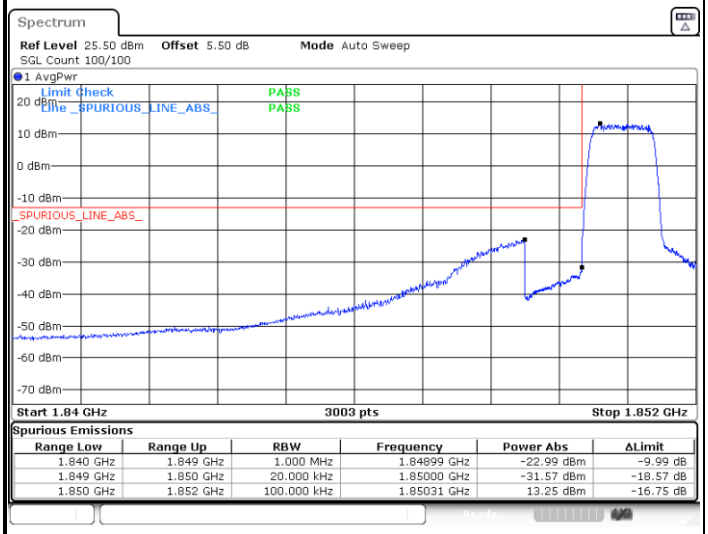


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.908 GHz	1.910 GHz	100.000 kHz	1.90977 GHz	20.66 dBm	-9.34 dB
1.910 GHz	1.911 GHz	20.000 kHz	1.91000 GHz	-29.47 dBm	-16.47 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91100 GHz	-39.03 dBm	-26.03 dB

Date: 8.AUG.2023 10:33:11

Lowest Band Edge / Full RB

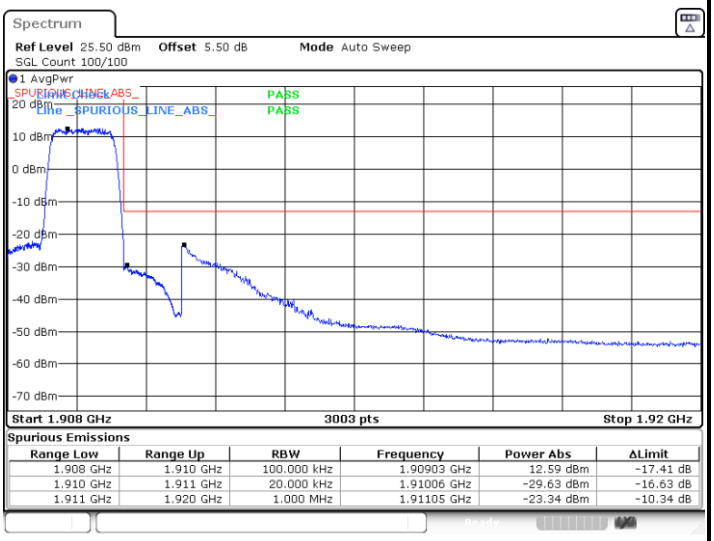


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84899 GHz	-22.99 dBm	-9.99 dB
1.849 GHz	1.850 GHz	20.000 kHz	1.85000 GHz	-31.57 dBm	-18.57 dB
1.850 GHz	1.852 GHz	100.000 kHz	1.85031 GHz	13.25 dBm	-16.75 dB

Date: 8.AUG.2023 10:21:24

Highest Band Edge / Full RB



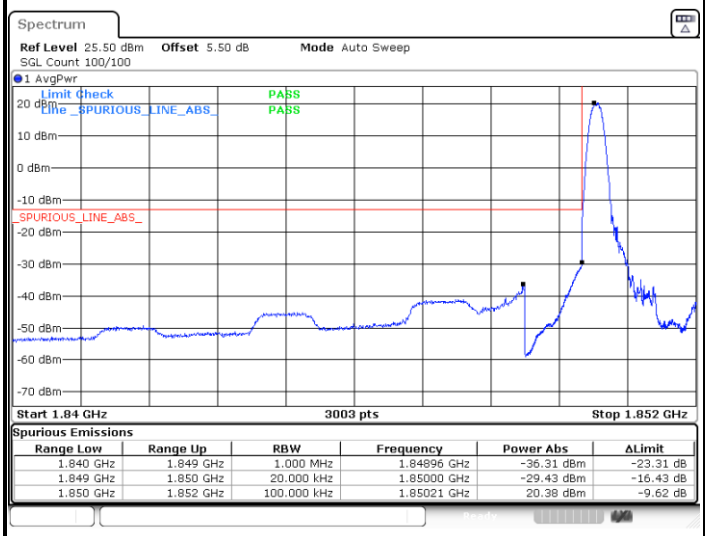
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.908 GHz	1.910 GHz	100.000 kHz	1.90903 GHz	12.59 dBm	-17.41 dB
1.910 GHz	1.911 GHz	20.000 kHz	1.91006 GHz	-29.63 dBm	-16.63 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91105 GHz	-23.34 dBm	-10.34 dB

Date: 8.AUG.2023 10:36:38

LTE Band 2 / 1.4MHz / 16QAM

Lowest Band Edge / 1 RB

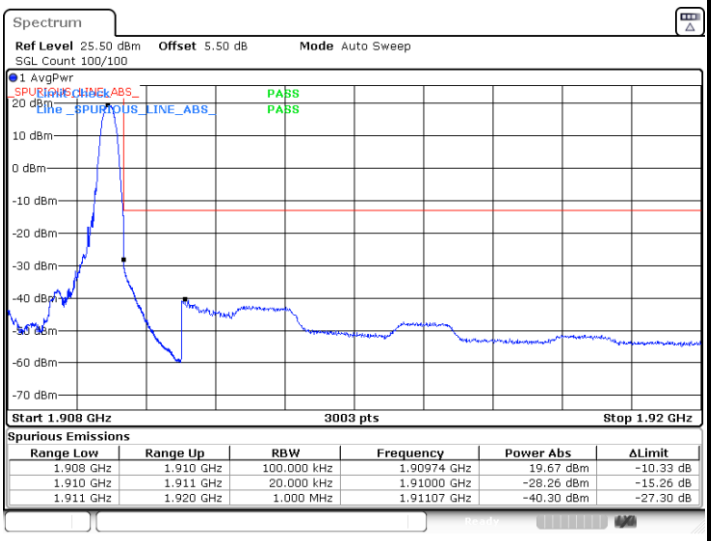


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84896 GHz	-36.31 dBm	-23.31 dB
1.849 GHz	1.850 GHz	20.000 kHz	1.85000 GHz	-29.43 dBm	-16.43 dB
1.850 GHz	1.852 GHz	100.000 kHz	1.85021 GHz	20.38 dBm	-9.62 dB

Date: 8.AUG.2023 10:19:40

Highest Band Edge / 1 RB

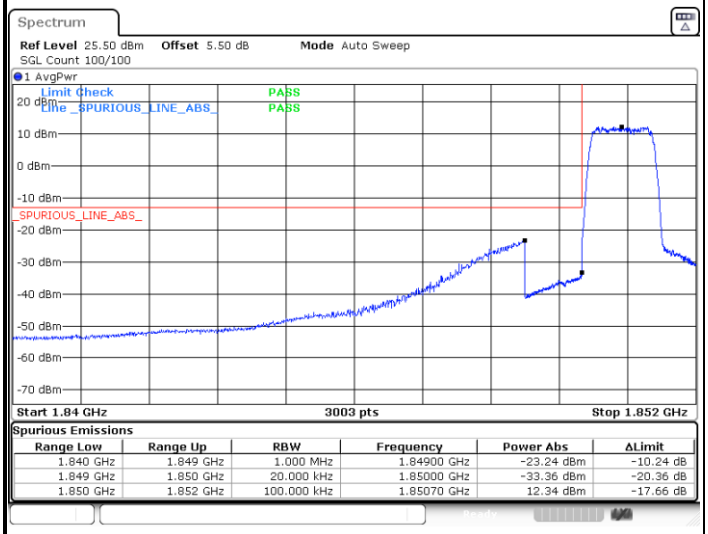


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.908 GHz	1.910 GHz	100.000 kHz	1.90974 GHz	19.67 dBm	-10.33 dB
1.910 GHz	1.911 GHz	20.000 kHz	1.91000 GHz	-28.26 dBm	-15.26 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91107 GHz	-40.30 dBm	-27.30 dB

Date: 8.AUG.2023 10:34:54

Lowest Band Edge / Full RB

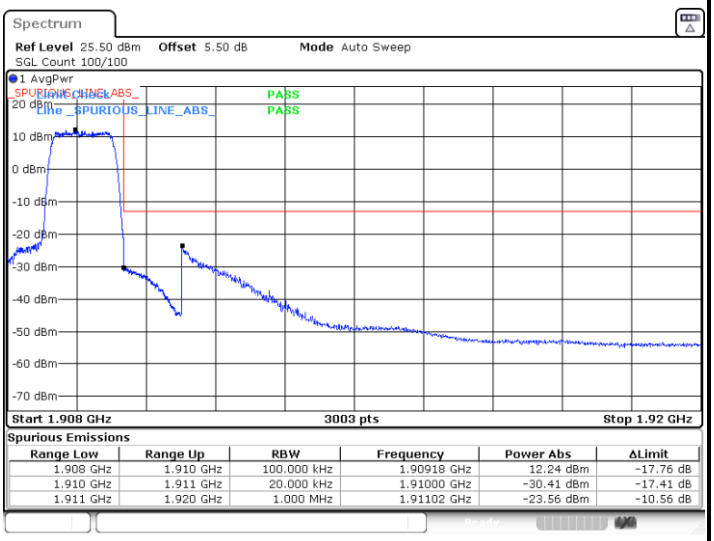


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84900 GHz	-23.24 dBm	-10.24 dB
1.849 GHz	1.850 GHz	20.000 kHz	1.85000 GHz	-33.36 dBm	-20.36 dB
1.850 GHz	1.852 GHz	100.000 kHz	1.85070 GHz	12.34 dBm	-17.66 dB

Date: 8.AUG.2023 10:23:08

Highest Band Edge / Full RB



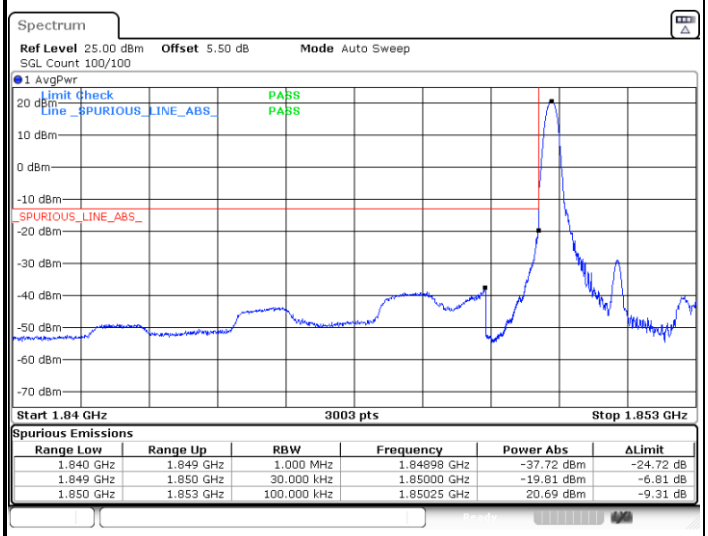
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.908 GHz	1.910 GHz	100.000 kHz	1.90918 GHz	12.24 dBm	-17.76 dB
1.910 GHz	1.911 GHz	20.000 kHz	1.91000 GHz	-30.41 dBm	-17.41 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91102 GHz	-23.56 dBm	-10.56 dB

Date: 8.AUG.2023 10:38:22

LTE Band 2 / 3MHz / QPSK

Lowest Band Edge / 1RB

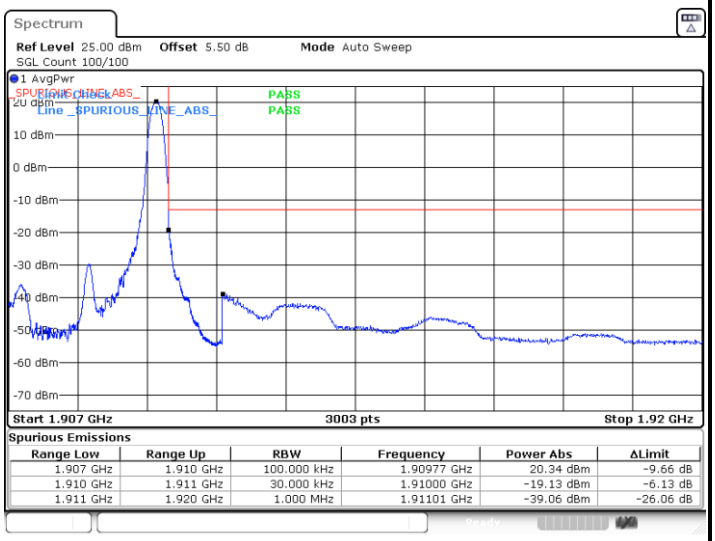


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84898 GHz	-37.72 dBm	-24.72 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.85000 GHz	-19.81 dBm	-6.81 dB
1.850 GHz	1.853 GHz	100.000 kHz	1.85025 GHz	20.69 dBm	-9.31 dB

Date: 8.AUG.2023 10:42:11

Highest Band Edge / 1 RB

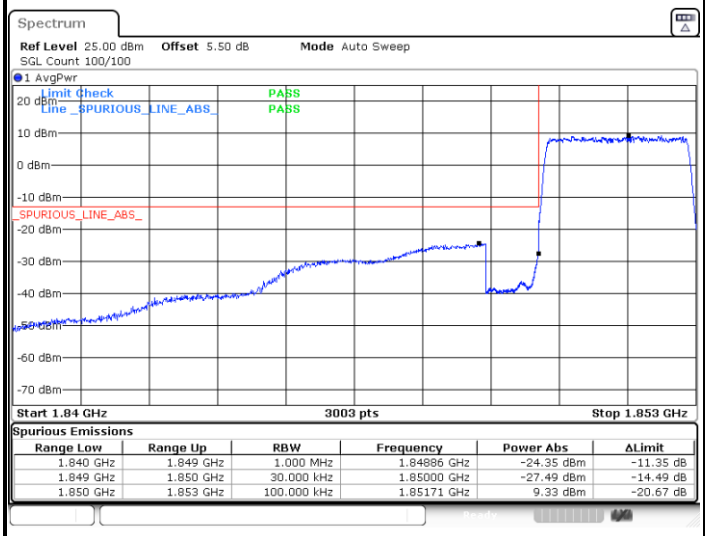


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.907 GHz	1.910 GHz	100.000 kHz	1.90977 GHz	20.34 dBm	-9.66 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91000 GHz	-19.13 dBm	-6.13 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91101 GHz	-39.06 dBm	-26.06 dB

