FCC RF Test Report

APPLICANT	: TCL Communication Ltd.
EQUIPMENT	: R5.5
BRAND NAME	: lively
MODEL NAME	: LVR52
FCC ID	: 2ACCJ-LVR52
STANDARD	: 47 CFR Part 22(H), 24(E), 27(L), 27(F), 27(H)
CLASSIFICATION	: PCS Licensed Transmitter held to face(PCF)
TEST DATE(S)	: Dec. 02, 2024 ~ Dec. 06, 2024

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

Fly Liang

Approved by: Fly Liang

ACCREDITED
Cert #5145.01

Sporton International Inc. (ShenZhen)

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People's Republic of China

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APPENDIX A. TEST RESULTS OF CONDUCTED TEST

APPENDIX B. TEST RESULTS OF RADIATED TEST

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG4N0506	Rev. 01	Initial issue of report	Apr. 30, 2025

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	-	Report Only	-
	§22.913(a)(5)	Effective Radiated Power (Band 5)	ERP < 7 Watt	PASS	-
	§27.50(b)(10) §27.50(c)(10)	Effective Radiated Power (Band 12) (Band 13)	ERP < 3 Watt		-
	§24.232(c)	Equivalent Isotropic Radiated Power (Band 2)	EIRP < 2Watt		-
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4) (Band 66)	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 §22.917(a) §24.238(a) §27.53(c)(2)(4) §27.53(g) §27.53(h)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 66)	< 43+10log10(P[Watts])	PASS	-
3.8	§2.1051 §22.917(a) §24.238(a) §27.53(c)(2) §27.53(g) §27.53(h)	Conducted Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 66)	< 43+10log10(P[Watts])	PASS	-
3.9	§2.1055 §22.355	Frequency Stability Temperature & Voltage	< 2.5 ppm for Part 22	PASS	-
	§2.1055 §24.235 §27.54		Within Authorized Band		
4.4	§2.1053 §22.917(a) §24.238(a) §27.53(c)(2) §27.53(f) §27.53(g) §27.53(h)	Radiated Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 66)	< 43+10log$_{10}$(P[Watts])	PASS	Under limit 13.60 dB at 1664.18 MHz

Conformity Assessment Condition:

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

Disclaimer:

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

1 General Description

1.1 Applicant

TCL Communication Ltd.
5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong

1.2 Manufacturer

TCL Communication Ltd.
5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	R5.5
Brand Name	lively
Model Name	LVR52
FCC ID	2ACCJ-LVR52
IMEI Code	Conducted: 358608620200160 Radiation: 358608620200798
HW Version	V7.0
SW Version	1G0101
EUT Stage	Production Unit

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	LTE Band 2 : 1850 MHz ~ 1910 MHz LTE Band 4 : 1710 MHz ~ 1755 MHz LTE Band 5 : 824 MHz ~ 849 MHz LTE Band 12 : 699 MHz ~ 716 MHz LTE Band 13 : 777 MHz ~ 787 MHz LTE Band 66 : 1710 MHz ~ 1780 MHz
Rx Frequency	LTE Band 2 : 1930 MHz ~ 1990 MHz LTE Band 4 : 2110 MHz ~ 2155 MHz LTE Band 5 : 869 MHz ~ 894 MHz LTE Band 12 : 729 MHz ~ 746 MHz LTE Band 13 : 746 MHz ~ 756 MHz LTE Band 66 : 2110 MHz~ 2180 MHz
Bandwidth	LTE Band 2 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 4 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 5 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 12 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 13 : 5MHz / 10MHz LTE Band 66 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz
Maximum Output Power to Antenna	LTE Band 2 : 22.32 dBm LTE Band 4 : 22.30 dBm LTE Band 5 : 23.78 dBm LTE Band 12 : 23.18 dBm LTE Band 13 : 23.62 dBm LTE Band 66 : 22.52 dBm
Antenna Gain	LTE Band 2 : 0.5 dBi LTE Band 4 : 0.6 dBi LTE Band 5 : -1.1 dBi LTE Band 12 : -4.6 dBi LTE Band 13 : -2.4 dBi LTE Band 66 : 0.6 dBi
Type of Modulation	QPSK / 16QAM

Note: The device supports LTE Category 1.

1.5 Modification of EUT

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

1.6 Maximum ERP/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	0.1816	1M09G7D	0.1387	1M09W7D
3	1851.5 ~ 1908.5	0.1888	2M70G7D	0.1361	2M71W7D
5	1852.5 ~ 1907.5	0.1858	4M50G7D	0.1337	4M49W7D
10	1855.0 ~ 1905.0	0.1828	9M01G7D	0.1365	5M07W7D
15	1857.5 ~ 1902.5	0.1726	13M4G7D	0.1352	5M03W7D
20	1860.0 ~ 1900.0	0.1914	17M9G7D	0.1371	5M07W7D
LTE Band 4		QPSK		16QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
1.4	1710.7 ~ 1754.3	0.1774	1M10G7D	0.1390	1M09W7D
3	1711.5 ~ 1753.5	0.1837	2M72G7D	0.1327	2M73W7D
5	1712.5 ~ 1752.5	0.1849	4M48G7D	0.1361	4M49W7D
10	1715.0 ~ 1750.0	0.1828	9M05G7D	0.1355	5M03W7D
15	1717.5 ~ 1747.5	0.1828	13M4G7D	0.1496	4M98W7D
20	1720.0 ~ 1745.0	0.1950	17M8G7D	0.1393	5M15W7D
LTE Band 5		QPSK		16QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
1.4	824.7 ~ 848.3	0.1045	1M10G7D	0.0853	1M10W7D
3	825.5 ~ 847.5	0.1064	2M72G7D	0.0843	2M72W7D
5	826.5 ~ 846.5	0.1074	4M51G7D	0.0832	4M47W7D
10	829.0 ~ 844.0	0.1130	9M01G7D	0.0879	5M05W7D
LTE Band 12		QPSK		16QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
1.4	699.7 ~ 715.3	0.0439	1M10G7D	0.0357	1M09W7D
3	700.5 ~ 714.5	0.0428	2M72G7D	0.0331	2M72W7D
5	701.5 ~ 713.5	0.0429	4M52G7D	0.0332	4M48W7D
10	704.0 ~ 711.0	0.0440	9M11G7D	0.0333	5M01W7D

LTE Band 13		QPSK		16QAM	
BW (MHz)	**Frequency Range (MHz)**	**Maximum ERP(W)**	**Emission Designator (99%OBW)**	**Maximum ERP(W)**	**Emission Designator (99%OBW)**
5	779.5 ~ 784.5	0.0762	4M49G7D	0.0585	4M50W7D
10	782.0	0.0807	8M97G7D	0.0596	5M15W7D
LTE Band 66		**QPSK**		**16QAM**	
BW (MHz)	**Frequency Range (MHz)**	**Maximum EIRP(W)**	**Emission Designator (99%OBW)**	**Maximum EIRP(W)**	**Emission Designator (99%OBW)**
1.4	1710.7 ~ 1779.3	0.1936	1M10G7D	0.1614	1M09W7D
3	1711.5 ~ 1778.5	0.1910	2M72G7D	0.1452	2M73W7D
5	1712.5 ~ 1777.5	0.1928	4M48G7D	0.1466	4M49W7D
10	1715.0 ~ 1775.0	0.1986	9M05G7D	0.1486	5M03W7D
15	1717.5 ~ 1772.5	0.1972	13M4G7D	0.1466	4M98W7D
20	1720.0 ~ 1770.0	0.2051	17M8G7D	0.1517	5M15W7D

Note:

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

1.7 Testing Location

Sporton International Inc. (ShenZhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	TH01-SZ	CN1256	421272

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City, Guangdong Province 518103 People's Republic of China TEL: +86-755-86066985		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH01-SZ	CN1256	421272

1.8 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH01-SZ	AUDIX	E3	6.2009-8-24

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 22(H), 24(E), 27(L), 27(F), 27(H)
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

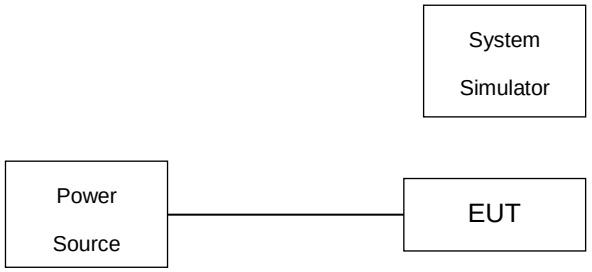
Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas License Digital Systems v03r01 with maximum output power.

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

Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16 QAM	64 QAM	1	Half	Full	L	M	H
Max. Output Power	2	v	v	v	v	v	v	v	v	-	v	v	v	v	v	v
	4	v	v	v	v	v	v	v	v	-	v	v	v	v	v	v
	5	v	v	v	v	-	-	v	v	-	v	v	v	v	v	v
	12	v	v	v	v	-	-	v	v	-	v	v	v	v	v	v
	13	-	-	v	v	-	-	v	v	-	v	v	v	v	v	v
	66	v	v	v	v	v	v	v	v	-	v	v	v	v	v	v
Peak-to-Average Ratio	2						v	v	v	-			v		v	
	5				v	-	-	v	v	-			v		v	
	12				v	-	-	v	v	-			v		v	
	13	-	-		v	-	-	v	v	-			v		v	
	66						v	v	v	-			v		v	
26dB and 99% Bandwidth	2	v	v	v	v	v	v	v	v	-			v		v	
	5	v	v	v	v	-	-	v	v	-			v		v	
	12	v	v	v	v	-	-	v	v	-			v		v	
	13	-	-	v	v	-	-	v	v	-			v		v	
	66	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
	5	v	v	v	v	-	-	v	v	-	v		v	v		v
	12	v	v	v	v	-	-	v	v	-	v		v	v		v
	13	-	-	v	v	-	-	v	v	-	v		v	v		v
	66	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	v
	5	v	v	v	v	-	-	v	v	-	v			v	v	v
	12	v	v	v	v	-	-	v	v	-	v			v	v	v
	13	-	-	v	v	-	-	v	v	-	v			v	v	v
	66	v	v	v	v	v	v	v	v	-	v			v	v	v

Frequency Stability	2				v			v		-			v		v	
	5				v	-	-	v		-			v		v	
	12				v	-	-	v		-			v		v	
	13	-	-		v	-	-	v		-			v		v	
	66				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	v
	4	v	v	v	v	v	v	v	v	-	v	v	v	v	v	v
	5	v	v	v	v	-	-	v	v	-	v	v	v	v	v	v
	12	v	v	v	v	-	-	v	v	-	v	v	v	v	v	v
	13	-	-	v	v	-	-	v	v	-	v	v	v	v	v	v
	66	v	v	v	v	v	v	v	v	-	v	v	v	v	v	v
Radiated Spurious Emission	2	Worst Case													v	
	5	Worst Case													v	
	12	Worst Case													v	
	13	Worst Case													v	
	66	Worst Case													v	
Note	1. The mark "**v** " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.															

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

2.4 Measurement Results Explanation Example

For all conducted test items:

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

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.5 dB and 10dB attenuator.

Example :

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

= 4.5 + 10 = 14.5 (dB)

2.5 Frequency List of Low/Middle/High Channels

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

LTE Band 4 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	20050	20175	20300
	Frequency	1720	1732.5	1745
15	Channel	20025	20175	20325
	Frequency	1717.5	1732.5	1747.5
10	Channel	20000	20175	20350
	Frequency	1715	1732.5	1750
5	Channel	19975	20175	20375
	Frequency	1712.5	1732.5	1752.5
3	Channel	19965	20175	20385
	Frequency	1711.5	1732.5	1753.5
1.4	Channel	19957	20175	20393
	Frequency	1710.7	1732.5	1754.3

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

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

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

LTE Band 66 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	132072	132322	132572
	Frequency	1720	1745	1770
15	Channel	132047	132322	132597
	Frequency	1717.5	1745	1772.5
10	Channel	132022	132322	132622
	Frequency	1715	1745	1775
5	Channel	131997	132322	132647
	Frequency	1712.5	1745	1777.5
3	Channel	131987	132322	132657
	Frequency	1711.5	1745	1778.5
1.4	Channel	131979	132322	132665
	Frequency	1710.7	1745	1779.3

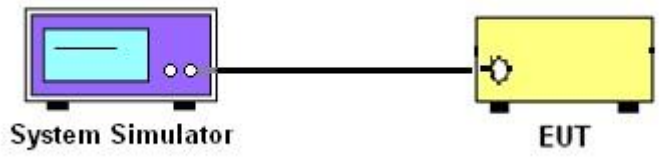
3 Conducted Test Items

3.1 Measuring Instruments

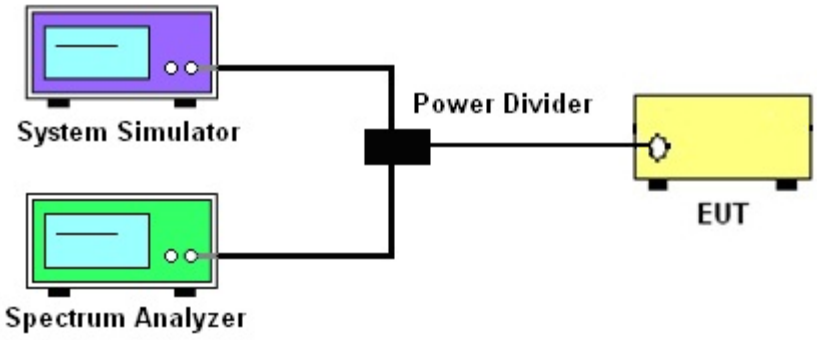
See list of measuring instruments of this test report.

3.2 Test Setup

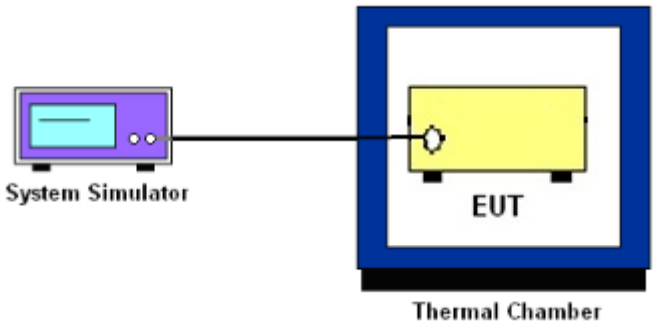
3.2.1 Conducted Output Power



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



3.2.3 Frequency Stability



3.3 Test Result of Conducted Test

Please refer to Appendix A.

3.4 Conducted Output Power and ERP/EIRP

3.4.1 Description of the Conducted Output Power Measurement and ERP/EIRP Measurement

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

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

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

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 and Band 66.

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

22.917(a)

For operations in the 824 – 849 MHz band, the FCC limit is 43 + $10\log_{10}$(P[Watts]) dB below the transmitter power P(Watts) in a 100kHz 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.

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 (c)

For operations in the 776-788 MHz band, the FCC limit is 43 + $10\log_{10}$(P[Watts]) dB below the transmitter power P(Watts) in a 100 kHz bandwidth. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed. In addition, the power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least 65 + 10 log10 p(watts), dB, for mobile and portable equipment.

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 or a narrower RBW was used and the measured power was integrated over the full required measurement bandwidth of 1 MHz.
6. Set spectrum analyzer with RMS detector.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. Checked that all the results comply with the emission limit line.

   Example:

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

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

   = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB) = -13dBm.
9. When using the integration method, the starting frequency of the integration shall be centered at one-half of the RBW away from the band edge.

3.8 Conducted Spurious Emission

3.8.1 Description of Conducted Spurious Emission Measurement

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

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

3.8.2 Test Procedures

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

3.9 Frequency Stability

3.9.1 Description of Frequency Stability Measurement

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

3.9.2 Test Procedures for Temperature Variation

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

3.9.3 Test Procedures for Voltage Variation

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

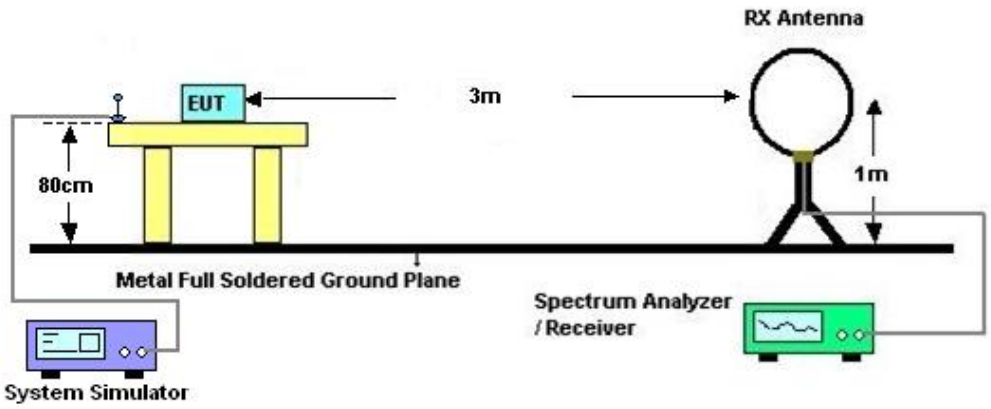
4 Radiated Test Items

4.1 Measuring Instruments

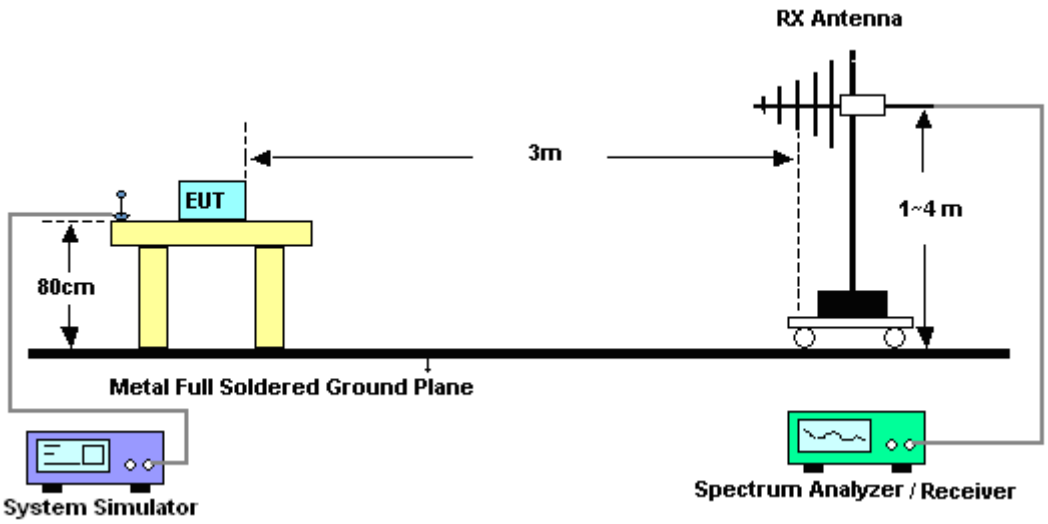
See list of measuring instruments of this test report.

