FCC RF Test Report

APPLICANT	: FIH CO., LTD.
EQUIPMENT	: Internet Gateway
BRAND NAME	: FIH
MODEL NAME	: FWF100V5L
FCC ID	: RYQFWF100V5L
STANDARD	: 47 CFR Part 2, 22, 24, 27
CLASSIFICATION	: PCS Licensed Transmitter (PCB)
TEST DATE(S)	: Aug. 15, 2022 ~ Jan. 06, 2023

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

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

Jason Jia

Approved by: Jason Jia

ACCREDITED Cert #5145.02

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

TABLE OF CONTENTS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG262206A	Rev. 01	Initial issue of report	Jan. 09, 2023

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)	Effective Radiated Power (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 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(h)	Conducted Band Edge Measurement (Band 2) (Band 5) (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(h)	Conducted Spurious Emission (Band 2) (Band 5) (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(h)	Radiated Spurious Emission (Band 2) (Band 5) (Band 13) (Band 66)	< 43+10log$_{10}$(P[Watts])	PASS	Under limit 17.87 dB at 5208.000 MHz

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1. General Description

1.1 Applicant

FIH CO., LTD.
No.4, Minsheng St., Tu-Cheng Dist., New Taipei City 23679, Taiwan

1.2 Manufacturer

FIH CO., LTD.
No.4, Minsheng St., Tu-Cheng Dist., New Taipei City 23679, Taiwan

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Internet Gateway
Brand Name	FIH
Model Name	FWF100V5L
FCC ID	RYQFWF100V5L
IMEI Code / SN Code	Conducted: FAL23621145 Radiation: 358835490000293/358835490000319
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	LTE Band 2 : 1850 MHz ~ 1910 MHz LTE Band 5 : 824 MHz ~ 849 MHz LTE Band 13 : 777 MHz ~ 787 MHz LTE Band 66 : 1710 MHz ~ 1755 MHz
Rx Frequency	LTE Band 2 : 1930 MHz ~ 1990 MHz LTE Band 5 : 869 MHz ~ 894 MHz LTE Band 13 : 746 MHz ~ 756 MHz LTE Band 66 : 2110 MHz~ 2155 MHz
Bandwidth	LTE Band 2 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 5 : 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	Ant.0 LTE Band 2 : 22.50 dBm LTE Band 5 : 23.31 dBm LTE Band 13 : 23.29 dBm LTE Band 66 : 22.49 dBm LTE Band 5B : 23.25 dBm Ant.1 LTE Band 2 : 23.11 dBm LTE Band 66 : 23.16 dBm LTE Band 66B : 22.91 dBm

	LTE Band 66C : 22.86 dBm
Antenna Gain	Ant.0 LTE Band 2 : 0.33 dBi LTE Band 5 : 0.20 dBi LTE Band 13 : 0.36 dBi LTE Band 66 : 1.01 dBi Ant.1 LTE Band 2 : 0.19 dBi LTE Band 66 : 0.19 dBi
Type of Modulation	QPSK / 16QAM / 64QAM

Note:

1. The maximum ERP/EIRP is calculated from max output power and max antenna gain, the test report only show the maximum ERP/EIRP of Ant.0 for LTE Band 5/13/66 and Ant.1 for LTE Band 2.
2. The device supports two PAs for LTE Band 2/66: main PA(Ant.1) and other PA(Ant.0).

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/64QAM	
BW (MHz)	**Frequency Range (MHz)**	**Maximum EIRP(W)**	**Emission Designator (99%OBW)**	**Maximum EIRP(W)**	**Emission Designator (99%OBW)**
20	1860.0 ~ 1900.0	0.2138	17M9G7D	0.1828	17M9W7D
LTE Band 5		**QPSK**		**16QAM/64QAM**	
BW (MHz)	**Frequency Range (MHz)**	**Maximum ERP(W)**	**Emission Designator (99%OBW)**	**Maximum ERP(W)**	**Emission Designator (99%OBW)**
10	829.0 ~ 844.0	0.1368	10M1G7D	0.1156	9M99W7D
LTE Band 13		**QPSK**		**16QAM/64QAM**	
BW (MHz)	**Frequency Range (MHz)**	**Maximum ERP(W)**	**Emission Designator (99%OBW)**	**Maximum ERP(W)**	**Emission Designator (99%OBW)**
10	782.0	0.1413	9M01G7D	0.1202	9M05W7D
LTE Band 66		**QPSK**		**16QAM/64QAM**	
BW (MHz)	**Frequency Range (MHz)**	**Maximum EIRP(W)**	**Emission Designator (99%OBW)**	**Maximum EIRP(W)**	**Emission Designator (99%OBW)**
20	1720.0 ~ 1745.0	0.2239	18M3G7D	0.1778	18M4W7D

LTE Band CA_5B	QPSK		16QAM/64QAM	
BW (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
10MHz+10MHz	0.1349	18M9G7D	0.1172	18M8W7D
LTE Band CA_66B	**QPSK**		**16QAM/64QAM**	
BW (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
15MHz+5MHz	0.2042	18M1G7D	0.1758	18M2W7D
LTE Band CA_66C	**QPSK**		**16QAM/64QAM**	
BW (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
20MHz+20MHz	0.2018	37M8G7D	0.1778	38M0W7D

1.7 Testing Location

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

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

1.8 Test Software

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

1.9 Applicable Standards

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

- 47 CFR Part 2, 22(H), 24(E), 27(F),27(L)
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.

2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2. Test Configuration of Equipment Under Test

2.1 Test Mode

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

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

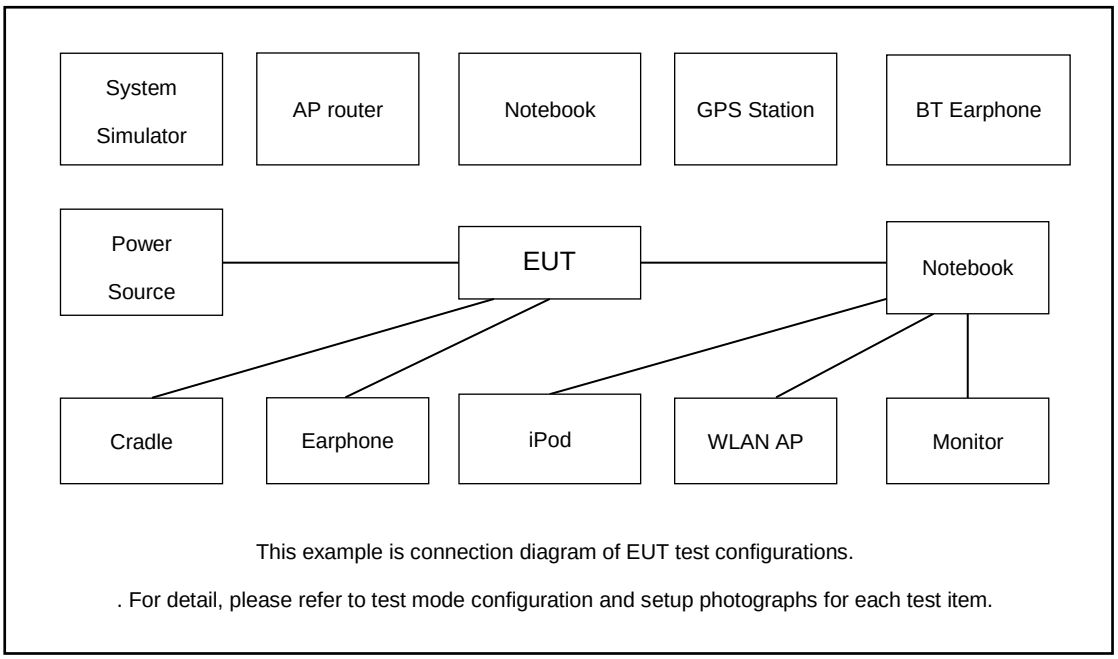
Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Max. Output Power	2	v	v	v	v	v	v	v	v	v	v		v	v	v	v
	5	v	v	v	v	-	-	v	v	v	v		v	v	v	v
	13	-	-	v	v	-	-	v	v	v	v		v	v	v	v
	66	v	v	v	v	v	v	v	v	v	v		v	v	v	v
Peak-to-Average Ratio	2				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

Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Conducted Spurious Emission	2	v	v	v	v	v	v	v			v			v	v	v
	5	v	v	v	v	-	-	v			v			v	v	v
	13	-	-	v	v	-	-	v			v			v	v	v
	66	v	v	v	v	v	v	v			v			v	v	v
Frequency Stability	2				v			v					v		v	
	5				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
	5	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	
	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.															

Test Items	Band	Bandwidth (MHz)								Modulation			RB #			Test Channel		
		10+10	15+5	5+15	10+5	5+10	5+5	5+3	3+5	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Max. Output Power	5B_CA	v	-	-	v	v	-	v	v	v	v	v	v			v	v	v
	66B_CA	v	v	v	v	v	v	-	-	v	v	v	v			v	v	v
26dB and 99% Bandwidth	5B_CA	v	-	-			-			v	v				v		v	
	66B_CA		v					-	-	v	v				v		v	
Conducted Band Edge	5B_CA	v	-	-	v	v	-	v	v	v	v	v	v		v	v		v
	66B_CA	v	v	v	v	v	v	-	-	v	v	v	v		v	v		v
Conducted Spurious Emission	5B_CA	v	-	-	v	v	-	v	v	v			v			v	v	v
	66B_CA	v	v	v	v	v	v	-	-	v			v			v	v	v
E.I.R.P.	5B_CA	v	-	-	v	v	-	v	v	v	v	v	v			v	v	v
	66B_CA	v	v	v	v	v	v	-	-	v	v	v	v			v	v	v
Radiated Spurious Emission	5B_CA	Worst Case															v	
	66B_CA	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. 4. All test items are based on engineering evaluation. 5. For QAM modulation mode, the whole testing has assessed 16QAM&64QAM mode by referring to the higher conducted power																	

Test Items	Band	Bandwidth (MHz)									Modulation			RB #			Test Channel		
		20+20	20+15	20+10	20+5	15+20	15+15	15+10	10+20	10+15	5+20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Max. Output Power	66C_CA	v	v	v	v	v	v	v	v	v	v	v	v	v	v			v	v	v
26dB and 99% Bandwidth	66C_CA	v										v	v						v	
Conducted Band Edge	66C_CA	v	v	v	v	v	v	v	v	v	v	v	v	v	v		v	v		v
Conducted Spurious Emission	66C_CA	v	v	v	v	v	v	v	v	v	v	v			v			v	v	v
E.I.R.P.	66C_CA	v	v	v	v	v	v	v	v	v	v	v	v	v	v			v	v	v
Radiated Spurious Emission	66C_CA	Worst Case																	v	
Note	1. The mark "**v** " means that this configuration is chosen for testing 2. 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. 3. All test items are based on engineering evaluation. 4. For QAM modulation mode, the whole testing has assessed 16QAM&64QAM mode by referring to the higher conducted power																			

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 5.2 dB.

Example :

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

= 5.2 (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 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 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	132197	132322
	Frequency	1720	1732.5	1745
15	Channel	132047	132197	132347
	Frequency	1717.5	1732.5	1747.5
10	Channel	132022	132197	132372
	Frequency	1715	1732.5	1750
5	Channel	131997	132197	132397
	Frequency	1712.5	1732.5	1752.5
3	Channel	131987	132197	132407
	Frequency	1711.5	1732.5	1753.5
1.4	Channel	131979	132197	132415
	Frequency	1710.7	1732.5	1754.3

LTE Band 5B_CA Channel and Frequency List					
BW [MHz]	Channel/Frequency(MHz)		Lowest	Middle	Highest
3 + 5	PCC	Channel	20416	20501	20586
		Frequency	825.6	834.1	842.6
	SCC	Channel	20455	20540	20625
		Frequency	829.5	838.0	846.5
5 + 3	PCC	Channel	20425	20510	20595
		Frequency	826.5	835.0	843.5
	SCC	Channel	20464	20549	20634
		Frequency	830.4	838.9	847.4
5 + 10	PCC	Channel	20428	20478	20528
		Frequency	826.8	831.8	836.8
	SCC	Channel	20500	20550	20600
		Frequency	834	839	844
10 + 5	PCC	Channel	20450	20500	20550
		Frequency	829	834	839
	SCC	Channel	20522	20572	20622
		Frequency	836.2	841.2	846.2
10 + 10	PCC	Channel	20450	20476	20501
		Frequency	829	831.6	834.1
	SCC	Channel	20549	20575	20600
		Frequency	838.9	841.5	844

LTE Band 66C_CA Channel and Frequency List					
BW [MHz]	Channel/Frequency(MHz)		Lowest	Middle	Highest
10 + 15	PCC	Channel	132025	132125	132227
		Frequency	1715.3	1725.3	1735.5
	SCC	Channel	132145	132245	132347
		Frequency	1727.3	1737.3	1747.5
15 + 10	PCC	Channel	132047	132150	132252
		Frequency	1717.5	1727.8	1738
	SCC	Channel	132167	132270	132372
		Frequency	1729.5	1739.8	1750
10 + 20	PCC	Channel	132027	132100	132178
		Frequency	1715.5	1722.8	1730.6
	SCC	Channel	132171	132244	132322
		Frequency	1729.9	1737.2	1745
20 + 10	PCC	Channel	132072	132150	132228
		Frequency	1720	1727.8	1735.6
	SCC	Channel	132216	132294	132372
		Frequency	1734.4	1742.2	1750
15 + 15	PCC	Channel	132047	132122	132197
		Frequency	1717.5	1725	1732.5
	SCC	Channel	132197	132272	132347
		Frequency	1732.5	1740	1747.5
15 + 20	PCC	Channel	132050	132099	132151
		Frequency	1717.8	1722.7	1727.9
	SCC	Channel	132221	132270	132322
		Frequency	1734.9	1739.8	1745
20 + 15	PCC	Channel	132072	132124	132176
		Frequency	1720	1725.2	1730.4
	SCC	Channel	132243	132295	132347
		Frequency	1737.1	1742.3	1747.5
20 + 5	PCC	Channel	132072	132176	132280
		Frequency	1720	1730.4	1740.8
	SCC	Channel	132189	132293	132397
		Frequency	1731.7	1742.1	1752.5
5 + 20	PCC	Channel	132005	132101	132205

		Frequency	1713.3	1722.9	1733.3
	SCC	Channel	132122	132218	132322
		Frequency	1725	1734.6	1745
20 + 20	PCC	Channel	132072	132098	132124
		Frequency	1720	1722.6	1725.2
	SCC	Channel	132270	132296	132322
		Frequency	1739.8	1742.4	1745

LTE Band 66B_CA Channel and Frequency List					
BW [MHz]	**Channel/Frequency(MHz)**		**Lowest**	**Middle**	**Highest**
5 + 5	PCC	Channel	131997	132173	132349
		Frequency	1712.5	1730.1	1747.7
	SCC	Channel	132045	132221	132397
		Frequency	1717.3	1734.9	1752.5
5 + 10	PCC	Channel	132000	132149	132300
		Frequency	1712.8	1727.7	1742.8
	SCC	Channel	132072	132221	132372
		Frequency	1720	1734.9	1750
10 + 5	PCC	Channel	132022	132174	132325
		Frequency	1715	1730.2	1745.3
	SCC	Channel	132094	132246	132397
		Frequency	1722.2	1737.4	1752.5
5 + 15	PCC	Channel	132002	132126	132254
		Frequency	1713	1725.4	1738.2
	SCC	Channel	132095	132219	132347
		Frequency	1722.3	1734.7	1747.5
15 + 5	PCC	Channel	132047	132176	132304
		Frequency	1717.5	1730.4	1743.2
	SCC	Channel	132140	132269	132397
		Frequency	1726.8	1739.7	1752.5
10 + 10	PCC	Channel	132022	132148	132273
		Frequency	1715	1727.6	1740.1
	SCC	Channel	132121	132247	132372
		Frequency	1724.9	1737.5	1750

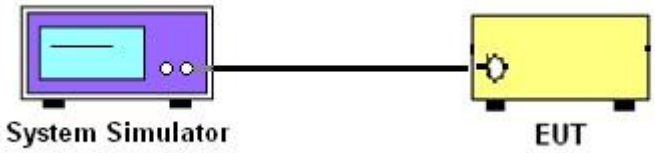
3. Conducted Test Items

3.1 Measuring Instruments

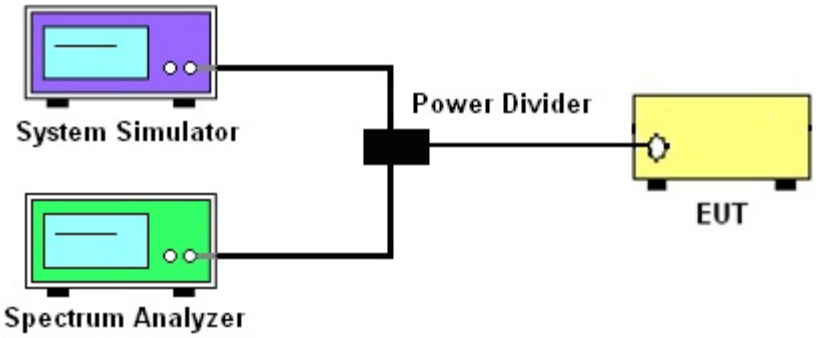
See list of measuring instruments of this test report.