Date: 8.AUG.2023 10:54:48

Lowest Band Edge / Full RB

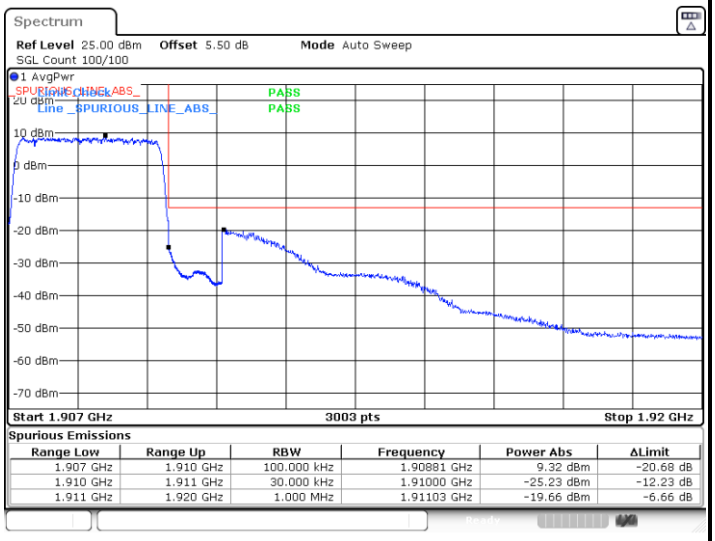


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84886 GHz	-24.35 dBm	-11.35 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.85000 GHz	-27.49 dBm	-14.49 dB
1.850 GHz	1.853 GHz	100.000 kHz	1.85171 GHz	9.33 dBm	-20.67 dB

Date: 8.AUG.2023 10:45:38

Highest Band Edge / Full RB



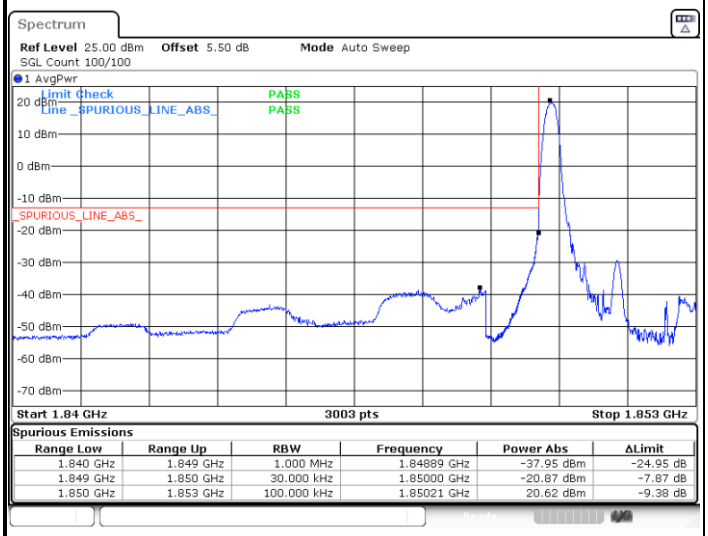
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.907 GHz	1.910 GHz	100.000 kHz	1.90881 GHz	9.32 dBm	-20.68 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91000 GHz	-25.23 dBm	-12.23 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91103 GHz	-19.66 dBm	-6.66 dB

Date: 8.AUG.2023 10:57:53

LTE Band 2 / 3MHz / 16QAM

Lowest Band Edge / 1 RB

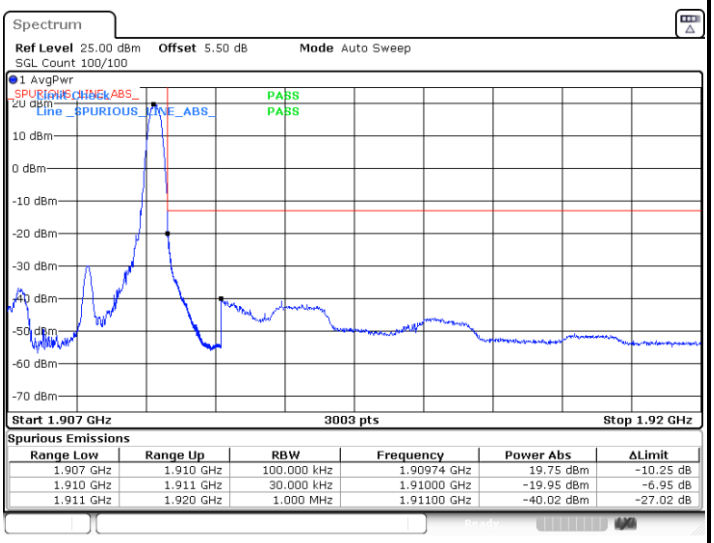


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84889 GHz	-37.95 dBm	-24.95 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.85000 GHz	-20.87 dBm	-7.87 dB
1.850 GHz	1.853 GHz	100.000 kHz	1.85021 GHz	20.62 dBm	-9.38 dB

Date: 8.AUG.2023 10:43:55

Highest Band Edge /1 RB

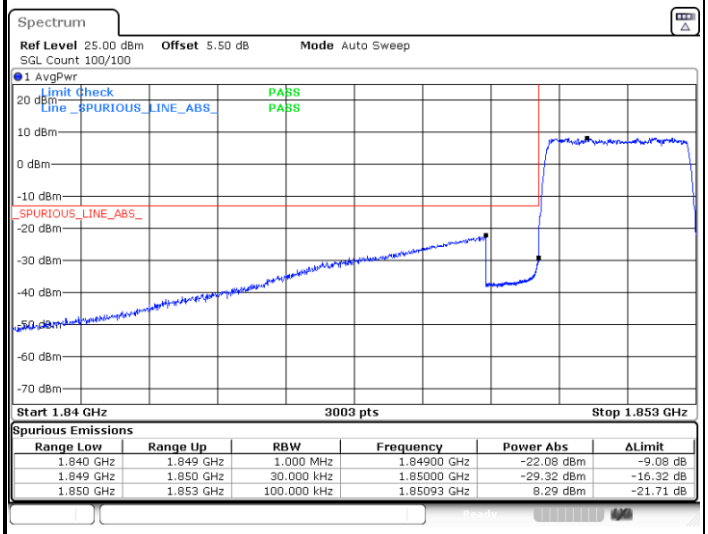


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.907 GHz	1.910 GHz	100.000 kHz	1.90974 GHz	19.75 dBm	-10.25 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91000 GHz	-19.95 dBm	-6.95 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91100 GHz	-40.02 dBm	-27.02 dB

Date: 8.AUG.2023 10:56:20

Lowest Band Edge / Full RB

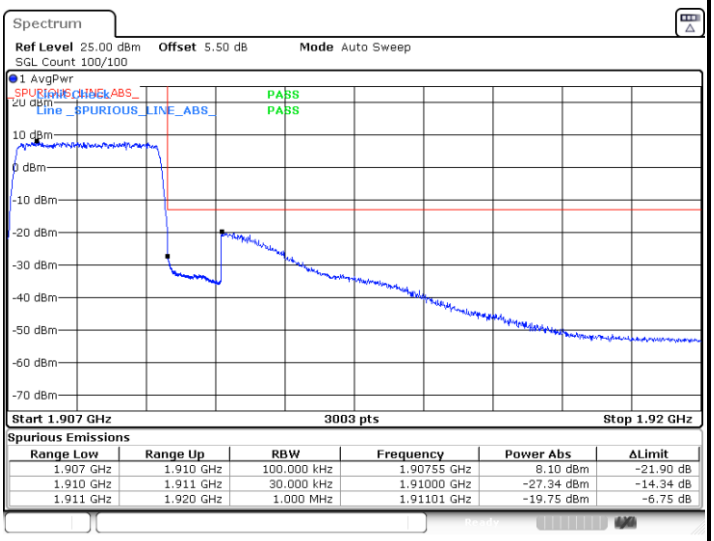


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84900 GHz	-22.08 dBm	-9.08 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.85000 GHz	-29.32 dBm	-16.32 dB
1.850 GHz	1.853 GHz	100.000 kHz	1.85093 GHz	8.29 dBm	-21.71 dB

Date: 8.AUG.2023 10:47:21

Highest Band Edge / Full RB



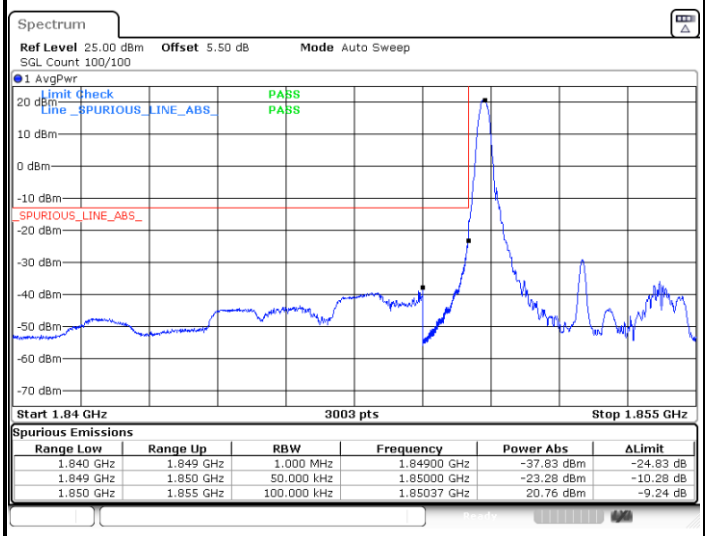
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.907 GHz	1.910 GHz	100.000 kHz	1.90755 GHz	8.10 dBm	-21.90 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91000 GHz	-27.34 dBm	-14.34 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91101 GHz	-19.75 dBm	-6.75 dB

Date: 8.AUG.2023 10:59:26

LTE Band 2 / 5MHz / QPSK

Lowest Band Edge / 1 RB

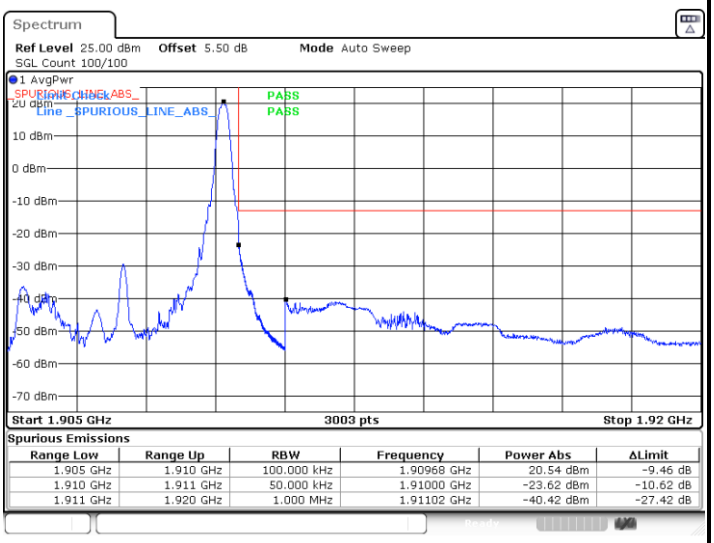


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84900 GHz	-37.83 dBm	-24.83 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.85000 GHz	-23.28 dBm	-10.28 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85037 GHz	20.76 dBm	-9.24 dB

Date: 8.AUG.2023 11:03:05

Highest Band Edge / 1 RB

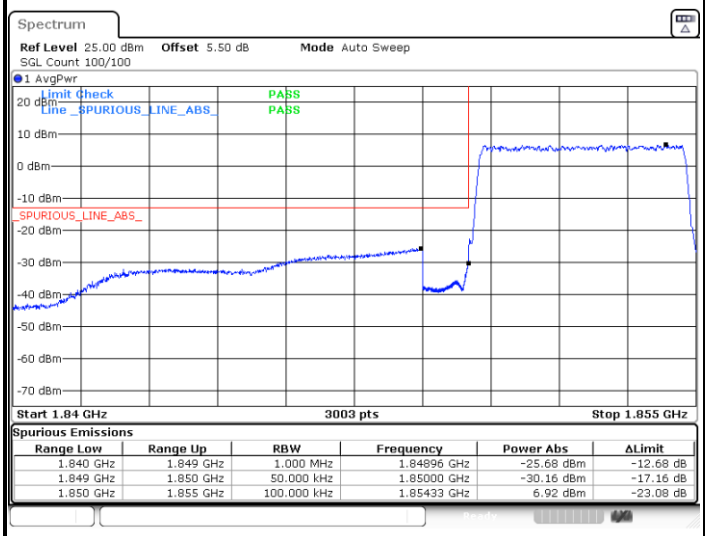


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90968 GHz	20.54 dBm	-9.46 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91000 GHz	-23.62 dBm	-10.62 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91102 GHz	-40.42 dBm	-27.42 dB

Date: 8.AUG.2023 11:15:00

Lowest Band Edge / Full RB

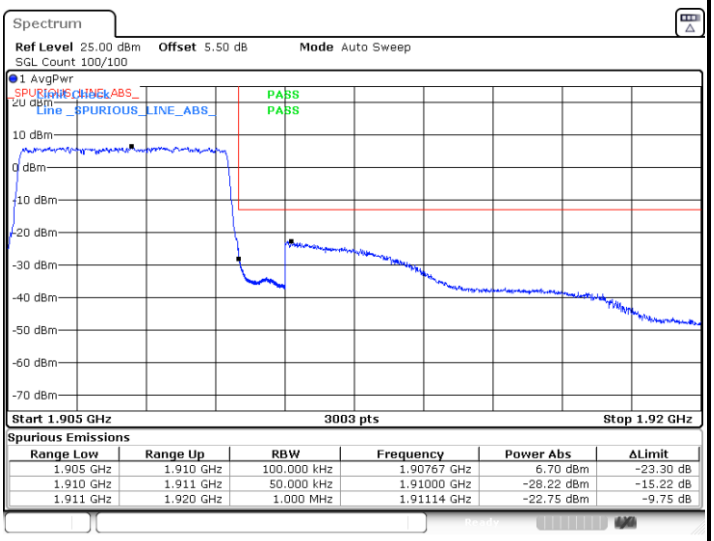


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84896 GHz	-25.68 dBm	-12.68 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.85000 GHz	-30.16 dBm	-17.16 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85433 GHz	6.92 dBm	-23.08 dB

Date: 8.AUG.2023 11:06:11

Highest Band Edge / Full RB



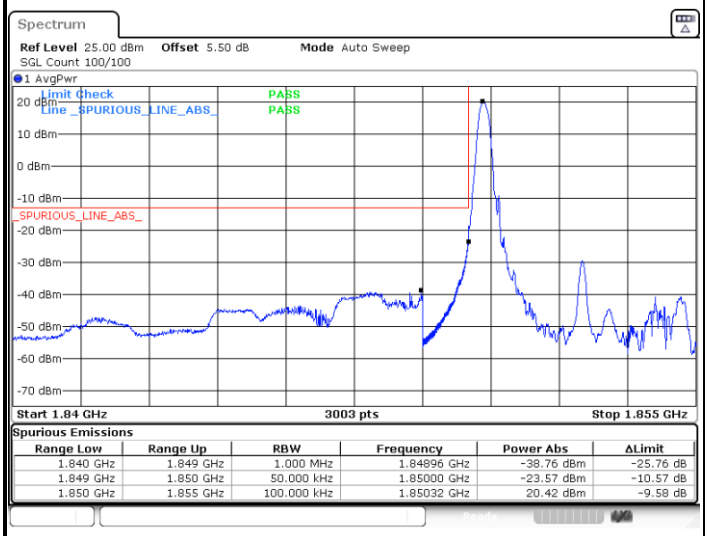
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90767 GHz	6.70 dBm	-23.30 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91000 GHz	-28.22 dBm	-15.22 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91114 GHz	-22.75 dBm	-9.75 dB