4.2 Test Setup

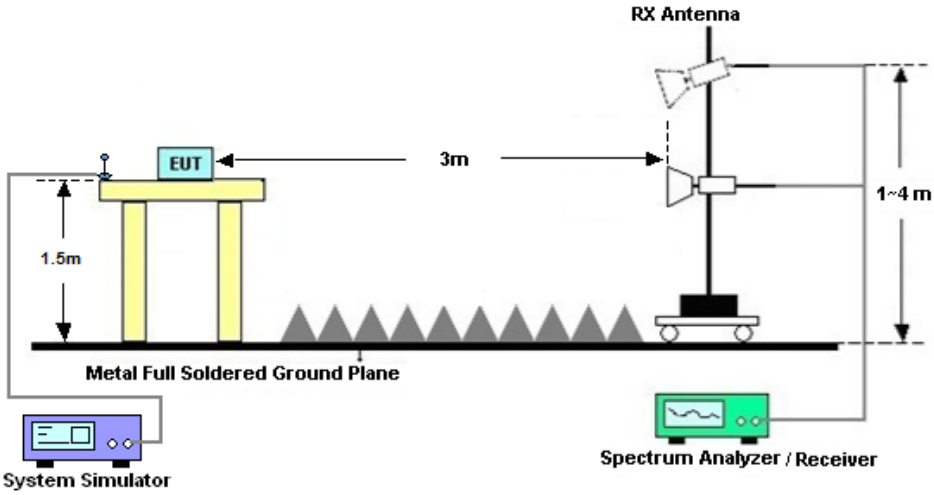
4.2.1 For radiated test below 30MHz



4.2.2 For radiated test from 30MHz to 1GHz



4.2.3 For radiated test above 1GHz



4.3 Test Result of Radiated Test

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

Please refer to Appendix B.

4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission

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

For LTE Band 13

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

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

4.4.2 Test Procedures

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

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	Apr. 09, 2024	Dec. 02, 2024~ Dec. 06, 2024	Apr. 08, 2025	Conducted (TH01-SZ)
DC Power Supply	TTI	PL330P	290070	Max 32V，3A	Oct. 15, 2024	Dec. 02, 2024~ Dec. 06, 2024	Oct. 14, 2025	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04 265	60.06.020.007 7	0.4GHz~26.5GHz	Dec. 25, 2023	Dec. 02, 2024~ Dec. 06, 2024	Dec. 24, 2024	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 03, 2024	Dec. 02, 2024~ Dec. 06, 2024	Jul. 02, 2025	Conducted (TH01-SZ)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Dec. 27, 2023	Dec. 02, 2024	Dec. 26, 2024	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2E	101141	9kHz~30MHz	Dec. 29, 2023	Dec. 02, 2024	Dec. 28, 2024	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5Ghz	Oct. 14, 2024	Dec. 02, 2024	Oct. 13, 2025	Radiation (03CH01-SZ
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz-2GHz	Oct. 24, 2023	Dec. 02, 2024	Oct. 23, 2025	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Jul. 04, 2024	Dec. 02, 2024	Jul. 03, 2025	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Apr. 09, 2024	Dec. 02, 2024	Apr. 08, 2025	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 09, 2024	Dec. 02, 2024	Apr. 08, 2025	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-00 101800-30-1 0P-R	1943528	1GHz~18GHz	Oct. 14, 2024	Dec. 02, 2024	Oct. 13, 2025	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	TTA1840-35 -HG	1871923	18GHz~40GHz	Jul. 03, 2024	Dec. 02, 2024	Jul. 02, 2025	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	Oct. 14, 2024	Dec. 02, 2024	Oct. 13, 2025	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Dec. 02, 2024	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Dec. 02, 2024	NCR	Radiation (03CH01-SZ)

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 Spurious Emission & Bandedge	±1.34 dB
Occupied Channel Bandwidth	±0.012 MHz
Conducted Power	±1.34 dB
Peak to Average Ratio	±1.34 dB
Frequency Stability	±1.3 Hz

Uncertainty of Radiated Emission Measurement (9 KHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.48 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.53 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.02 dB

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

Appendix A. Test Results of Conducted Test

Test Engineer :	Lorenzo Liu	Temperature :	24~26℃
		Relative Humidity :	50~53%

Conducted Output Power(Average power) and ERP/EIRP

LTE Band 2:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP(W)		
Channel				18700	18900	19100			
Frequency (MHz)				1860	1880	1900	L	M	H
20	QPSK	1	0	22.21	21.91	21.89	0.1866	0.1742	0.1734
20	QPSK	1	49	22.32	22.08	22.08	0.1914	0.1811	0.1811
20	QPSK	1	99	22.08	21.84	21.91	0.1811	0.1714	0.1742
20	QPSK	50	0	20.94	20.75	20.81	0.1393	0.1334	0.1352
20	QPSK	50	24	21.03	20.82	20.87	0.1422	0.1355	0.1371
20	QPSK	50	50	20.98	20.66	20.78	0.1406	0.1306	0.1343
20	QPSK	100	0	20.91	20.76	20.85	0.1384	0.1337	0.1365
20	16QAM	1	0	20.87	20.46	20.84	0.1371	0.1247	0.1361
Channel				18675	18900	19125	EIRP(W)		
Frequency (MHz)				1857.5	1880	1902.5	L	M	H
15	QPSK	1	0	21.78	21.87	21.84	0.1690	0.1726	0.1714
15	16QAM	1	0	20.69	20.81	20.67	0.1315	0.1352	0.1309
Channel				18650	18900	19150	EIRP(W)		
Frequency (MHz)				1855	1880	1905	L	M	H
10	QPSK	1	0	22.04	22.12	21.99	0.1795	0.1828	0.1774
10	16QAM	1	0	20.81	20.85	20.78	0.1352	0.1365	0.1343
Channel				18625	18900	19175	EIRP(W)		
Frequency (MHz)				1852.5	1880	1907.5	L	M	H
5	QPSK	1	0	22.11	22.19	22.15	0.1824	0.1858	0.1841
5	16QAM	1	0	20.70	20.76	20.65	0.1318	0.1337	0.1303
Channel				18615	18900	19185	EIRP(W)		
Frequency (MHz)				1851.5	1880	1908.5	L	M	H
3	QPSK	1	0	22.12	22.26	22.20	0.1828	0.1888	0.1862
3	16QAM	1	0	20.72	20.84	20.73	0.1324	0.1361	0.1327
Channel				18607	18900	19193	EIRP(W)		
Frequency (MHz)				1850.7	1880	1909.3	L	M	H
1.4	QPSK	1	0	22.08	22.09	22.00	0.1811	0.1816	0.1778
1.4	16QAM	1	0	20.88	20.92	20.77	0.1374	0.1387	0.1340

LTE Band 4:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP(W)		
Channel				20050	20175	20300			
Frequency (MHz)				1720	1732.5	1745	L	M	H
20	QPSK	1	0	22.11	22.02	22.15	0.1866	0.1828	0.1884
20	QPSK	1	49	22.28	22.11	22.30	0.1941	0.1866	0.1950
20	QPSK	1	99	21.89	21.96	22.01	0.1774	0.1803	0.1824
20	QPSK	50	0	20.83	20.83	20.90	0.1390	0.1390	0.1413
20	QPSK	50	24	20.98	20.85	21.01	0.1439	0.1396	0.1449
20	QPSK	50	50	20.88	20.72	20.91	0.1406	0.1355	0.1416
20	QPSK	100	0	20.90	20.81	20.91	0.1413	0.1384	0.1416
20	16QAM	1	0	20.78	20.81	20.84	0.1374	0.1384	0.1393
Channel				20025	20175	20325	EIRP(W)		
Frequency (MHz)				1717.5	1732.5	1747.5	L	M	H
15	QPSK	1	0	21.79	22.02	21.75	0.1734	0.1828	0.1718
15	16QAM	1	0	21.15	20.87	21.12	0.1496	0.1403	0.1486
Channel				20000	20175	20350	EIRP(W)		
Frequency (MHz)				1715	1732.5	1750	L	M	H
10	QPSK	1	0	21.93	22.02	21.91	0.1791	0.1828	0.1782
10	16QAM	1	0	20.61	20.72	20.63	0.1321	0.1355	0.1327
Channel				19975	20175	20375	EIRP(W)		
Frequency (MHz)				1712.5	1732.5	1752.5	L	M	H
5	QPSK	1	0	22.07	22.06	22.05	0.1849	0.1845	0.1841
5	16QAM	1	0	20.63	20.74	20.71	0.1327	0.1361	0.1352
Channel				19965	20175	20385	EIRP(W)		
Frequency (MHz)				1711.5	1732.5	1753.5	L	M	H
3	QPSK	1	0	21.94	21.97	22.04	0.1795	0.1807	0.1837
3	16QAM	1	0	20.59	20.63	20.60	0.1315	0.1327	0.1318
Channel				19950	20175	20393	EIRP(W)		
Frequency (MHz)				1710	1732.5	1754.3	L	M	H
1.4	QPSK	1	0	21.78	21.89	21.82	0.1730	0.1774	0.1746
1.4	16QAM	1	0	20.69	20.83	20.70	0.1346	0.1390	0.1349

LTE Band 5:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel				20450	20525	20600			
Frequency (MHz)				829	836.5	844	L	M	H
10	QPSK	1	0	23.48	23.55	23.45	0.1054	0.1072	0.1047
10	QPSK	1	25	23.70	23.78	23.76	0.1109	0.1130	0.1125
10	QPSK	1	49	23.42	23.48	23.39	0.1040	0.1054	0.1033
10	QPSK	25	0	22.53	22.63	22.48	0.0847	0.0867	0.0838
10	QPSK	25	12	22.67	22.71	22.60	0.0875	0.0883	0.0861
10	QPSK	25	25	22.37	22.50	22.37	0.0817	0.0841	0.0817
10	QPSK	50	0	22.65	22.67	22.60	0.0871	0.0875	0.0861
10	16QAM	1	0	22.54	22.69	22.68	0.0849	0.0879	0.0877
Channel				20425	20525	20625	ERP(W)		
Frequency (MHz)				826.5	836.5	846.5	L	M	H
5	QPSK	1	0	23.52	23.56	23.52	0.1064	0.1074	0.1064
5	16QAM	1	0	22.36	22.45	22.31	0.0815	0.0832	0.0805
Channel				20415	20525	20635	ERP(W)		
Frequency (MHz)				825.5	836.5	847.5	L	M	H
3	QPSK	1	0	23.48	23.52	23.46	0.1054	0.1064	0.1050
3	16QAM	1	0	22.45	22.51	22.45	0.0832	0.0843	0.0832
Channel				20407	20525	20643	ERP(W)		
Frequency (MHz)				824.7	836.5	848.3	L	M	H
1.4	QPSK	1	0	23.40	23.44	23.35	0.1035	0.1045	0.1023
1.4	16QAM	1	0	22.49	22.56	22.47	0.0839	0.0853	0.0836

LTE Band 12:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel				23060	23095	23130			
Frequency (MHz)				704	707.5	711	L	M	H
10	QPSK	1	0	23.08	23.15	23.10	0.0430	0.0437	0.0432
10	QPSK	1	25	23.17	23.18	23.14	0.0439	0.0440	0.0436
10	QPSK	1	49	22.94	22.97	22.84	0.0416	0.0419	0.0406
10	QPSK	25	0	22.04	22.10	22.09	0.0338	0.0343	0.0342
10	QPSK	25	12	22.32	22.39	22.28	0.0361	0.0366	0.0357
10	QPSK	25	25	22.17	22.26	22.18	0.0348	0.0356	0.0349
10	QPSK	50	0	22.22	22.33	22.31	0.0352	0.0361	0.0360
10	16QAM	1	0	21.86	21.97	21.83	0.0324	0.0333	0.0322
Channel				23035	23095	23155	ERP(W)		
Frequency (MHz)				701.5	707.5	713.5	L	M	H
5	QPSK	1	0	23.07	23.00	22.95	0.0429	0.0422	0.0417
5	16QAM	1	0	21.75	21.96	21.72	0.0316	0.0332	0.0314
Channel				23025	23095	23165	ERP(W)		
Frequency (MHz)				700.5	707.5	714.5	L	M	H
3	QPSK	1	0	23.06	22.85	22.89	0.0428	0.0407	0.0411
3	16QAM	1	0	21.69	21.95	21.60	0.0312	0.0331	0.0305
Channel				23017	23095	23173	ERP(W)		
Frequency (MHz)				699.7	707.5	715.3	L	M	H
1.4	QPSK	1	0	23.05	23.17	23.12	0.0427	0.0439	0.0434
1.4	16QAM	1	0	22.15	22.28	22.19	0.0347	0.0357	0.0350

LTE Band 13:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel				23230					
Frequency (MHz)				782				M	
10	QPSK	1	0		23.43			0.0773	
10	QPSK	1	25		23.62			0.0807	
10	QPSK	1	49		23.31			0.0752	
10	QPSK	25	0		22.38			0.0607	
10	QPSK	25	12		22.39			0.0608	
10	QPSK	25	25		22.02			0.0558	
10	QPSK	50	0		22.31			0.0597	
10	16QAM	1	0		22.30			0.0596	
Channel				23205	23230	23255	ERP(W)		
Frequency (MHz)				779.5	782	784.5	L	M	H
5	QPSK	1	0	23.17	23.37	23.21	0.0728	0.0762	0.0735
5	16QAM	1	0	22.22	22.16	22.22	0.0585	0.0577	0.0585

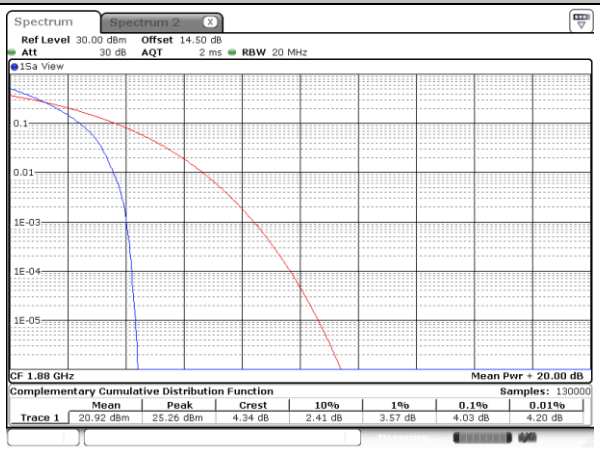
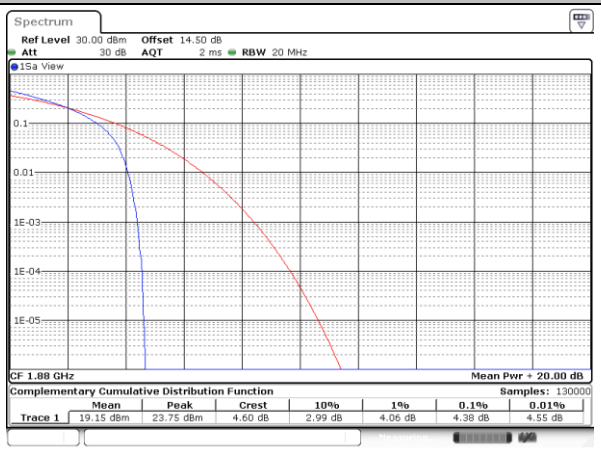
LTE Band 66:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP(W)		
Channel				132072	132322	132572			
Frequency (MHz)				1720	1745	1770	L	M	H
20	QPSK	1	0	22.34	22.41	22.28	0.1968	0.2000	0.1941
20	QPSK	1	49	22.49	22.52	22.38	0.2037	0.2051	0.1986
20	QPSK	1	99	22.12	22.24	22.14	0.1871	0.1923	0.1879
20	QPSK	50	0	21.21	21.34	21.23	0.1517	0.1563	0.1524
20	QPSK	50	24	21.31	21.36	21.27	0.1552	0.1570	0.1538
20	QPSK	50	50	21.21	21.30	21.18	0.1517	0.1549	0.1507
20	QPSK	100	0	21.36	21.44	21.31	0.1570	0.1600	0.1552
20	16QAM	1	0	21.08	21.21	21.19	0.1472	0.1517	0.1510
Channel				132047	132322	132597	EIRP(W)		
Frequency (MHz)				1717.5	1745	1772.5	L	M	H
15	QPSK	1	0	22.27	22.35	22.23	0.1936	0.1972	0.1919
15	16QAM	1	0	21.04	21.06	21.04	0.1459	0.1466	0.1459
Channel				132022	132322	132622	EIRP(W)		
Frequency (MHz)				1715	1745	1775	L	M	H
10	QPSK	1	0	22.26	22.38	22.24	0.1932	0.1986	0.1923
10	16QAM	1	0	20.99	21.07	21.12	0.1442	0.1469	0.1486
Channel				131997	132322	132647	EIRP(W)		
Frequency (MHz)				1712.5	1745	1777.5	L	M	H
5	QPSK	1	0	22.17	22.25	22.11	0.1892	0.1928	0.1866
5	16QAM	1	0	20.90	21.06	21.03	0.1413	0.1466	0.1455
Channel				131987	132322	132657	EIRP(W)		
Frequency (MHz)				1711.5	1745	1778.5	L	M	H
3	QPSK	1	0	22.03	22.21	22.00	0.1832	0.1910	0.1820
3	16QAM	1	0	20.83	20.96	21.02	0.1390	0.1432	0.1452
Channel				131979	132322	132665	EIRP(W)		
Frequency (MHz)				1710.7	1745	1779.3	L	M	H
1.4	QPSK	1	0	22.14	22.27	22.13	0.1879	0.1936	0.1875
1.4	16QAM	1	0	21.45	21.48	21.40	0.1603	0.1614	0.1585

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	4.03	4.38		PASS

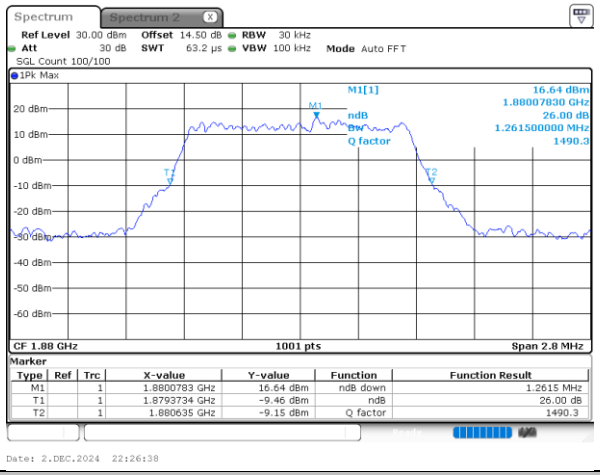
LTE Band 2 / 20MHz / QPSK	LTE Band 2 / 20MHz / 16QAM
Middle Channel / Full RB	Middle Channel / Full RB
	

26dB Bandwidth

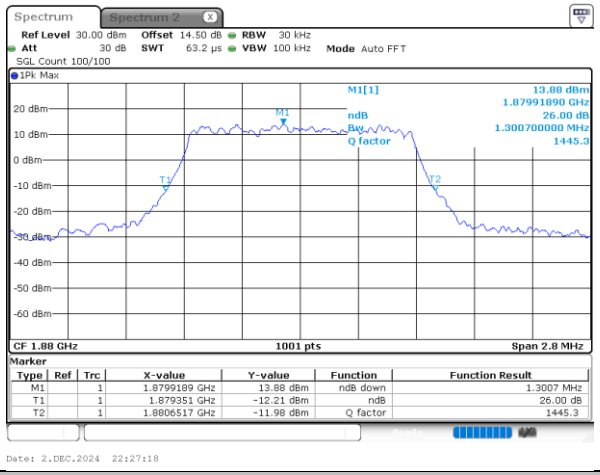
Mode	LTE Band 2 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	1.26	1.30	3.02	3.00	4.77	4.96	9.75	5.53	14.21	6.50	18.90	6.23