3.2 Test Setup

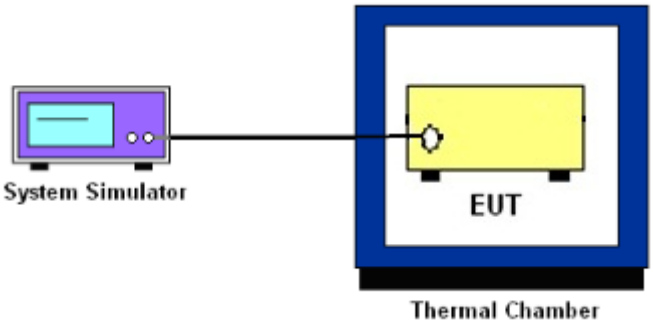
3.2.1 Conducted Output Power



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 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 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 (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 10^{th} harmonic.

3.8.2 Test Procedures

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

3.9 Frequency Stability

3.9.1 Description of Frequency Stability Measurement

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

3.9.2 Test Procedures for Temperature Variation

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

3.9.3 Test Procedures for Voltage Variation

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

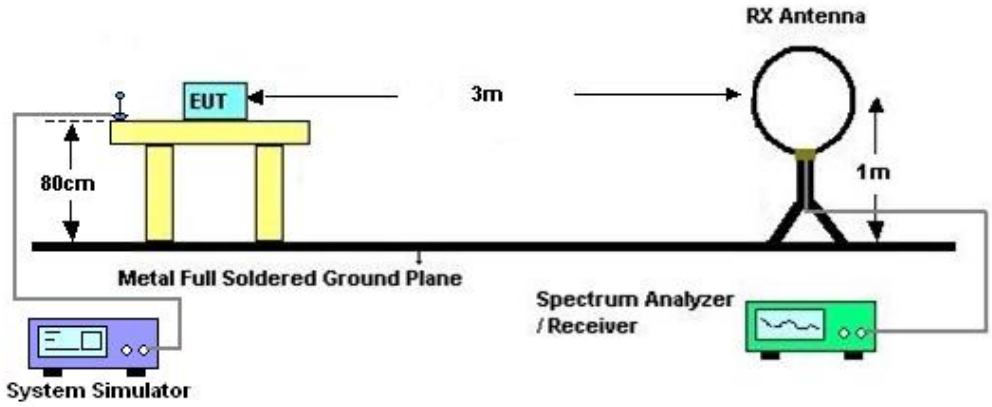
4. Radiated Test Items

4.1 Measuring Instruments

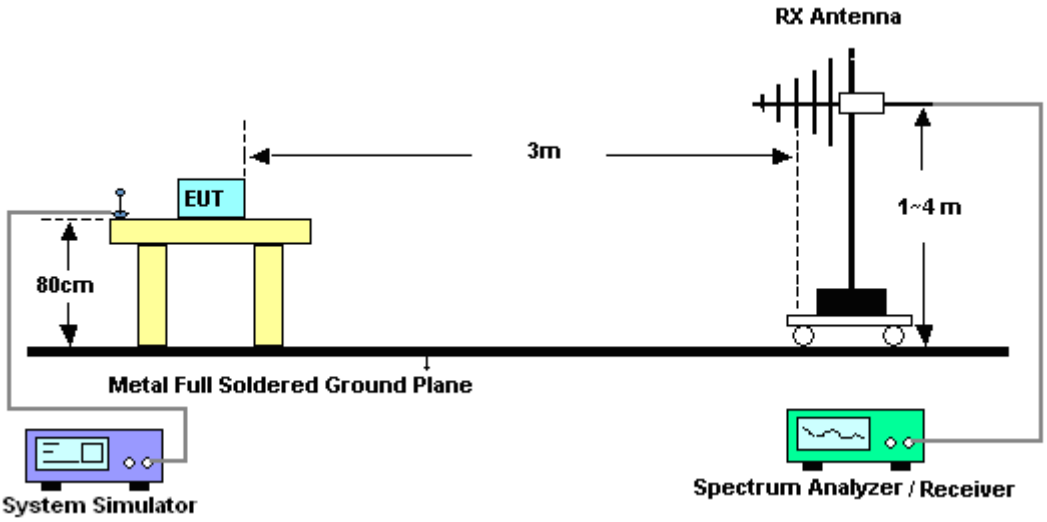
See list of measuring instruments of this test report.

4.2 Test Setup

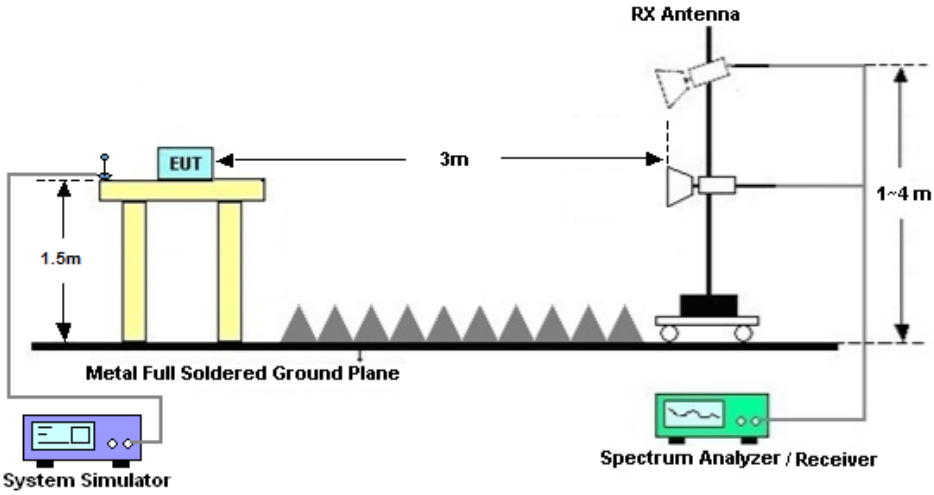
4.2.1 For radiated test below 30MHz



4.2.2 For radiated test from 30MHz to 1GHz



4.2.3 For radiated test above 1GHz



4.3 Test Result of Radiated Test

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

Please refer to Appendix B.

4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission

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

For LTE Band 13

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

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

4.4.2 Test Procedures

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

5. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 13, 2021	Aug. 16, 2022~ Jan. 06, 2023	Oct. 12, 2022	Conducted (TH01-KS)
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 12, 2022		Oct. 11, 2023	Conducted (TH01-KS)
Temperature & humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 15, 2022	Aug. 16, 2022~ Jan. 06, 2023	Jul. 14, 2023	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 12, 2021	Aug. 15, 2022	Oct. 11, 2022	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 17, 2021	Aug. 15, 2022	Oct. 16, 2022	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	May 24, 2022	Aug. 15, 2022	May 23, 2023	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1284	1GHz~18GHz	Jan. 05, 2022	Aug. 15, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2022	Aug. 15, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Jan. 05, 2022	Aug. 15, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 05, 2022	Aug. 15, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18GA	060840	1Ghz-18Ghz	Oct. 12, 2021	Aug. 15, 2022	Oct. 11, 2022	Radiation (03CH04-KS)
Amplifier	Agilent	8449B	3008A02370	1Ghz-18Ghz	Oct. 12, 2021	Aug. 15, 2022	Oct. 11, 2022	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Aug. 15, 2022	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Aug. 15, 2022	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Aug. 15, 2022	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

6. Uncertainty of Evaluation

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

Uncertainty of Conducted Measurement

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

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

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

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

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

Appendix A. Test Results of Conducted Test

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

Conducted Output Power(Average power) and ERP/EIRP

LTE Band 2-Ant.0

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	22.43	22.50	22.44	0.1888	0.1919	0.1892
20	QPSK	1	99	21.73	21.82	21.80	0.1607	0.1641	0.1633
20	QPSK	100	0	21.33	21.41	21.34	0.1466	0.1493	0.1469
20	16QAM	1	0	21.29	21.34	21.41	0.1452	0.1469	0.1493
20	64QAM	1	0	20.69	20.75	20.66	0.1265	0.1282	0.1256
Channel				18675	18900	19125	EIRP(W)		
Frequency (MHz)				1857.5	1880	1902.5	L	M	H
15	QPSK	1	0	22.41	22.48	22.41	0.1879	0.1910	0.1879
15	16QAM	1	0	21.25	21.31	21.39	0.1439	0.1459	0.1486
Channel				18650	18900	19150	EIRP(W)		
Frequency (MHz)				1855	1880	1905	L	M	H
10	QPSK	1	0	22.39	22.47	22.39	0.1871	0.1905	0.1871
10	16QAM	1	0	21.22	21.30	21.37	0.1429	0.1455	0.1479
Channel				18625	18900	19175	EIRP(W)		
Frequency (MHz)				1852.5	1880	1907.5	L	M	H
5	QPSK	1	0	22.37	22.43	22.37	0.1862	0.1888	0.1862
5	16QAM	1	0	21.20	21.28	21.36	0.1422	0.1449	0.1476
Channel				18615	18900	19185	EIRP(W)		
Frequency (MHz)				1851.5	1880	1908.5	L	M	H
3	QPSK	1	0	22.36	22.41	22.36	0.1858	0.1879	0.1858
3	16QAM	1	0	21.19	21.24	21.34	0.1419	0.1435	0.1469
Channel				18607	18900	19193	EIRP(W)		
Frequency (MHz)				1850.7	1880	1909.3	L	M	H
1.4	QPSK	1	0	22.31	22.39	22.34	0.1837	0.1871	0.1849
1.4	16QAM	1	0	21.16	21.23	21.32	0.1409	0.1432	0.1462

LTE Band 2-Ant.1

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP(W)		
Channel				18700	18900	19100			
Frequency (MHz)				1860	1880	1900	L	M	H
20	QPSK	1	0	23.06	23.11	23.07	0.2113	0.2138	0.2118
20	QPSK	1	99	22.64	22.58	22.67	0.1919	0.1892	0.1932
20	QPSK	100	0	21.82	21.79	21.69	0.1589	0.1578	0.1542
20	16QAM	1	0	22.43	22.36	22.28	0.1828	0.1799	0.1766
20	64QAM	1	0	21.26	21.16	21.19	0.1396	0.1365	0.1374
Channel				18675	18900	19125	EIRP(W)		
Frequency (MHz)				1857.5	1880	1902.5	L	M	H
15	QPSK	1	0	22.97	22.98	22.95	0.2070	0.2075	0.2061
15	16QAM	1	0	22.39	22.34	22.26	0.1811	0.1791	0.1758
Channel				18650	18900	19150	EIRP(W)		
Frequency (MHz)				1855	1880	1905	L	M	H
10	QPSK	1	0	22.93	22.96	22.91	0.2051	0.2065	0.2042
10	16QAM	1	0	22.37	22.31	22.24	0.1803	0.1778	0.1750
Channel				18625	18900	19175	EIRP(W)		
Frequency (MHz)				1852.5	1880	1907.5	L	M	H
5	QPSK	1	0	22.91	22.94	22.89	0.2042	0.2056	0.2032
5	16QAM	1	0	22.34	22.28	22.23	0.1791	0.1766	0.1746
Channel				18615	18900	19185	EIRP(W)		
Frequency (MHz)				1851.5	1880	1908.5	L	M	H
3	QPSK	1	0	22.89	22.89	22.87	0.2032	0.2032	0.2023
3	16QAM	1	0	22.31	22.24	22.19	0.1778	0.1750	0.1730
Channel				18607	18900	19193	EIRP(W)		
Frequency (MHz)				1850.7	1880	1909.3	L	M	H
1.4	QPSK	1	0	22.86	22.83	22.85	0.2018	0.2004	0.2014
1.4	16QAM	1	0	22.29	22.21	22.16	0.1770	0.1738	0.1718

LTE Band 5-Ant.0

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	23.31	23.25	23.21	0.1368	0.1349	0.1337
10	QPSK	1	49	23.24	23.21	23.06	0.1346	0.1337	0.1291
10	QPSK	50	0	22.67	22.69	22.53	0.1180	0.1186	0.1143
10	16QAM	1	0	22.51	22.58	22.34	0.1138	0.1156	0.1094
10	64QAM	1	0	21.43	21.46	21.49	0.0887	0.0893	0.0899
Channel				20425	20525	20625	ERP(W)		
Frequency (MHz)				826.5	836.5	846.5	L	M	H
5	QPSK	1	0	23.26	23.23	23.16	0.1352	0.1343	0.1321
5	16QAM	1	0	22.48	22.54	22.21	0.1130	0.1146	0.1062
Channel				20415	20525	20635	ERP(W)		
Frequency (MHz)				825.5	836.5	847.5	L	M	H
3	QPSK	1	0	23.21	23.21	23.14	0.1337	0.1337	0.1315
3	16QAM	1	0	22.46	22.51	22.18	0.1125	0.1138	0.1054
Channel				20407	20525	20643	ERP(W)		
Frequency (MHz)				824.7	836.5	848.3	L	M	H
1.4	QPSK	1	0	23.19	23.16	23.11	0.1330	0.1321	0.1306
1.4	16QAM	1	0	22.41	22.44	22.17	0.1112	0.1119	0.1052

LTE Band 13-Ant.0

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	-	23.29	-	-	0.1413	-
10	QPSK	1	49	-	23.06	-	-	0.1340	-
10	QPSK	50	0	-	22.10	-	-	0.1074	-
10	16QAM	1	0	-	22.59	-	-	0.1202	-
10	64QAM	1	0	-	21.40	-	-	0.0914	-
Channel				23205	23230	23255	ERP(W)		
Frequency (MHz)				779.5	782	784.5	L	M	H
5	QPSK	1	0	23.22	23.19	23.29	0.1390	0.1380	0.1413
5	16QAM	1	0	22.42	22.37	22.62	0.1156	0.1143	0.1211

LTE Band 66-Ant.0

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP(W)		
Channel				132072	132197	132322			
Frequency (MHz)				1720	1732.5	1745	L	M	H
20	QPSK	1	0	22.39	22.49	22.41	0.2188	0.2239	0.2198
20	QPSK	1	99	22.28	22.39	22.31	0.2133	0.2188	0.2148
20	QPSK	100	0	21.30	21.33	21.52	0.1702	0.1714	0.1791
20	16QAM	1	0	21.43	21.42	21.49	0.1754	0.1750	0.1778
20	64QAM	1	0	20.42	20.38	20.34	0.1390	0.1377	0.1365
Channel				132047	132197	132347	EIRP(W)		
Frequency (MHz)				1717.5	1732.5	1747.5	L	M	H
15	QPSK	1	0	22.29	22.40	22.37	0.2138	0.2193	0.2178
15	16QAM	1	0	21.41	21.41	21.47	0.1746	0.1746	0.1770
Channel				132022	132197	132372	EIRP(W)		
Frequency (MHz)				1715	1732.5	1750	L	M	H
10	QPSK	1	0	22.26	22.39	22.36	0.2123	0.2188	0.2173
10	16QAM	1	0	21.39	21.39	21.45	0.1738	0.1738	0.1762
Channel				131997	132197	132397	EIRP(W)		
Frequency (MHz)				1712.5	1732.5	1752.5	L	M	H
5	QPSK	1	0	22.25	22.38	22.34	0.2118	0.2183	0.2163
5	16QAM	1	0	21.37	21.37	21.43	0.1730	0.1730	0.1754
Channel				131987	132197	132407	EIRP(W)		
Frequency (MHz)				1711.5	1732.5	1753.5	L	M	H
3	QPSK	1	0	22.22	22.35	22.31	0.2104	0.2168	0.2148
3	16QAM	1	0	21.36	21.36	21.40	0.1726	0.1726	0.1742
Channel				131979	132197	132415	EIRP(W)		
Frequency (MHz)				1710.7	1732.5	1754.3	L	M	H
1.4	QPSK	1	0	22.20	22.33	22.29	0.2094	0.2158	0.2138
1.4	16QAM	1	0	21.35	21.34	21.39	0.1722	0.1718	0.1738