Date: 8.AUG.2023 11:18:05

LTE Band 2 / 5MHz / 16QAM

Lowest Band Edge / 1RB

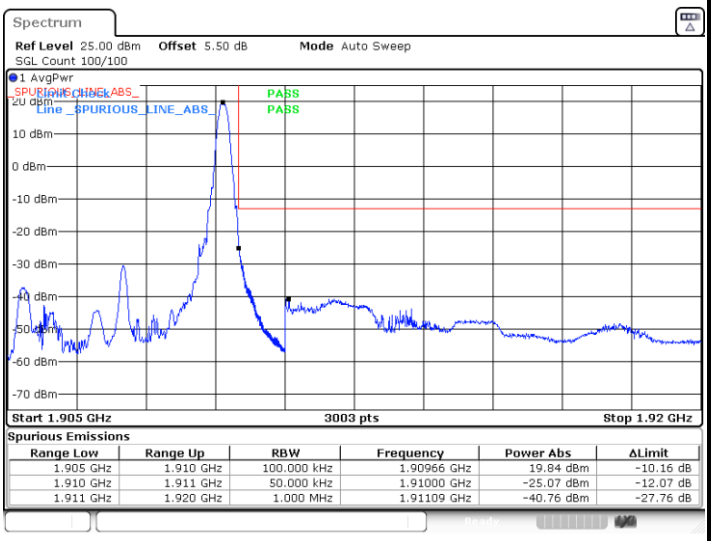


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84896 GHz	-38.76 dBm	-25.76 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.85000 GHz	-23.57 dBm	-10.57 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85032 GHz	20.42 dBm	-9.58 dB

Date: 8.AUG.2023 11:04:38

Highest Band Edge / 1 RB

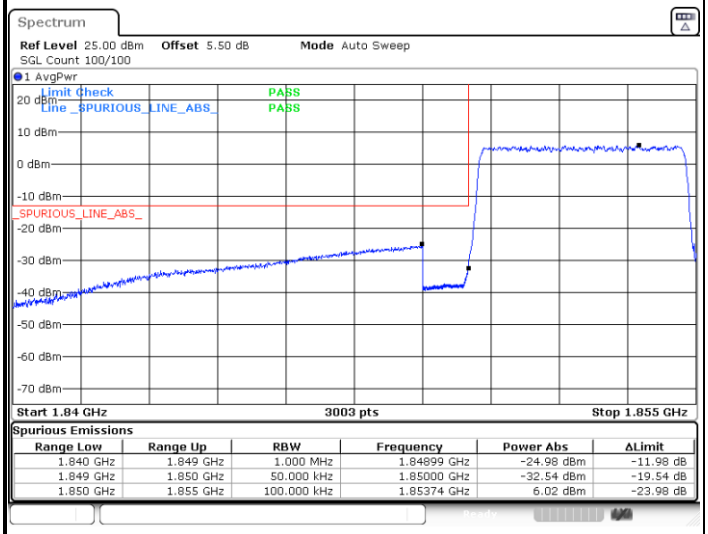


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90966 GHz	19.84 dBm	-10.16 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91000 GHz	-25.07 dBm	-12.07 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91109 GHz	-40.76 dBm	-27.76 dB

Date: 8.AUG.2023 11:16:32

Lowest Band Edge / Full RB

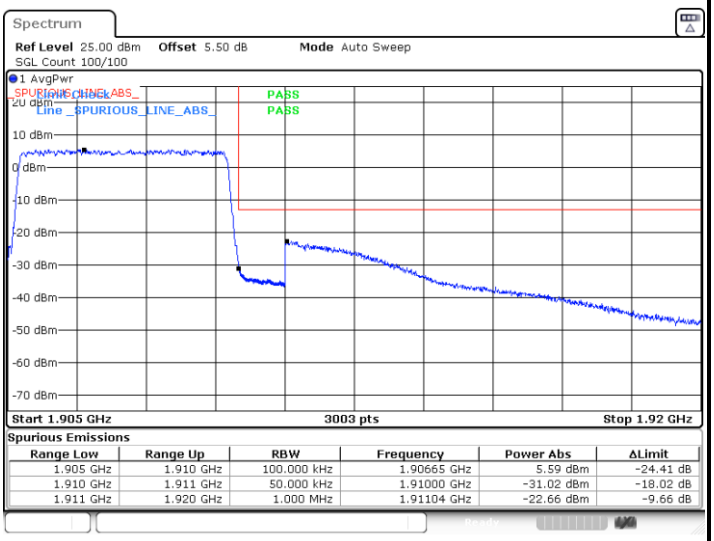


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84899 GHz	-24.98 dBm	-11.98 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.85000 GHz	-32.54 dBm	-19.54 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85374 GHz	6.02 dBm	-23.98 dB

Date: 8.AUG.2023 11:07:44

Highest Band Edge / Full RB



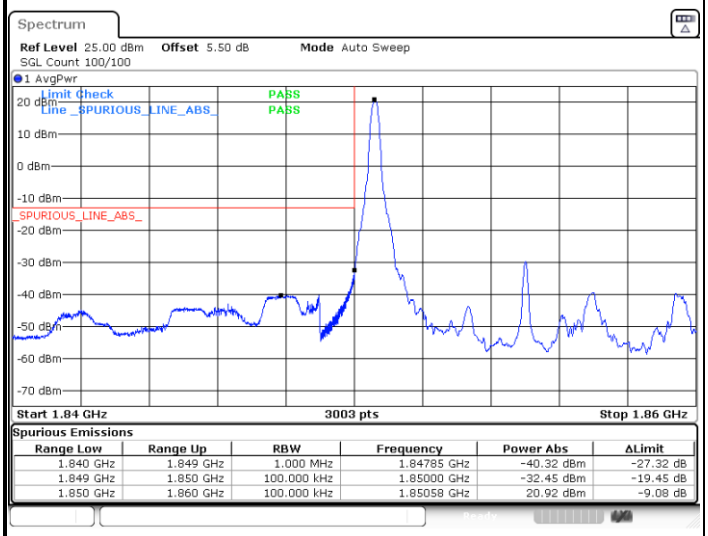
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90665 GHz	5.59 dBm	-24.41 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91000 GHz	-31.02 dBm	-18.02 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91104 GHz	-22.66 dBm	-9.66 dB

Date: 8.AUG.2023 11:19:38

LTE Band 2 / 10MHz / QPSK

Lowest Band Edge / 1 RB

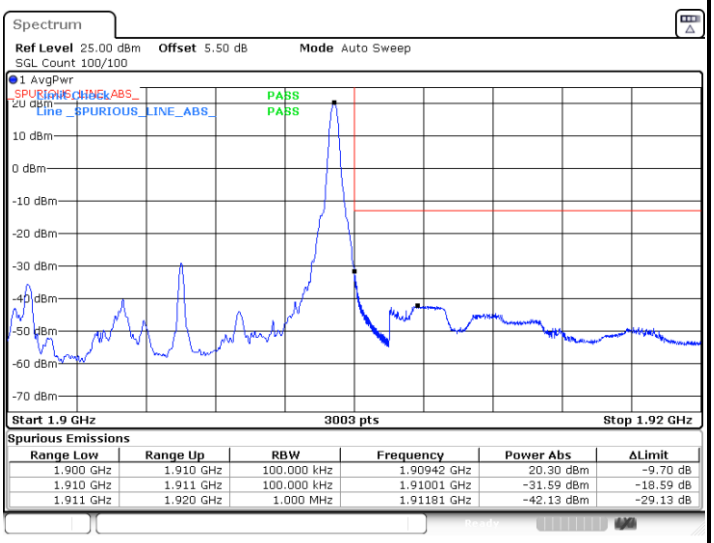


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84785 GHz	-40.32 dBm	-27.32 dB
1.849 GHz	1.850 GHz	100.000 kHz	1.85000 GHz	-32.45 dBm	-19.45 dB
1.850 GHz	1.860 GHz	100.000 kHz	1.85058 GHz	20.92 dBm	-9.08 dB

Date: 8.AUG.2023 11:23:17

Highest Band Edge / 1 RB

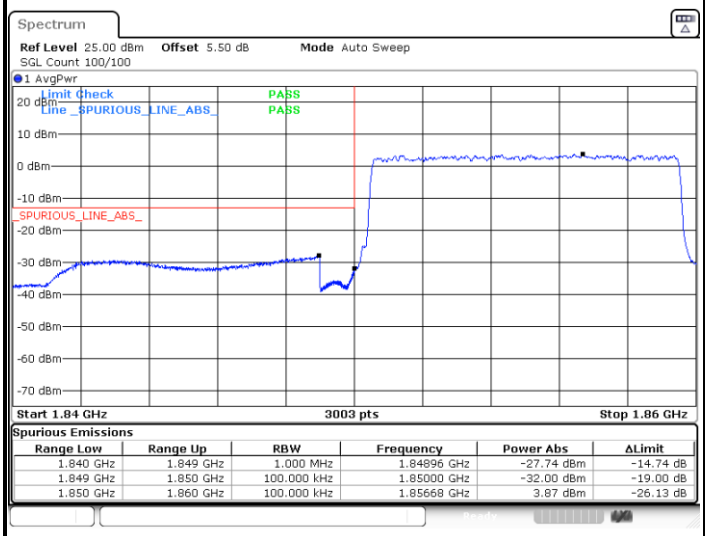


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.900 GHz	1.910 GHz	100.000 kHz	1.90942 GHz	20.30 dBm	-9.70 dB
1.910 GHz	1.911 GHz	100.000 kHz	1.91001 GHz	-31.59 dBm	-18.59 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91181 GHz	-42.13 dBm	-29.13 dB

Date: 8.AUG.2023 11:35:12

Lowest Band Edge / Full RB

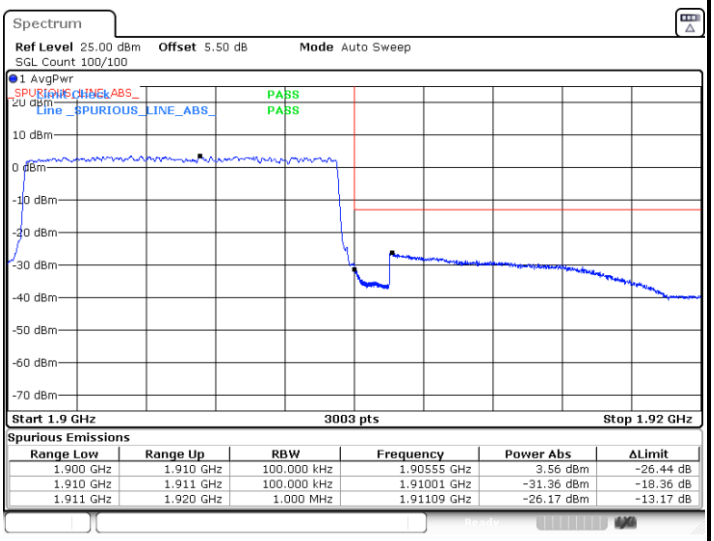


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84896 GHz	-27.74 dBm	-14.74 dB
1.849 GHz	1.850 GHz	100.000 kHz	1.85000 GHz	-32.00 dBm	-19.00 dB
1.850 GHz	1.860 GHz	100.000 kHz	1.85668 GHz	3.87 dBm	-26.13 dB

Date: 8.AUG.2023 11:26:22

Highest Band Edge / Full RB



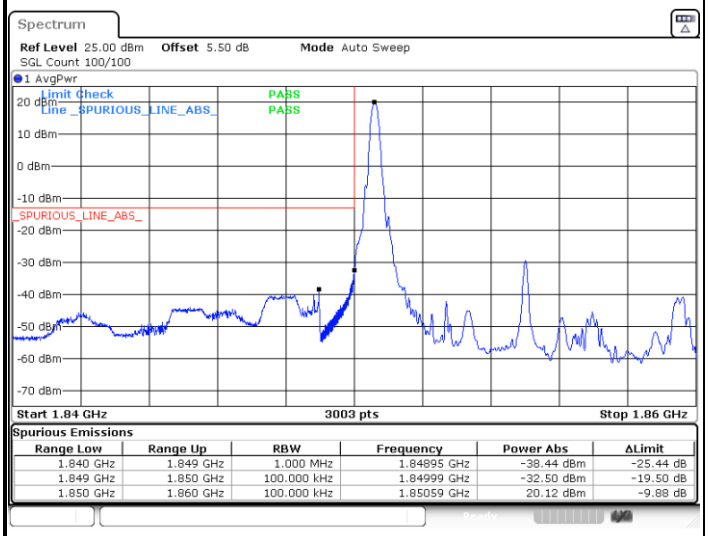
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.900 GHz	1.910 GHz	100.000 kHz	1.90555 GHz	3.56 dBm	-26.44 dB
1.910 GHz	1.911 GHz	100.000 kHz	1.91001 GHz	-31.36 dBm	-18.36 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91109 GHz	-26.17 dBm	-13.17 dB

Date: 8.AUG.2023 11:38:17

LTE Band 2 / 10MHz / 16QAM

Lowest Band Edge / 1 RB

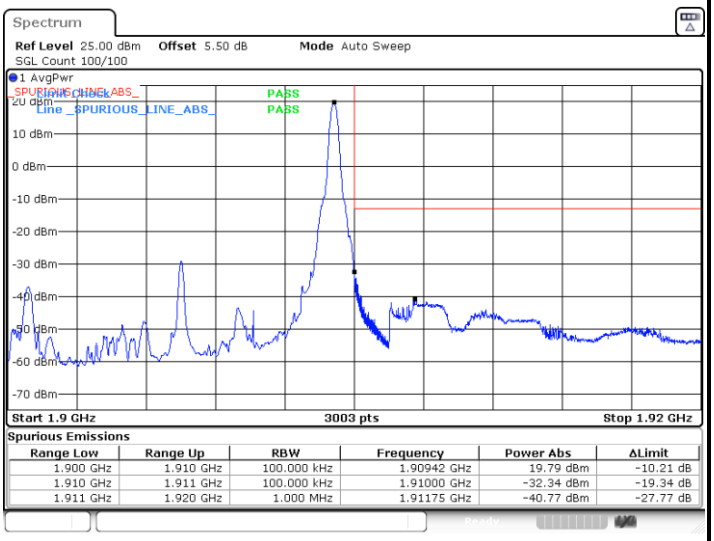


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84895 GHz	-38.44 dBm	-25.44 dB
1.849 GHz	1.850 GHz	100.000 kHz	1.84999 GHz	-32.50 dBm	-19.50 dB
1.850 GHz	1.860 GHz	100.000 kHz	1.85059 GHz	20.12 dBm	-9.88 dB