LTE Band 2

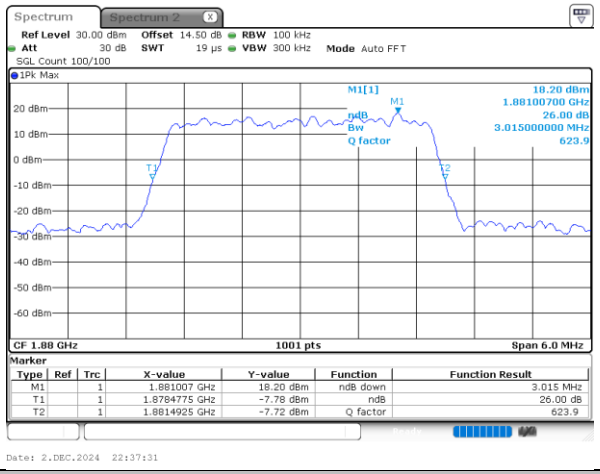
Middle Channel / 1.4MHz / QPSK



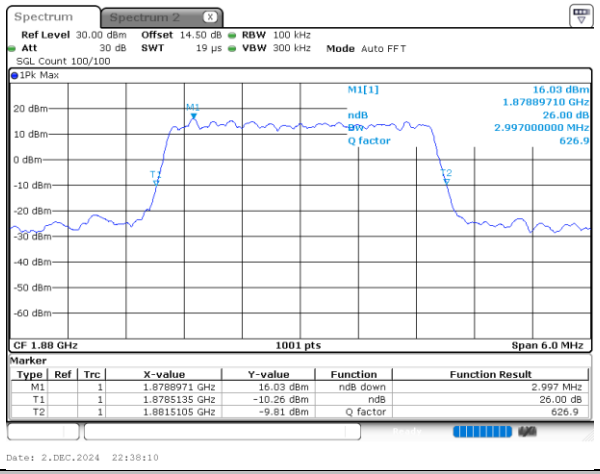
Middle Channel / 1.4MHz / 16QAM



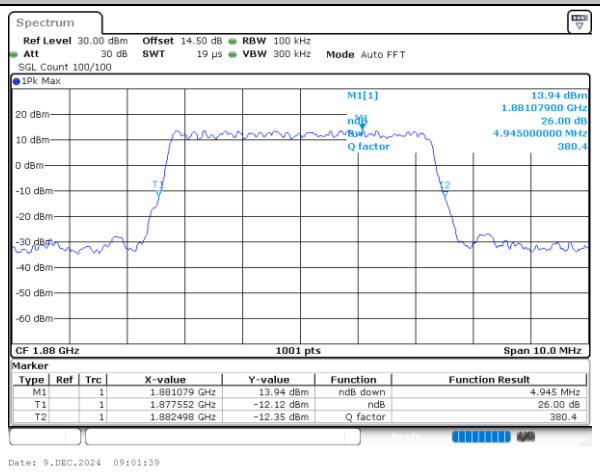
Middle Channel / 3MHz / QPSK



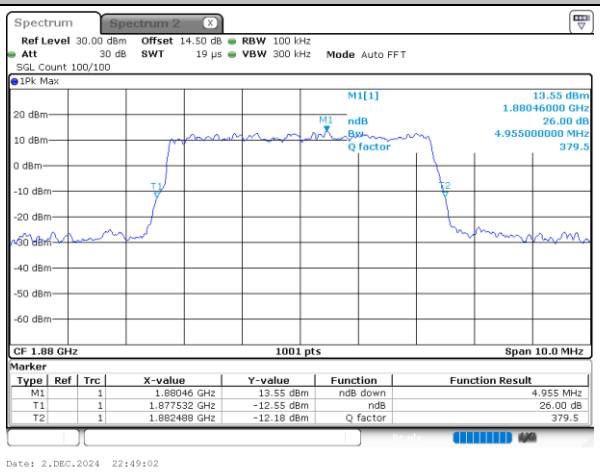
Middle Channel / 3MHz / 16QAM



Middle Channel / 5MHz / QPSK

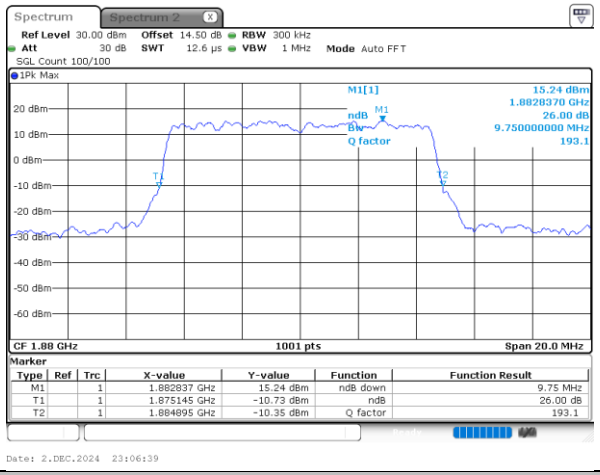


Middle Channel / 5MHz / 16QAM

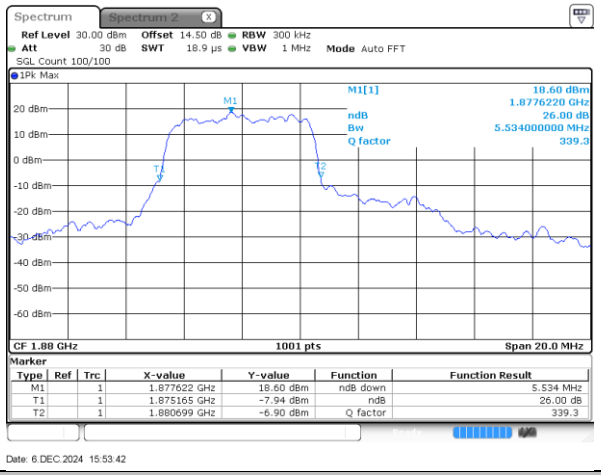


LTE Band 2

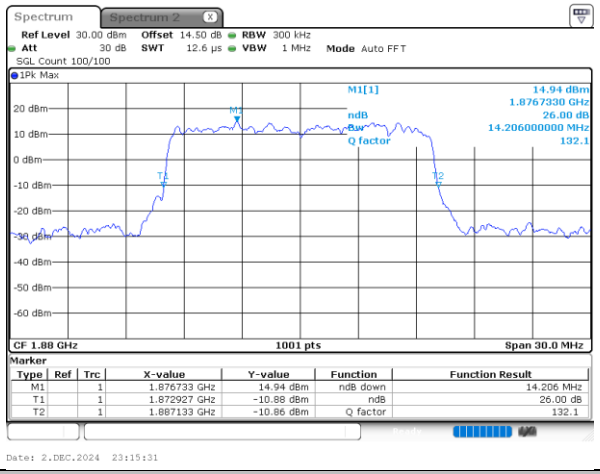
Middle Channel / 10MHz / QPSK



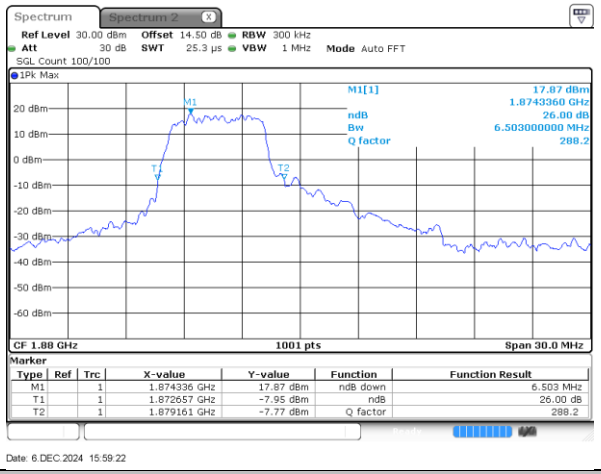
Middle Channel / 10MHz / 16QAM



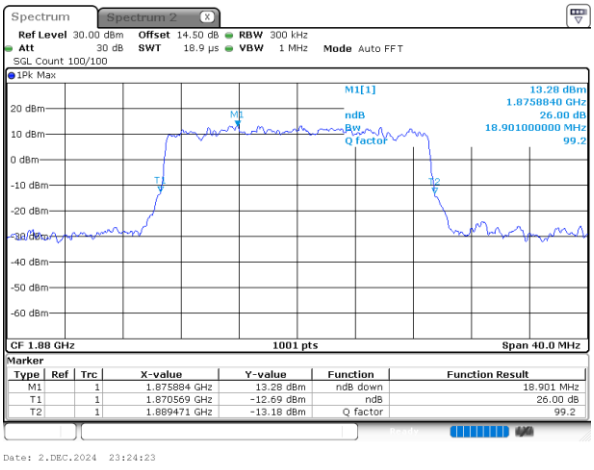
Middle Channel / 15MHz / QPSK



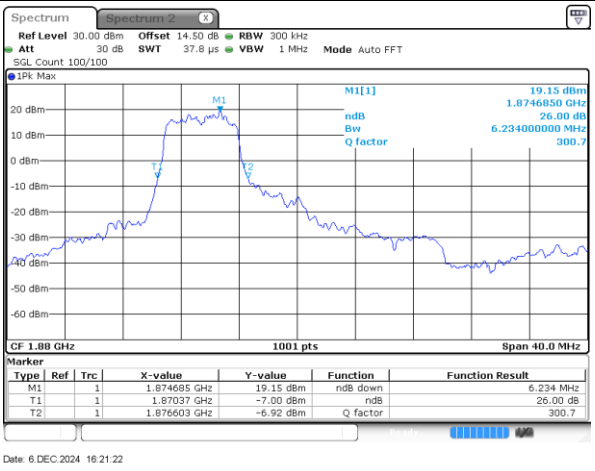
Middle Channel / 15MHz / 16QAM



Middle Channel / 20MHz / QPSK



Middle Channel / 20MHz / 16QAM

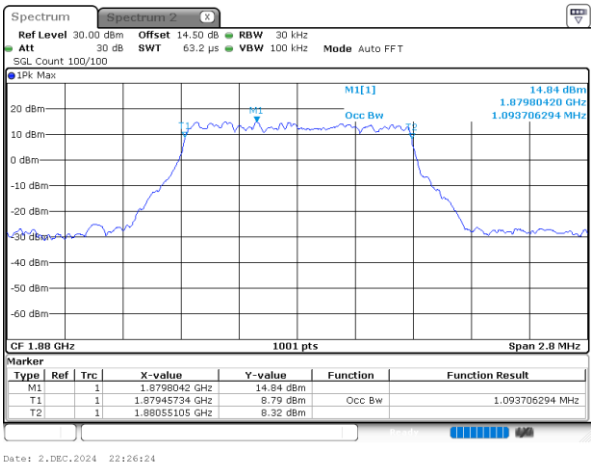


Occupied Bandwidth

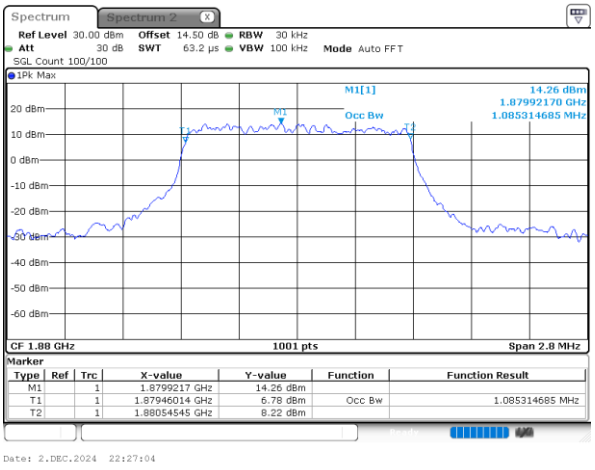
Mode	LTE Band 2 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	1.09	1.09	2.70	2.71	4.50	4.49	9.01	5.07	13.40	5.03	17.90	5.07