LTE Band 66-Ant.1

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP(W)		
Channel				132072	132197	132322			
Frequency (MHz)				1720	1732.5	1745	L	M	H
20	QPSK	1	0	23.09	23.11	23.16	0.2128	0.2138	0.2163
20	QPSK	1	99	22.94	22.98	22.90	0.2056	0.2075	0.2037
20	QPSK	100	0	22.19	22.16	22.12	0.1730	0.1718	0.1702
20	16QAM	1	0	22.34	22.31	22.42	0.1791	0.1778	0.1824
20	64QAM	1	0	21.16	21.19	21.12	0.1365	0.1374	0.1352
Channel				132047	132197	132347	EIRP(W)		
Frequency (MHz)				1717.5	1732.5	1747.5	L	M	H
15	QPSK	1	0	23.01	23.06	23.09	0.2089	0.2113	0.2128
15	16QAM	1	0	22.31	22.29	22.39	0.1778	0.1770	0.1811
Channel				132022	132197	132372	EIRP(W)		
Frequency (MHz)				1715	1732.5	1750	L	M	H
10	QPSK	1	0	22.95	23.02	23.01	0.2061	0.2094	0.2089
10	16QAM	1	0	22.28	22.26	22.34	0.1766	0.1758	0.1791
Channel				131997	132197	132397	EIRP(W)		
Frequency (MHz)				1712.5	1732.5	1752.5	L	M	H
5	QPSK	1	0	22.91	22.95	22.97	0.2042	0.2061	0.2070
5	16QAM	1	0	22.26	22.24	22.31	0.1758	0.1750	0.1778
Channel				131987	132197	132407	EIRP(W)		
Frequency (MHz)				1711.5	1732.5	1753.5	L	M	H
3	QPSK	1	0	22.89	22.91	22.94	0.2032	0.2042	0.2056
3	16QAM	1	0	22.23	22.21	22.29	0.1746	0.1738	0.1770
Channel				131979	132197	132415	EIRP(W)		
Frequency (MHz)				1710.7	1732.5	1754.3	L	M	H
1.4	QPSK	1	0	22.87	22.89	22.90	0.2023	0.2032	0.2037
1.4	16QAM	1	0	22.21	22.19	22.26	0.1738	0.1730	0.1758

CA Power and ERP/EIRP

CA_5B-Ant.0

Combination 10MHz+10MHz (50RB+50RB)							
Channel	Modulation	PCC		SCC		Measured Power	ERP(W)
		RB Size	RB offset	RB Size	RB offset		
L	QPSK	1	Max	1	0	23.11	0.1306
M	QPSK	1	Max	1	0	23.25	0.1349
H	QPSK	1	Max	1	0	23.09	0.1300
L	16QAM	1	Max	1	0	22.64	0.1172
M	16QAM	1	Max	1	0	22.49	0.1132
H	16QAM	1	Max	1	0	22.51	0.1138
L	64QAM	1	Max	1	0	20.34	0.0690
M	64QAM	1	Max	1	0	20.46	0.0710
H	64QAM	1	Max	1	0	20.49	0.0714
Combination 10MHz+5MHz (50RB+25RB)							
Channel	Modulation	PCC		SCC		Measured Power	ERP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	23.21	0.1337
L	16QAM	1	Max	1	0	22.59	0.1159
Combination 5MHz+10MHz (25RB+50RB)							
Channel	Modulation	PCC		SCC		Measured Power	ERP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	23.16	0.1321
L	16QAM	1	Max	1	0	22.53	0.1143
Combination 5MHz+3MHz (25RB+15RB)							
Channel	Modulation	PCC		SCC		Measured Power	ERP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	23.14	0.1315
L	16QAM	1	Max	1	0	22.51	0.1138
Combination 3MHz+5MHz (15RB+25RB)							
Channel	Modulation	PCC		SCC		Measured Power	ERP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	23.12	0.1309
L	16QAM	1	Max	1	0	22.48	0.1130

CA_66B-Ant.1

Combination 10MHz+10MHz (50RB+50RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
L	QPSK	1	Max	1	0	22.91	0.2042
M	QPSK	1	Max	1	0	22.89	0.2032
H	QPSK	1	Max	1	0	22.76	0.1972
L	16QAM	1	Max	1	0	22.15	0.1714
M	16QAM	1	Max	1	0	22.26	0.1758
H	16QAM	1	Max	1	0	22.23	0.1746
L	64QAM	1	Max	1	0	20.04	0.1054
M	64QAM	1	Max	1	0	20.17	0.1086
H	64QAM	1	Max	1	0	20.06	0.1059
Combination 15MHz+5MHz (75RB+25RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
L	QPSK	1	Max	1	0	22.85	0.2014
M	16QAM	1	Max	1	0	22.20	0.1734
Combination 5MHz+15MHz (25RB+75RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
L	QPSK	1	Max	1	0	22.82	0.2000
M	16QAM	1	Max	1	0	22.18	0.1726
Combination 10MHz+5MHz (50RB+25RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
L	QPSK	1	Max	1	0	22.81	0.1995
M	16QAM	1	Max	1	0	22.14	0.1710
Combination 5MHz+10MHz (25RB+50RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
L	QPSK	1	Max	1	0	22.76	0.1972
M	16QAM	1	Max	1	0	22.13	0.1706
Combination 5MHz+5MHz (25RB+25RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
L	QPSK	1	Max	1	0	22.74	0.1963
M	16QAM	1	Max	1	0	22.11	0.1698

CA_66C-Ant.1

Combination 20MHz+20MHz (100RB+100RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
L	QPSK	1	Max	1	0	22.82	0.2000
M	QPSK	1	Max	1	0	22.86	0.2018
H	QPSK	1	Max	1	0	22.79	0.1986
L	16QAM	1	Max	1	0	22.31	0.1778
M	16QAM	1	Max	1	0	22.25	0.1754
H	16QAM	1	Max	1	0	22.16	0.1718
L	64QAM	1	Max	1	0	20.03	0.1052
M	64QAM	1	Max	1	0	20.11	0.1072
H	64QAM	1	Max	1	0	20.07	0.1062
Combination 20MHz+15MHz (100RB+75RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	22.83	0.2004
L	16QAM	1	Max	1	0	22.29	0.1770
Combination 15MHz+20MHz (75RB+100RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	22.80	0.1991
L	16QAM	1	Max	1	0	22.27	0.1762
Combination 15MHz+15MHz (75RB+75RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	22.78	0.1982
L	16QAM	1	Max	1	0	22.24	0.1750
Combination 20MHz+10MHz (100RB+50RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	22.76	0.1972
L	16QAM	1	Max	1	0	22.23	0.1746
Combination 10MHz+20MHz (50RB+100RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	22.75	0.1968
L	16QAM	1	Max	1	0	22.21	0.1738
Combination 15MHz+10MHz (75RB+50RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	22.73	0.1959
L	16QAM	1	Max	1	0	22.20	0.1734

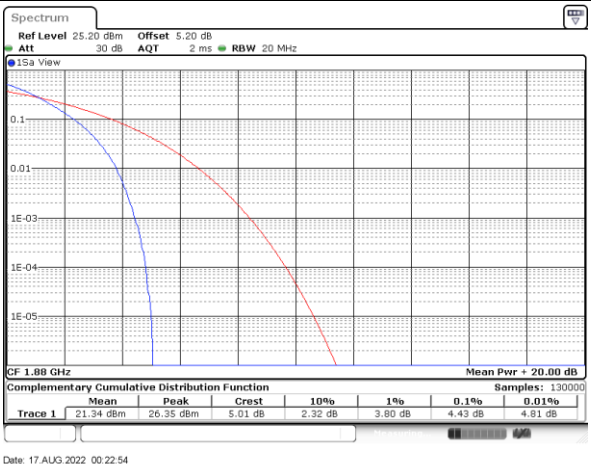
Combination 10MHz+15MHz (50RB+75RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	22.71	0.1950
L	16QAM	1	Max	1	0	22.17	0.1722
Combination 20MHz+5MHz (100RB+25RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	22.69	0.1941
L	16QAM	1	Max	1	0	22.15	0.1714
Combination 5MHz+20MHz (25RB+100RB)							
Channel	Modulation	PCC		SCC		Measured Power	EIRP(W)
		RB Size	RB offset	RB Size	RB offset		
M	QPSK	1	Max	1	0	22.68	0.1936
L	16QAM	1	Max	1	0	22.14	0.1710

LTE Band 2 for Ant.1

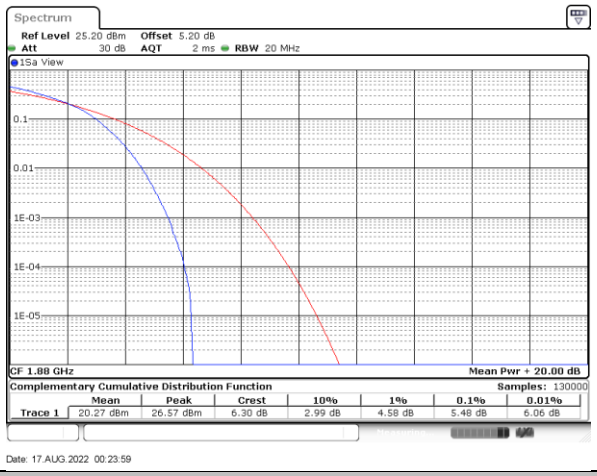
Peak-to-Average Ratio

Mode	LTE Band 2 / 20MHz			
Mod.	QPSK	16QAM	64QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Result
Middle CH	4.43	5.48	5.91	PASS

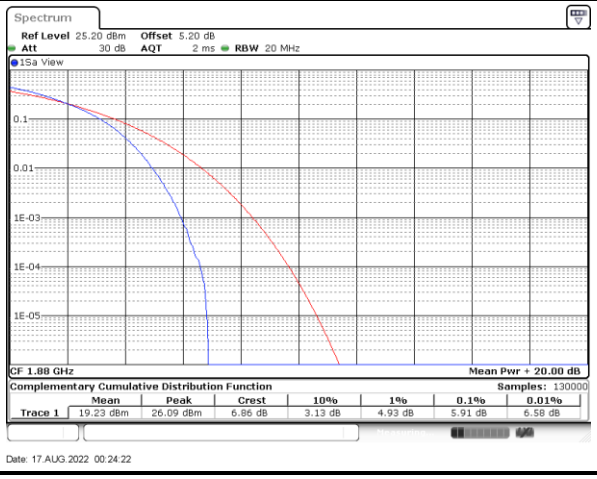
LTE Band 2 / 20MHz
Middle Channel / Full RB/ QPSK



Middle Channel / Full RB/ 16QAM



Middle Channel / Full RB/ 64QAM

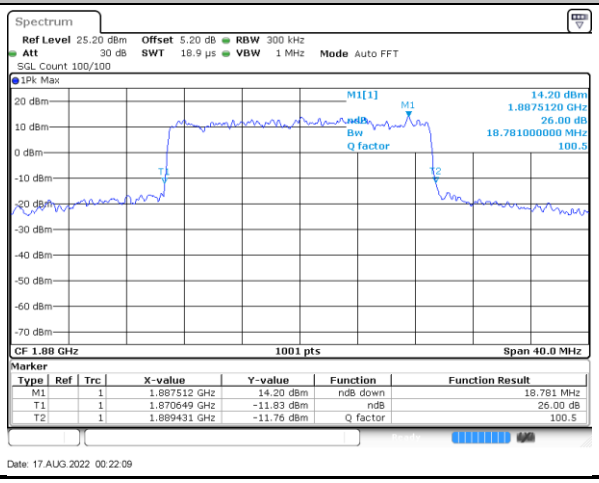


26dB Bandwidth

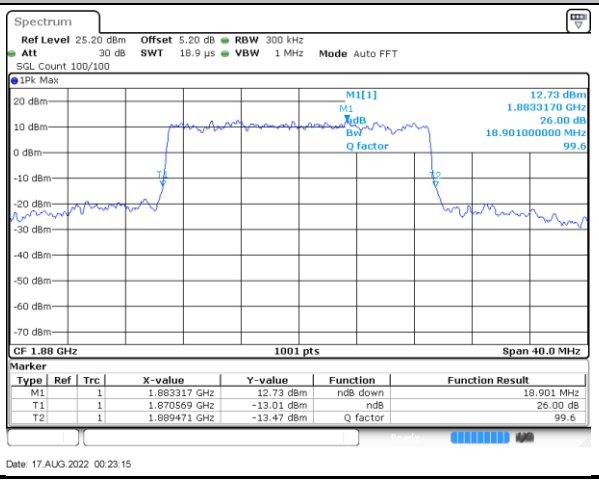
Mode	LTE Band 2 : 26dB BW(MHz)	
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	18.78	18.90

LTE Band 2

Middle Channel / 20MHz / QPSK



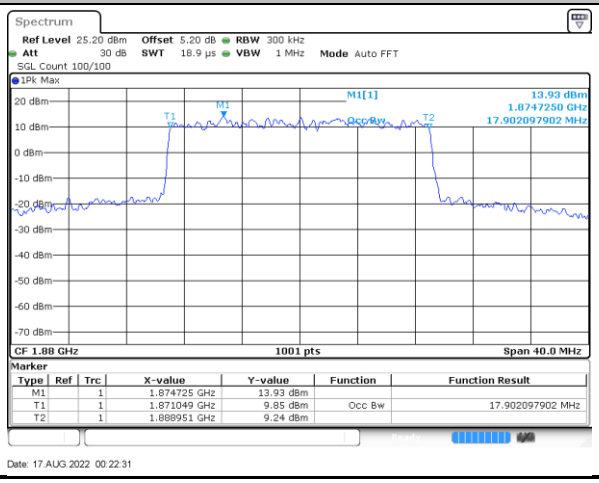
Middle Channel / 20MHz / 16QAM

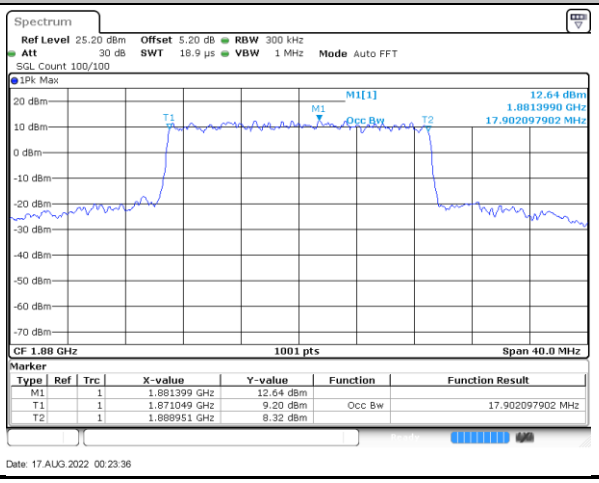


Occupied Bandwidth

Mode	LTE Band 2 : 99%OBW(MHz)	
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	17.90	17.90

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

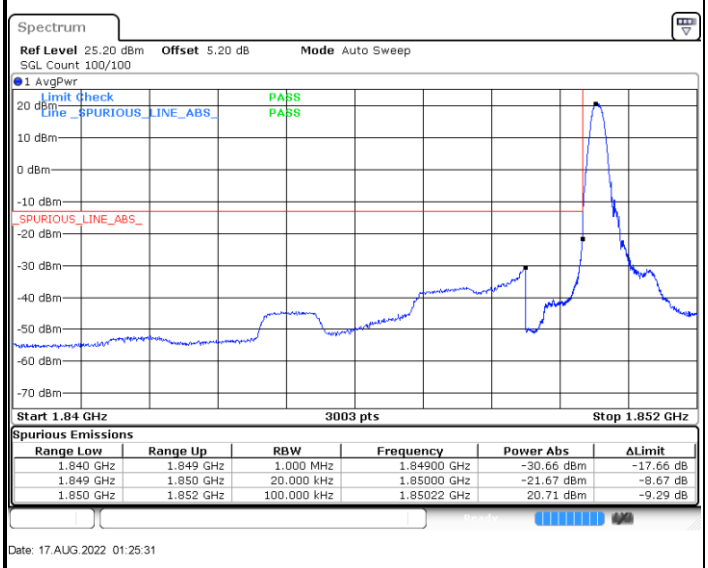




Conducted Band Edge

LTE Band 2 / 1.4MHz / QPSK

Lowest Band Edge / 1RB

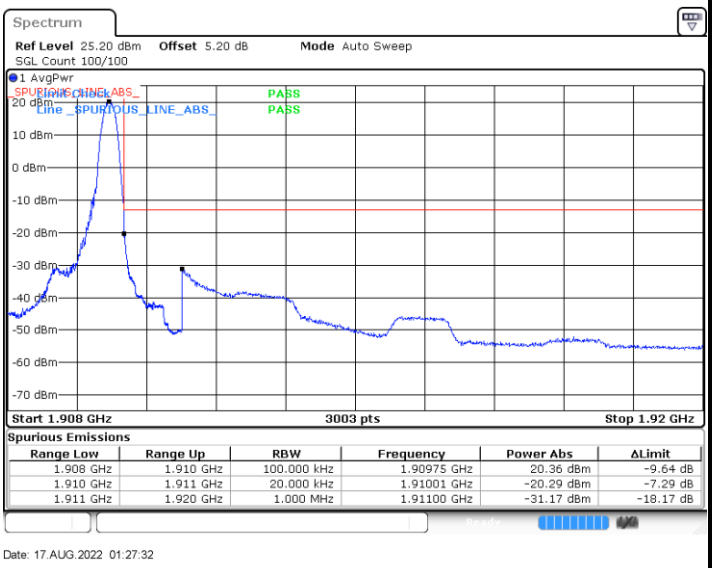


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84900 GHz	-30.66 dBm	-17.66 dB
1.849 GHz	1.850 GHz	20.000 kHz	1.85000 GHz	-21.67 dBm	-8.67 dB
1.850 GHz	1.852 GHz	100.000 kHz	1.85022 GHz	20.71 dBm	-9.29 dB