Date: 8.AUG.2023 11:24:49

Highest Band Edge / 1 RB

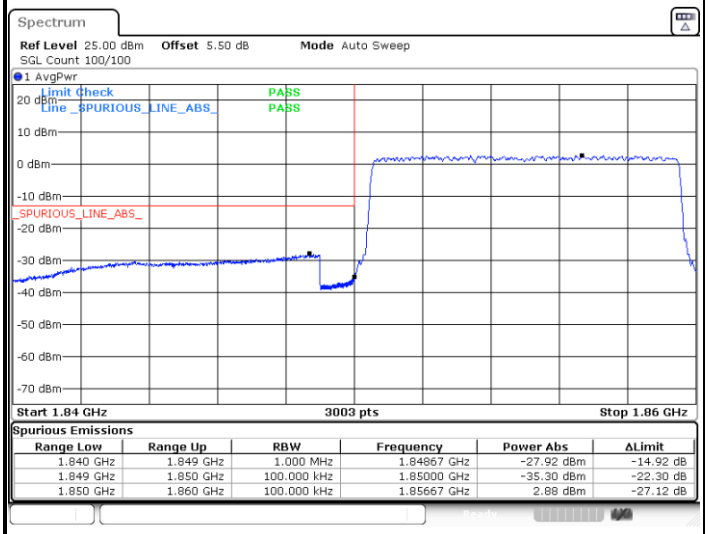


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.900 GHz	1.910 GHz	100.000 kHz	1.90942 GHz	19.79 dBm	-10.21 dB
1.910 GHz	1.911 GHz	100.000 kHz	1.91000 GHz	-32.34 dBm	-19.34 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91175 GHz	-40.77 dBm	-27.77 dB

Date: 8.AUG.2023 11:36:44

Lowest Band Edge / Full RB

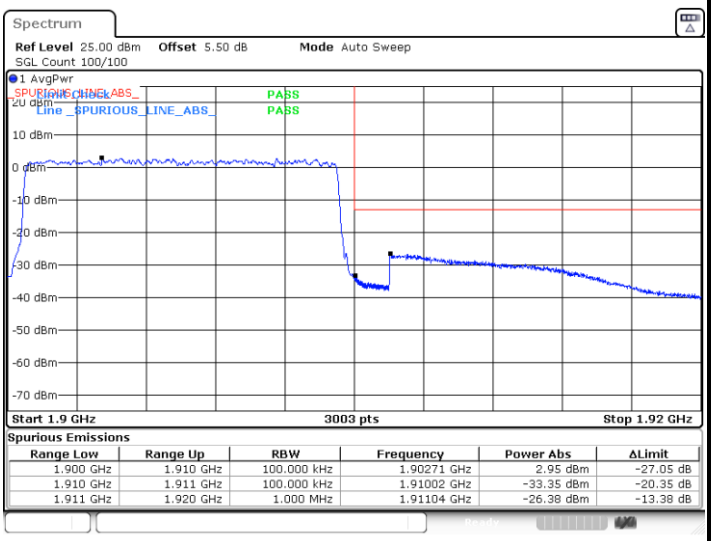


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84867 GHz	-27.92 dBm	-14.92 dB
1.849 GHz	1.850 GHz	100.000 kHz	1.85000 GHz	-35.30 dBm	-22.30 dB
1.850 GHz	1.860 GHz	100.000 kHz	1.85667 GHz	2.88 dBm	-27.12 dB

Date: 8.AUG.2023 11:27:55

Highest Band Edge / Full RB



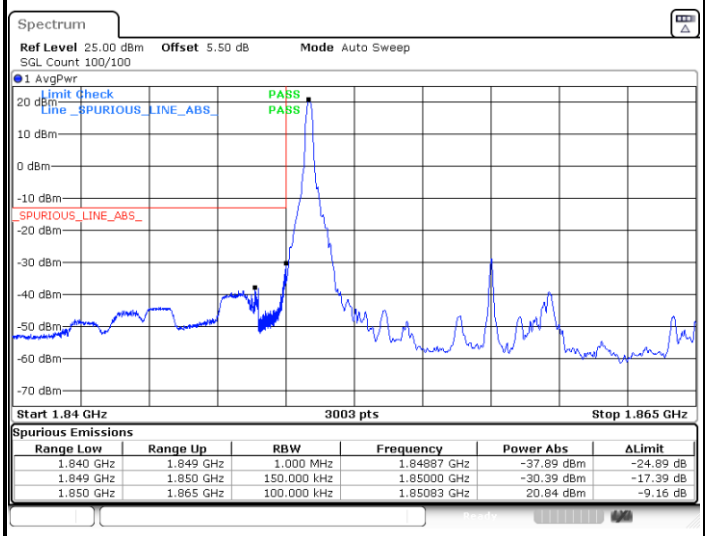
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.900 GHz	1.910 GHz	100.000 kHz	1.90271 GHz	2.95 dBm	-27.05 dB
1.910 GHz	1.911 GHz	100.000 kHz	1.91002 GHz	-33.35 dBm	-20.35 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91104 GHz	-26.38 dBm	-13.38 dB

Date: 8.AUG.2023 11:39:50

LTE Band 2 / 15MHz / QPSK

Lowest Band Edge / 1 RB

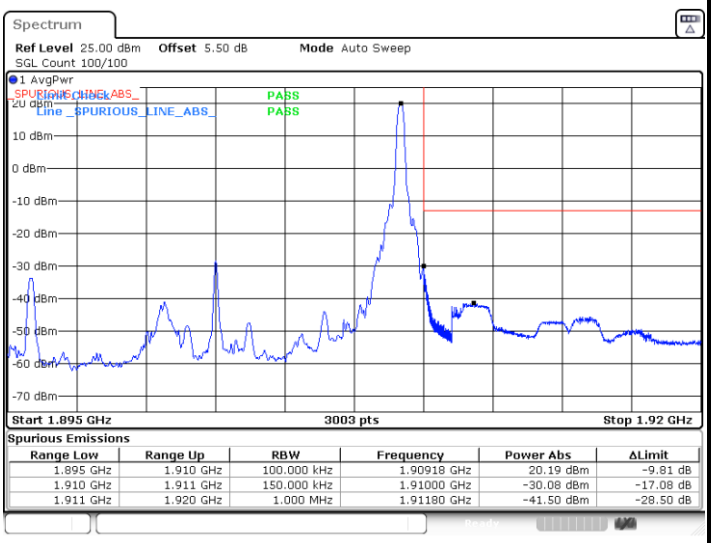


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84887 GHz	-37.89 dBm	-24.89 dB
1.849 GHz	1.850 GHz	150.000 kHz	1.85000 GHz	-30.39 dBm	-17.39 dB
1.850 GHz	1.865 GHz	100.000 kHz	1.85083 GHz	20.84 dBm	-9.16 dB

Date: 8.AUG.2023 11:43:28

Highest Band Edge / 1 RB

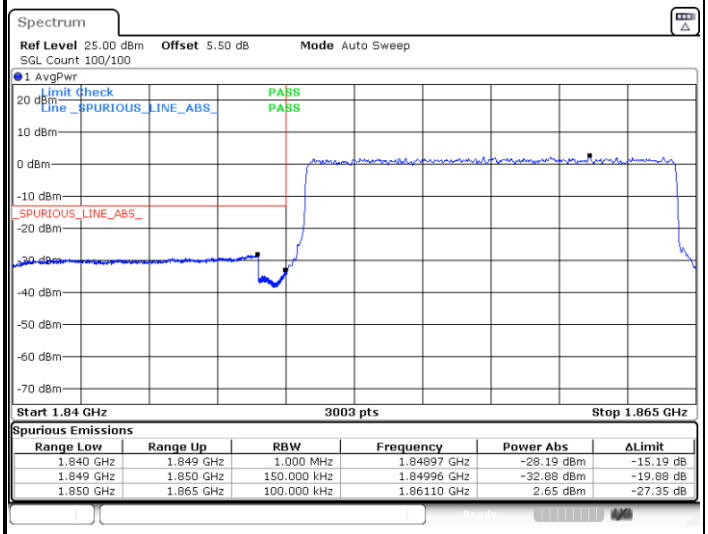


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.895 GHz	1.910 GHz	100.000 kHz	1.90918 GHz	20.19 dBm	-9.81 dB
1.910 GHz	1.911 GHz	150.000 kHz	1.91000 GHz	-30.08 dBm	-17.08 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91180 GHz	-41.50 dBm	-28.50 dB

Date: 8.AUG.2023 11:55:20

Lowest Band Edge / Full RB

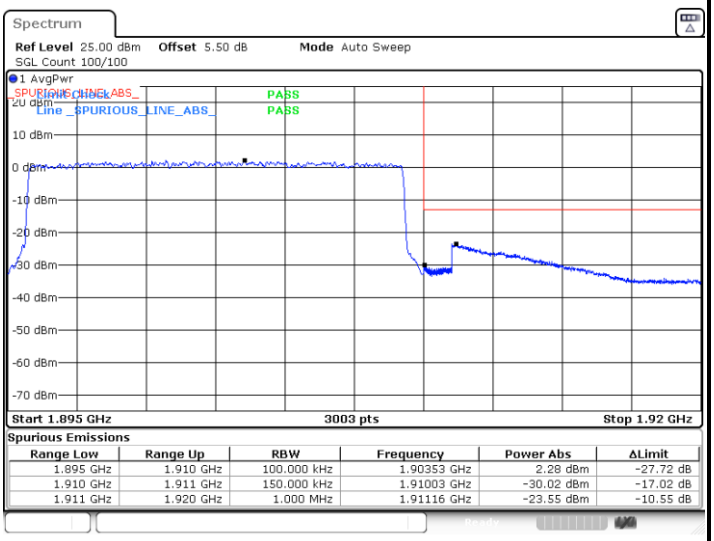


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84897 GHz	-28.19 dBm	-15.19 dB
1.849 GHz	1.850 GHz	150.000 kHz	1.84996 GHz	-32.88 dBm	-19.88 dB
1.850 GHz	1.865 GHz	100.000 kHz	1.86110 GHz	2.65 dBm	-27.35 dB

Date: 8.AUG.2023 11:46:33

Highest Band Edge / Full RB



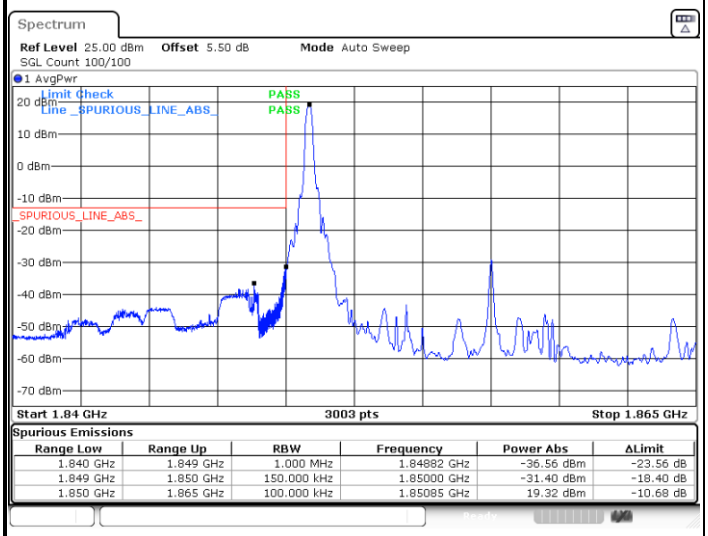
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.895 GHz	1.910 GHz	100.000 kHz	1.90353 GHz	2.28 dBm	-27.72 dB
1.910 GHz	1.911 GHz	150.000 kHz	1.91003 GHz	-30.02 dBm	-17.02 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91116 GHz	-23.55 dBm	-10.55 dB

Date: 8.AUG.2023 11:58:24

LTE Band 2 / 15MHz / 16QAM

Lowest Band Edge / 1 RB

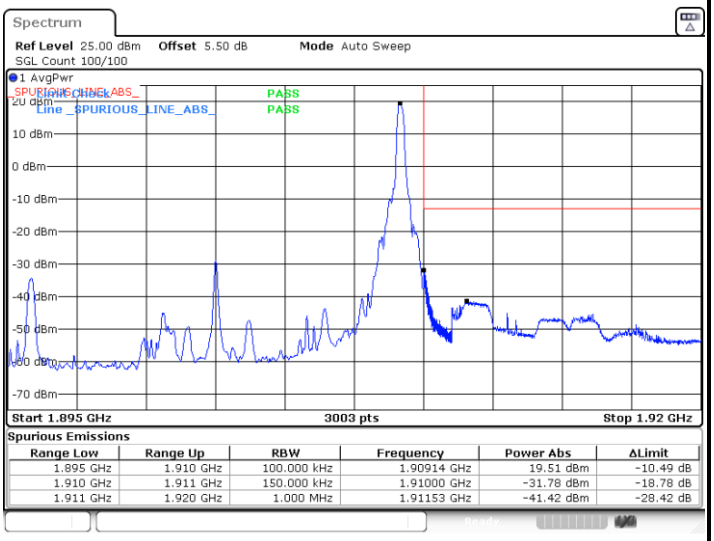


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84882 GHz	-36.56 dBm	-23.56 dB
1.849 GHz	1.850 GHz	150.000 kHz	1.85000 GHz	-31.40 dBm	-18.40 dB
1.850 GHz	1.865 GHz	100.000 kHz	1.85085 GHz	19.32 dBm	-10.68 dB

Date: 8.AUG.2023 11:45:01

Highest Band Edge / 1 RB

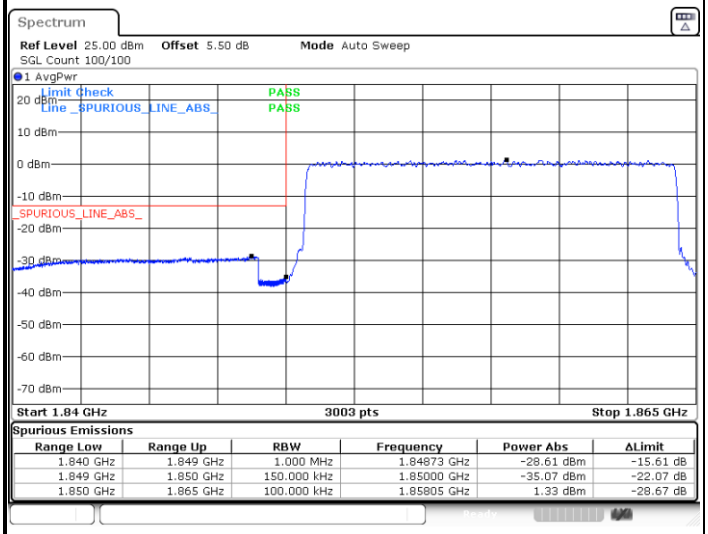


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.895 GHz	1.910 GHz	100.000 kHz	1.90914 GHz	19.51 dBm	-10.49 dB
1.910 GHz	1.911 GHz	150.000 kHz	1.91000 GHz	-31.78 dBm	-18.78 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91153 GHz	-41.42 dBm	-28.42 dB