LTE Band 2

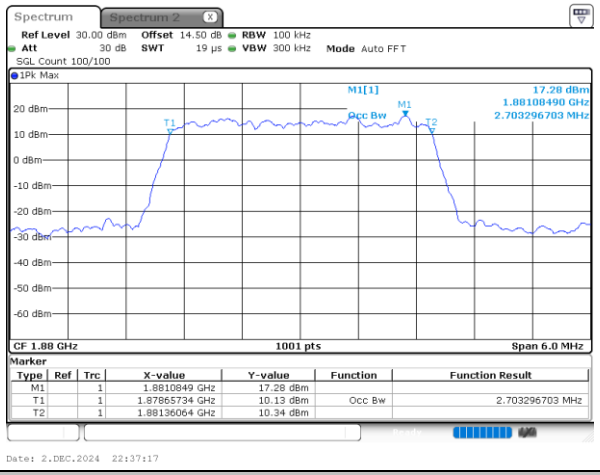
Middle Channel / 1.4MHz / QPSK



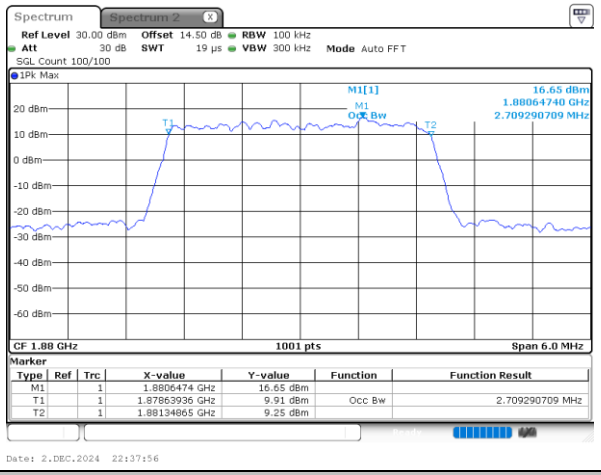
Middle Channel / 1.4MHz / 16QAM



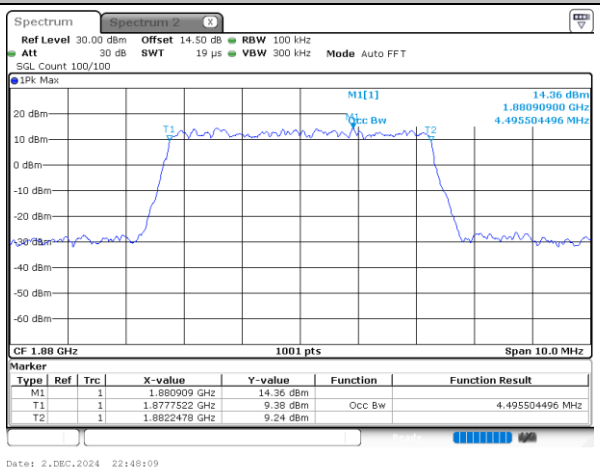
Middle Channel / 3MHz / QPSK



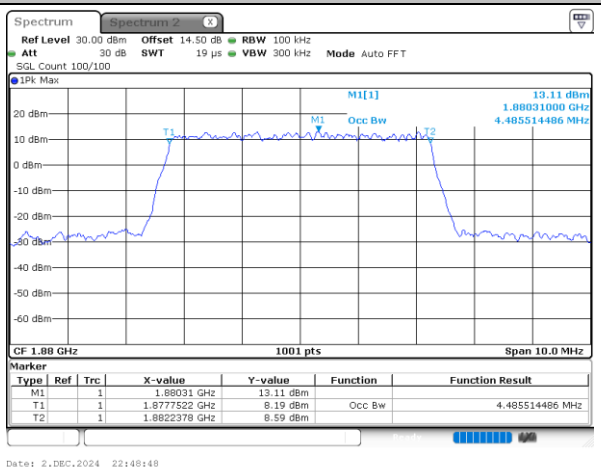
Middle Channel / 3MHz / 16QAM



Middle Channel / 5MHz / QPSK

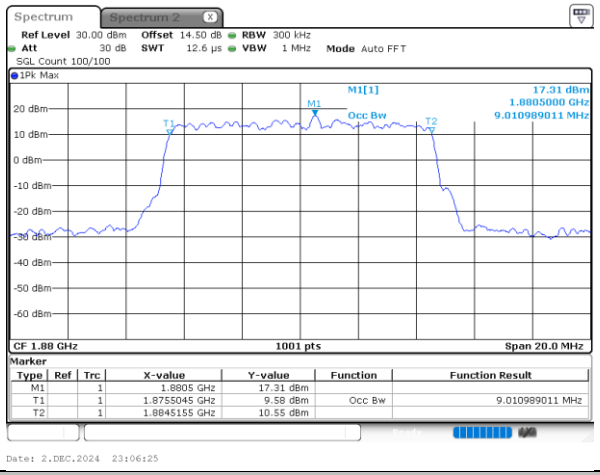


Middle Channel / 5MHz / 16QAM

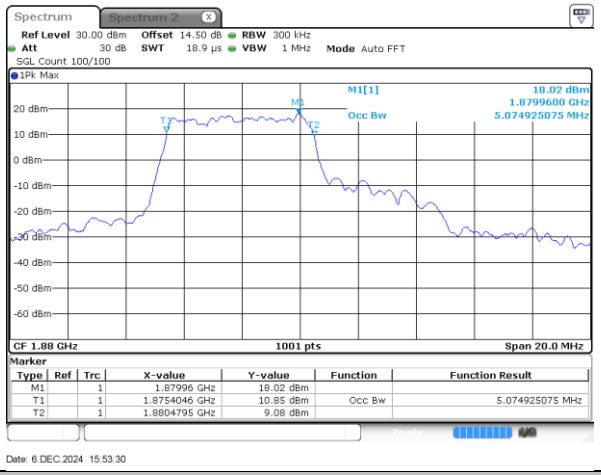


LTE Band 2

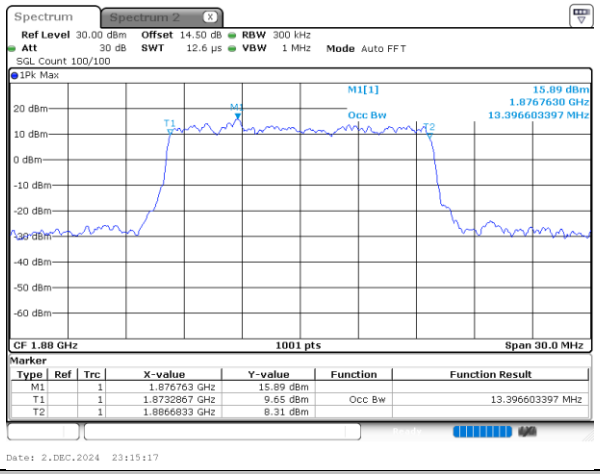
Middle Channel / 10MHz / QPSK



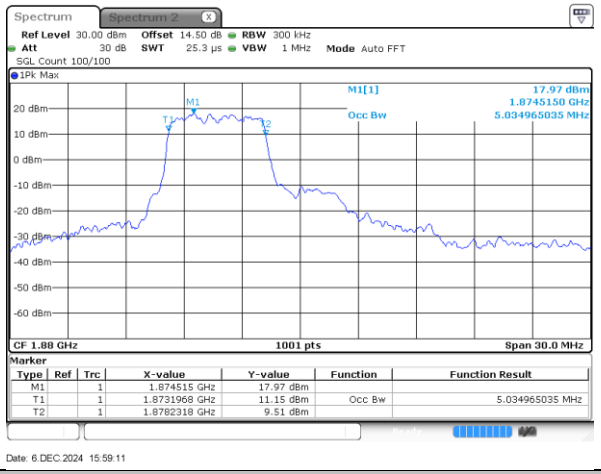
Middle Channel / 10MHz / 16QAM



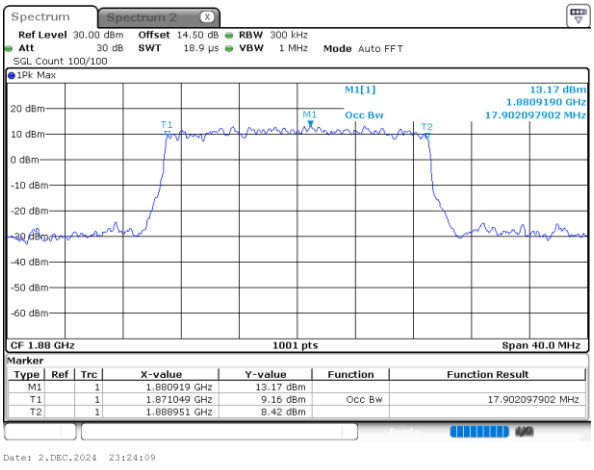
Middle Channel / 15MHz / QPSK



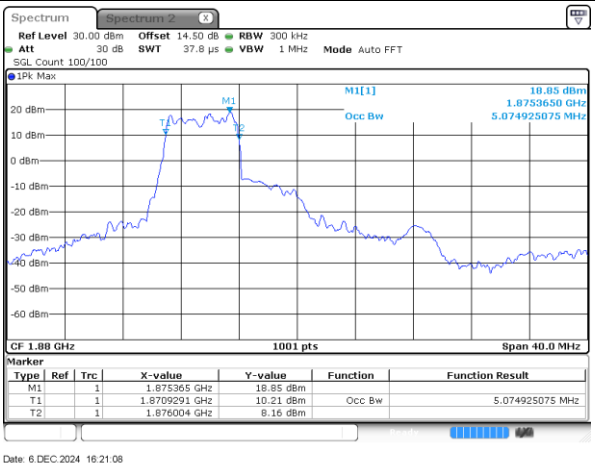
Middle Channel / 15MHz / 16QAM



Middle Channel / 20MHz / QPSK



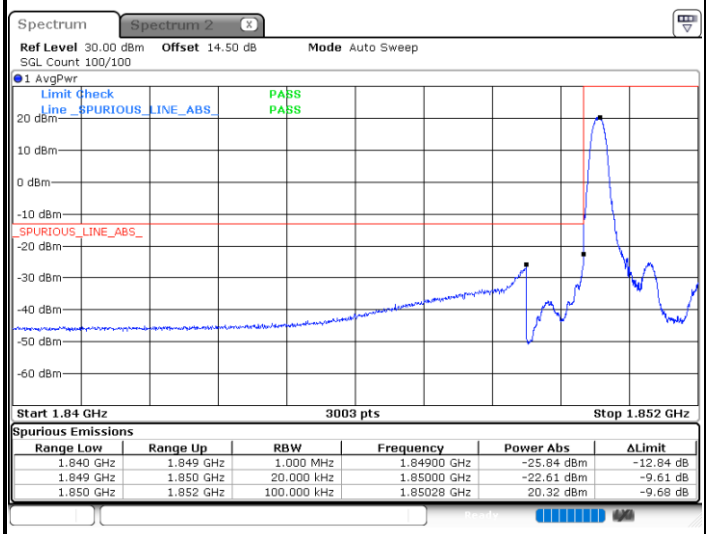
Middle Channel / 20MHz / 16QAM



Conducted Band Edge

LTE Band 2 / 1.4MHz / QPSK

Lowest Band Edge / 1RB

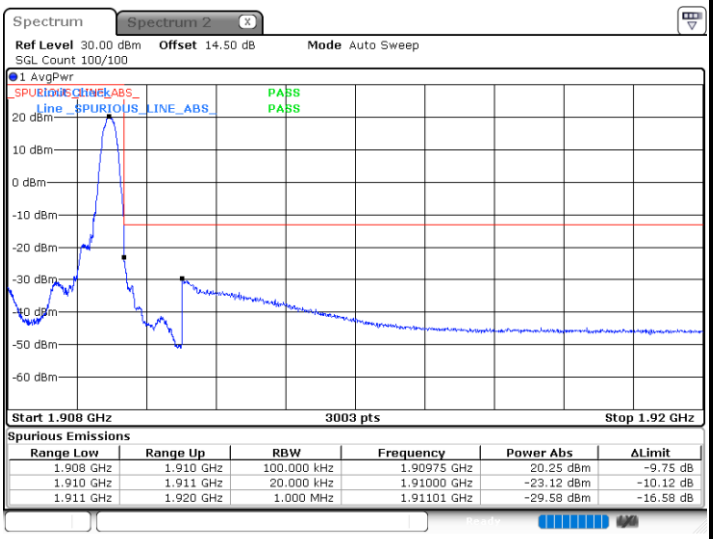


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84900 GHz	-25.84 dBm	-12.84 dB
1.849 GHz	1.850 GHz	20.000 kHz	1.85000 GHz	-22.61 dBm	-9.61 dB
1.850 GHz	1.852 GHz	100.000 kHz	1.85028 GHz	20.32 dBm	-9.68 dB

Date: 2.DEC.2024 22:21:38

Highest Band Edge / 1RB

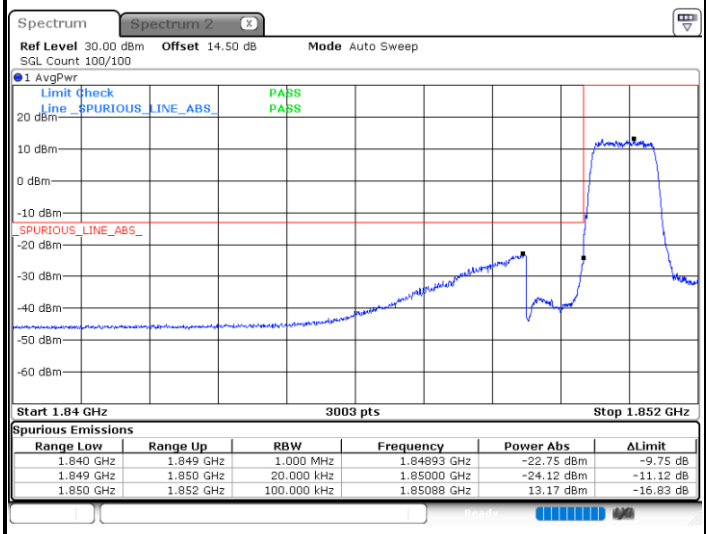


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.908 GHz	1.910 GHz	100.000 kHz	1.90975 GHz	20.25 dBm	-9.75 dB
1.910 GHz	1.911 GHz	20.000 kHz	1.91000 GHz	-23.12 dBm	-10.12 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91101 GHz	-29.58 dBm	-16.58 dB

Date: 2.DEC.2024 22:27:57

Lowest Band Edge / Full RB

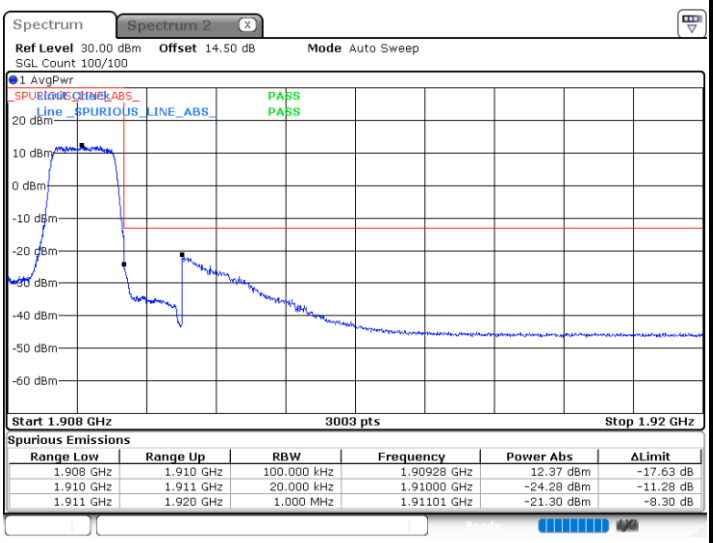


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84893 GHz	-22.75 dBm	-9.75 dB
1.849 GHz	1.850 GHz	20.000 kHz	1.85000 GHz	-24.12 dBm	-11.12 dB
1.850 GHz	1.852 GHz	100.000 kHz	1.85088 GHz	13.17 dBm	-16.83 dB

Date: 2.DEC.2024 22:24:09

Highest Band Edge / Full RB



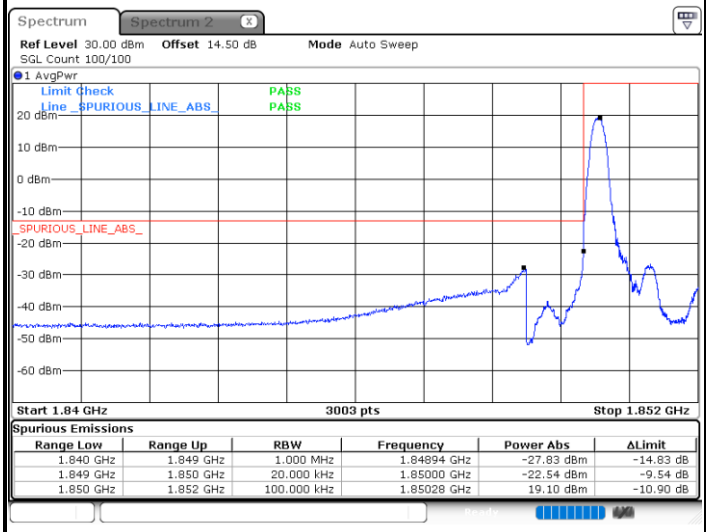
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.908 GHz	1.910 GHz	100.000 kHz	1.90928 GHz	12.37 dBm	-17.63 dB
1.910 GHz	1.911 GHz	20.000 kHz	1.91000 GHz	-24.28 dBm	-11.28 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91101 GHz	-21.30 dBm	-8.30 dB

Date: 2.DEC.2024 22:30:27

LTE Band 2 / 1.4MHz / 16QAM

Lowest Band Edge / 1 RB

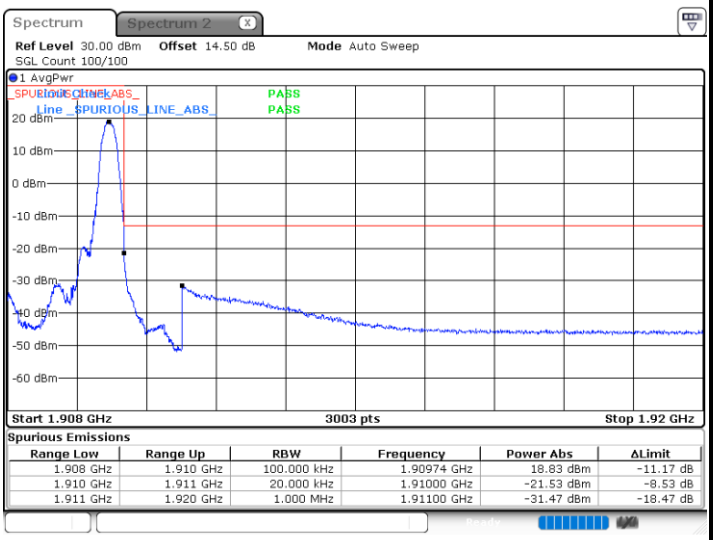


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84894 GHz	-27.83 dBm	-14.83 dB
1.849 GHz	1.850 GHz	20.000 kHz	1.85000 GHz	-22.54 dBm	-9.54 dB
1.850 GHz	1.852 GHz	100.000 kHz	1.85028 GHz	19.10 dBm	-10.90 dB

Date: 2.DEC.2024 22:22:19

Highest Band Edge / 1 RB

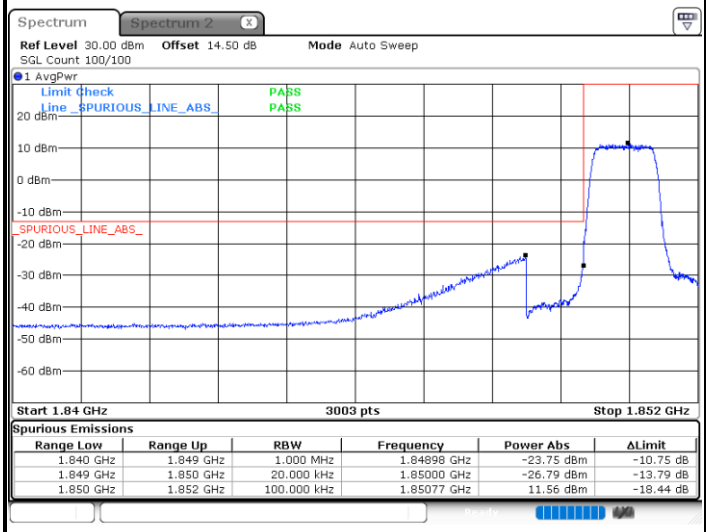


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.908 GHz	1.910 GHz	100.000 kHz	1.90974 GHz	18.83 dBm	-11.17 dB
1.910 GHz	1.911 GHz	20.000 kHz	1.91000 GHz	-21.53 dBm	-8.53 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91100 GHz	-31.47 dBm	-18.47 dB

Date: 2.DEC.2024 22:28:37

Lowest Band Edge / Full RB

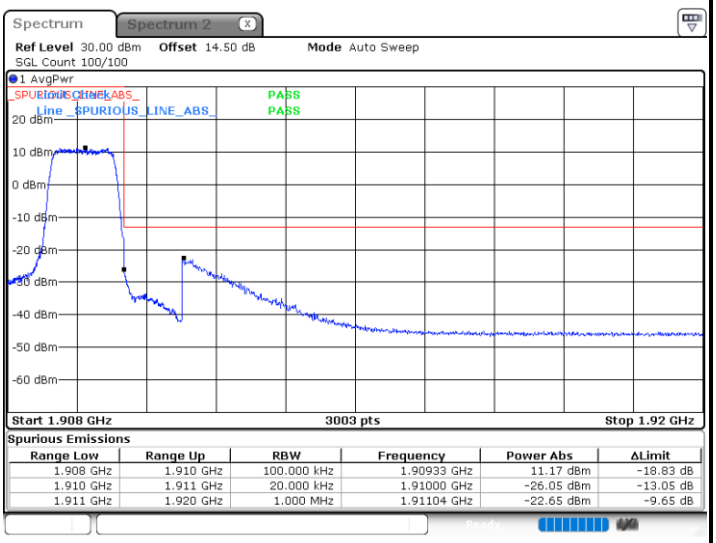


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84898 GHz	-23.75 dBm	-10.75 dB
1.849 GHz	1.850 GHz	20.000 kHz	1.85000 GHz	-26.79 dBm	-13.79 dB
1.850 GHz	1.852 GHz	100.000 kHz	1.85077 GHz	11.56 dBm	-18.44 dB

Date: 2.DEC.2024 22:24:49

Highest Band Edge / Full RB



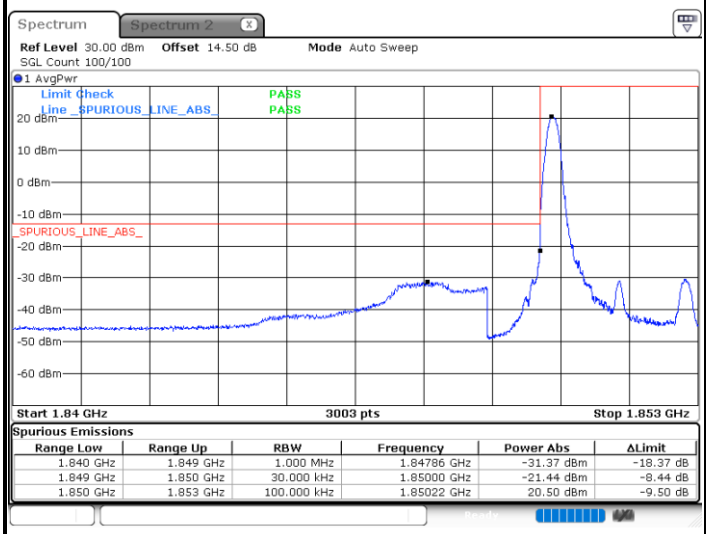
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.908 GHz	1.910 GHz	100.000 kHz	1.90933 GHz	11.17 dBm	-18.83 dB
1.910 GHz	1.911 GHz	20.000 kHz	1.91000 GHz	-26.05 dBm	-13.05 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91104 GHz	-22.65 dBm	-9.65 dB

Date: 2.DEC.2024 22:31:08

LTE Band 2 / 3MHz / QPSK

Lowest Band Edge / 1RB

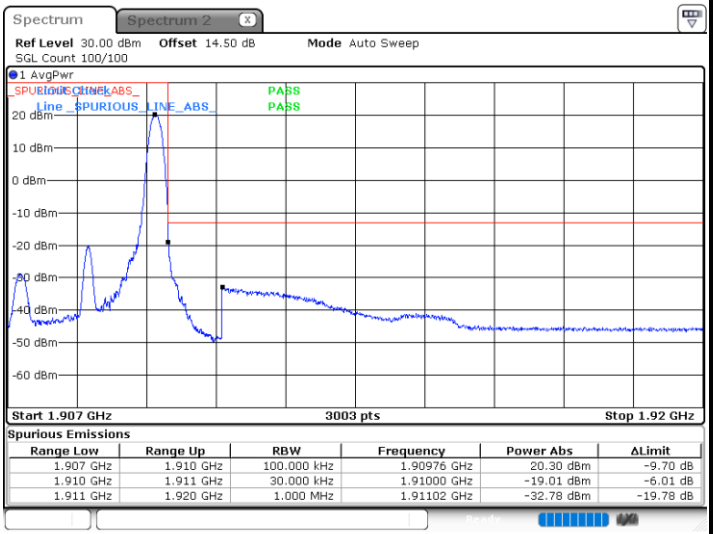


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84786 GHz	-31.37 dBm	-18.37 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.85000 GHz	-21.44 dBm	-8.44 dB
1.850 GHz	1.853 GHz	100.000 kHz	1.85022 GHz	20.50 dBm	-9.50 dB

Date: 2.DEC.2024 22:32:31

Highest Band Edge / 1RB

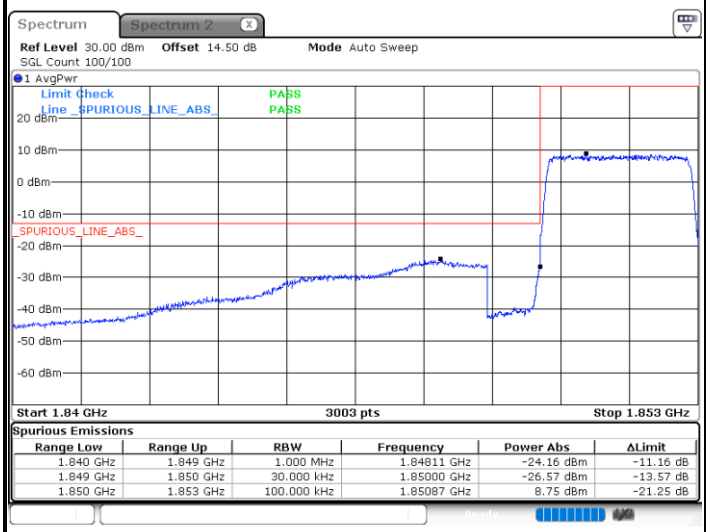


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.907 GHz	1.910 GHz	100.000 kHz	1.90976 GHz	20.30 dBm	-9.70 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91000 GHz	-19.01 dBm	-6.01 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91102 GHz	-32.78 dBm	-19.78 dB

Date: 2.DEC.2024 22:38:50

Lowest Band Edge / Full RB

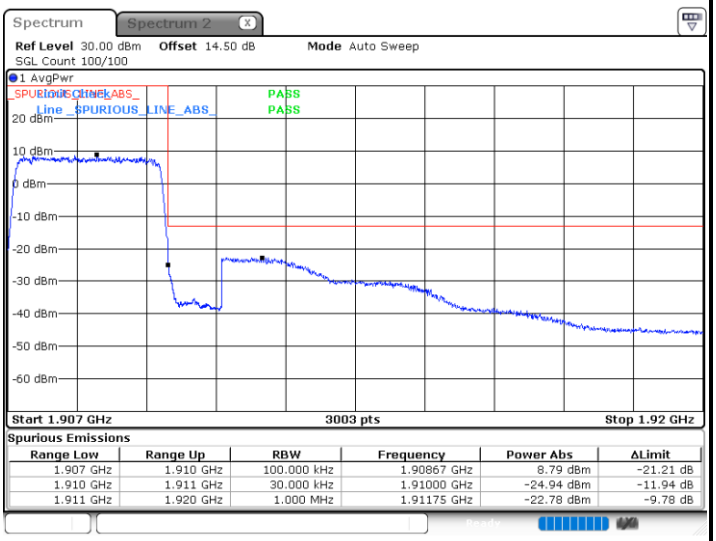


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84811 GHz	-24.16 dBm	-11.16 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.85000 GHz	-26.57 dBm	-13.57 dB
1.850 GHz	1.853 GHz	100.000 kHz	1.85087 GHz	8.75 dBm	-21.25 dB