Date: 17.AUG.2022 01:25:31

Highest Band Edge / 1RB

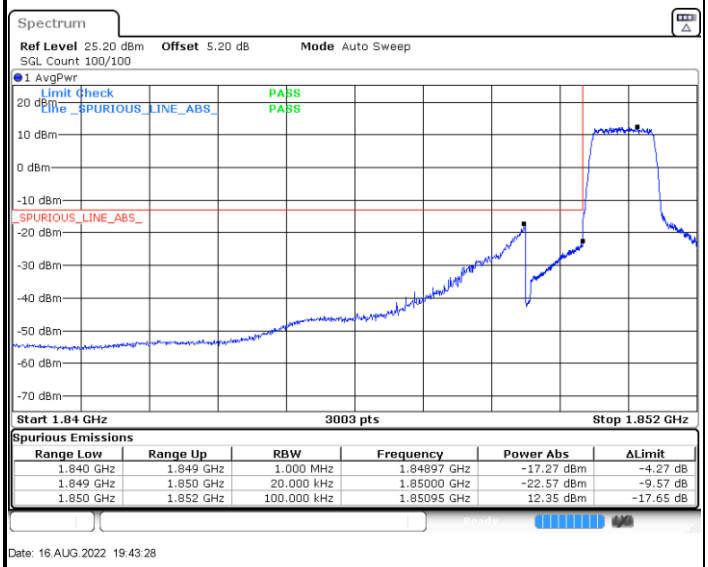


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.908 GHz	1.910 GHz	100.000 kHz	1.90975 GHz	20.36 dBm	-9.64 dB
1.910 GHz	1.911 GHz	20.000 kHz	1.91001 GHz	-20.29 dBm	-7.29 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91100 GHz	-31.17 dBm	-18.17 dB

Date: 17.AUG.2022 01:27:32

Lowest Band Edge / Full RB

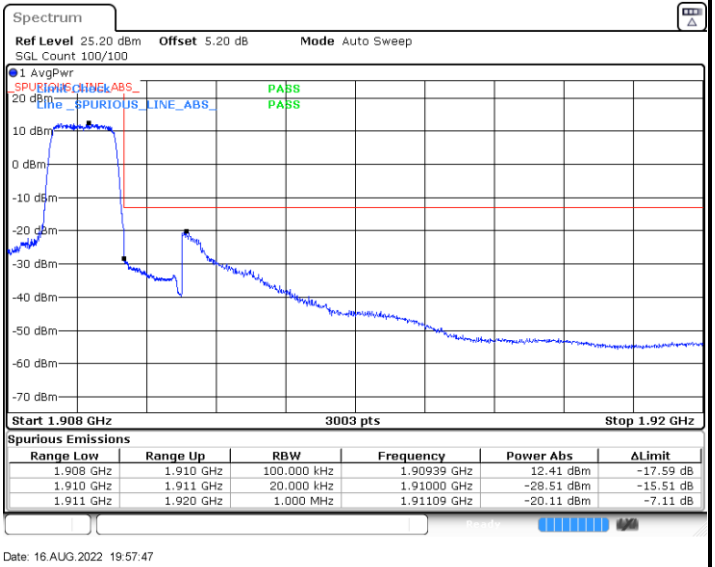


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84897 GHz	-17.27 dBm	-4.27 dB
1.849 GHz	1.850 GHz	20.000 kHz	1.85000 GHz	-22.57 dBm	-9.57 dB
1.850 GHz	1.852 GHz	100.000 kHz	1.85095 GHz	12.35 dBm	-17.65 dB

Date: 16.AUG.2022 19:43:28

Highest Band Edge / Full RB



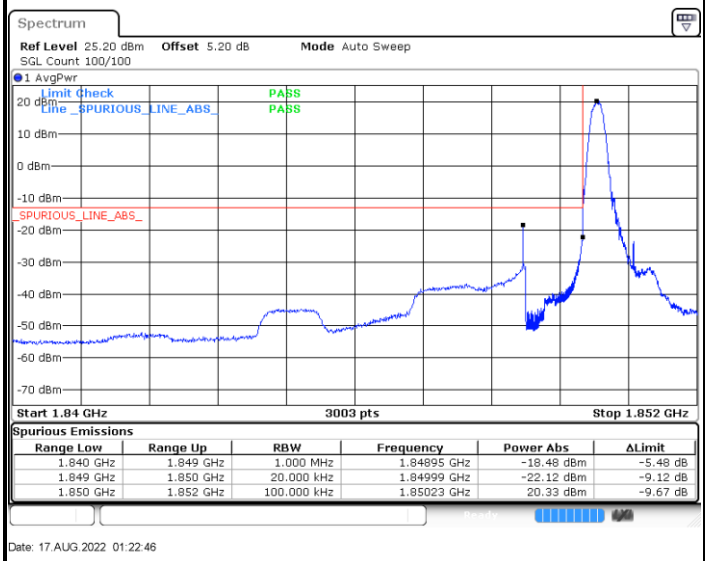
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.908 GHz	1.910 GHz	100.000 kHz	1.90939 GHz	12.41 dBm	-17.59 dB
1.910 GHz	1.911 GHz	20.000 kHz	1.91000 GHz	-28.51 dBm	-15.51 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91109 GHz	-20.11 dBm	-7.11 dB

Date: 16.AUG.2022 19:57:47

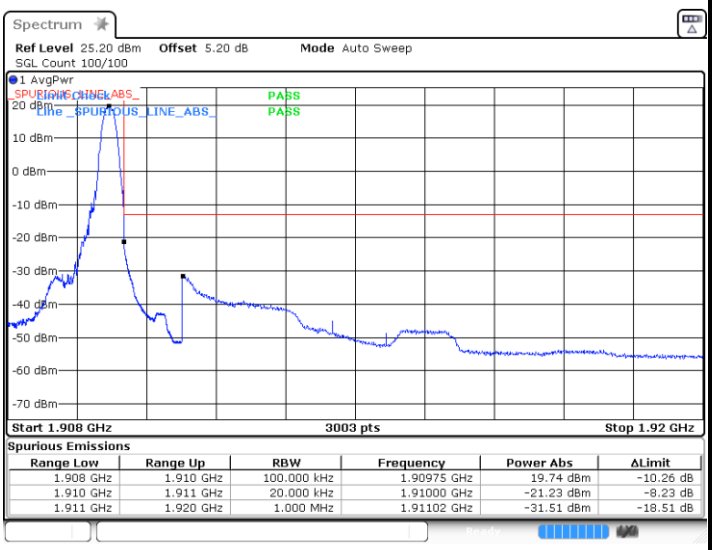
LTE Band 2 / 1.4MHz / 16QAM

Lowest Band Edge / 1 RB



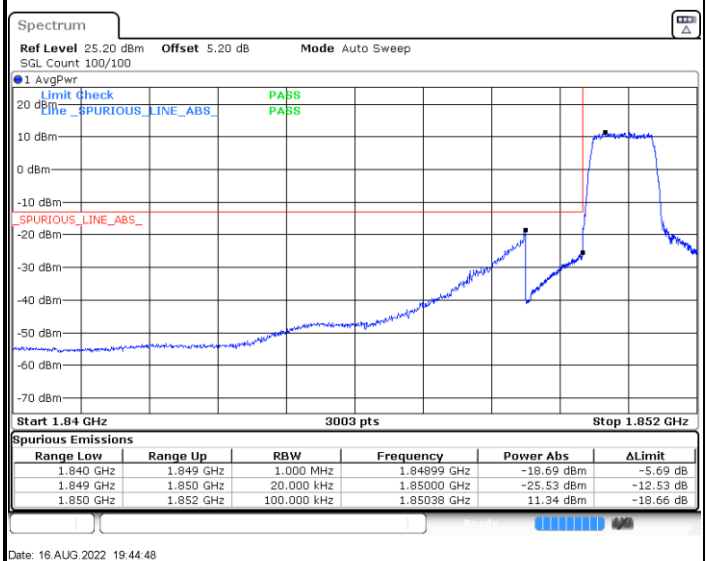
Date: 17.AUG.2022 01:22:46

Highest Band Edge / 1 RB



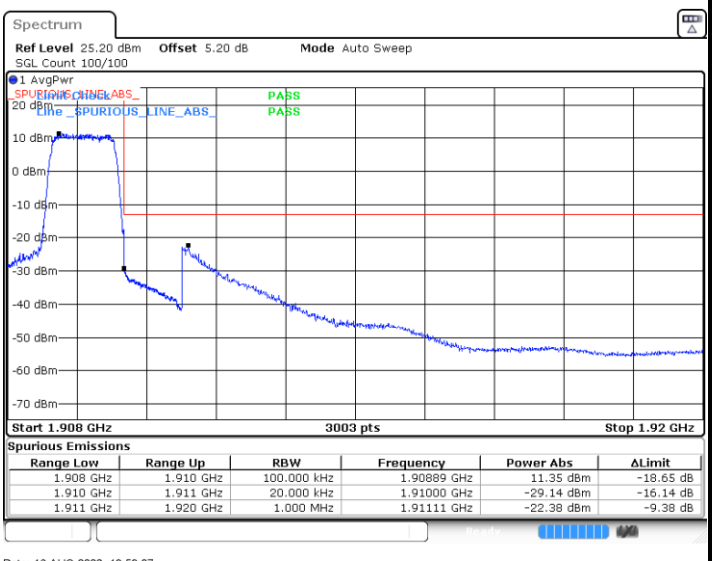
Date: 16.AUG.2022 19:53:46

Lowest Band Edge / Full RB



Date: 16.AUG.2022 19:44:48

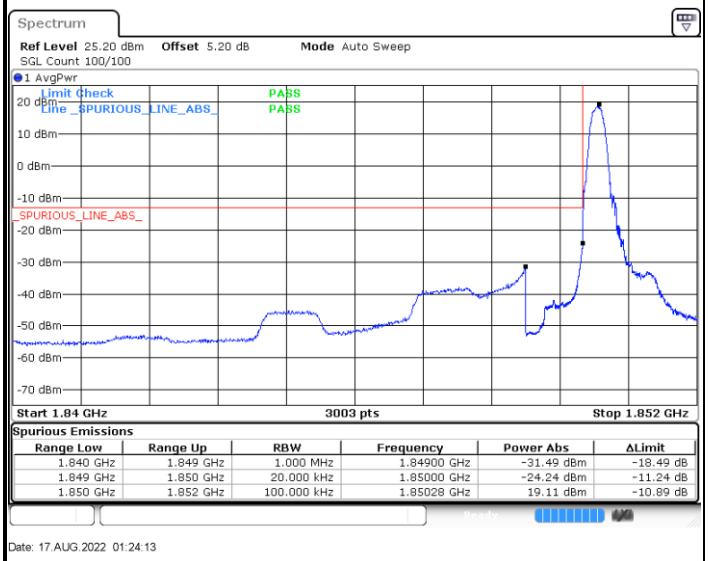
Highest Band Edge / Full RB



Date: 16.AUG.2022 19:59:07

LTE Band 2 / 1.4MHz / 64QAM

Lowest Band Edge / 1 RB

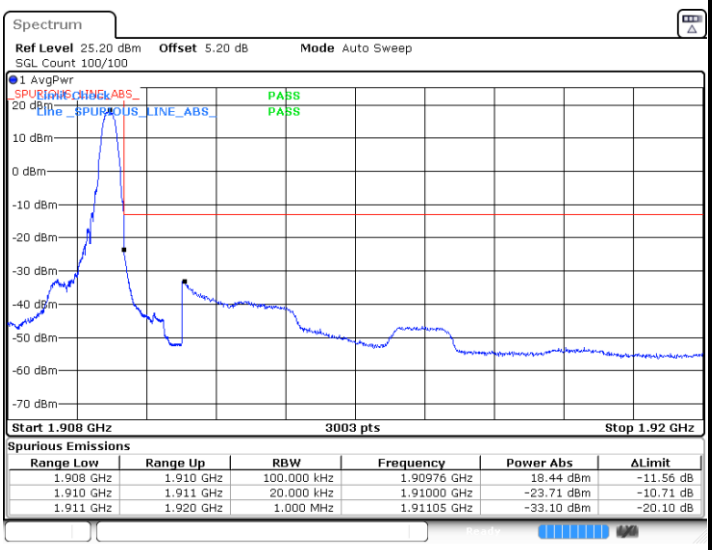


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84900 GHz	-31.49 dBm	-18.49 dB
1.849 GHz	1.850 GHz	20.000 kHz	1.85000 GHz	-24.24 dBm	-11.24 dB
1.850 GHz	1.852 GHz	100.000 kHz	1.85028 GHz	19.11 dBm	-10.89 dB

Date: 17.AUG.2022 01:24:13

Highest Band Edge / 1 RB

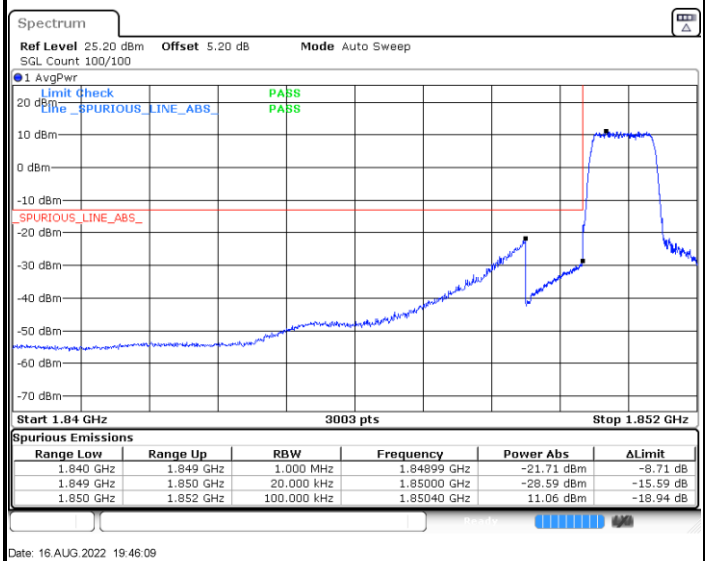


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.908 GHz	1.910 GHz	100.000 kHz	1.90976 GHz	18.44 dBm	-11.56 dB
1.910 GHz	1.911 GHz	20.000 kHz	1.91000 GHz	-23.71 dBm	-10.71 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91105 GHz	-33.10 dBm	-20.10 dB

Date: 16.AUG.2022 19:55:06

Lowest Band Edge / Full RB

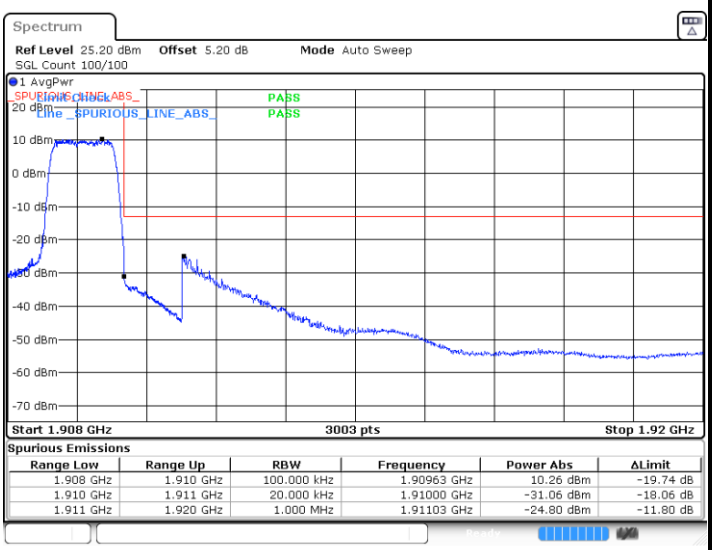


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84899 GHz	-21.71 dBm	-8.71 dB
1.849 GHz	1.850 GHz	20.000 kHz	1.85000 GHz	-28.59 dBm	-15.59 dB
1.850 GHz	1.852 GHz	100.000 kHz	1.85040 GHz	11.06 dBm	-18.94 dB

Date: 16.AUG.2022 19:46:09

Highest Band Edge / Full RB



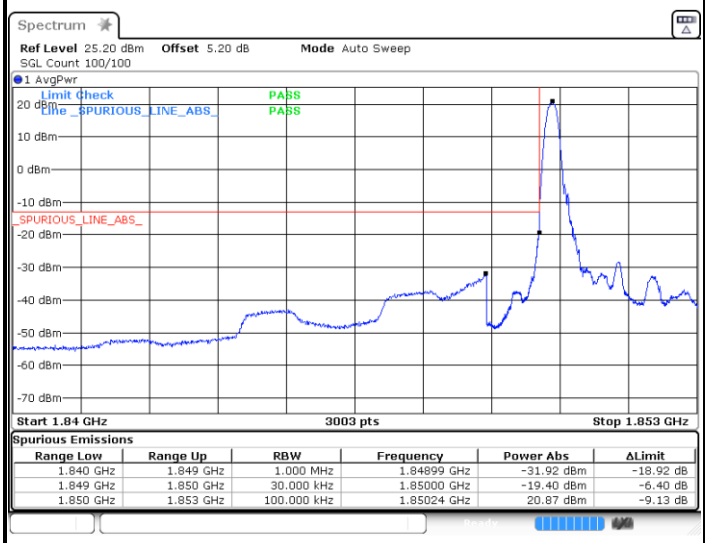
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.908 GHz	1.910 GHz	100.000 kHz	1.90963 GHz	10.26 dBm	-19.74 dB
1.910 GHz	1.911 GHz	20.000 kHz	1.91000 GHz	-31.06 dBm	-18.06 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91103 GHz	-24.80 dBm	-11.80 dB