Date: 8.AUG.2023 11:56:52

Lowest Band Edge / Full RB

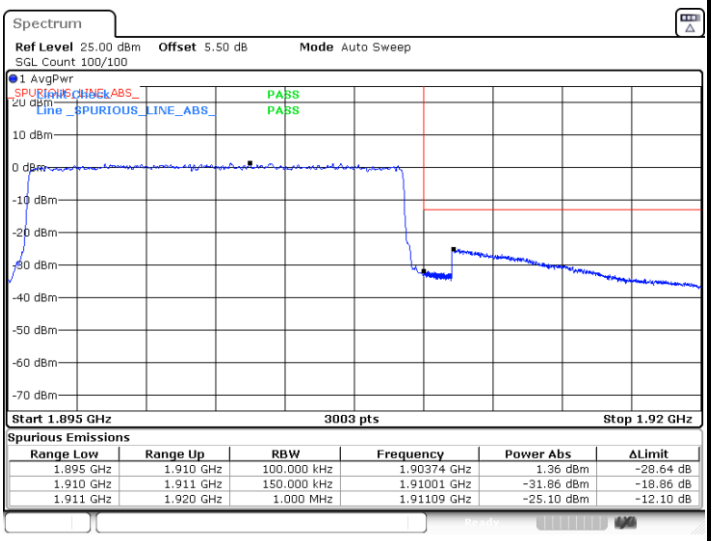


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84873 GHz	-28.61 dBm	-15.61 dB
1.849 GHz	1.850 GHz	150.000 kHz	1.85000 GHz	-35.07 dBm	-22.07 dB
1.850 GHz	1.865 GHz	100.000 kHz	1.85805 GHz	1.33 dBm	-28.67 dB

Date: 8.AUG.2023 11:48:06

Highest Band Edge / Full RB



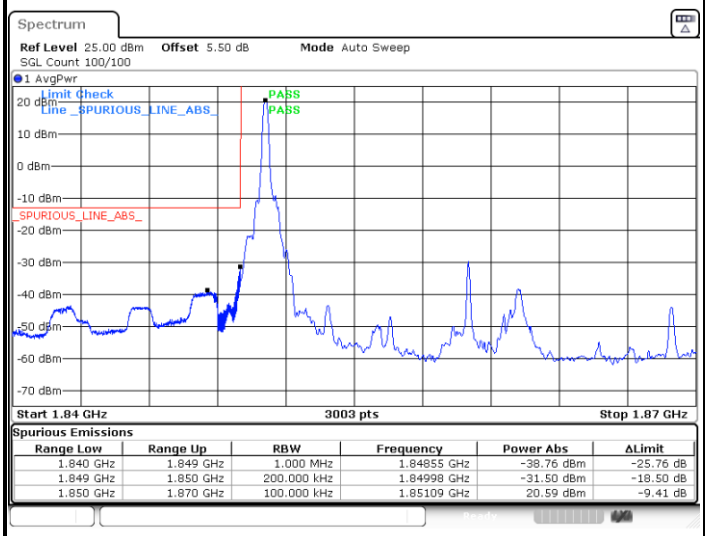
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.895 GHz	1.910 GHz	100.000 kHz	1.90374 GHz	1.36 dBm	-28.64 dB
1.910 GHz	1.911 GHz	150.000 kHz	1.91001 GHz	-31.86 dBm	-18.86 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91109 GHz	-25.10 dBm	-12.10 dB

Date: 8.AUG.2023 11:59:56

LTE Band 2 / 20MHz / QPSK

Lowest Band Edge / 1 RB

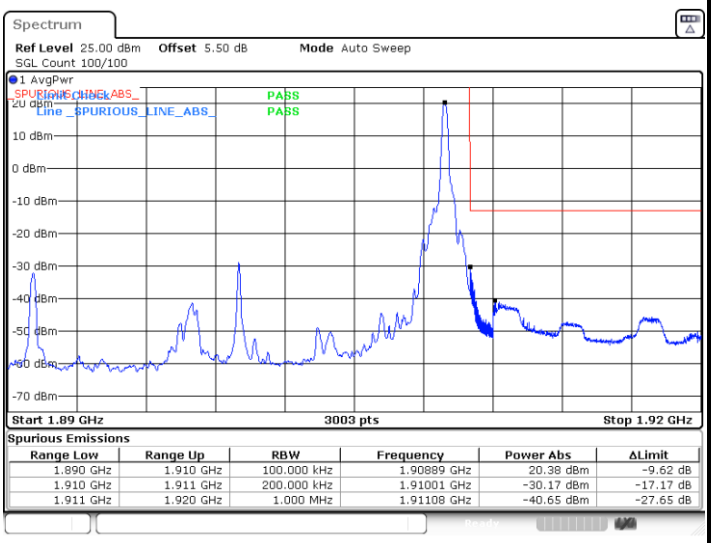


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84855 GHz	-38.76 dBm	-25.76 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84998 GHz	-31.50 dBm	-18.50 dB
1.850 GHz	1.870 GHz	100.000 kHz	1.85109 GHz	20.59 dBm	-9.41 dB

Date: 8.AUG.2023 12:03:35

Highest Band Edge / 1 RB

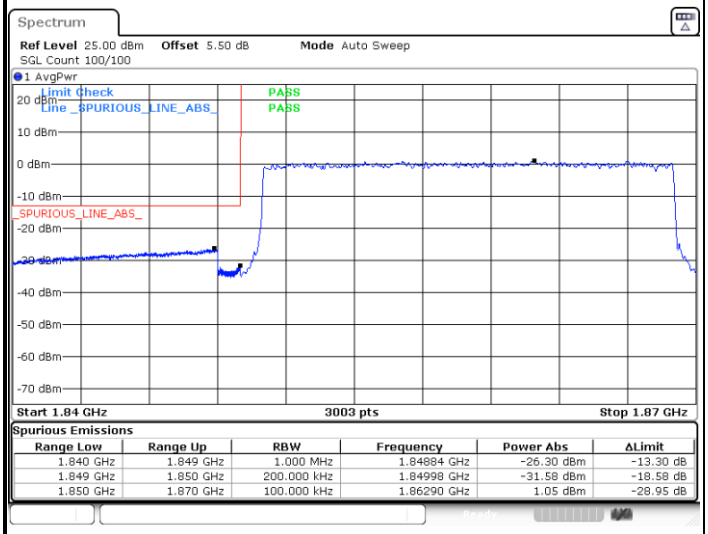


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.890 GHz	1.910 GHz	100.000 kHz	1.90889 GHz	20.38 dBm	-9.62 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91001 GHz	-30.17 dBm	-17.17 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91108 GHz	-40.65 dBm	-27.65 dB

Date: 8.AUG.2023 12:20:26

Lowest Band Edge / Full RB

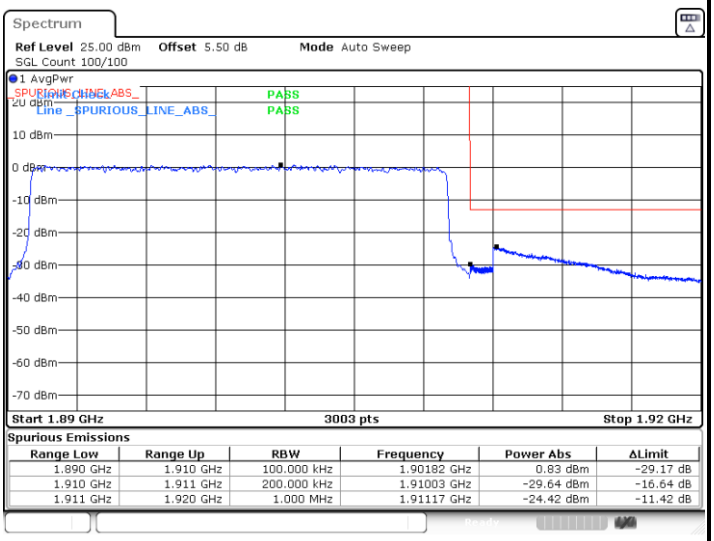


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84884 GHz	-26.30 dBm	-13.30 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84998 GHz	-31.58 dBm	-18.58 dB
1.850 GHz	1.870 GHz	100.000 kHz	1.86290 GHz	1.05 dBm	-28.95 dB

Date: 8.AUG.2023 12:05:19

Highest Band Edge / Full RB



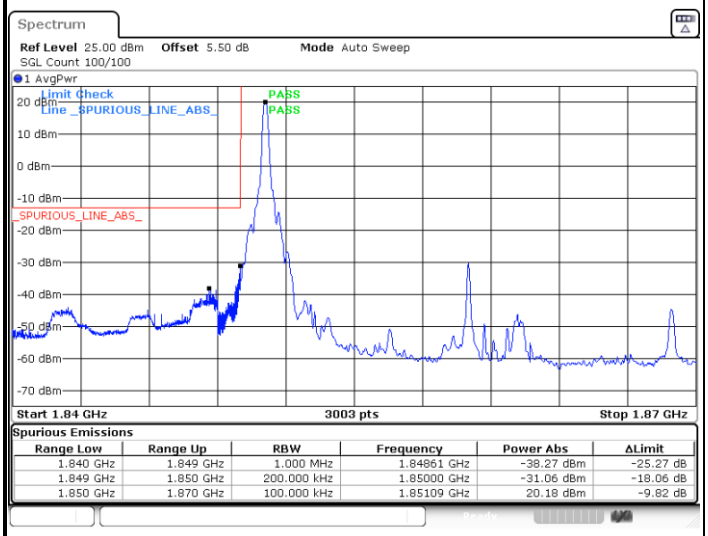
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.890 GHz	1.910 GHz	100.000 kHz	1.90182 GHz	0.83 dBm	-29.17 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91003 GHz	-29.64 dBm	-16.64 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91117 GHz	-24.42 dBm	-11.42 dB

Date: 8.AUG.2023 12:22:10

LTE Band 2 / 20MHz / 16QAM

Lowest Band Edge / 1 RB

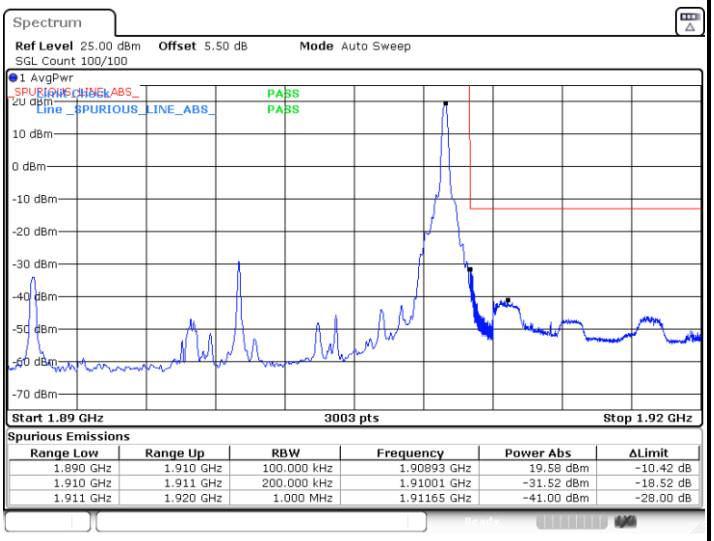


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84861 GHz	-38.27 dBm	-25.27 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.85000 GHz	-31.06 dBm	-18.06 dB
1.850 GHz	1.870 GHz	100.000 kHz	1.85109 GHz	20.18 dBm	-9.82 dB

Date: 8.AUG.2023 12:04:27

Highest Band Edge / 1 RB

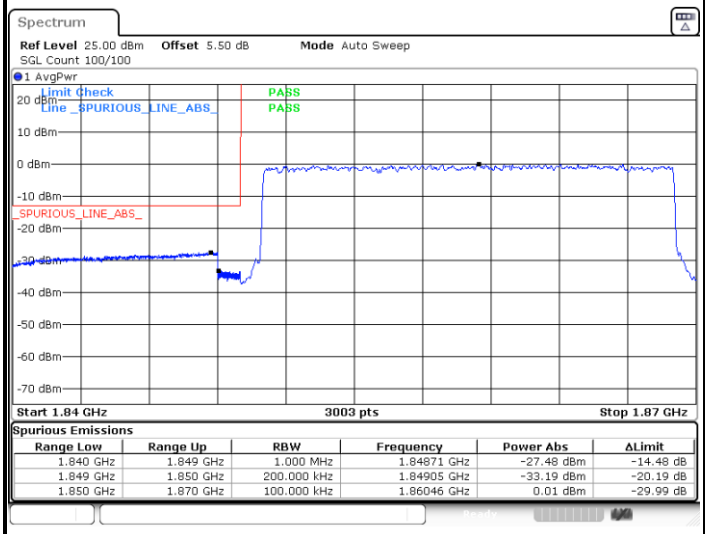


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.890 GHz	1.910 GHz	100.000 kHz	1.90893 GHz	19.58 dBm	-10.42 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91001 GHz	-31.52 dBm	-18.52 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91165 GHz	-41.00 dBm	-28.00 dB

Date: 8.AUG.2023 12:21:18

Lowest Band Edge / Full RB

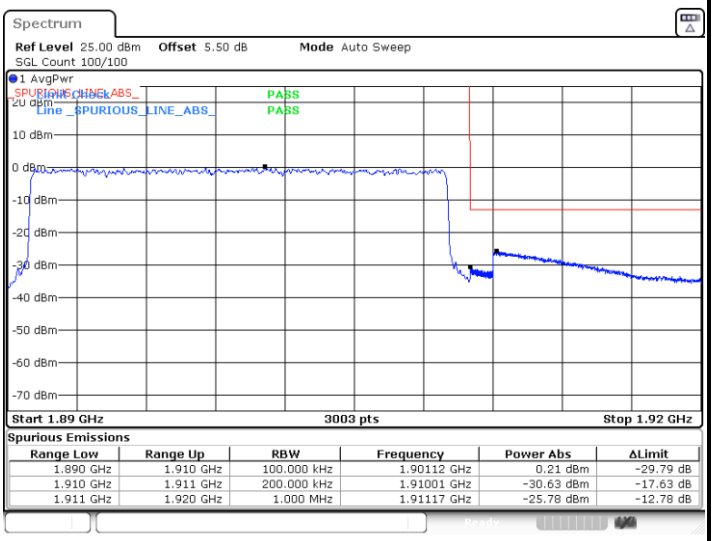


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84871 GHz	-27.48 dBm	-14.48 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84905 GHz	-33.19 dBm	-20.19 dB
1.850 GHz	1.870 GHz	100.000 kHz	1.86046 GHz	0.01 dBm	-29.99 dB