Date: 2.DEC.2024 22:35:01

Highest Band Edge / Full RB



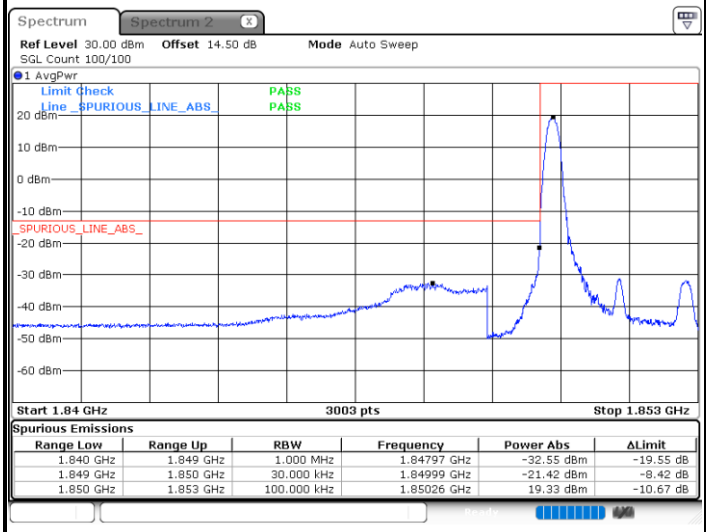
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.907 GHz	1.910 GHz	100.000 kHz	1.90867 GHz	8.79 dBm	-21.21 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91000 GHz	-24.94 dBm	-11.94 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91175 GHz	-22.78 dBm	-9.78 dB

Date: 2.DEC.2024 22:40:10

LTE Band 2 / 3MHz / 16QAM

Lowest Band Edge / 1 RB

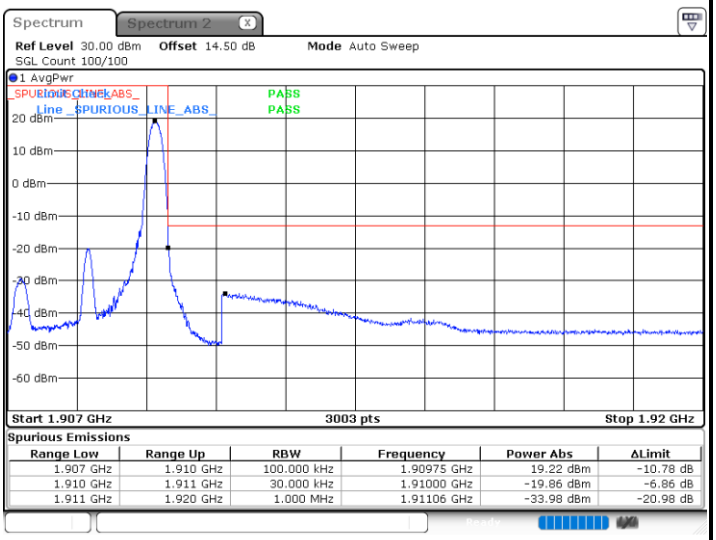


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84797 GHz	-32.55 dBm	-19.55 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.84999 GHz	-21.42 dBm	-8.42 dB
1.850 GHz	1.853 GHz	100.000 kHz	1.85026 GHz	19.33 dBm	-10.67 dB

Date: 2.DEC.2024 22:33:11

Highest Band Edge / 1 RB

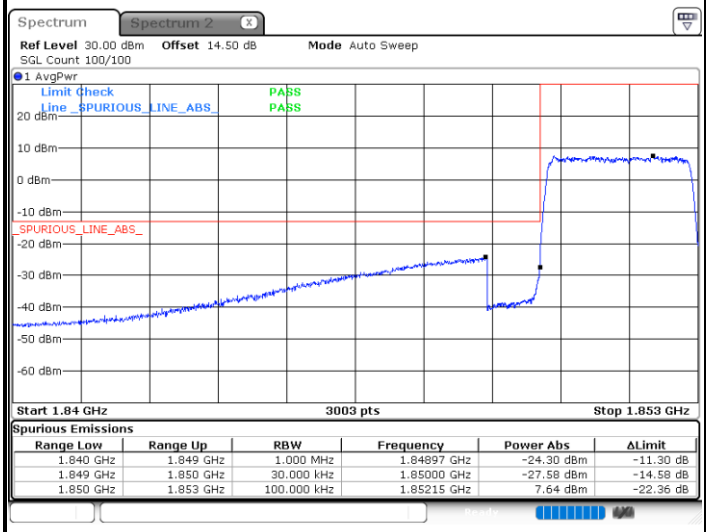


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.907 GHz	1.910 GHz	100.000 kHz	1.90975 GHz	19.22 dBm	-10.78 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91000 GHz	-19.86 dBm	-6.86 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91106 GHz	-33.98 dBm	-20.98 dB

Date: 2.DEC.2024 22:39:30

Lowest Band Edge / Full RB

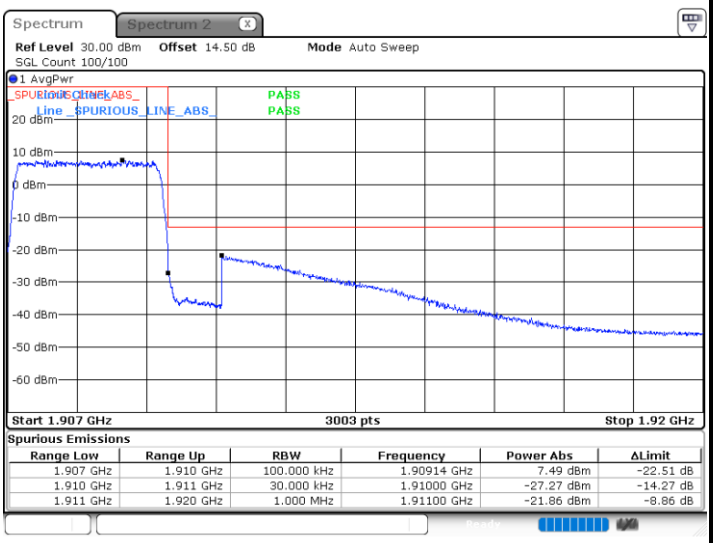


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84897 GHz	-24.30 dBm	-11.30 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.85000 GHz	-27.58 dBm	-14.58 dB
1.850 GHz	1.853 GHz	100.000 kHz	1.85215 GHz	7.64 dBm	-22.36 dB

Date: 2.DEC.2024 22:35:41

Highest Band Edge / Full RB



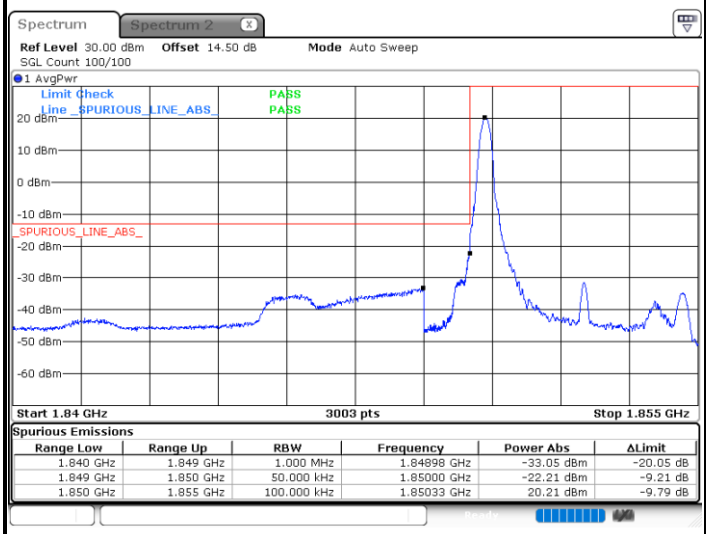
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.907 GHz	1.910 GHz	100.000 kHz	1.90914 GHz	7.49 dBm	-22.51 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91000 GHz	-27.27 dBm	-14.27 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91100 GHz	-21.86 dBm	-8.86 dB

Date: 2.DEC.2024 22:40:51

LTE Band 2 / 5MHz / QPSK

Lowest Band Edge / 1RB

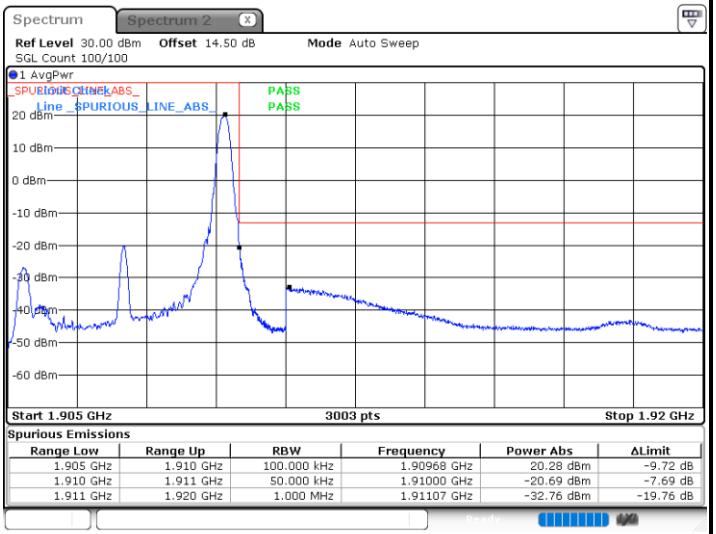


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84898 GHz	-33.05 dBm	-20.05 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.85000 GHz	-22.21 dBm	-9.21 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85033 GHz	20.21 dBm	-9.79 dB

Date: 2.DEC.2024 22:43:23

Highest Band Edge / 1RB

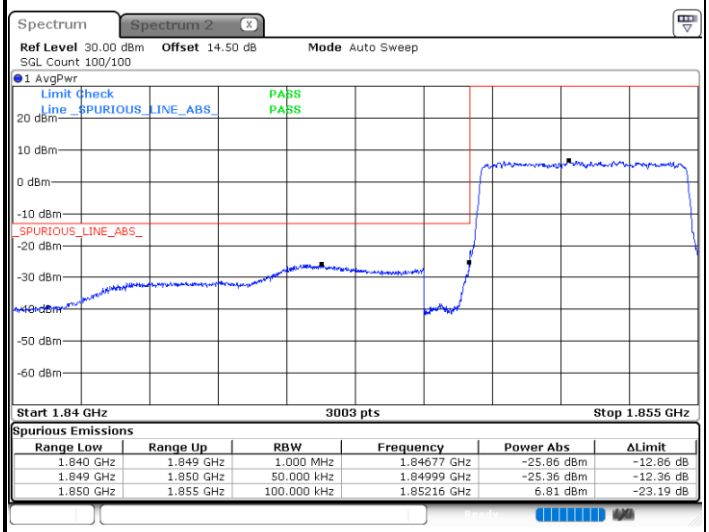


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90968 GHz	20.28 dBm	-9.72 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91000 GHz	-20.69 dBm	-7.69 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91107 GHz	-32.76 dBm	-19.76 dB

Date: 2.DEC.2024 22:49:42

Lowest Band Edge / Full RB

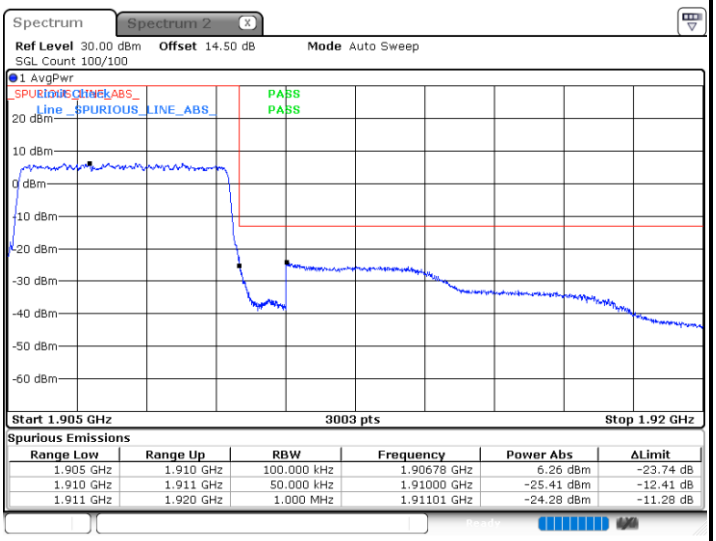


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84677 GHz	-25.86 dBm	-12.86 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.84999 GHz	-25.36 dBm	-12.36 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85216 GHz	6.81 dBm	-23.19 dB

Date: 2.DEC.2024 22:45:53

Highest Band Edge / Full RB



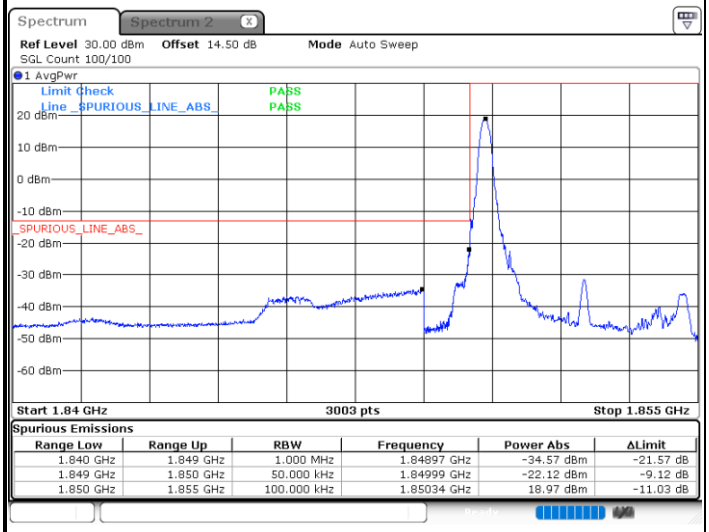
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90678 GHz	6.26 dBm	-23.74 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91000 GHz	-25.41 dBm	-12.41 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91101 GHz	-24.28 dBm	-11.28 dB

Date: 2.DEC.2024 22:51:02

LTE Band 2 / 5MHz / 16QAM

Lowest Band Edge / 1 RB

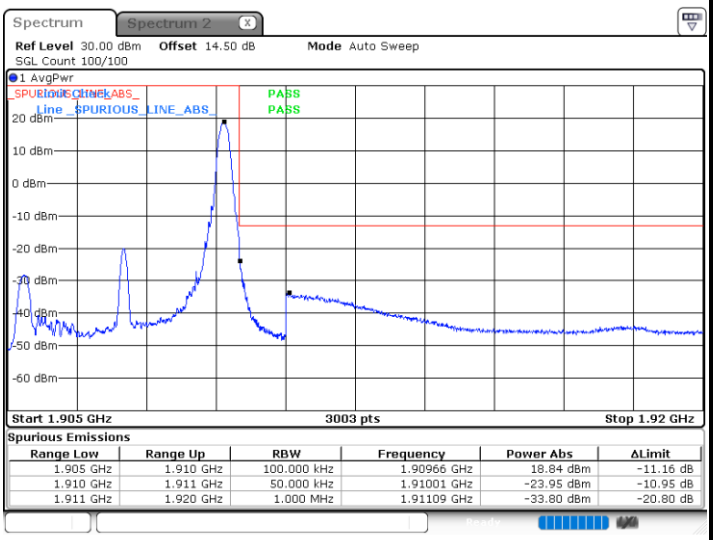


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84897 GHz	-34.57 dBm	-21.57 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.84999 GHz	-22.12 dBm	-9.12 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85034 GHz	18.97 dBm	-11.03 dB

Date: 2.DEC.2024 22:44:04

Highest Band Edge / 1 RB

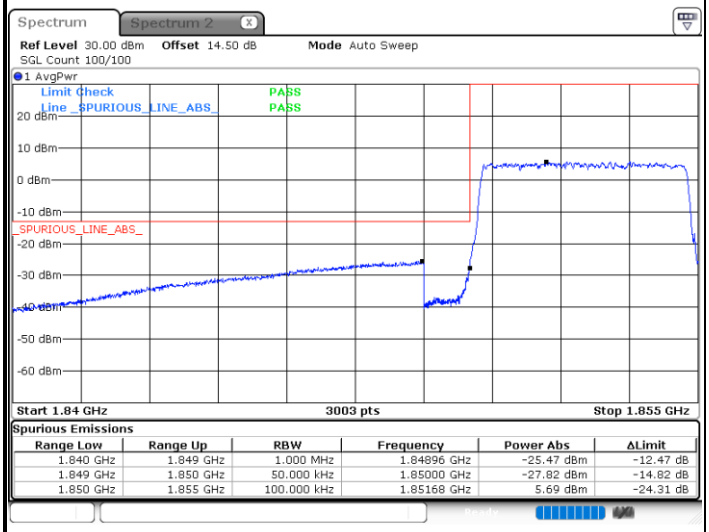


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90966 GHz	18.84 dBm	-11.16 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91001 GHz	-23.95 dBm	-10.95 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91109 GHz	-33.80 dBm	-20.80 dB

Date: 2.DEC.2024 22:50:22

Lowest Band Edge / Full RB

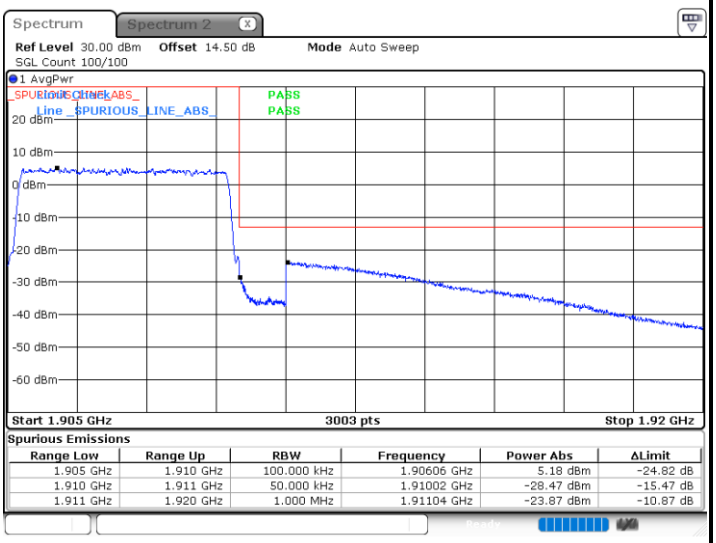


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84896 GHz	-25.47 dBm	-12.47 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.85000 GHz	-27.82 dBm	-14.82 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85168 GHz	5.69 dBm	-24.31 dB