Date: 16.AUG.2022 20:00:27

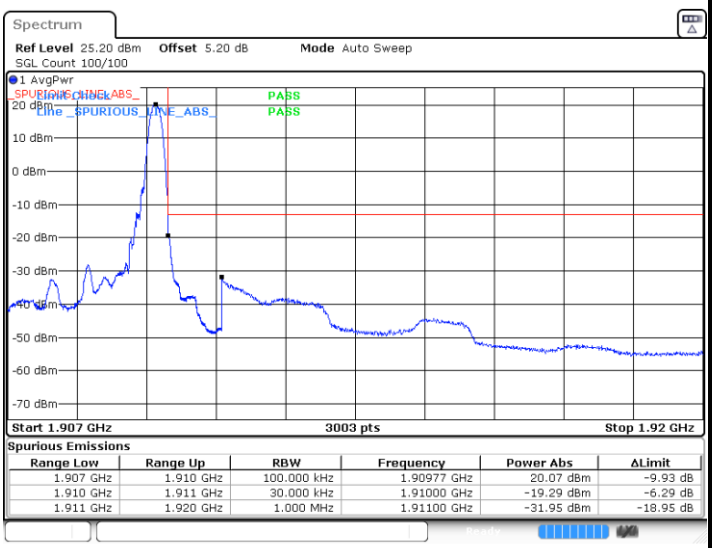
LTE Band 2 / 3MHz / QPSK

Lowest Band Edge / 1RB



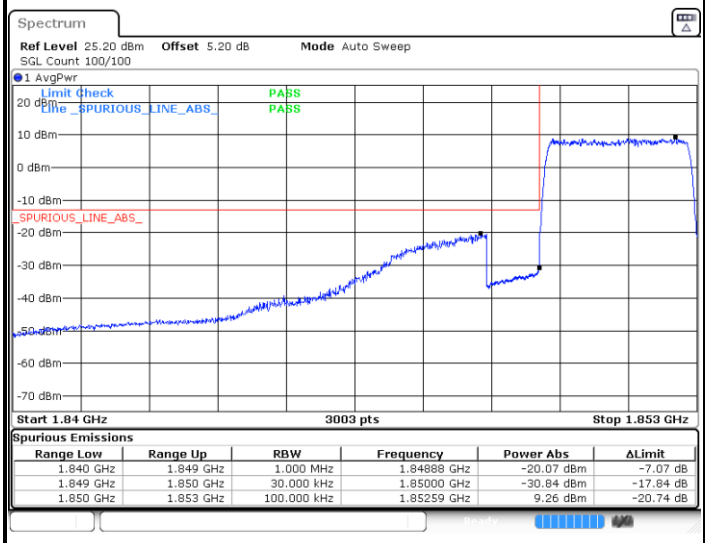
Date: 16.AUG.2022 20:03:25

Highest Band Edge / 1 RB



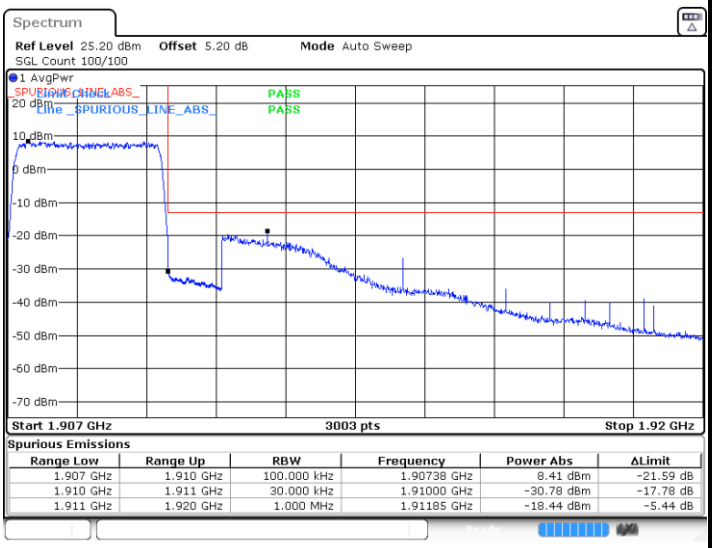
Date: 16.AUG.2022 20:14:09

Lowest Band Edge / Full RB



Date: 16.AUG.2022 20:08:47

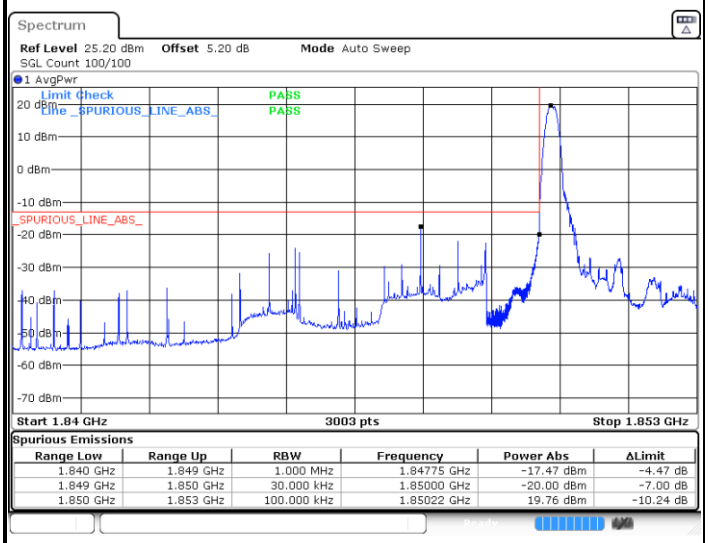
Highest Band Edge / Full RB



Date: 16.AUG.2022 20:19:31

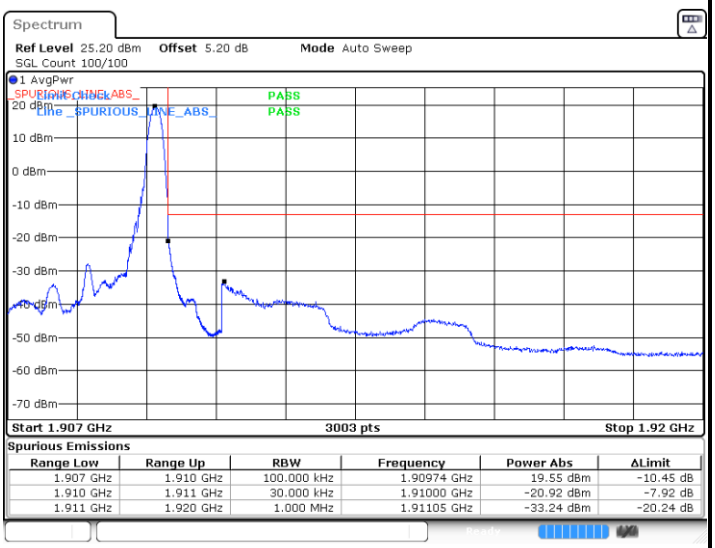
LTE Band 2 / 3MHz / 16QAM

Lowest Band Edge / 1 RB



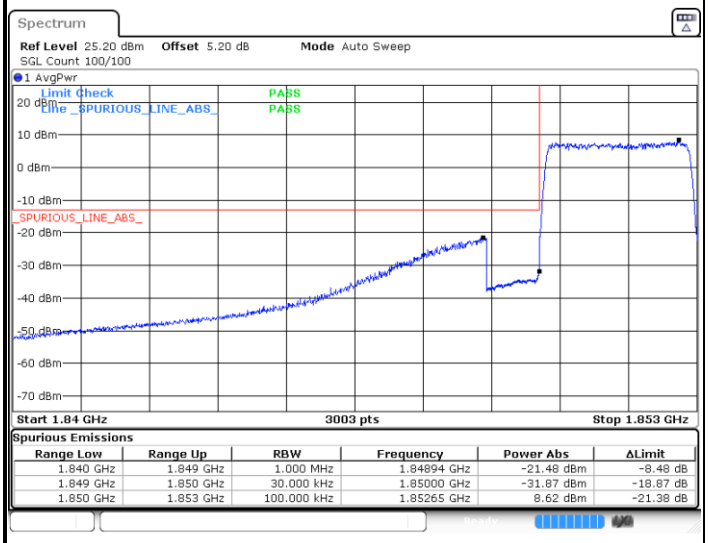
Date: 16.AUG.2022 20:04:45

Highest Band Edge /1 RB



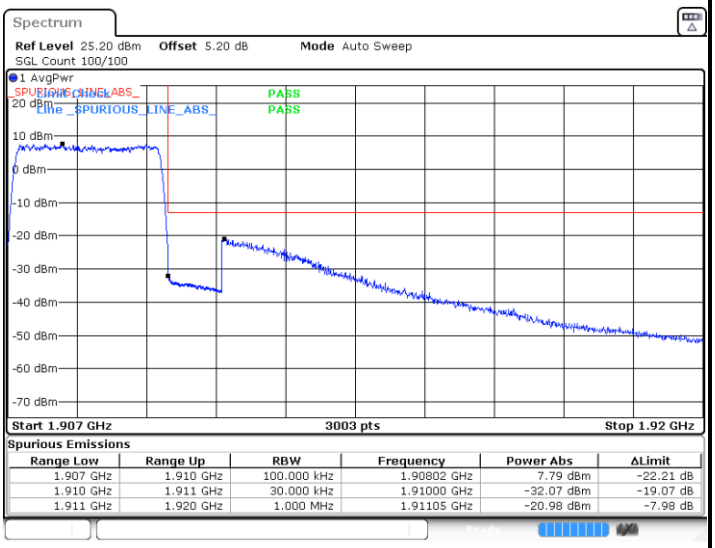
Date: 16.AUG.2022 20:15:29

Lowest Band Edge / Full RB



Date: 16.AUG.2022 20:10:07

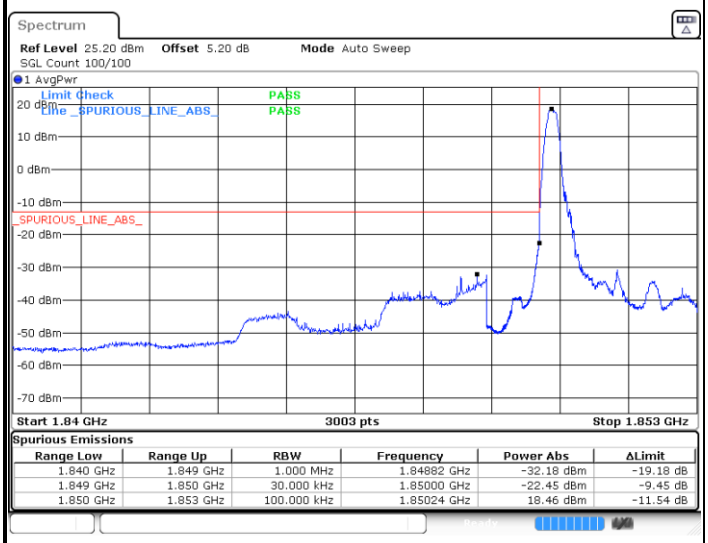
Highest Band Edge / Full RB



Date: 16.AUG.2022 20:20:51

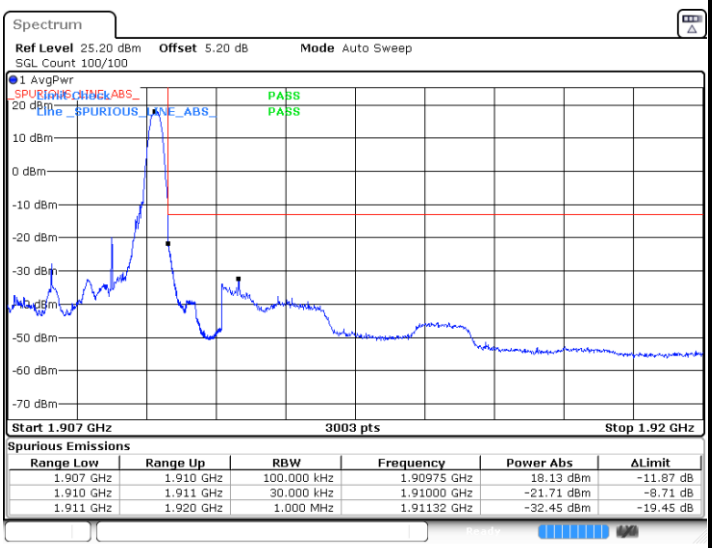
LTE Band 2 / 3MHz / 64QAM

Lowest Band Edge / 1 RB



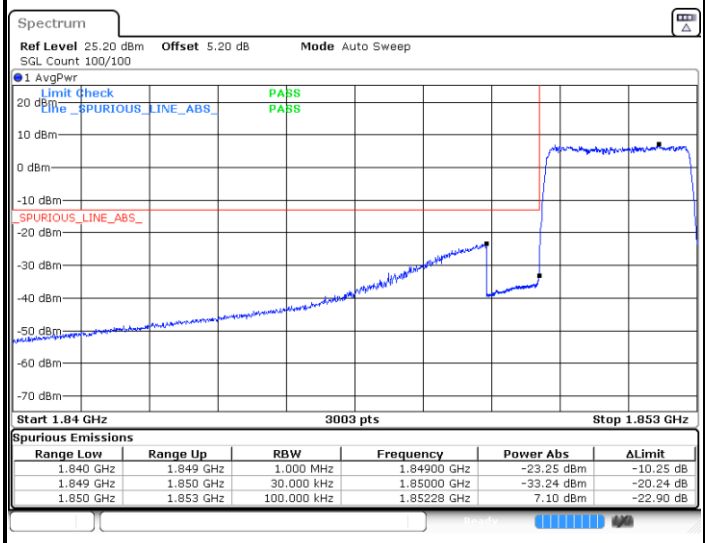
Date: 16.AUG.2022 20:06:05

Highest Band Edge /1 RB



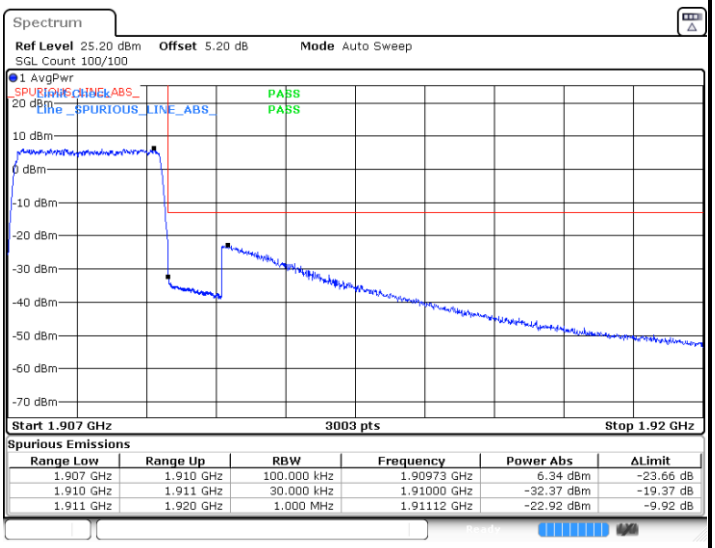
Date: 16.AUG.2022 20:16:50

Lowest Band Edge / Full RB



Date: 16.AUG.2022 20:11:28

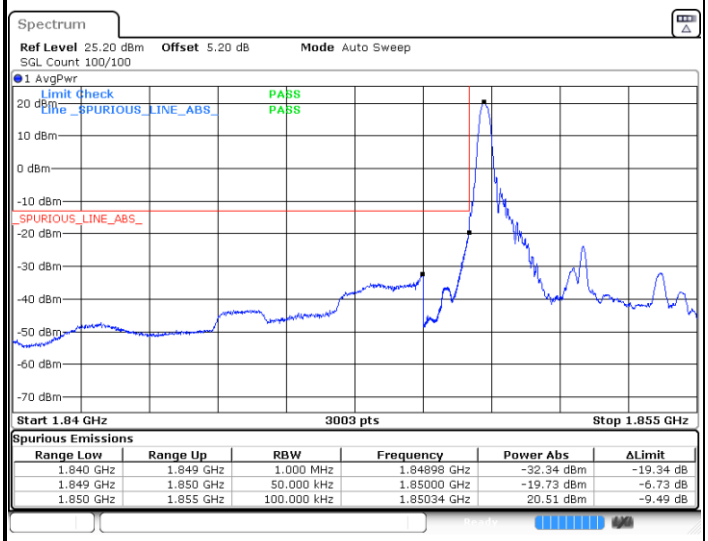
Highest Band Edge / Full RB



Date: 16.AUG.2022 20:22:13

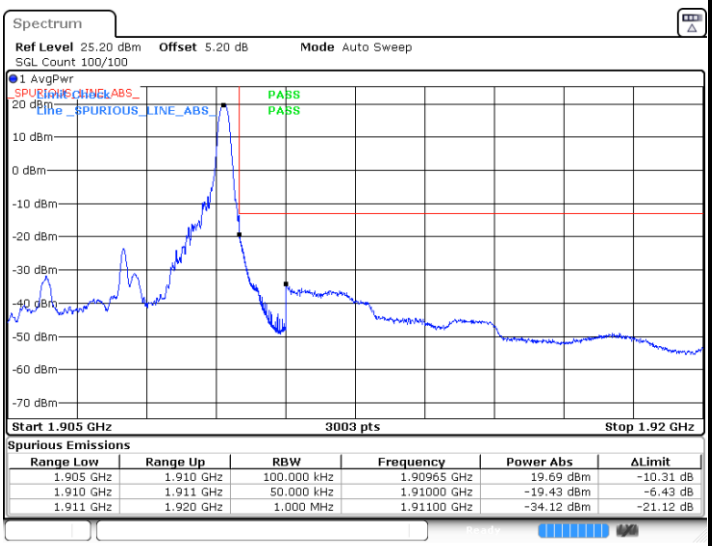
LTE Band 2 / 5MHz / QPSK

Lowest Band Edge / 1 RB



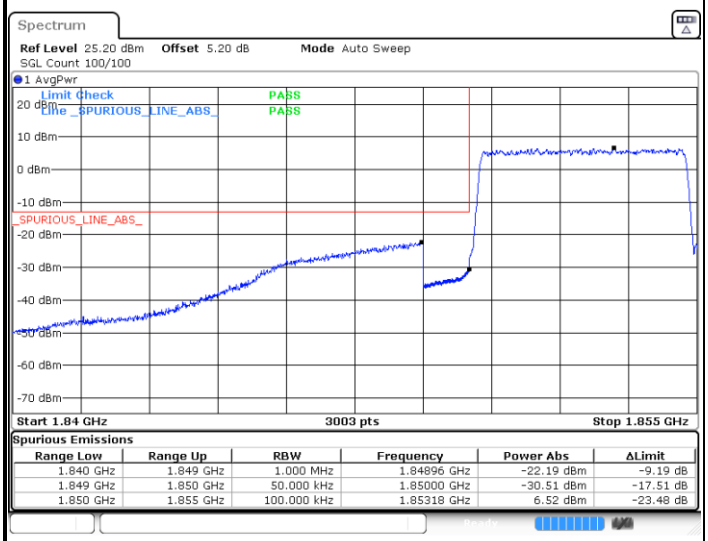
Date: 16.AUG.2022 20:28:49

Highest Band Edge / 1 RB



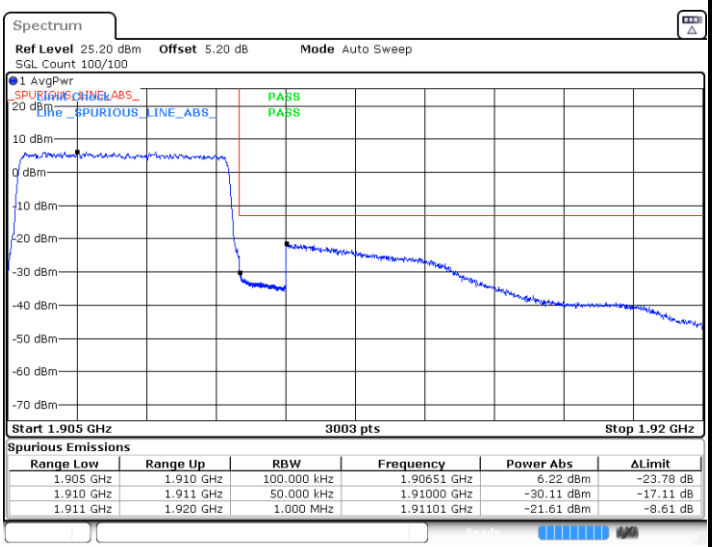
Date: 16.AUG.2022 20:39:32

Lowest Band Edge / Full RB



Date: 16.AUG.2022 20:34:10

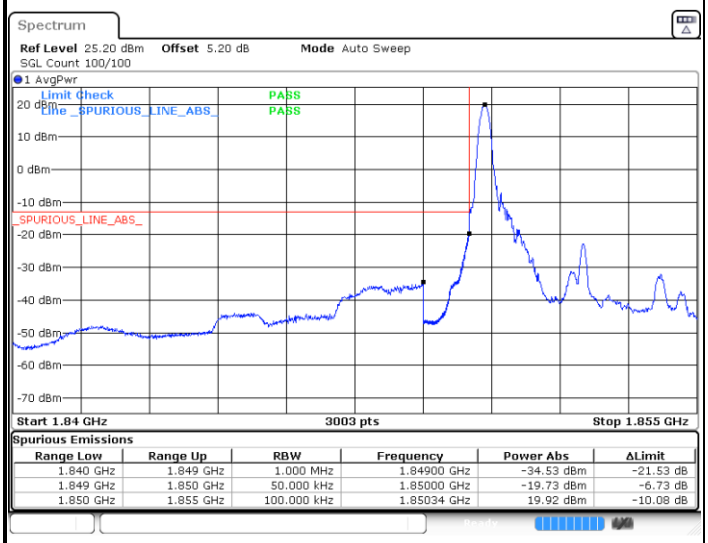
Highest Band Edge / Full RB



Date: 16.AUG.2022 20:44:54

LTE Band 2 / 5MHz / 16QAM

Lowest Band Edge / 1RB

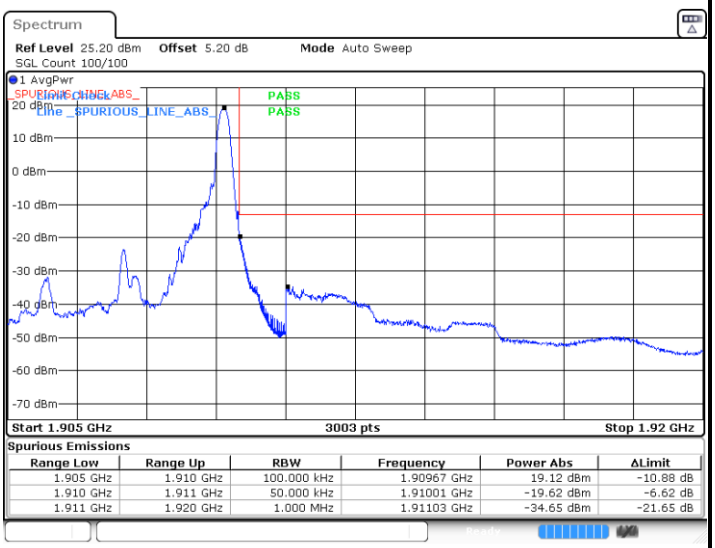


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84900 GHz	-34.53 dBm	-21.53 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.85000 GHz	-19.73 dBm	-6.73 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85034 GHz	19.92 dBm	-10.08 dB

Date: 16.AUG.2022 20:30:09