Date: 8.AUG.2023 12:06:11

Highest Band Edge / Full RB



Spurious Emissions

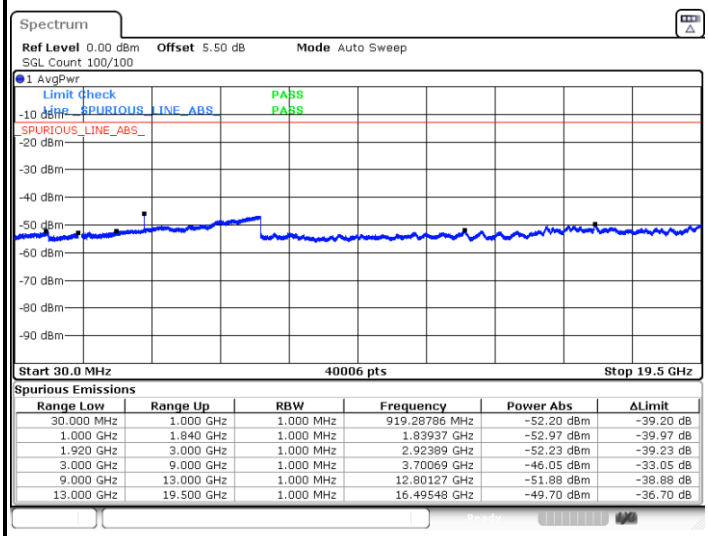
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.890 GHz	1.910 GHz	100.000 kHz	1.90112 GHz	0.21 dBm	-29.79 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91001 GHz	-30.63 dBm	-17.63 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91117 GHz	-25.78 dBm	-12.78 dB

Date: 8.AUG.2023 12:23:02

Conducted Spurious Emission

LTE Band 2 / 1.4MHz

Lowest Channel / QPSK

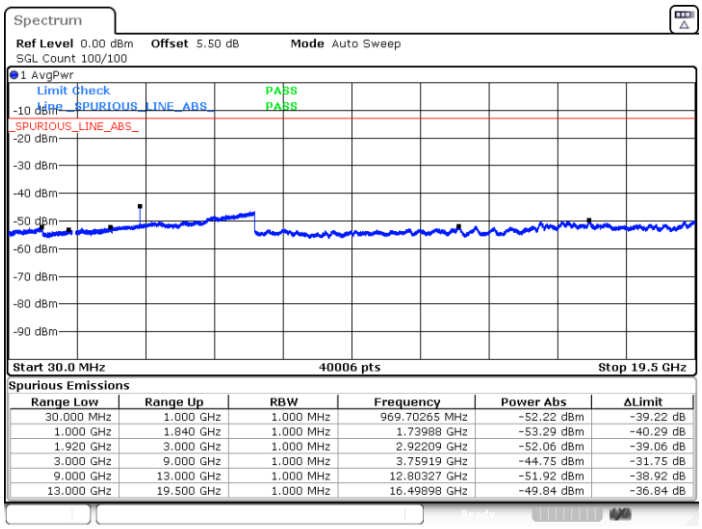


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	919.28786 MHz	-52.20 dBm	-39.20 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83937 GHz	-52.97 dBm	-39.97 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.92389 GHz	-52.23 dBm	-39.23 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70069 GHz	-46.05 dBm	-33.05 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.80127 GHz	-51.88 dBm	-38.88 dB
13.000 GHz	19.500 GHz	1.000 MHz	16.49548 GHz	-49.70 dBm	-36.70 dB

Date: 8.AUG.2023 09:58:52

Middle Channel / QPSK

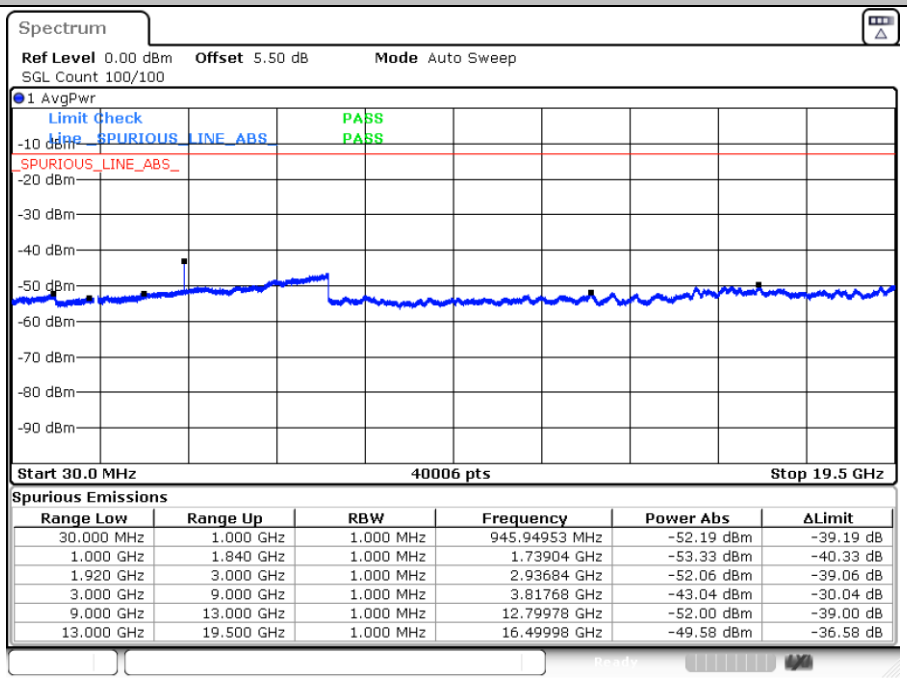


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	969.70265 MHz	-52.22 dBm	-39.22 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.73988 GHz	-53.29 dBm	-40.29 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.92209 GHz	-52.06 dBm	-39.06 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.75919 GHz	-44.75 dBm	-31.75 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.80327 GHz	-51.92 dBm	-38.92 dB
13.000 GHz	19.500 GHz	1.000 MHz	16.49898 GHz	-49.84 dBm	-36.84 dB

Date: 8.AUG.2023 10:27:48

Highest Channel / QPSK



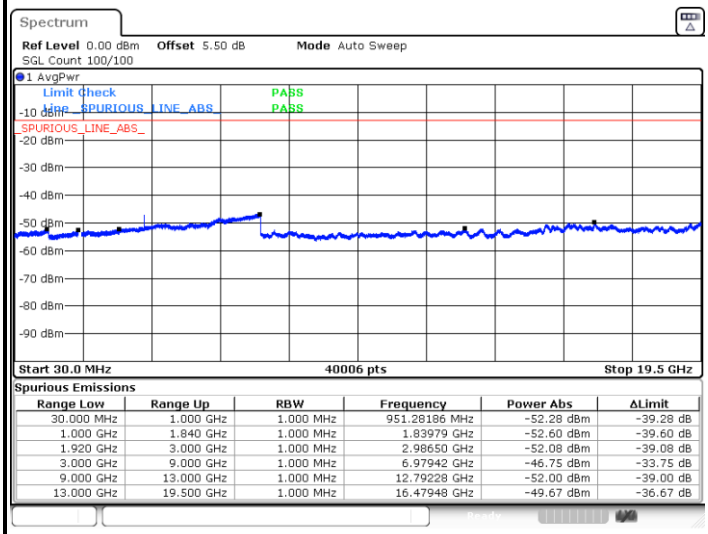
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	945.94953 MHz	-52.19 dBm	-39.19 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.73904 GHz	-53.33 dBm	-40.33 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.93684 GHz	-52.06 dBm	-39.06 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.81768 GHz	-43.04 dBm	-30.04 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.79978 GHz	-52.00 dBm	-39.00 dB
13.000 GHz	19.500 GHz	1.000 MHz	16.49998 GHz	-49.58 dBm	-36.58 dB

Date: 8.AUG.2023 10:31:27

LTE Band 2 / 3MHz

Lowest Channel / QPSK

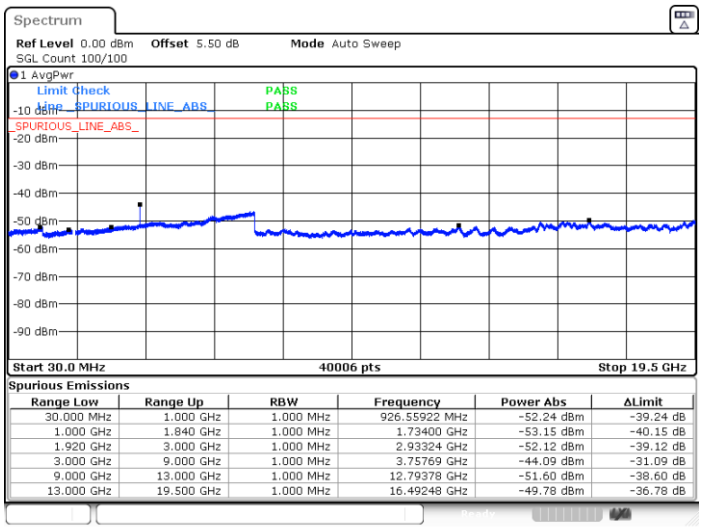


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	951.28186 MHz	-52.28 dBm	-39.28 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83979 GHz	-52.60 dBm	-39.60 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98650 GHz	-52.08 dBm	-39.08 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.97942 GHz	-46.75 dBm	-33.75 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.79228 GHz	-52.00 dBm	-39.00 dB
13.000 GHz	19.500 GHz	1.000 MHz	16.47948 GHz	-49.67 dBm	-36.67 dB

Date: 8.AUG.2023 10:40:28

Middle Channel / QPSK

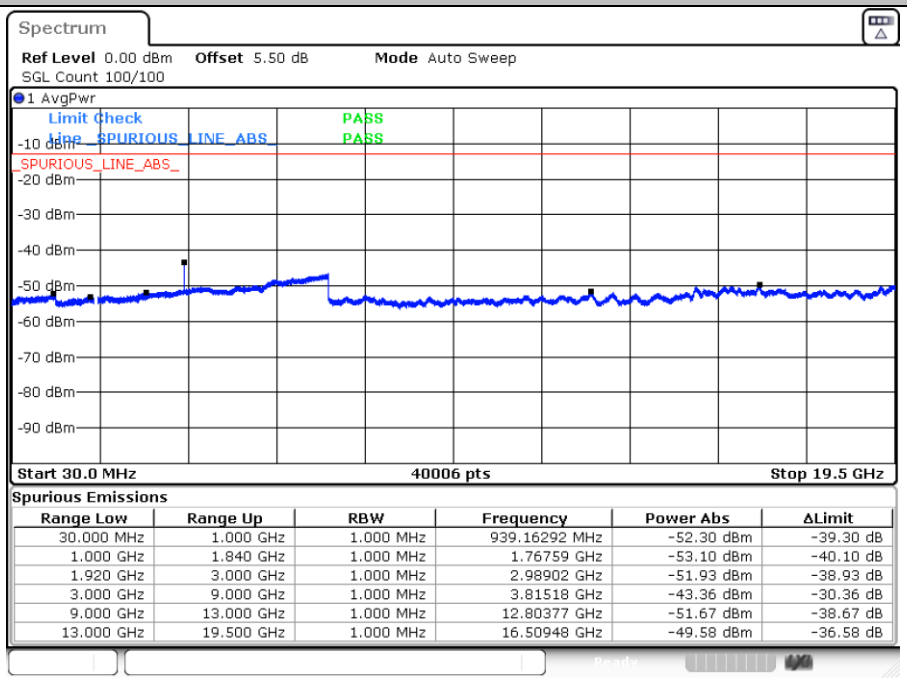


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	926.55922 MHz	-52.24 dBm	-39.24 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.73400 GHz	-53.15 dBm	-40.15 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.93324 GHz	-52.12 dBm	-39.12 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.75769 GHz	-44.09 dBm	-31.09 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.79378 GHz	-51.60 dBm	-38.60 dB
13.000 GHz	19.500 GHz	1.000 MHz	16.49248 GHz	-49.78 dBm	-36.78 dB

Date: 8.AUG.2023 10:49:27

Highest Channel / QPSK



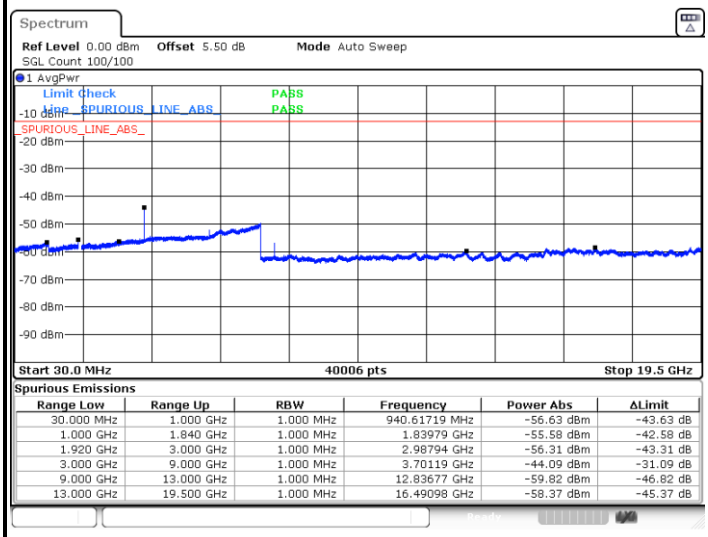
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	939.16292 MHz	-52.30 dBm	-39.30 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.76759 GHz	-53.10 dBm	-40.10 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98902 GHz	-51.93 dBm	-38.93 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.81518 GHz	-43.36 dBm	-30.36 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.80377 GHz	-51.67 dBm	-38.67 dB
13.000 GHz	19.500 GHz	1.000 MHz	16.50948 GHz	-49.58 dBm	-36.58 dB

Date: 8.AUG.2023 10:53:05

LTE Band 2 / 5MHz

Lowest Channel / QPSK

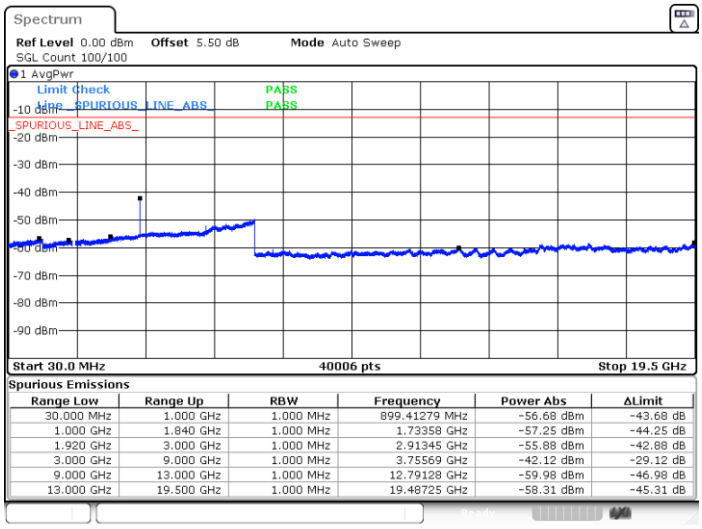


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	940.61719 MHz	-56.63 dBm	-43.63 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83979 GHz	-55.58 dBm	-42.58 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98794 GHz	-56.31 dBm	-43.31 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70119 GHz	-44.09 dBm	-31.09 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.83677 GHz	-59.82 dBm	-46.82 dB
13.000 GHz	19.500 GHz	1.000 MHz	16.49098 GHz	-58.37 dBm	-45.37 dB