Date: 2.DEC.2024 22:46:34

Highest Band Edge / Full RB



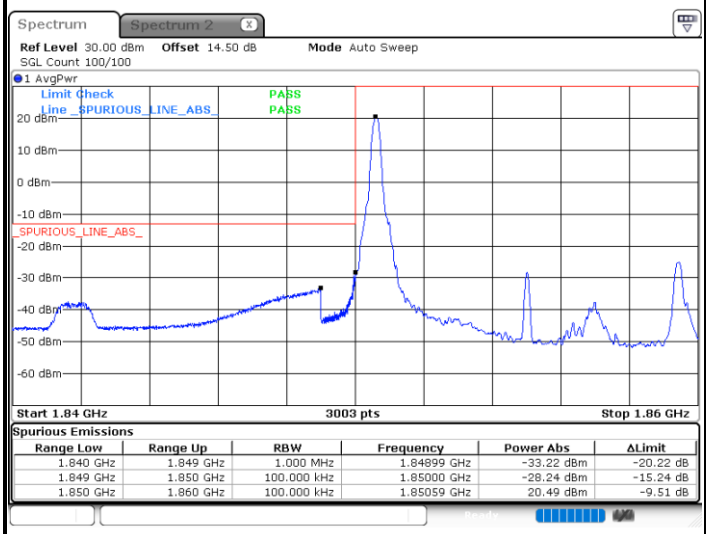
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90606 GHz	5.18 dBm	-24.82 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91002 GHz	-28.47 dBm	-15.47 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91104 GHz	-23.87 dBm	-10.87 dB

Date: 2.DEC.2024 22:51:43

LTE Band 2 / 10MHz / QPSK

Lowest Band Edge / 1RB

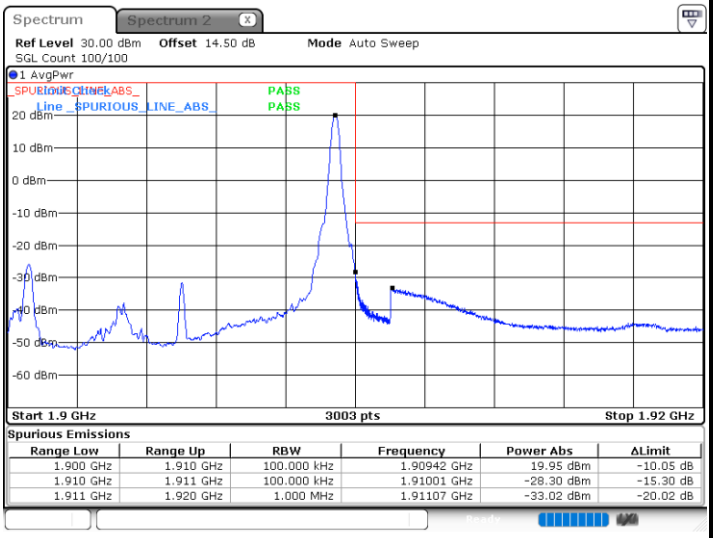


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84899 GHz	-33.22 dBm	-20.22 dB
1.849 GHz	1.850 GHz	100.000 kHz	1.85000 GHz	-28.24 dBm	-15.24 dB
1.850 GHz	1.860 GHz	100.000 kHz	1.85059 GHz	20.49 dBm	-9.51 dB

Date: 2.DEC.2024 22:54:15

Highest Band Edge / 1RB

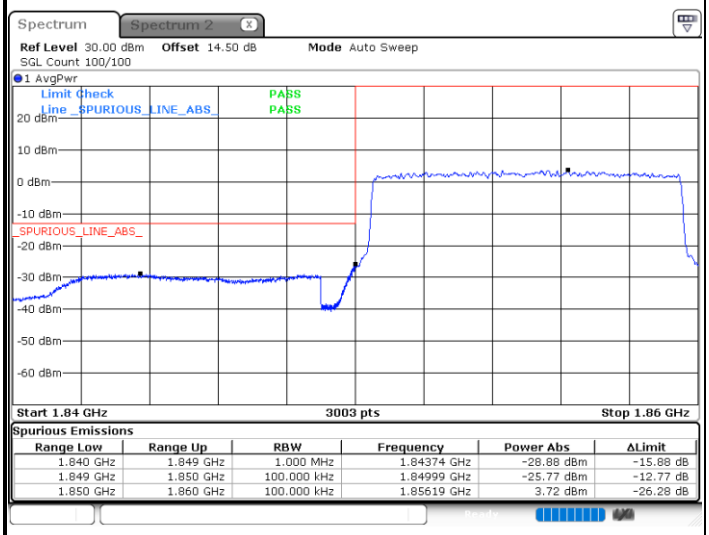


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.900 GHz	1.910 GHz	100.000 kHz	1.90942 GHz	19.95 dBm	-10.05 dB
1.910 GHz	1.911 GHz	100.000 kHz	1.91001 GHz	-28.30 dBm	-15.30 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91107 GHz	-33.02 dBm	-20.02 dB

Date: 2.DEC.2024 23:07:18

Lowest Band Edge / Full RB

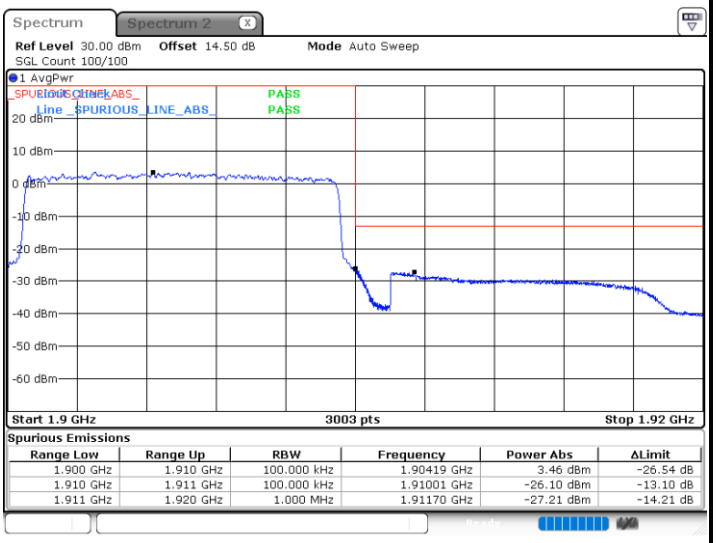


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84374 GHz	-28.88 dBm	-15.88 dB
1.849 GHz	1.850 GHz	100.000 kHz	1.84999 GHz	-25.77 dBm	-12.77 dB
1.850 GHz	1.860 GHz	100.000 kHz	1.85619 GHz	3.72 dBm	-26.28 dB

Date: 2.DEC.2024 22:55:36

Highest Band Edge / Full RB



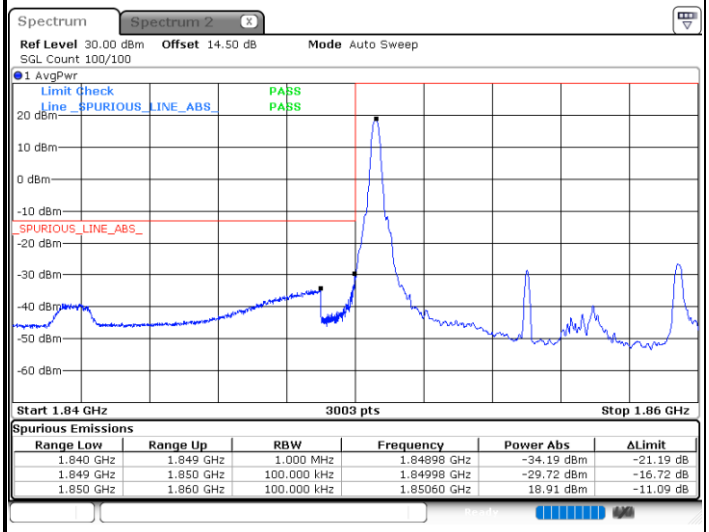
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.900 GHz	1.910 GHz	100.000 kHz	1.90419 GHz	3.46 dBm	-26.54 dB
1.910 GHz	1.911 GHz	100.000 kHz	1.91001 GHz	-26.10 dBm	-13.10 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91170 GHz	-27.21 dBm	-14.21 dB

Date: 2.DEC.2024 23:08:39

LTE Band 2 / 10MHz / 16QAM

Lowest Band Edge / 1 RB

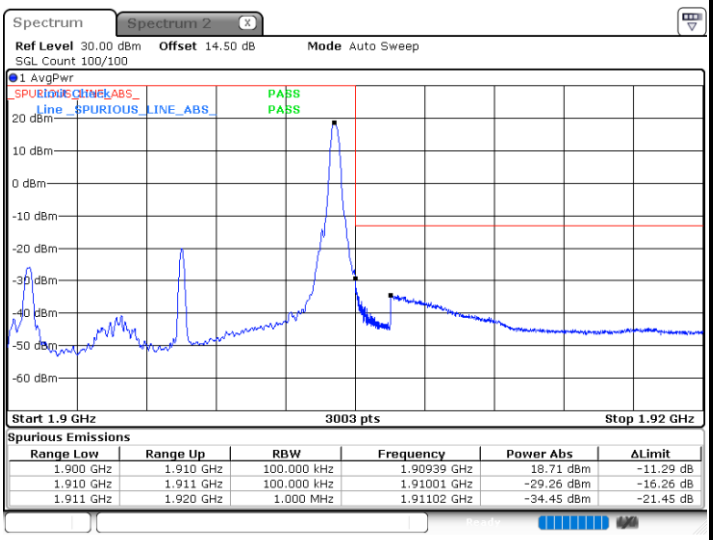


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84898 GHz	-34.19 dBm	-21.19 dB
1.849 GHz	1.850 GHz	100.000 kHz	1.84998 GHz	-29.72 dBm	-16.72 dB
1.850 GHz	1.860 GHz	100.000 kHz	1.85060 GHz	18.91 dBm	-11.09 dB

Date: 2.DEC.2024 22:54:56

Highest Band Edge / 1 RB

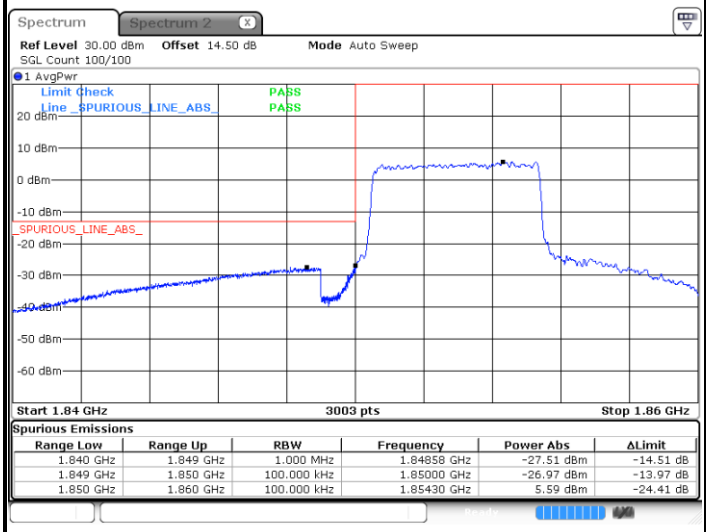


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.900 GHz	1.910 GHz	100.000 kHz	1.90939 GHz	18.71 dBm	-11.29 dB
1.910 GHz	1.911 GHz	100.000 kHz	1.91001 GHz	-29.26 dBm	-16.26 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91102 GHz	-34.45 dBm	-21.45 dB

Date: 2.DEC.2024 23:07:58

Lowest Band Edge / Full RB

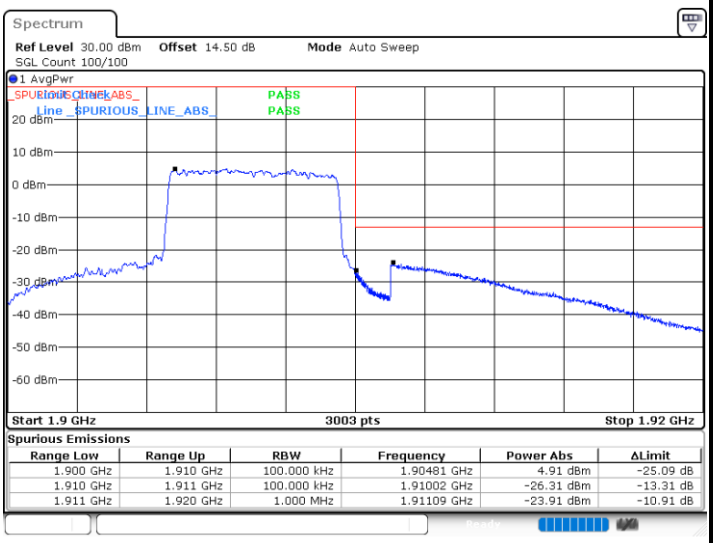


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84858 GHz	-27.51 dBm	-14.51 dB
1.849 GHz	1.850 GHz	100.000 kHz	1.85000 GHz	-26.97 dBm	-13.97 dB
1.850 GHz	1.860 GHz	100.000 kHz	1.85430 GHz	5.59 dBm	-24.41 dB

Date: 6.DEC.2024 15:49:00

Highest Band Edge / Full RB



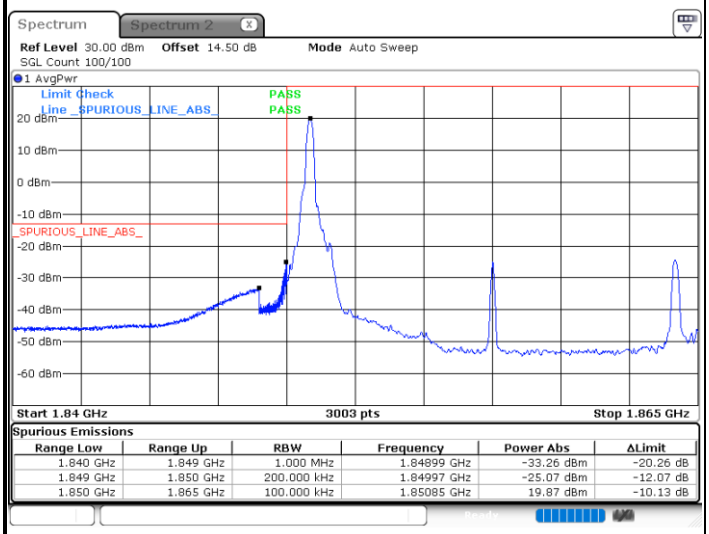
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.900 GHz	1.910 GHz	100.000 kHz	1.90481 GHz	4.91 dBm	-25.09 dB
1.910 GHz	1.911 GHz	100.000 kHz	1.91002 GHz	-26.31 dBm	-13.31 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91109 GHz	-23.91 dBm	-10.91 dB

Date: 6.DEC.2024 18:52:12

LTE Band 2 / 15MHz / QPSK

Lowest Band Edge / 1RB

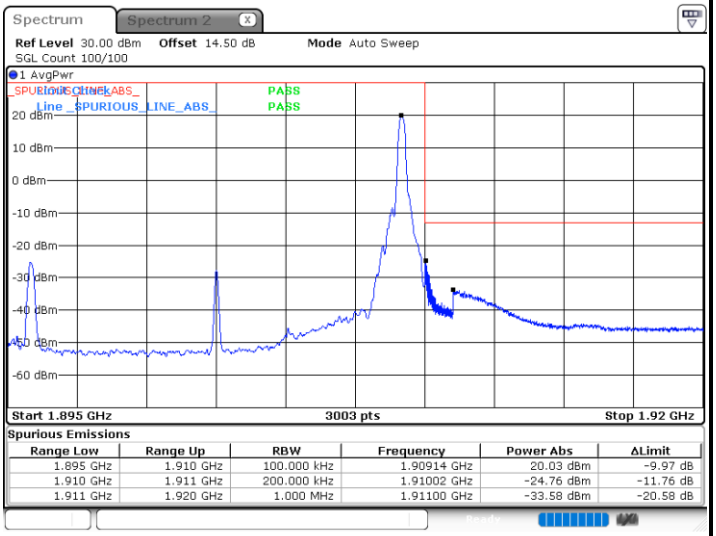


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84899 GHz	-33.26 dBm	-20.26 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84997 GHz	-25.07 dBm	-12.07 dB
1.850 GHz	1.865 GHz	100.000 kHz	1.85085 GHz	19.87 dBm	-10.13 dB

Date: 2.DEC.2024 23:11:11

Highest Band Edge / 1RB

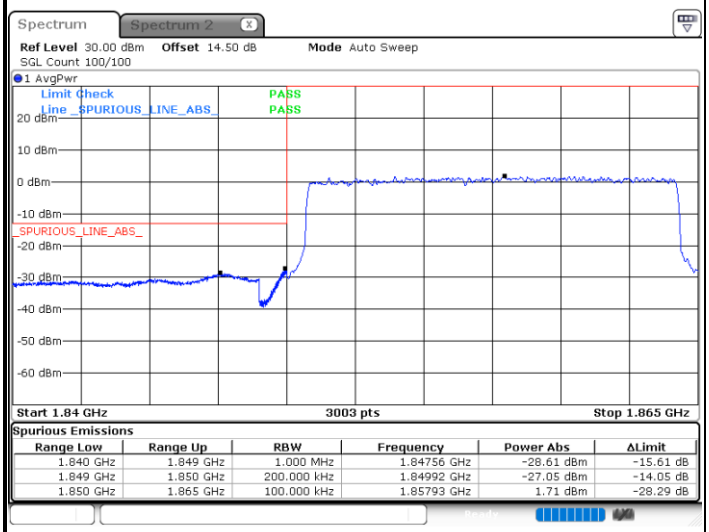


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.895 GHz	1.910 GHz	100.000 kHz	1.90914 GHz	20.03 dBm	-9.97 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91002 GHz	-24.76 dBm	-11.76 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91100 GHz	-33.58 dBm	-20.58 dB

Date: 2.DEC.2024 23:16:10

Lowest Band Edge / Full RB

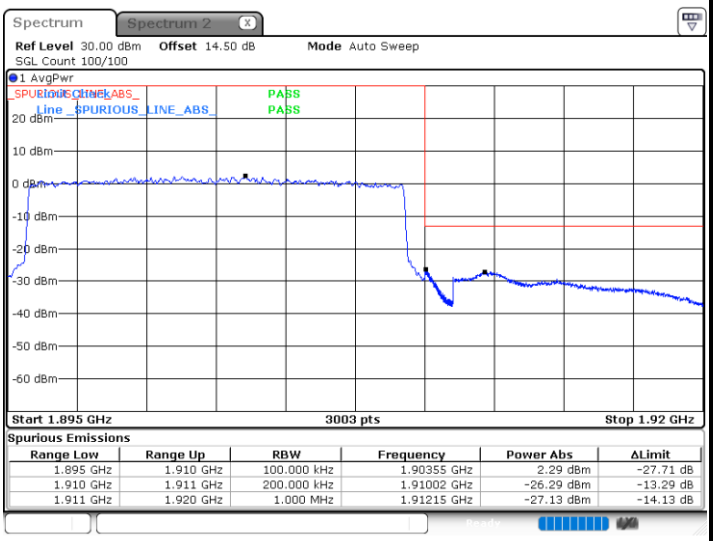


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84756 GHz	-28.61 dBm	-15.61 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84992 GHz	-27.05 dBm	-14.05 dB
1.850 GHz	1.865 GHz	100.000 kHz	1.85793 GHz	1.71 dBm	-28.29 dB