Highest Band Edge / 1 RB

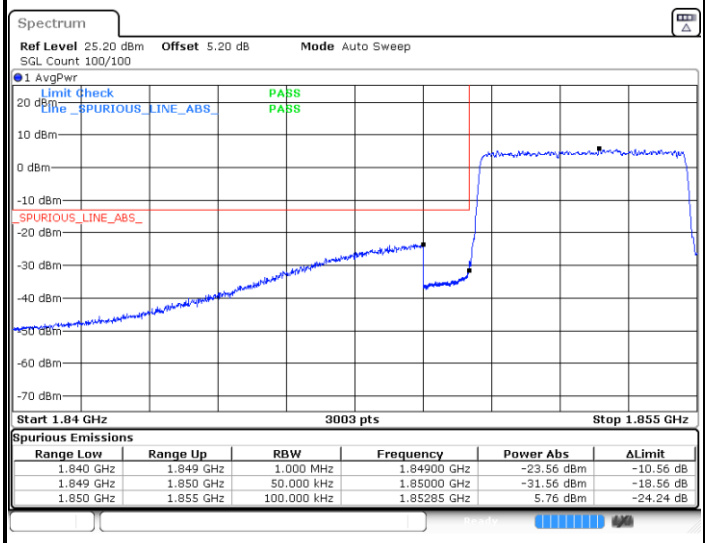


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90967 GHz	19.12 dBm	-10.88 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91001 GHz	-19.62 dBm	-6.62 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91103 GHz	-34.65 dBm	-21.65 dB

Date: 16.AUG.2022 20:40:52

Lowest Band Edge / Full RB

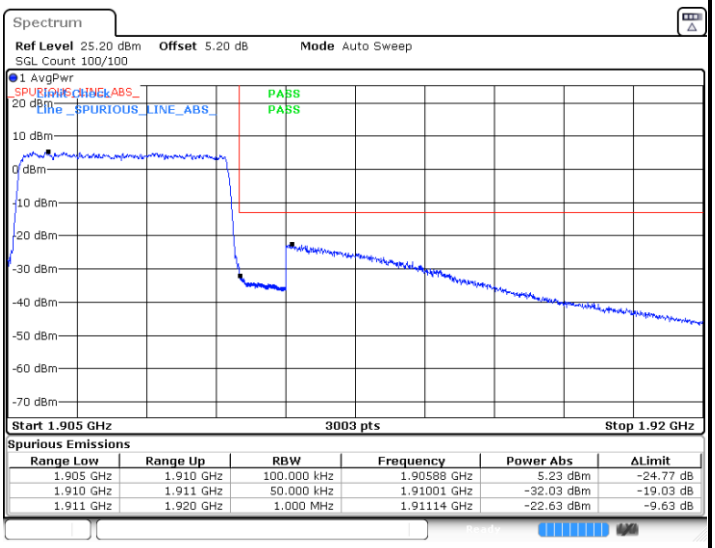


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84900 GHz	-23.56 dBm	-10.56 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.85000 GHz	-31.56 dBm	-18.56 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85285 GHz	5.76 dBm	-24.24 dB

Date: 16.AUG.2022 20:35:30

Highest Band Edge / Full RB



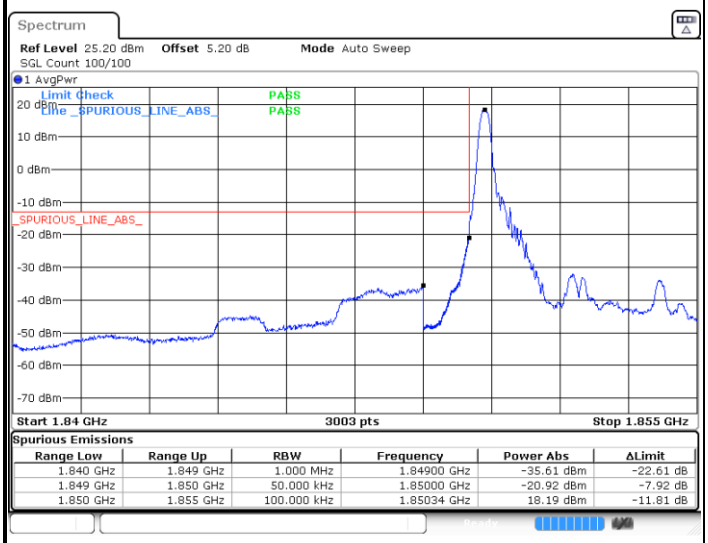
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90588 GHz	5.23 dBm	-24.77 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91001 GHz	-32.03 dBm	-19.03 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91114 GHz	-22.63 dBm	-9.63 dB

Date: 16.AUG.2022 20:46:14

LTE Band 2 / 5MHz / 64QAM

Lowest Band Edge / 1RB

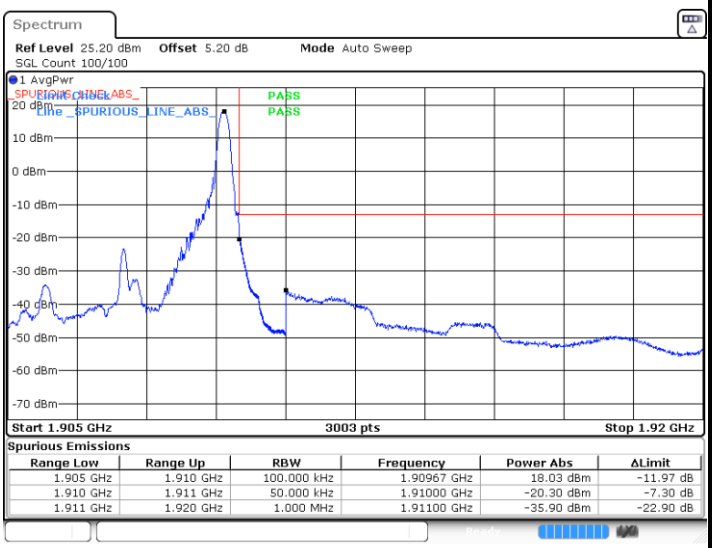


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84900 GHz	-35.61 dBm	-22.61 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.85000 GHz	-20.92 dBm	-7.92 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85034 GHz	18.19 dBm	-11.81 dB

Date: 16.AUG.2022 20:31:29

Highest Band Edge / 1 RB

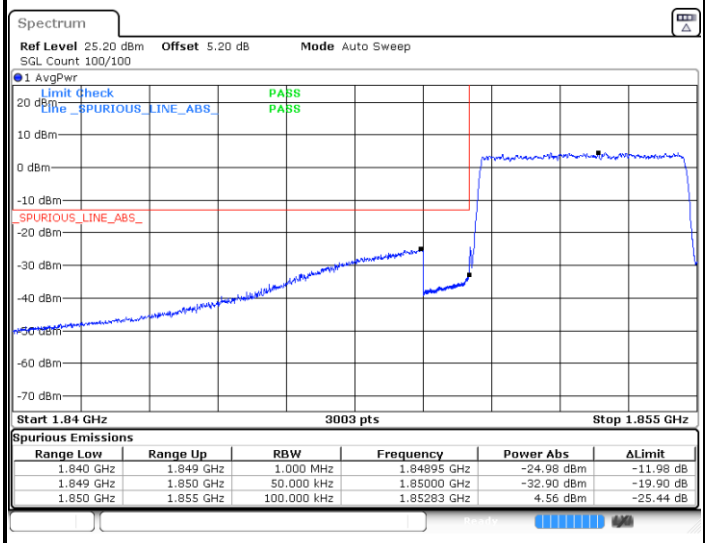


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90967 GHz	18.03 dBm	-11.97 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91000 GHz	-20.30 dBm	-7.30 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91100 GHz	-35.90 dBm	-22.90 dB

Date: 16.AUG.2022 20:42:13

Lowest Band Edge / Full RB

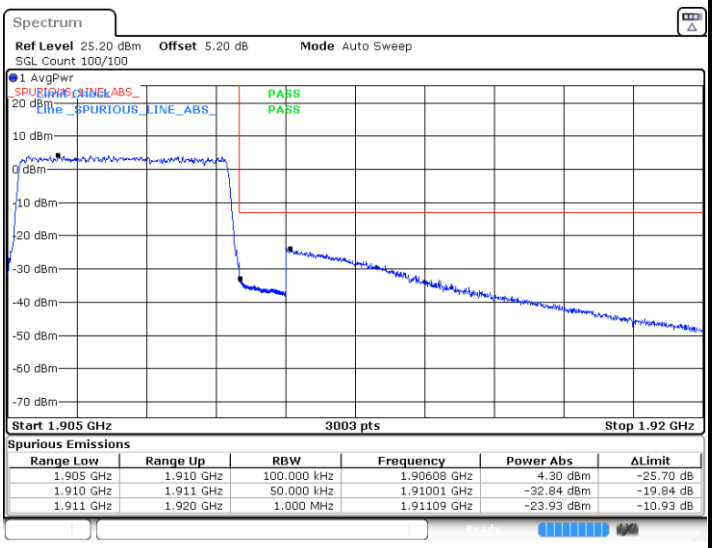


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84895 GHz	-24.98 dBm	-11.98 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.85000 GHz	-32.90 dBm	-19.90 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85283 GHz	4.56 dBm	-25.44 dB