Date: 8.AUG.2023 11:01:32

Middle Channel / QPSK

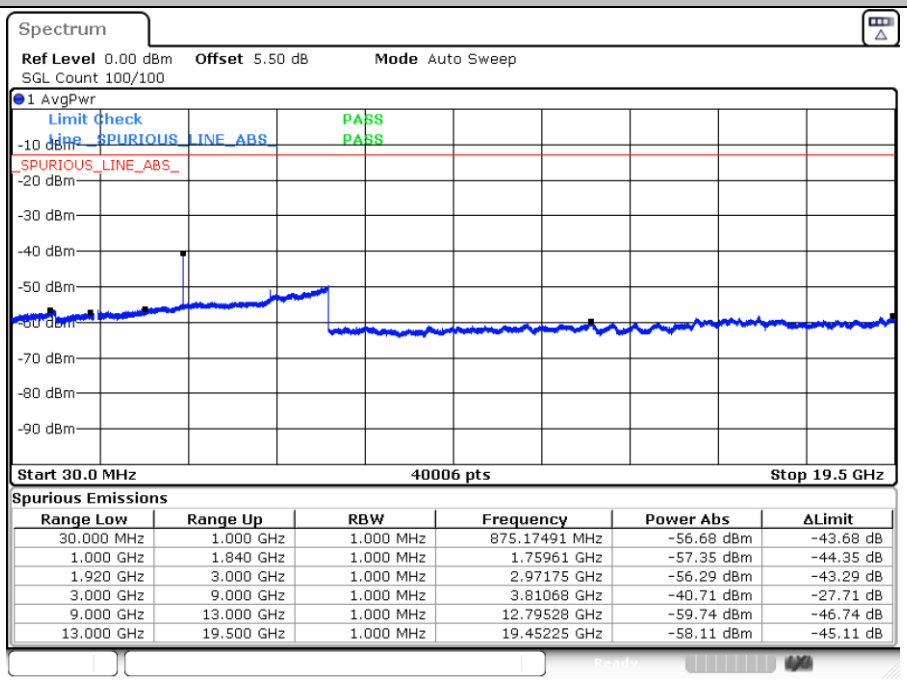


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	899.41279 MHz	-56.68 dBm	-43.68 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.73358 GHz	-57.25 dBm	-44.25 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.91345 GHz	-55.88 dBm	-42.88 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.75569 GHz	-42.12 dBm	-29.12 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.79128 GHz	-59.98 dBm	-46.98 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.48725 GHz	-58.31 dBm	-45.31 dB

Date: 8.AUG.2023 11:09:49

Highest Channel / QPSK



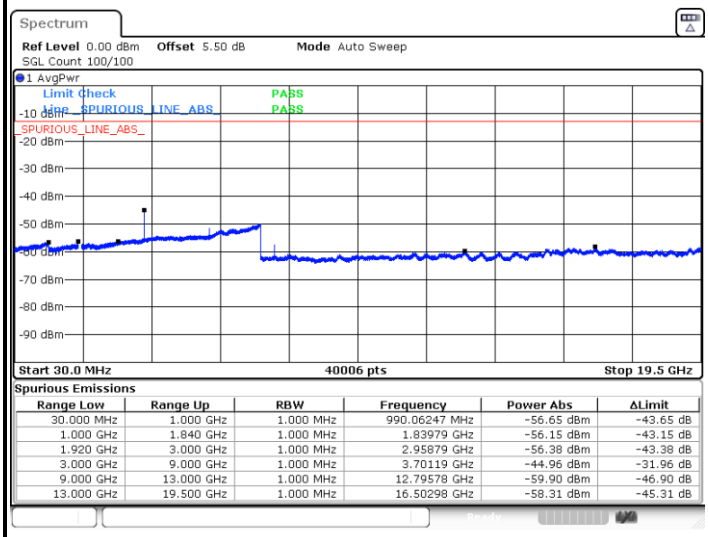
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	875.17491 MHz	-56.68 dBm	-43.68 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.75961 GHz	-57.35 dBm	-44.35 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.97175 GHz	-56.29 dBm	-43.29 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.81068 GHz	-40.71 dBm	-27.71 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.79528 GHz	-59.74 dBm	-46.74 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.45225 GHz	-58.11 dBm	-45.11 dB

Date: 8.AUG.2023 11:13:27

LTE Band 2 / 10MHz

Lowest Channel / QPSK

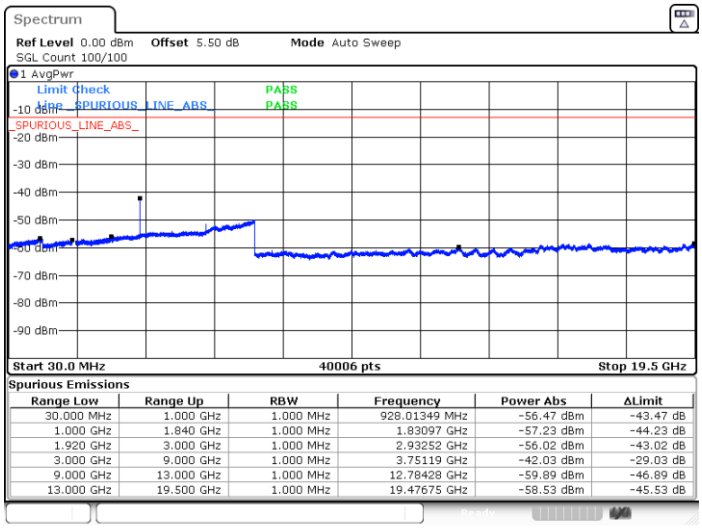


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	990.06247 MHz	-56.65 dBm	-43.65 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83979 GHz	-56.15 dBm	-43.15 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.95879 GHz	-56.38 dBm	-43.38 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70119 GHz	-44.96 dBm	-31.96 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.79578 GHz	-59.90 dBm	-46.90 dB
13.000 GHz	19.500 GHz	1.000 MHz	16.50298 GHz	-58.31 dBm	-45.31 dB

Date: 8.AUG.2023 11:21:44

Middle Channel / QPSK

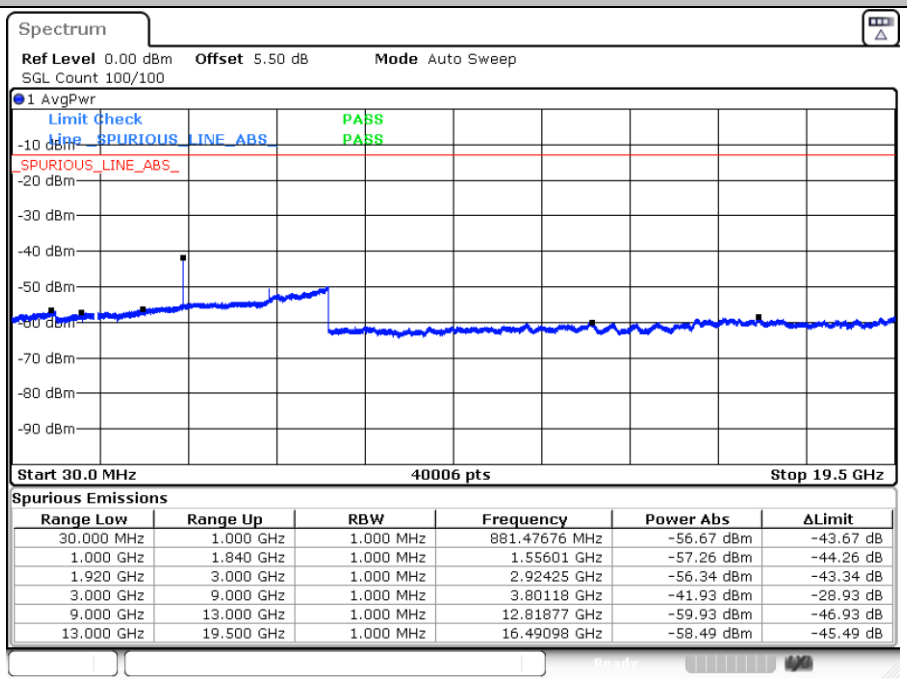


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	928.01349 MHz	-56.47 dBm	-43.47 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83097 GHz	-57.23 dBm	-44.23 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.93252 GHz	-56.02 dBm	-43.02 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.75119 GHz	-42.03 dBm	-29.03 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.78428 GHz	-59.89 dBm	-46.89 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.47675 GHz	-58.53 dBm	-45.53 dB

Date: 8.AUG.2023 11:30:01

Highest Channel / QPSK



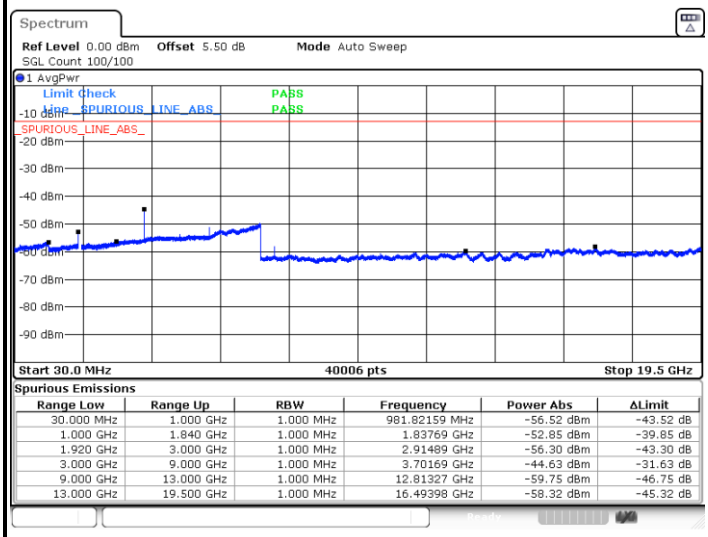
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	881.47676 MHz	-56.67 dBm	-43.67 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.55601 GHz	-57.26 dBm	-44.26 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.92425 GHz	-56.34 dBm	-43.34 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.80118 GHz	-41.93 dBm	-28.93 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.81877 GHz	-59.93 dBm	-46.93 dB
13.000 GHz	19.500 GHz	1.000 MHz	16.49098 GHz	-58.49 dBm	-45.49 dB

Date: 8.AUG.2023 11:33:39

LTE Band 2 / 15MHz

Lowest Channel / QPSK

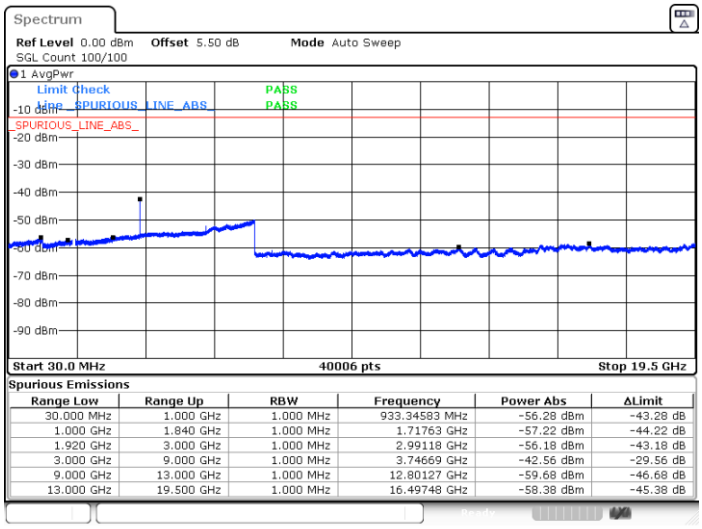


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	981.82159 MHz	-56.52 dBm	-43.52 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83769 GHz	-52.85 dBm	-39.85 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.91489 GHz	-56.30 dBm	-43.30 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70169 GHz	-44.63 dBm	-31.63 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.81327 GHz	-59.75 dBm	-46.75 dB
13.000 GHz	19.500 GHz	1.000 MHz	16.49398 GHz	-58.32 dBm	-45.32 dB

Date: 8.AUG.2023 11:41:56

Middle Channel / QPSK

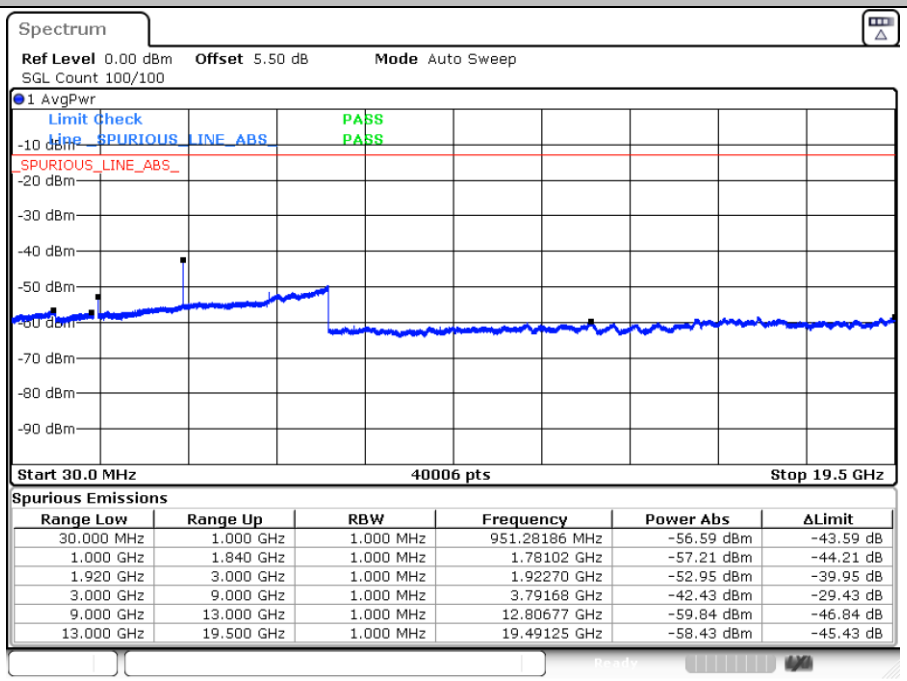


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	933.34583 MHz	-56.28 dBm	-43.28 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.71763 GHz	-57.22 dBm	-44.22 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.99118 GHz	-56.18 dBm	-43.18 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.74669 GHz	-42.56 dBm	-29.56 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.80127 GHz	-59.68 dBm	-46.68 dB
13.000 GHz	19.500 GHz	1.000 MHz	16.49748 GHz	-58.38 dBm	-45.38 dB

Date: 8.AUG.2023 11:50:11

Highest Channel / QPSK



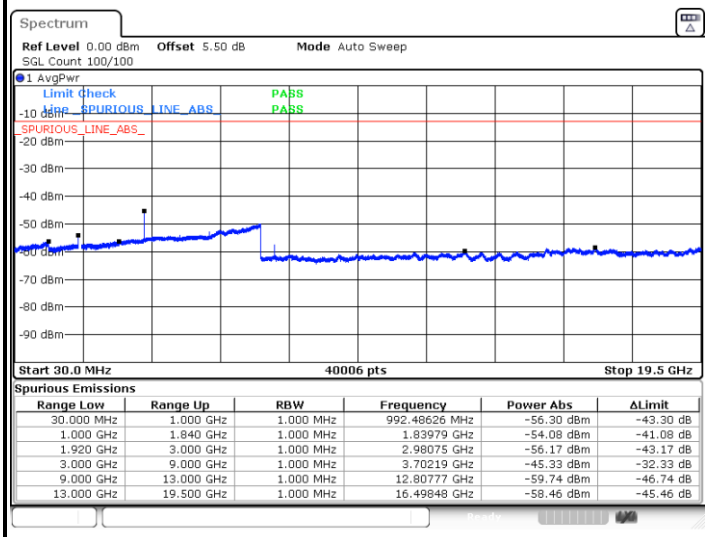
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	951.28186 MHz	-56.59 dBm	-43.59 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.78102 GHz	-57.21 dBm	-44.21 dB
1.920 GHz	3.000 GHz	1.000 MHz	1.92270 GHz	-52.95 dBm	-39.95 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.79168 GHz	-42.43 dBm	-29.43 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.80677 GHz	-59.84 dBm	-46.84 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.49125 GHz	-58.43 dBm	-45.43 dB