Date: 2.DEC.2024 23:12:32

Highest Band Edge / Full RB



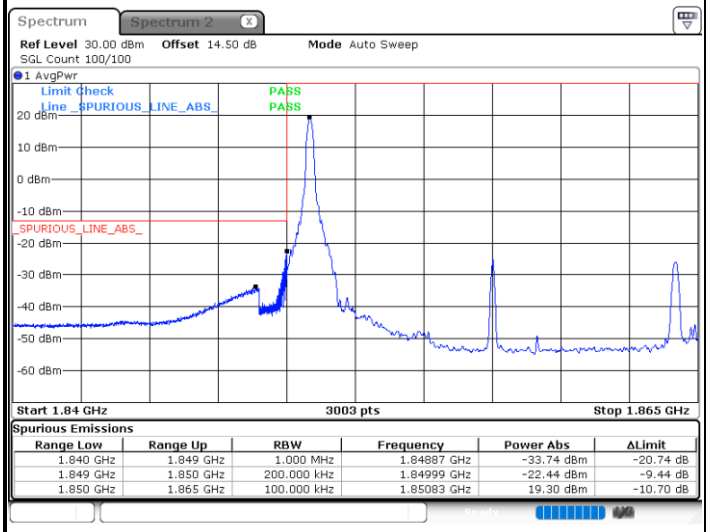
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.895 GHz	1.910 GHz	100.000 kHz	1.90355 GHz	2.29 dBm	-27.71 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91002 GHz	-26.29 dBm	-13.29 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91215 GHz	-27.13 dBm	-14.13 dB

Date: 2.DEC.2024 23:17:31

LTE Band 2 / 15MHz / 16QAM

Lowest Band Edge / 1 RB

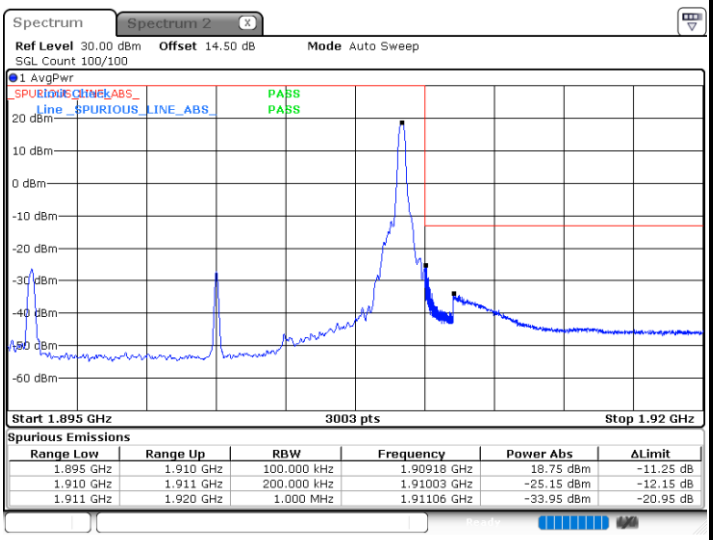


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84887 GHz	-33.74 dBm	-20.74 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84999 GHz	-22.44 dBm	-9.44 dB
1.850 GHz	1.865 GHz	100.000 kHz	1.85083 GHz	19.30 dBm	-10.70 dB

Date: 2.DEC.2024 23:11:52

Highest Band Edge / 1 RB

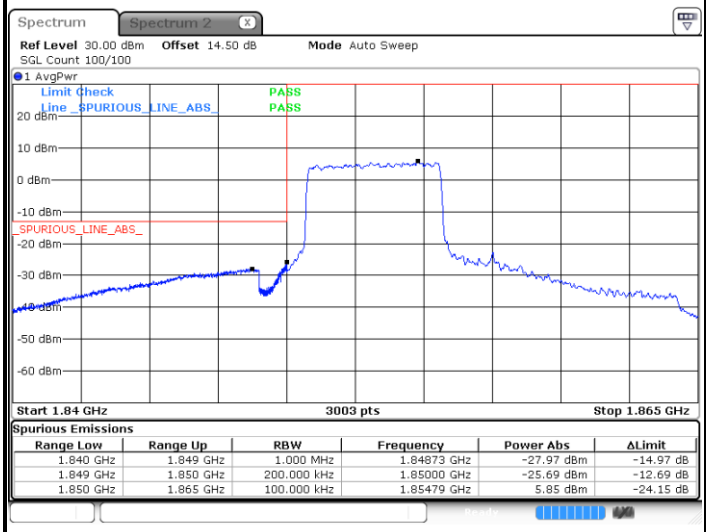


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.895 GHz	1.910 GHz	100.000 kHz	1.90918 GHz	18.75 dBm	-11.25 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91003 GHz	-25.15 dBm	-12.15 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91106 GHz	-33.95 dBm	-20.95 dB

Date: 2.DEC.2024 23:16:50

Lowest Band Edge / Full RB

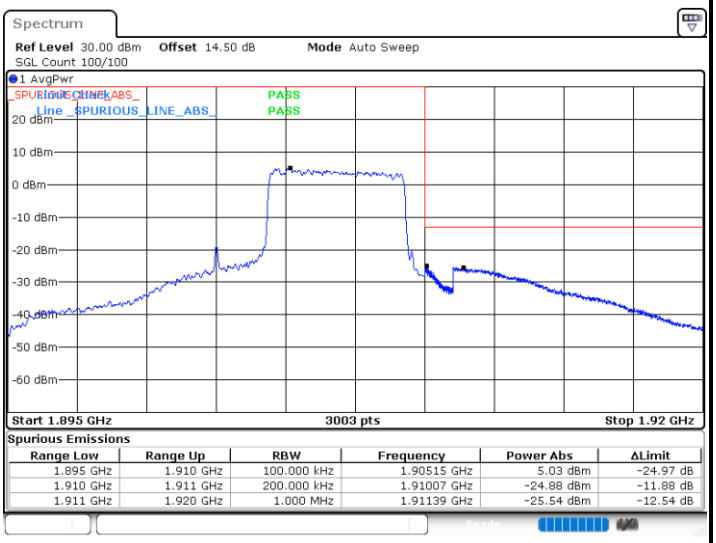


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84873 GHz	-27.97 dBm	-14.97 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.85000 GHz	-25.69 dBm	-12.69 dB
1.850 GHz	1.865 GHz	100.000 kHz	1.85479 GHz	5.85 dBm	-24.15 dB

Date: 6.DEC.2024 15:57:57

Highest Band Edge / Full RB



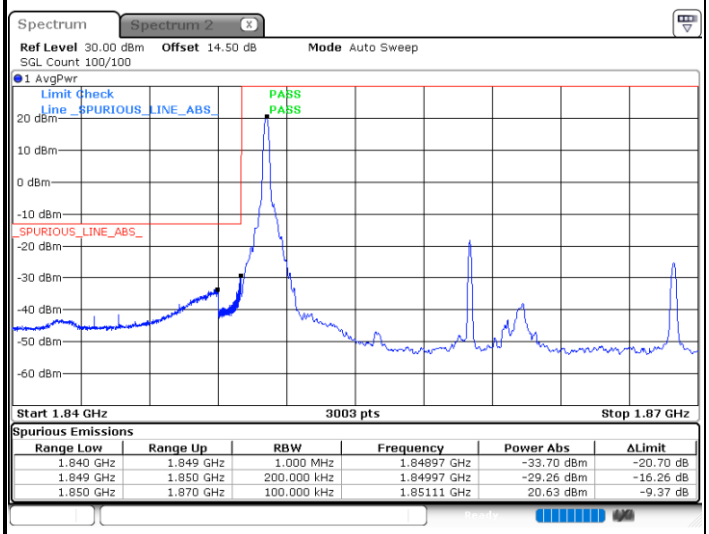
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.895 GHz	1.910 GHz	100.000 kHz	1.90515 GHz	5.03 dBm	-24.97 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91007 GHz	-24.88 dBm	-11.88 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91139 GHz	-25.54 dBm	-12.54 dB

Date: 6.DEC.2024 18:54:57

LTE Band 2 / 20MHz / QPSK

Lowest Band Edge / 1RB

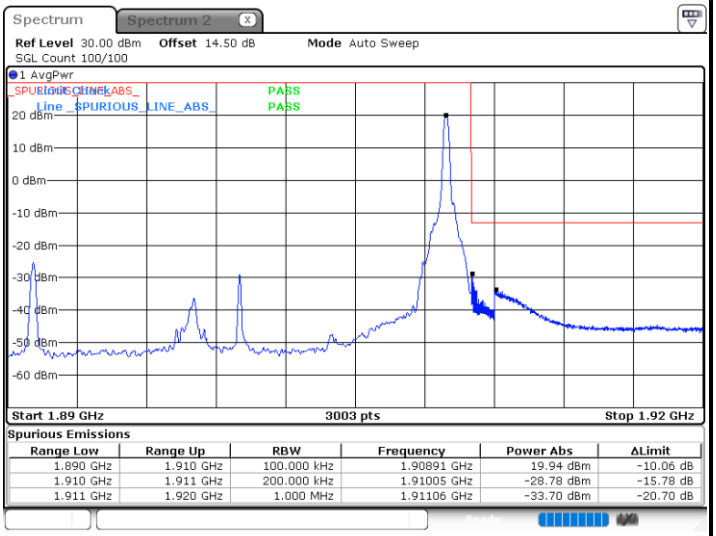


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84897 GHz	-33.70 dBm	-20.70 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84997 GHz	-29.26 dBm	-16.26 dB
1.850 GHz	1.870 GHz	100.000 kHz	1.85111 GHz	20.63 dBm	-9.37 dB

Date: 2.DEC.2024 23:20:03

Highest Band Edge / 1RB

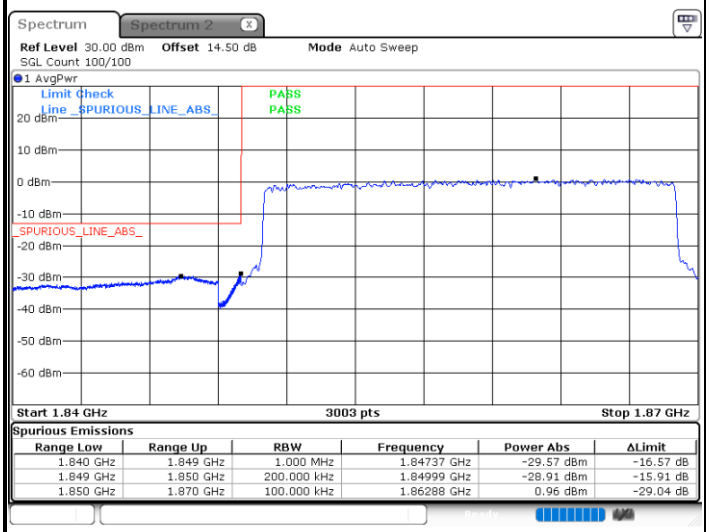


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.890 GHz	1.910 GHz	100.000 kHz	1.90891 GHz	19.94 dBm	-10.06 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91005 GHz	-28.78 dBm	-15.78 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91106 GHz	-33.70 dBm	-20.70 dB

Date: 2.DEC.2024 23:25:18

Lowest Band Edge / Full RB

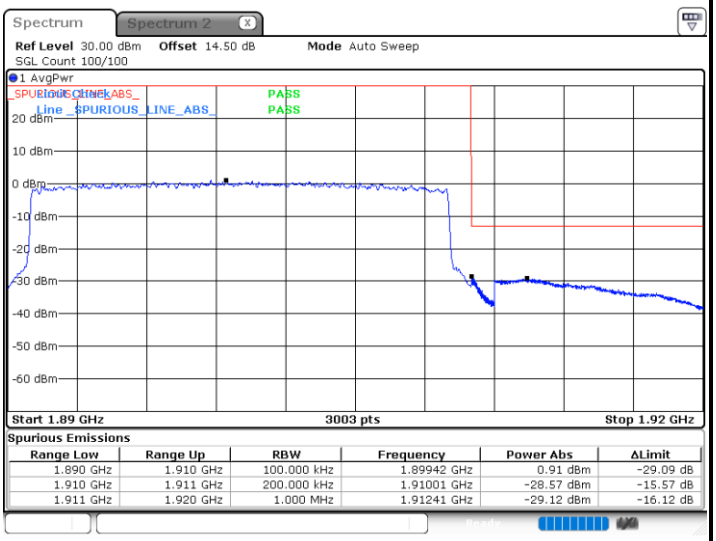


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84737 GHz	-29.57 dBm	-16.57 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84999 GHz	-28.91 dBm	-15.91 dB
1.850 GHz	1.870 GHz	100.000 kHz	1.86288 GHz	0.96 dBm	-29.04 dB

Date: 2.DEC.2024 23:21:24

Highest Band Edge / Full RB



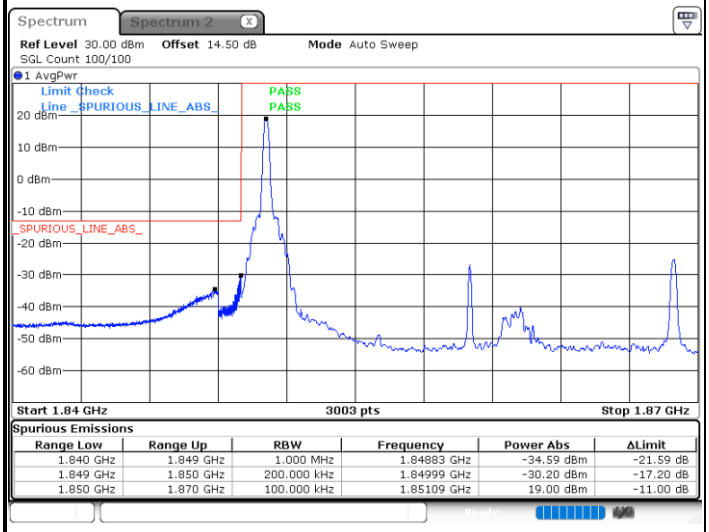
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.890 GHz	1.910 GHz	100.000 kHz	1.89942 GHz	0.91 dBm	-29.09 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91001 GHz	-28.57 dBm	-15.57 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91241 GHz	-29.12 dBm	-16.12 dB

Date: 2.DEC.2024 23:26:38

LTE Band 2 / 20MHz / 16QAM

Lowest Band Edge / 1 RB

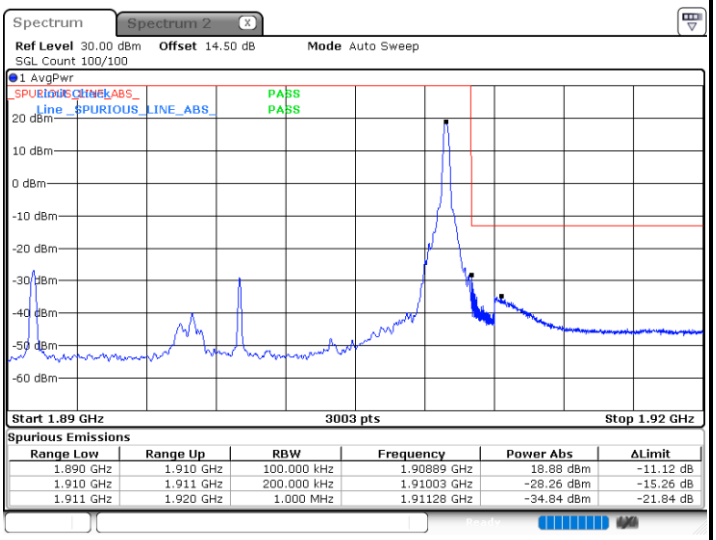


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84883 GHz	-34.59 dBm	-21.59 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84999 GHz	-30.20 dBm	-17.20 dB
1.850 GHz	1.870 GHz	100.000 kHz	1.85109 GHz	19.00 dBm	-11.00 dB

Date: 2.DEC.2024 23:20:44

Highest Band Edge / 1 RB

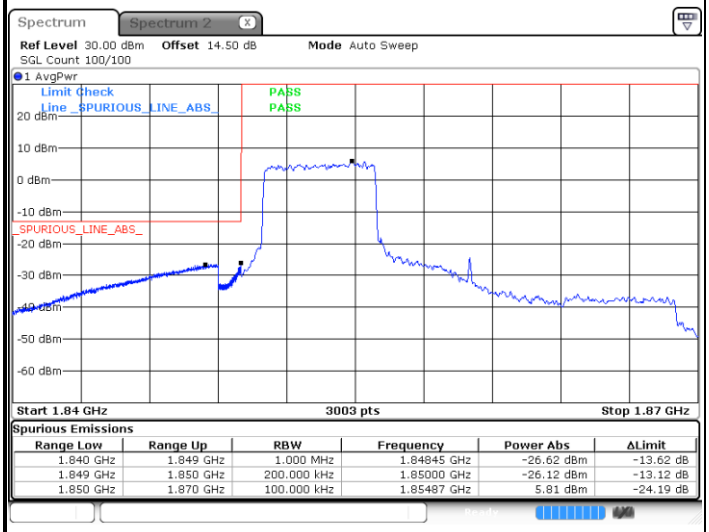


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.890 GHz	1.910 GHz	100.000 kHz	1.90889 GHz	18.88 dBm	-11.12 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91003 GHz	-28.26 dBm	-15.26 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91128 GHz	-34.84 dBm	-21.84 dB

Date: 2.DEC.2024 23:25:58

Lowest Band Edge / Full RB

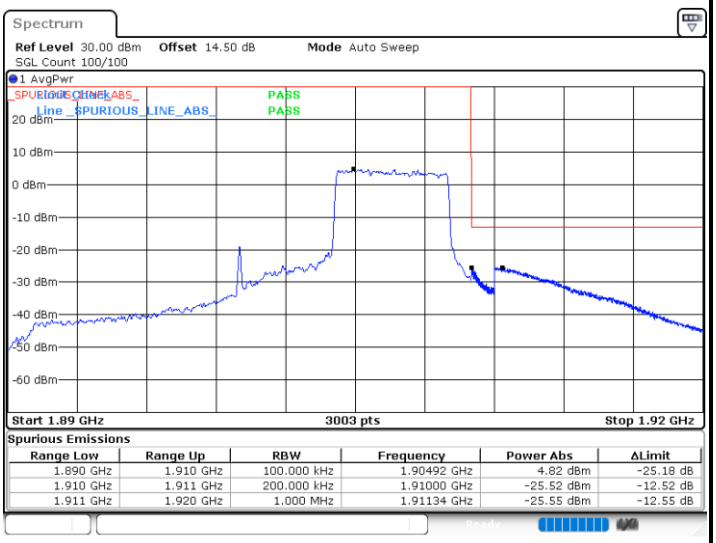


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84845 GHz	-26.62 dBm	-13.62 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.85000 GHz	-26.12 dBm	-13.12 dB
1.850 GHz	1.870 GHz	100.000 kHz	1.85487 GHz	5.81 dBm	-24.19 dB

Date: 6.DEC.2024 16:21:52

Highest Band Edge / Full RB



Spurious Emissions

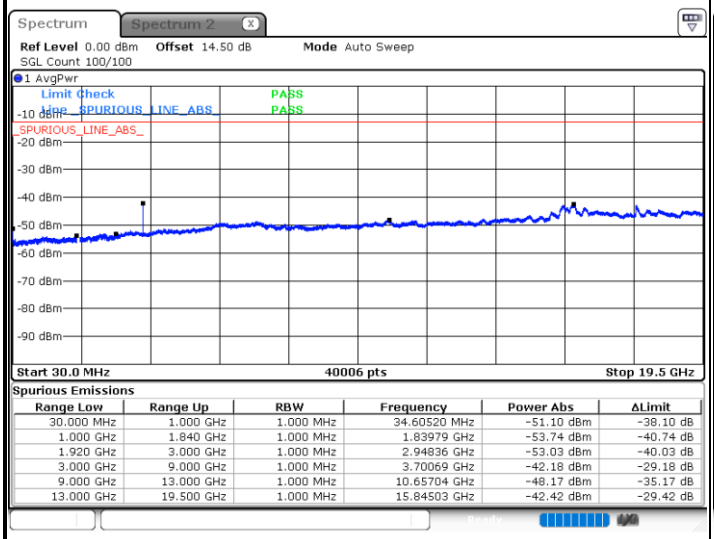
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.890 GHz	1.910 GHz	100.000 kHz	1.90492 GHz	4.82 dBm	-25.18 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91000 GHz	-25.52 dBm	-12.52 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91134 GHz	-25.55 dBm	-12.55 dB