Date: 16.AUG.2022 20:36:51

Highest Band Edge / Full RB



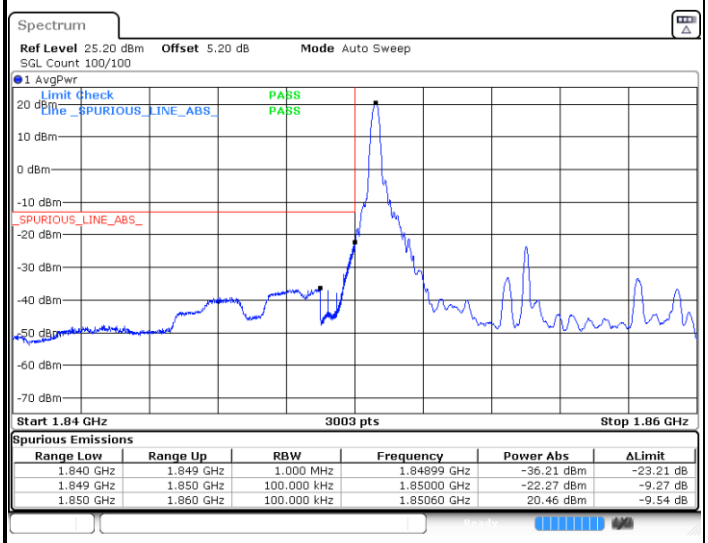
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90608 GHz	4.30 dBm	-25.70 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91001 GHz	-32.84 dBm	-19.84 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91109 GHz	-23.93 dBm	-10.93 dB

Date: 16.AUG.2022 20:47:35

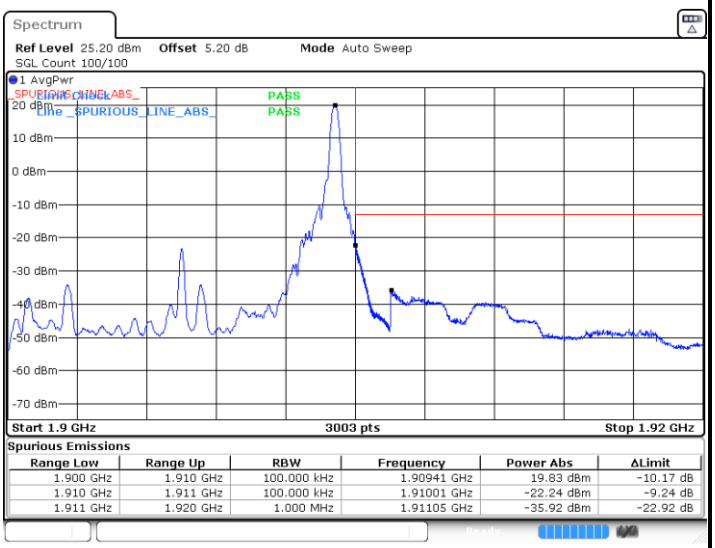
LTE Band 2 / 10MHz / QPSK

Lowest Band Edge / 1 RB



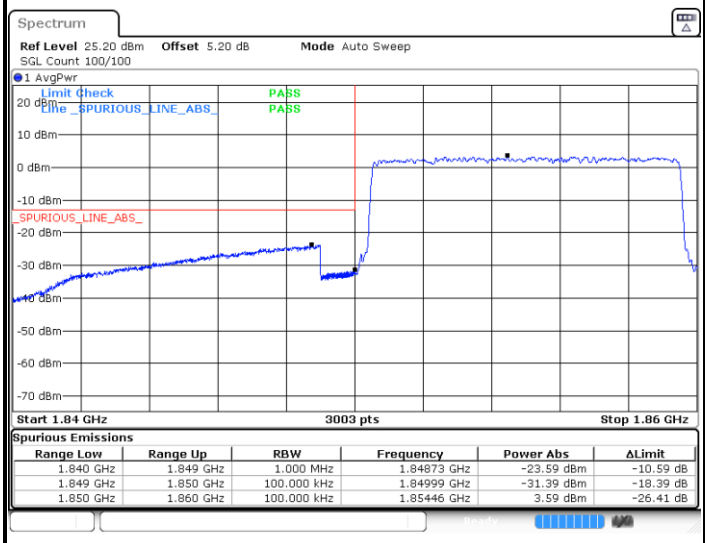
Date: 16.AUG.2022 20:51:08

Highest Band Edge / 1 RB



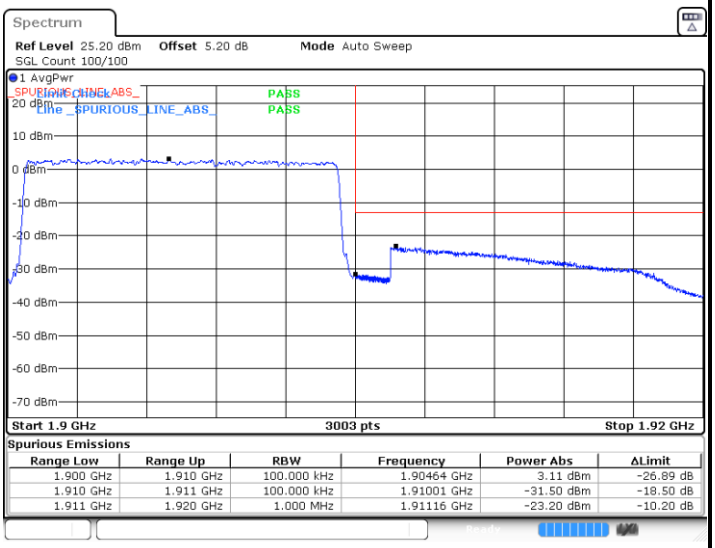
Date: 16.AUG.2022 21:01:50

Lowest Band Edge / Full RB



Date: 16.AUG.2022 20:56:29

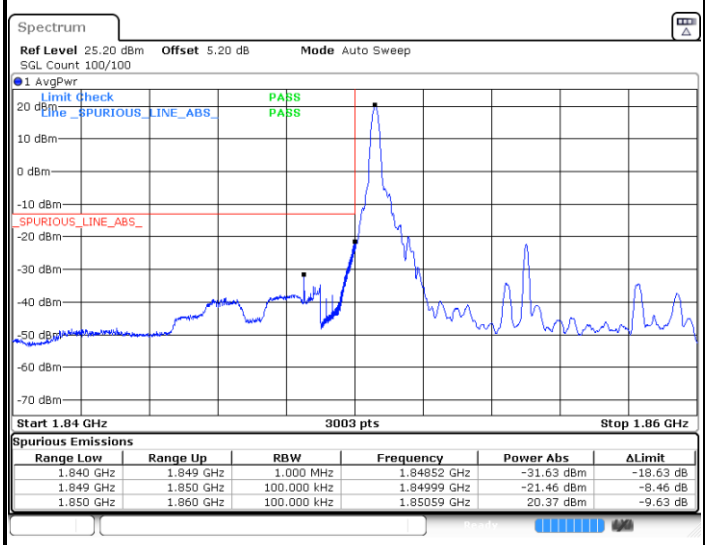
Highest Band Edge / Full RB



Date: 16.AUG.2022 21:07:12

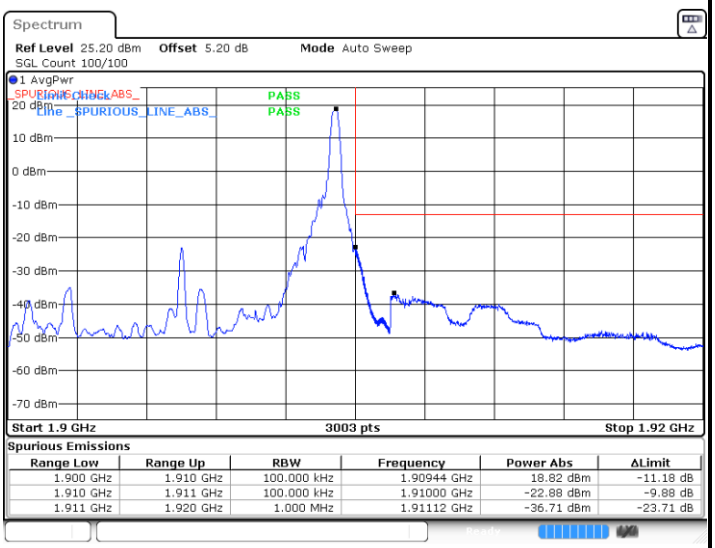
LTE Band 2 / 10MHz / 16QAM

Lowest Band Edge / 1 RB



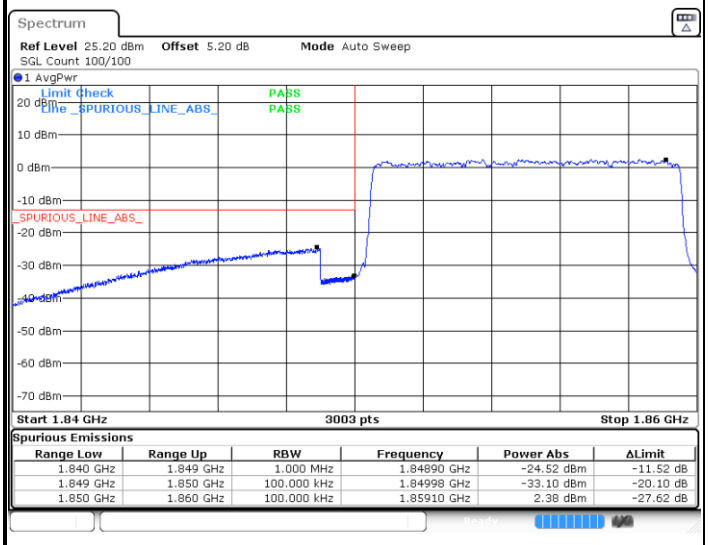
Date: 16.AUG.2022 20:52:28

Highest Band Edge / 1 RB



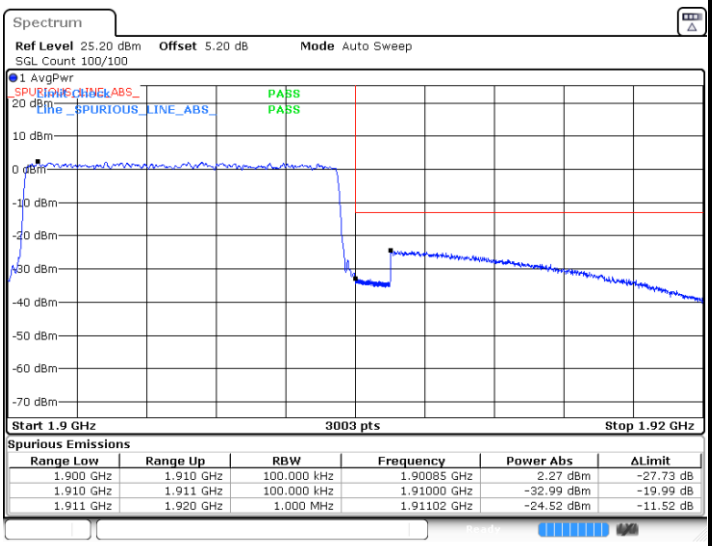
Date: 16.AUG.2022 21:03:10

Lowest Band Edge / Full RB



Date: 16.AUG.2022 20:57:49

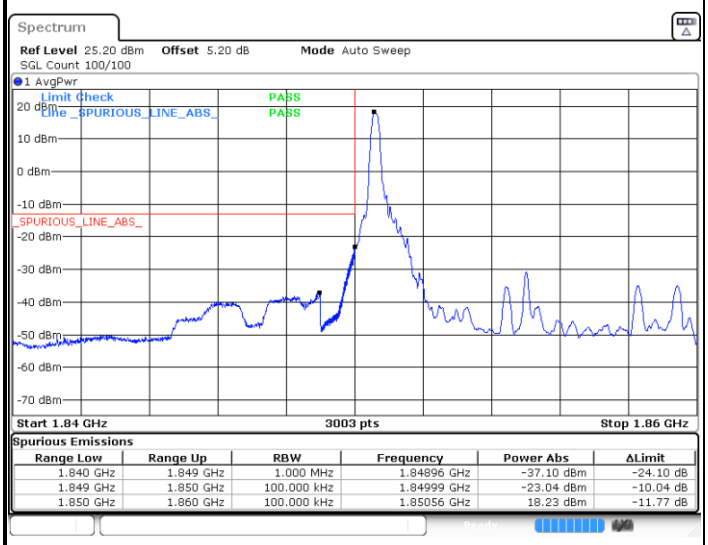
Highest Band Edge / Full RB



Date: 16.AUG.2022 21:08:32

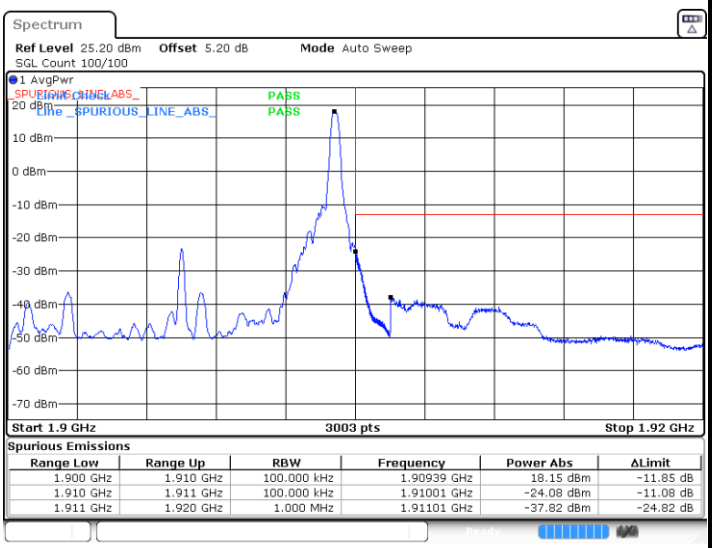
LTE Band 2 / 10MHz / 64QAM

Lowest Band Edge / 1 RB



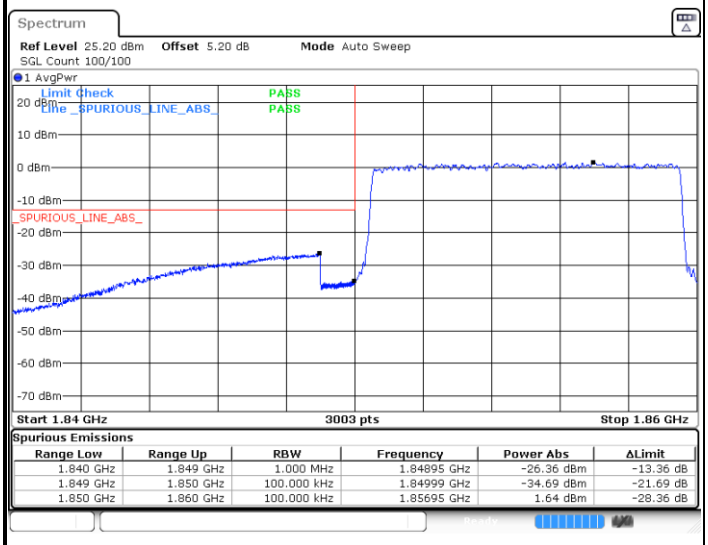
Date: 16.AUG.2022 20:53:48

Highest Band Edge / 1 RB



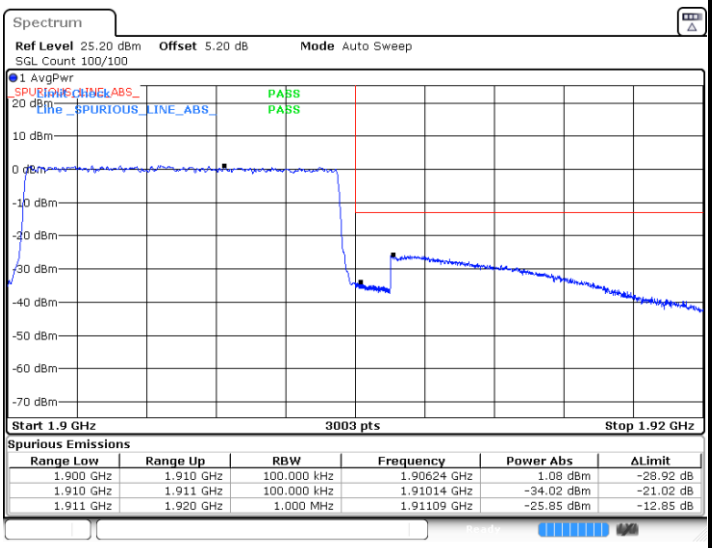
Date: 16.AUG.2022 21:04:30

Lowest Band Edge / Full RB



Date: 16.AUG.2022 20:59:09

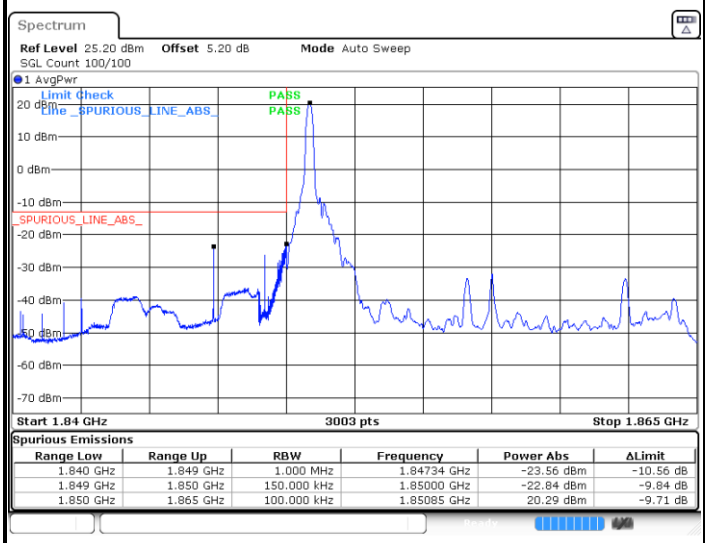
Highest Band Edge / Full RB



Date: 16.AUG.2022 21:09:52

LTE Band 2 / 15MHz / QPSK

Lowest Band Edge / 1 RB

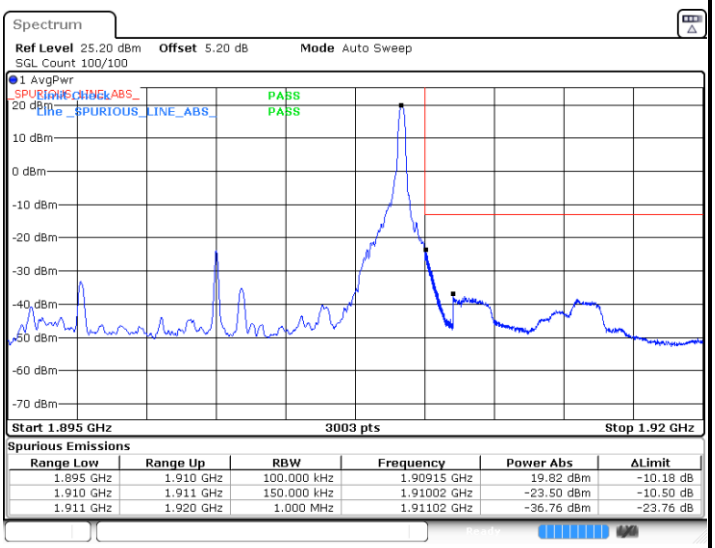


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84734 GHz	-23.56 dBm	-10.56 dB
1.849 GHz	1.850 GHz	150.000 kHz	1.85000 GHz	-22.84 dBm	-9.84 dB
1.850 GHz	1.865 GHz	100.000 kHz	1.85085 GHz	20.29 dBm	-9.71 dB