Date: 8.AUG.2023 11:53:48

LTE Band 2 / 20MHz

Lowest Channel / QPSK

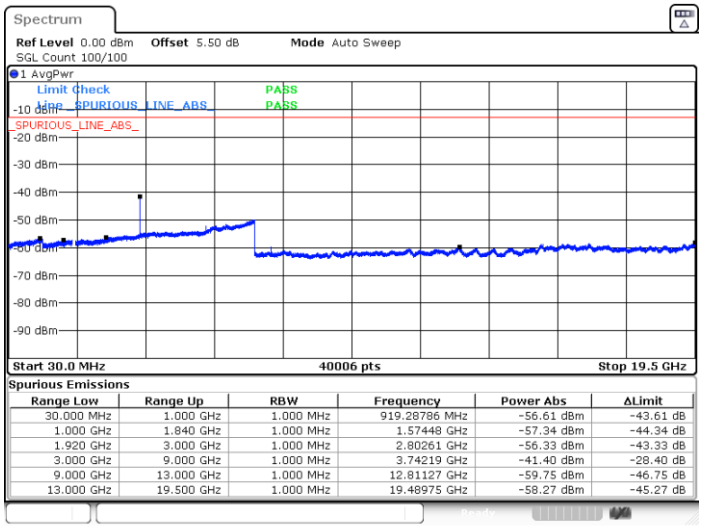


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	992.48626 MHz	-56.30 dBm	-43.30 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83979 GHz	-54.08 dBm	-41.08 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98075 GHz	-56.17 dBm	-43.17 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70219 GHz	-45.33 dBm	-32.33 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.80777 GHz	-59.74 dBm	-46.74 dB
13.000 GHz	19.500 GHz	1.000 MHz	16.49848 GHz	-58.46 dBm	-45.46 dB

Date: 8.AUG.2023 12:02:02

Middle Channel / QPSK

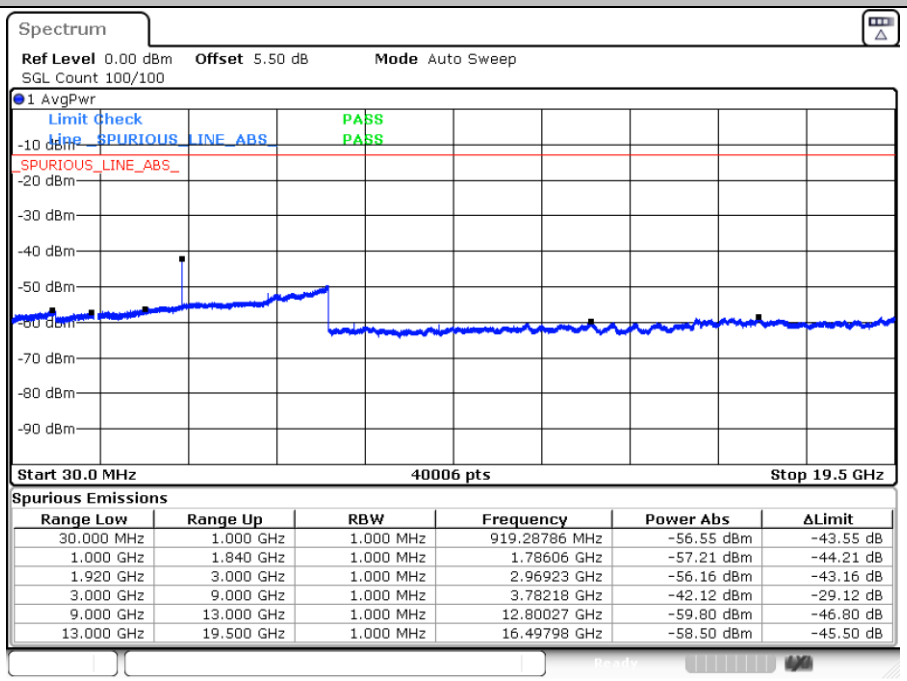


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	919.28786 MHz	-56.61 dBm	-43.61 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.57448 GHz	-57.34 dBm	-44.34 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.80261 GHz	-56.33 dBm	-43.33 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.74219 GHz	-41.40 dBm	-28.40 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.81127 GHz	-59.75 dBm	-46.75 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.48975 GHz	-58.27 dBm	-45.27 dB

Date: 8.AUG.2023 12:08:16

Highest Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	919.28786 MHz	-56.55 dBm	-43.55 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.78606 GHz	-57.21 dBm	-44.21 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.96923 GHz	-56.16 dBm	-43.16 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.78218 GHz	-42.12 dBm	-29.12 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.80027 GHz	-59.80 dBm	-46.80 dB
13.000 GHz	19.500 GHz	1.000 MHz	16.49798 GHz	-58.50 dBm	-45.50 dB

Date: 8.AUG.2023 12:19:33

Frequency Stability

Test Conditions		LTE Band 2 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	2.5ppm
		Deviation (ppm)	Result
50	Normal Voltage	0.0009	PASS
40	Normal Voltage	0.0007	
30	Normal Voltage	0.0010	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0002	
0	Normal Voltage	0.0007	
-10	Normal Voltage	0.0013	
-20	Normal Voltage	0.0004	
-30	Normal Voltage	0.0018	
20	Maximum Voltage	0.0007	
20	Normal Voltage	0.0014	
20	Battery End Point	0.0003	

Note:

1. Normal Voltage =3.85 V. ; Battery End Point (BEP) =3.3 V. ; Maximum Voltage =4.4 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

Test Engineer :	Chris Chen	Temperature :	23~25℃
		Relative Humidity :	41~42%

Note: All RSE test points are spurious by EUT, not noise floor.

LTE Band 2 / 1.4MHz / QPSK								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3705	-64.27	-13	-51.27	-76.53	2.64	14.90	H
	5550	-60.22	-13	-47.22	-72.08	2.94	14.80	H
	7395	-59.36	-13	-46.36	-69.13	3.39	13.16	H
	3705	-60.06	-13	-47.06	-72.32	2.64	14.90	V
	5550	-60.43	-13	-47.43	-72.29	2.94	14.80	V
	7395	-59.56	-13	-46.56	-69.33	3.39	13.16	V
Middle	3765	-65.05	-13	-52.05	-77.31	2.64	14.90	H
	5640	-43.68	-13	-30.68	-55.54	2.94	14.80	H
	7515	-58.75	-13	-45.75	-68.52	3.39	13.16	H
	3765	-61.26	-13	-48.26	-73.52	2.64	14.90	V
	5640	-59.07	-13	-46.07	-70.93	2.94	14.80	V
	7515	-58.78	-13	-45.78	-68.55	3.39	13.16	V
Highest	3810	-65.57	-13	-52.57	-77.83	2.64	14.90	H
	5730	-57.26	-13	-44.26	-69.12	2.94	14.80	H
	7635	-57.83	-13	-44.83	-67.60	3.39	13.16	H
	3810	-60.41	-13	-47.41	-72.67	2.64	14.90	V
	5730	-60.74	-13	-47.74	-72.60	2.94	14.80	V
	7635	-57.81	-13	-44.81	-67.58	3.39	13.16	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 2 / 3MHz / QPSK								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3705	-65.33	-13	-52.33	-77.59	2.64	14.90	H
	5550	-53.54	-13	-40.54	-65.40	2.94	14.80	H
	7395	-58.99	-13	-45.99	-68.76	3.39	13.16	H
	3705	-64.09	-13	-51.09	-76.35	2.64	14.90	V
	5550	-51.75	-13	-38.75	-63.61	2.94	14.80	V
	7395	-59.40	-13	-46.40	-69.17	3.39	13.16	V
Middle	3750	-66.24	-13	-53.24	-78.50	2.64	14.90	H
	5640	-54.70	-13	-41.70	-66.56	2.94	14.80	H
	7515	-59.00	-13	-46.00	-68.77	3.39	13.16	H
	3750	-61.98	-13	-48.98	-74.24	2.64	14.90	V
	5640	-54.12	-13	-41.12	-65.98	2.94	14.80	V
	7515	-59.23	-13	-46.23	-69.00	3.39	13.16	V
Highest	3810	-66.50	-13	-53.50	-78.76	2.64	14.90	H
	5715	-55.22	-13	-42.22	-67.08	2.94	14.80	H
	7635	-58.36	-13	-45.36	-68.13	3.39	13.16	H
	3814	-61.86	-13	-48.86	-74.12	2.64	14.90	V
	5715	-52.62	-13	-39.62	-64.48	2.94	14.80	V
	7635	-58.44	-13	-45.44	-68.21	3.39	13.16	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 2 / 5MHz / QPSK								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3705	-64.51	-13	-51.51	-76.77	2.64	14.90	H
	5550	-56.96	-13	-43.96	-68.82	2.94	14.80	H
	7395	-58.89	-13	-45.89	-68.66	3.39	13.16	H
	3705	-59.05	-13	-46.05	-71.31	2.64	14.90	V
	5550	-56.67	-13	-43.67	-68.53	2.94	14.80	V
	7395	-58.83	-13	-45.83	-68.60	3.39	13.16	V
Middle	3750	-66.57	-13	-53.57	-78.83	2.64	14.90	H
	5640	-44.42	-13	-31.42	-56.28	2.94	14.80	H
	7515	-58.77	-13	-45.77	-68.54	3.39	13.16	H
	3750	-62.86	-13	-49.86	-75.12	2.64	14.90	V
	5640	-52.48	-13	-39.48	-64.34	2.94	14.80	V
	7515	-58.29	-13	-45.29	-68.06	3.39	13.16	V
Highest	3810	-64.51	-13	-51.51	-76.77	2.64	14.90	H
	5715	-57.97	-13	-44.97	-69.83	2.94	14.80	H
	7620	-58.09	-13	-45.09	-67.86	3.39	13.16	H
	3810	-58.43	-13	-45.43	-70.69	2.64	14.90	V
	5715	-57.59	-13	-44.59	-69.45	2.94	14.80	V
	7620	-58.14	-13	-45.14	-67.91	3.39	13.16	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 2 / 10MHz / QPSK								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3705	-64.05	-13	-51.05	-76.31	2.64	14.90	H
	5550	-53.91	-13	-40.91	-65.77	2.94	14.80	H
	7395	-58.92	-13	-45.92	-68.69	3.39	13.16	H
	3705	-59.49	-13	-46.49	-71.75	2.64	14.90	V
	5550	-49.65	-13	-36.65	-61.51	2.94	14.80	V
	7395	-58.72	-13	-45.72	-68.49	3.39	13.16	V
Middle	3750	-66.47	-13	-53.47	-78.73	2.64	14.90	H
	5625	-48.07	-13	-35.07	-59.93	2.94	14.80	H
	7500	-58.38	-13	-45.38	-68.15	3.39	13.16	H
	3750	-62.10	-13	-49.10	-74.36	2.64	14.90	V
	5625	-54.34	-13	-41.34	-66.20	2.94	14.80	V
	7500	-58.19	-13	-45.19	-67.96	3.39	13.16	V
Highest	3795	-64.57	-13	-51.57	-76.83	2.64	14.90	H
	5700	-59.95	-13	-46.95	-71.81	2.94	14.80	H
	7605	-57.65	-13	-44.65	-67.42	3.39	13.16	H
	3795	-59.20	-13	-46.20	-71.46	2.64	14.90	V
	5700	-57.35	-13	-44.35	-69.21	2.94	14.80	V
	7605	-57.83	-13	-44.83	-67.60	3.39	13.16	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 2 / 15MHz / QPSK								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3705	-62.30	-13	-49.30	-74.56	2.64	14.90	H
	5550	-57.05	-13	-44.05	-68.91	2.94	14.80	H
	7410	-58.79	-13	-45.79	-68.56	3.39	13.16	H
	3705	-58.40	-13	-45.40	-70.66	2.64	14.90	V
	5550	-58.47	-13	-45.47	-70.33	2.94	14.80	V
	7410	-59.17	-13	-46.17	-68.94	3.39	13.16	V
Middle	3750	-66.47	-13	-53.47	-78.73	2.64	14.90	H
	5625	-48.07	-13	-35.07	-59.93	2.94	14.80	H
	7500	-58.38	-13	-45.38	-68.15	3.39	13.16	H
	3750	-62.10	-13	-49.10	-74.36	2.64	14.90	V
	5625	-54.34	-13	-41.34	-66.20	2.94	14.80	V
	7500	-58.19	-13	-45.19	-67.96	3.39	13.16	V
Highest	3795	-65.15	-13	-52.15	-77.41	2.64	14.90	H
	5685	-53.36	-13	-40.36	-65.22	2.94	14.80	H
	7590	-58.07	-13	-45.07	-67.84	3.39	13.16	H
	3795	-60.75	-13	-47.75	-73.01	2.64	14.90	V
	5685	-57.27	-13	-44.27	-69.13	2.94	14.80	V
	7590	-58.24	-13	-45.24	-68.01	3.39	13.16	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

LTE Band 2 / 20MHz / QPSK								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3702	-61.71	-13	-48.71	-73.97	2.64	14.90	H
	5553	-59.31	-13	-46.31	-71.17	2.94	14.80	H
	7404	-58.38	-13	-45.38	-68.15	3.39	13.16	H
	3702	-57.93	-13	-44.93	-70.19	2.64	14.90	V
	5553	-59.87	-13	-46.87	-71.73	2.94	14.80	V
	7404	-58.10	-13	-45.10	-67.87	3.39	13.16	V
Middle	3741	-59.15	-13	-46.15	-71.41	2.64	14.90	H
	5613	-55.57	-13	-42.57	-67.43	2.94	14.80	H
	7488	-51.98	-13	-38.98	-61.75	3.39	13.16	H
	3741	-56.77	-13	-43.77	-69.03	2.64	14.90	V
	5613	-55.89	-13	-42.89	-67.75	2.94	14.80	V
	7488	-51.51	-13	-38.51	-61.28	3.39	13.16	V
Highest	3783	-64.59	-13	-51.59	-76.85	2.64	14.90	H
	5673	-51.70	-13	-38.70	-63.56	2.94	14.80	H
	7560	-58.20	-13	-45.20	-67.97	3.39	13.16	H
	3783	-59.91	-13	-46.91	-72.17	2.64	14.90	V
	5673	-58.83	-13	-45.83	-70.69	2.94	14.80	V
	7560	-57.76	-13	-44.76	-67.53	3.39	13.16	V

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