Date: 6.DEC.2024 18:57:24

Conducted Spurious Emission

LTE Band 2 / 1.4MHz

Lowest Channel / QPSK

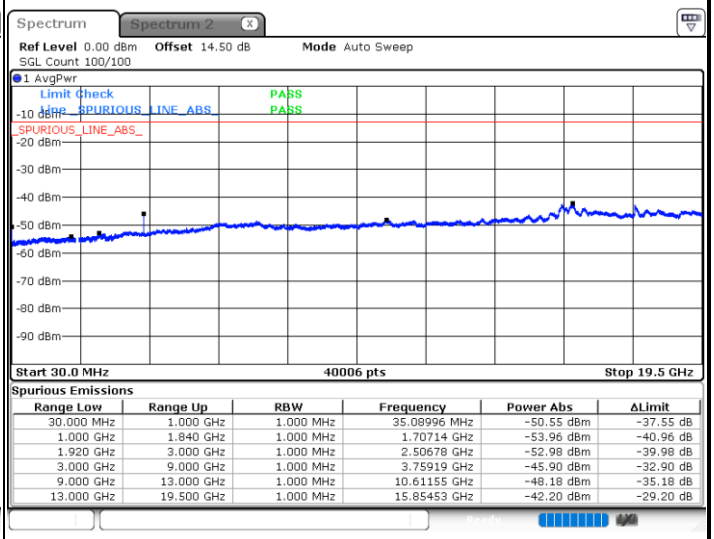


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	34.60520 MHz	-51.10 dBm	-38.10 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83979 GHz	-53.74 dBm	-40.74 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.94836 GHz	-53.03 dBm	-40.03 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70069 GHz	-42.18 dBm	-29.18 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.65704 GHz	-48.17 dBm	-35.17 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.84503 GHz	-42.42 dBm	-29.42 dB

Date: 2.DEC.2024 22:23:29

Middle Channel / QPSK

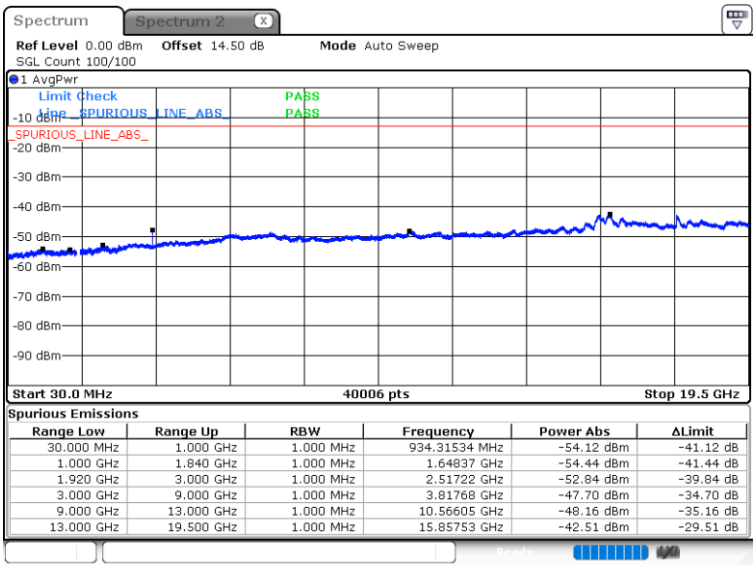


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	35.08996 MHz	-50.55 dBm	-37.55 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.70714 GHz	-53.96 dBm	-40.96 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.50678 GHz	-52.98 dBm	-39.98 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.75919 GHz	-45.90 dBm	-32.90 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.61155 GHz	-48.18 dBm	-35.18 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.85453 GHz	-42.20 dBm	-29.20 dB

Date: 2.DEC.2024 22:25:59

Highest Channel / QPSK



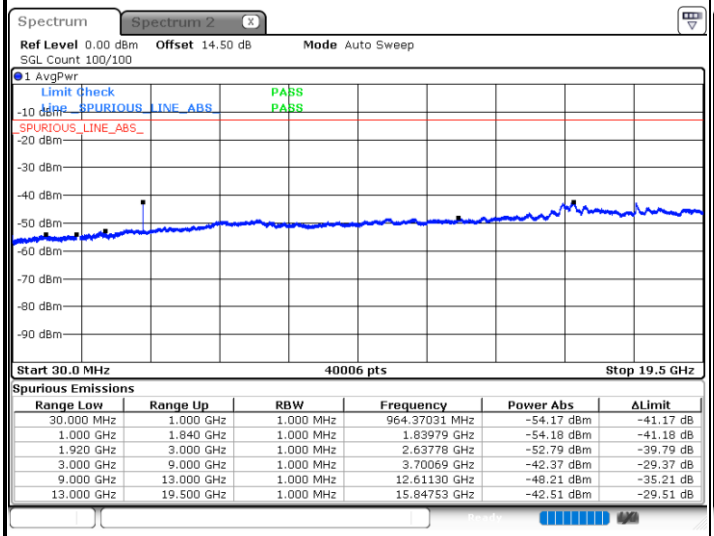
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	934.31534 MHz	-54.12 dBm	-41.12 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.64837 GHz	-54.44 dBm	-41.44 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.51722 GHz	-52.84 dBm	-39.84 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.81768 GHz	-47.70 dBm	-34.70 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.56605 GHz	-48.16 dBm	-35.16 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.85753 GHz	-42.51 dBm	-29.51 dB

Date: 2.DEC.2024 22:29:47

LTE Band 2 / 3MHz

Lowest Channel / QPSK

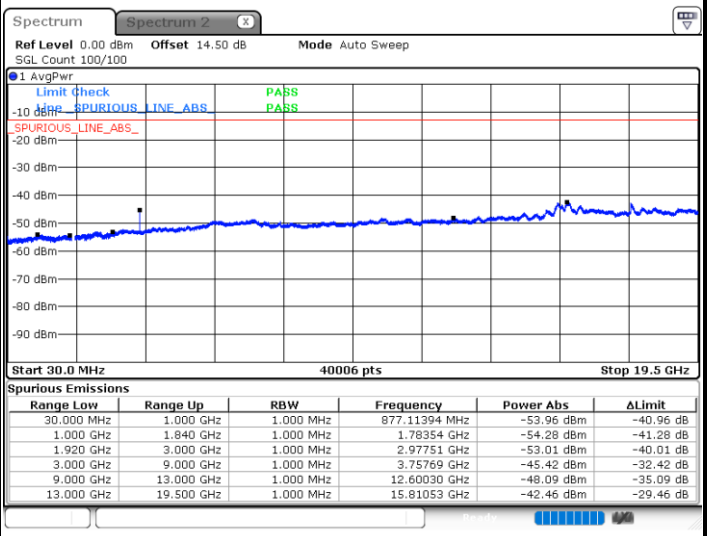


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	964.37031 MHz	-54.17 dBm	-41.17 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83979 GHz	-54.18 dBm	-41.18 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.63778 GHz	-52.79 dBm	-39.79 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70069 GHz	-42.37 dBm	-29.37 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.61130 GHz	-48.21 dBm	-35.21 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.84753 GHz	-42.51 dBm	-29.51 dB

Date: 2.DEC.2024 22:34:21

Middle Channel / QPSK

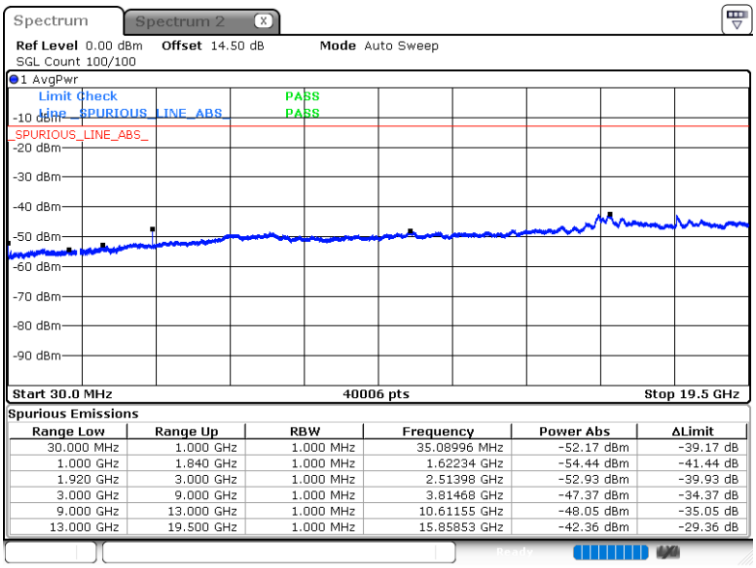


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	877.11394 MHz	-53.96 dBm	-40.96 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.78354 GHz	-54.28 dBm	-41.28 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.97751 GHz	-53.01 dBm	-40.01 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.75769 GHz	-45.42 dBm	-32.42 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.60030 GHz	-48.09 dBm	-35.09 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.81053 GHz	-42.46 dBm	-29.46 dB

Date: 2.DEC.2024 22:36:51

Highest Channel / QPSK



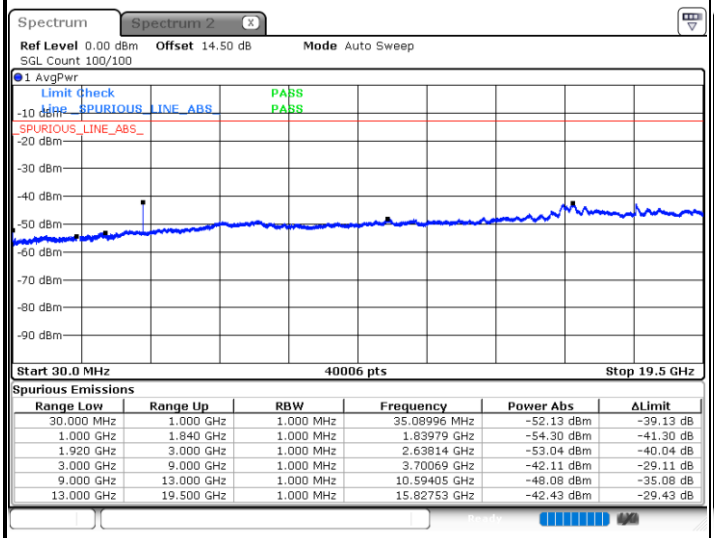
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	35.08996 MHz	-52.17 dBm	-39.17 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.62234 GHz	-54.44 dBm	-41.44 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.51398 GHz	-52.93 dBm	-39.93 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.81468 GHz	-47.37 dBm	-34.37 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.61155 GHz	-48.05 dBm	-35.05 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.85853 GHz	-42.36 dBm	-29.36 dB

Date: 2.DEC.2024 22:42:01

LTE Band 2 / 5MHz

Lowest Channel / QPSK

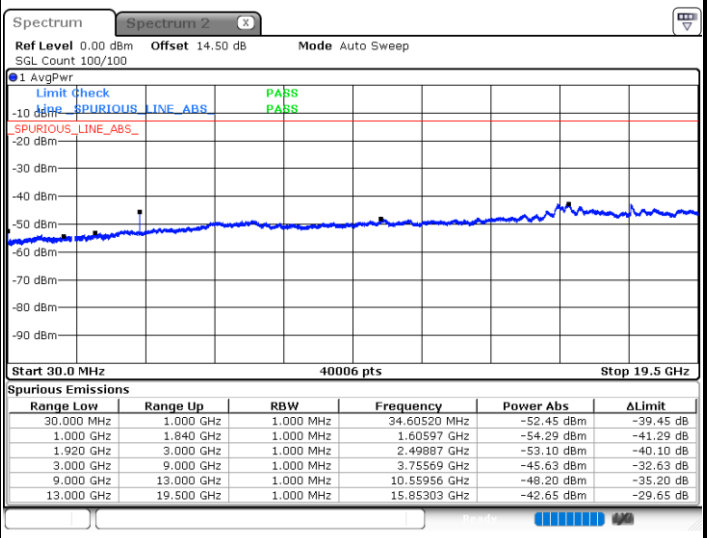


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	35.08996 MHz	-52.13 dBm	-39.13 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83979 GHz	-54.30 dBm	-41.30 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.63814 GHz	-53.04 dBm	-40.04 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70069 GHz	-42.11 dBm	-29.11 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.59405 GHz	-48.08 dBm	-35.08 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.82753 GHz	-42.43 dBm	-29.43 dB

Date: 2.DEC.2024 22:45:13

Middle Channel / QPSK

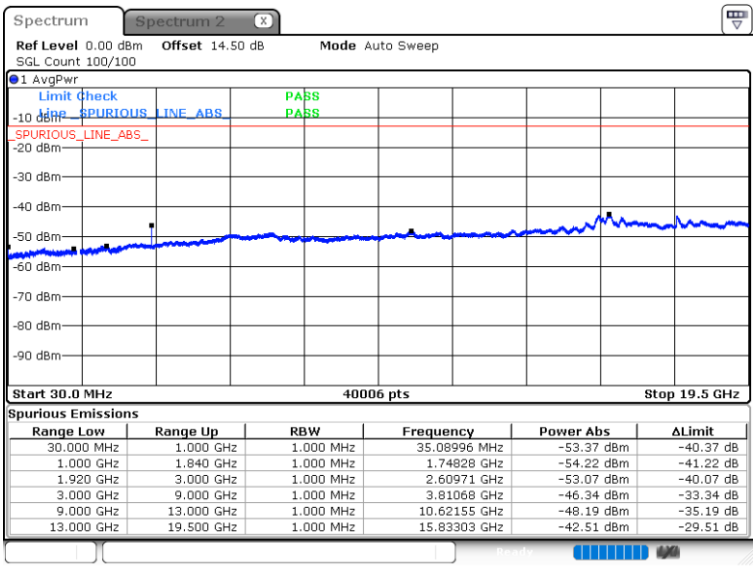


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	34.60520 MHz	-52.45 dBm	-39.45 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.60597 GHz	-54.29 dBm	-41.29 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.49887 GHz	-53.10 dBm	-40.10 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.75569 GHz	-45.63 dBm	-32.63 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.55956 GHz	-48.20 dBm	-35.20 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.85303 GHz	-42.65 dBm	-29.65 dB

Date: 2.DEC.2024 22:47:43

Highest Channel / QPSK



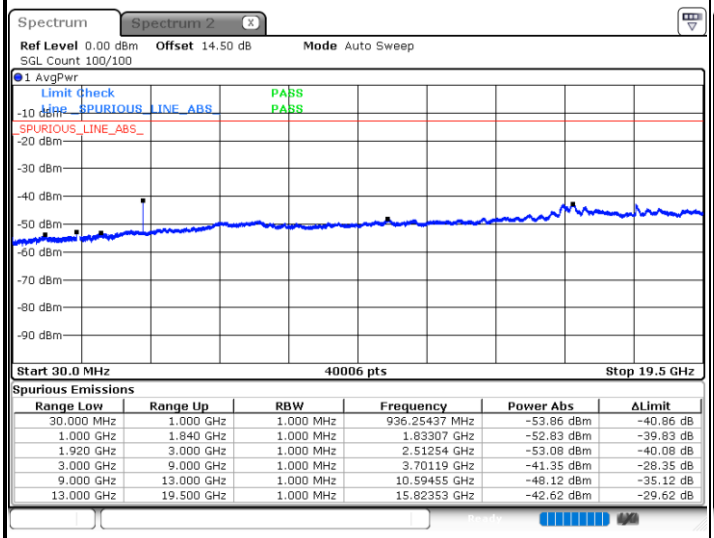
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	35.08996 MHz	-53.37 dBm	-40.37 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.74828 GHz	-54.22 dBm	-41.22 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.60971 GHz	-53.07 dBm	-40.07 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.81068 GHz	-46.34 dBm	-33.34 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.62155 GHz	-48.19 dBm	-35.19 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.83303 GHz	-42.51 dBm	-29.51 dB

Date: 2.DEC.2024 22:52:52

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	936.25437 MHz	-53.86 dBm	-40.86 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83307 GHz	-52.83 dBm	-39.83 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.51254 GHz	-53.08 dBm	-40.08 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70119 GHz	-41.35 dBm	-28.35 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.59455 GHz	-48.12 dBm	-35.12 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.82353 GHz	-42.62 dBm	-29.62 dB

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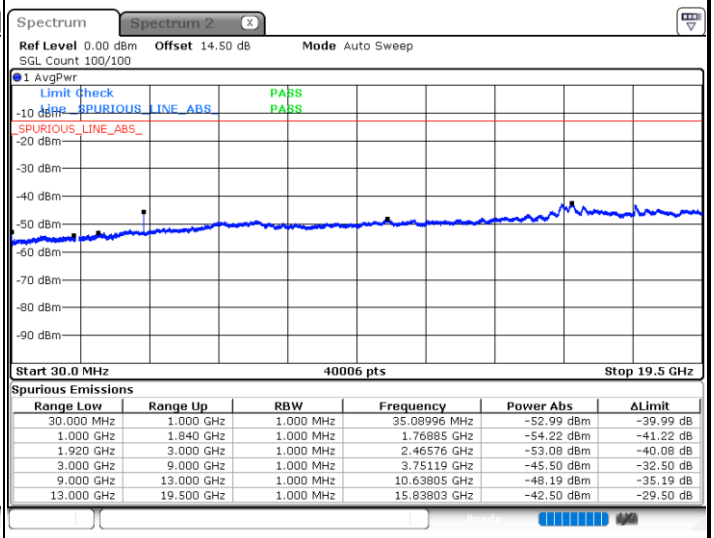
Middle Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	35.08996 MHz	-52.99 dBm	-39.99 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.76885 GHz	-54.22 dBm	-41.22 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.46576 GHz	-53.08 dBm	-40.08 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.75119 GHz	-45.50 dBm	-32.50 dB
9.000 GHz	13.000 GHz	1.000 MHz	10.63805 GHz	-48.19 dBm	-35.19 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.83803 GHz	-42.50 dBm	-29.50 dB

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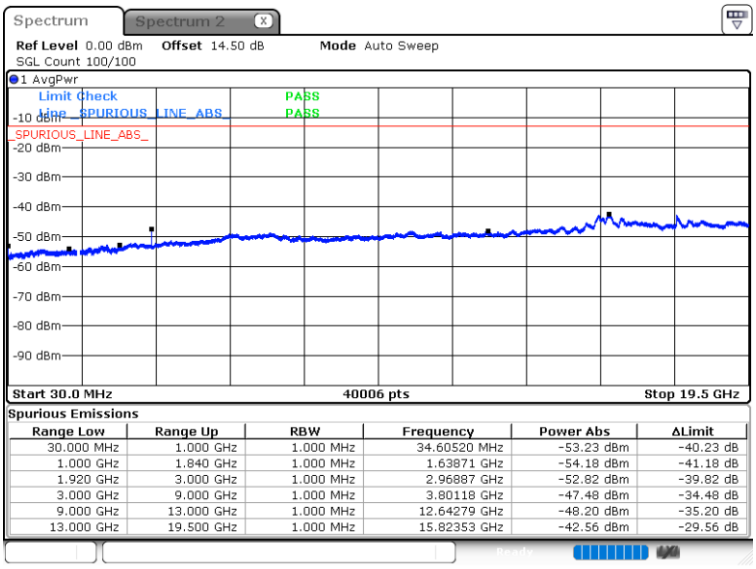
Highest Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	34.60520 MHz	-53.23 dBm	-40.23 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.63871 GHz	-54.18 dBm	-41.18 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.96887 GHz	-52.82 dBm	-39.82 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.80118 GHz	-47.48 dBm	-34.48 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.64279 GHz	-48.20 dBm	-35.20 dB
13.000 GHz	19.500 GHz	1.000 MHz	15.82353 GHz	-42.56 dBm	-29.56 dB

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