Date: 16.AUG.2022 21:15:40

Highest Band Edge / 1 RB

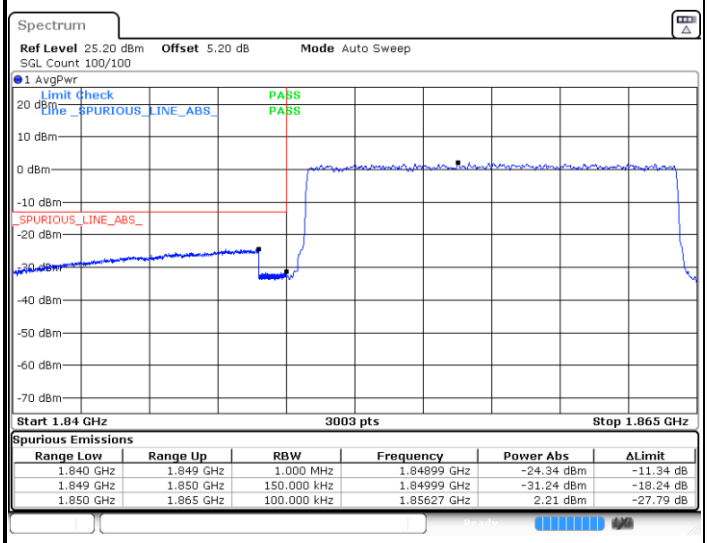


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.895 GHz	1.910 GHz	100.000 kHz	1.90915 GHz	19.82 dBm	-10.18 dB
1.910 GHz	1.911 GHz	150.000 kHz	1.91002 GHz	-23.50 dBm	-10.50 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91102 GHz	-36.76 dBm	-23.76 dB

Date: 16.AUG.2022 21:26:25

Lowest Band Edge / Full RB

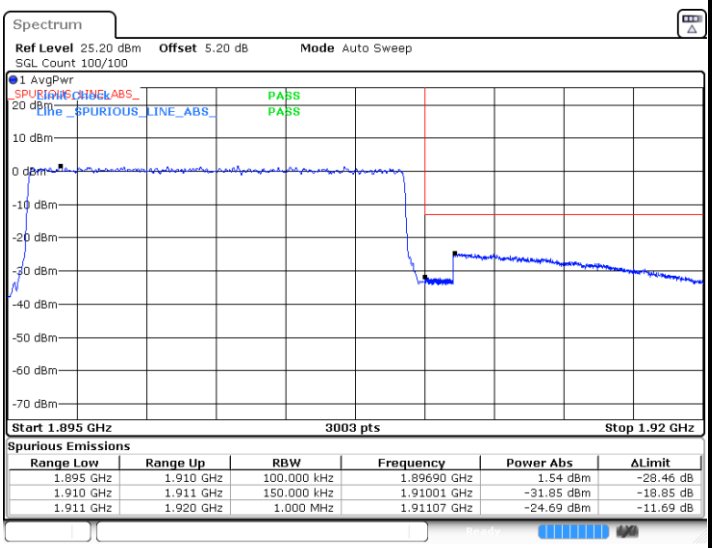


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84899 GHz	-24.34 dBm	-11.34 dB
1.849 GHz	1.850 GHz	150.000 kHz	1.84999 GHz	-31.24 dBm	-18.24 dB
1.850 GHz	1.865 GHz	100.000 kHz	1.85627 GHz	2.21 dBm	-27.79 dB

Date: 16.AUG.2022 21:21:02

Highest Band Edge / Full RB



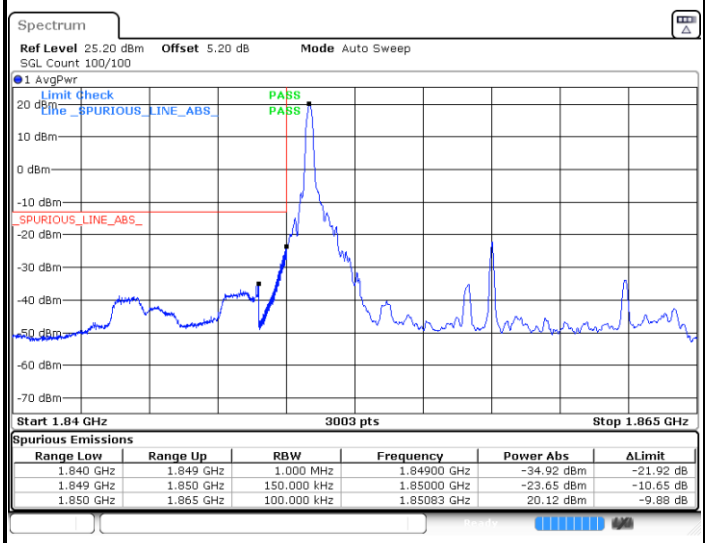
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.895 GHz	1.910 GHz	100.000 kHz	1.89690 GHz	1.54 dBm	-28.46 dB
1.910 GHz	1.911 GHz	150.000 kHz	1.91001 GHz	-31.85 dBm	-18.85 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91107 GHz	-24.69 dBm	-11.69 dB

Date: 16.AUG.2022 21:31:48

LTE Band 2 / 15MHz / 16QAM

Lowest Band Edge / 1 RB

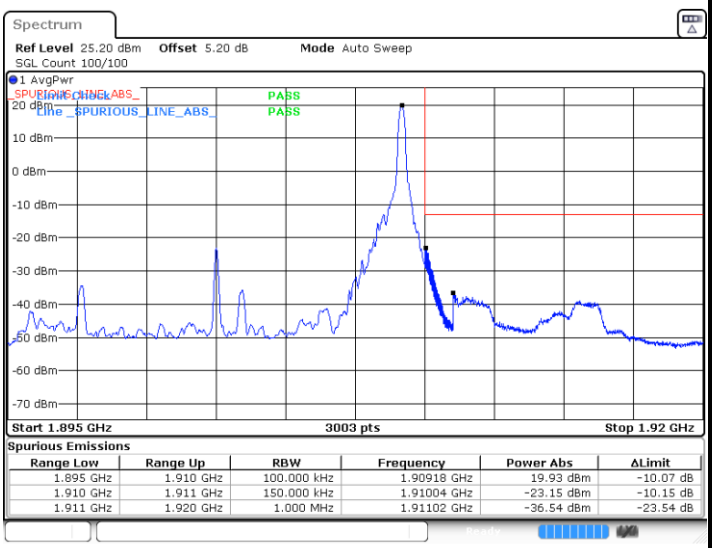


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84900 GHz	-34.92 dBm	-21.92 dB
1.849 GHz	1.850 GHz	150.000 kHz	1.85000 GHz	-23.65 dBm	-10.65 dB
1.850 GHz	1.865 GHz	100.000 kHz	1.85083 GHz	20.12 dBm	-9.88 dB

Date: 16.AUG.2022 21:17:00

Highest Band Edge / 1 RB

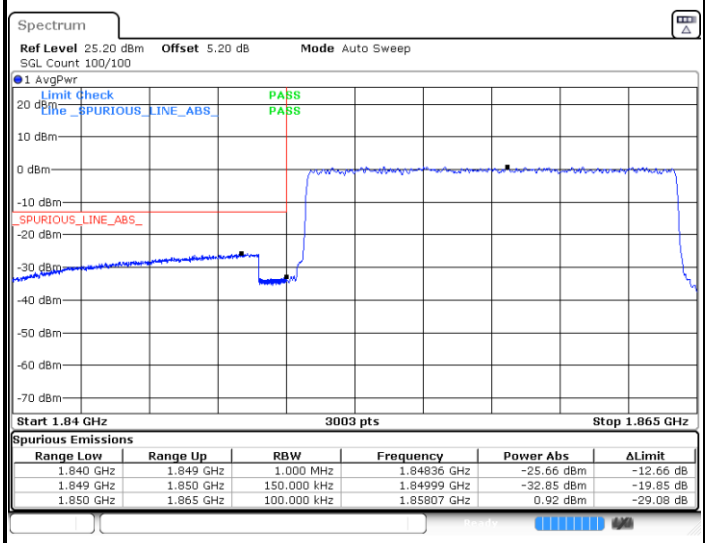


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.895 GHz	1.910 GHz	100.000 kHz	1.90918 GHz	19.93 dBm	-10.07 dB
1.910 GHz	1.911 GHz	150.000 kHz	1.91004 GHz	-23.15 dBm	-10.15 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91102 GHz	-36.54 dBm	-23.54 dB

Date: 16.AUG.2022 21:27:46

Lowest Band Edge / Full RB

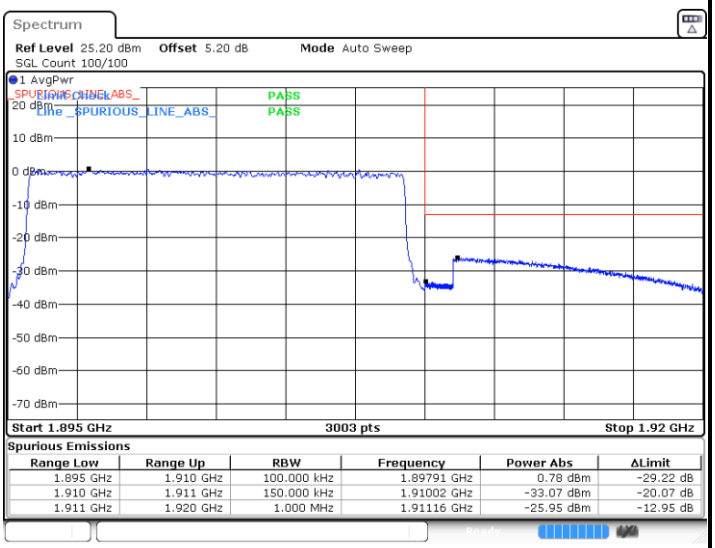


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84836 GHz	-25.66 dBm	-12.66 dB
1.849 GHz	1.850 GHz	150.000 kHz	1.84999 GHz	-32.85 dBm	-19.85 dB
1.850 GHz	1.865 GHz	100.000 kHz	1.85807 GHz	0.92 dBm	-29.08 dB

Date: 16.AUG.2022 21:22:23

Highest Band Edge / Full RB



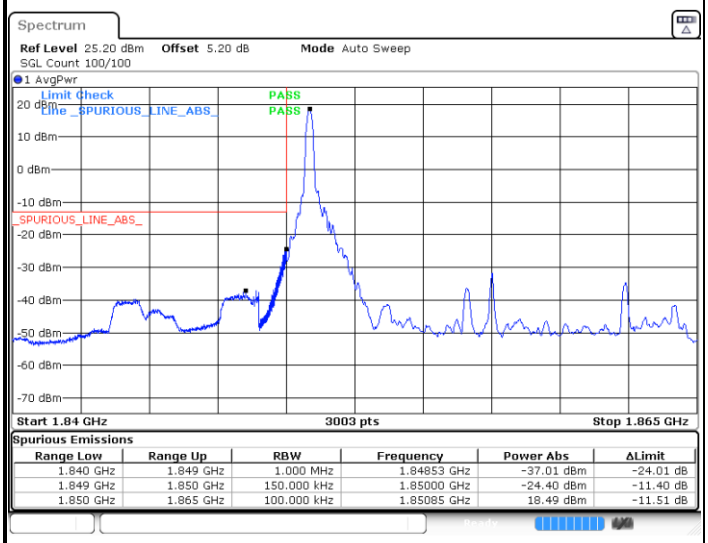
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.895 GHz	1.910 GHz	100.000 kHz	1.89791 GHz	0.78 dBm	-29.22 dB
1.910 GHz	1.911 GHz	150.000 kHz	1.91002 GHz	-33.07 dBm	-20.07 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91116 GHz	-25.95 dBm	-12.95 dB

Date: 16.AUG.2022 21:33:08

LTE Band 2 / 15MHz / 64QAM

Lowest Band Edge / 1 RB

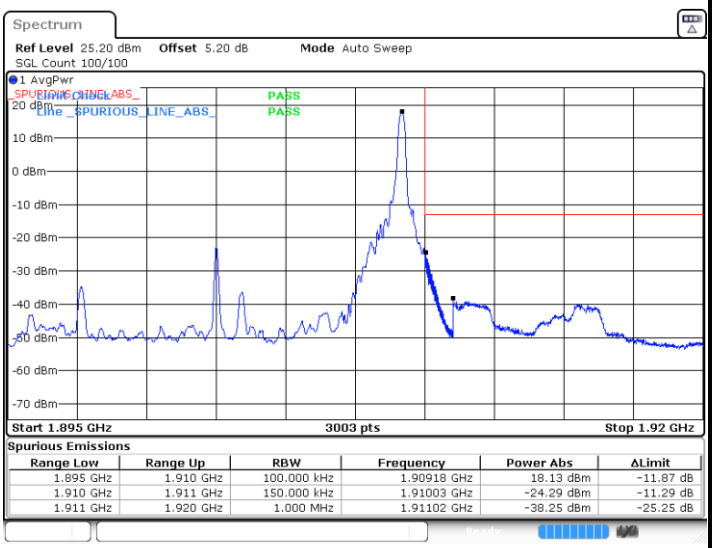


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84853 GHz	-37.01 dBm	-24.01 dB
1.849 GHz	1.850 GHz	150.000 kHz	1.85000 GHz	-24.40 dBm	-11.40 dB
1.850 GHz	1.865 GHz	100.000 kHz	1.85085 GHz	18.49 dBm	-11.51 dB

Date: 16.AUG.2022 21:18:21

Highest Band Edge / 1 RB

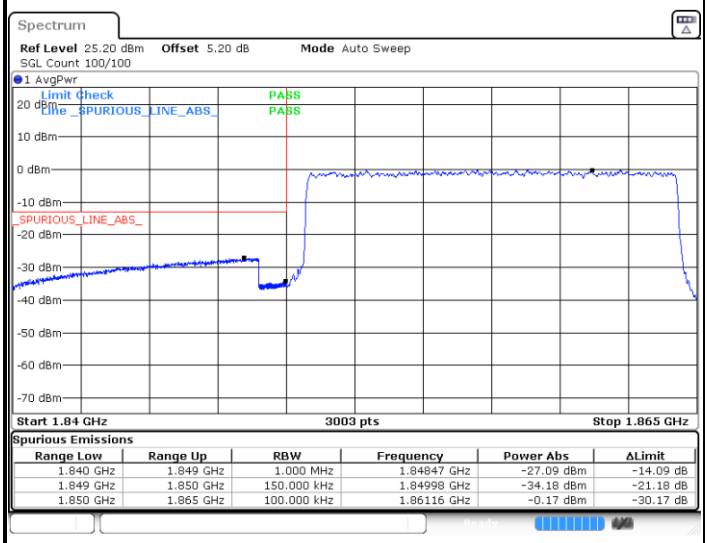


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.895 GHz	1.910 GHz	100.000 kHz	1.90918 GHz	18.13 dBm	-11.87 dB
1.910 GHz	1.911 GHz	150.000 kHz	1.91003 GHz	-24.29 dBm	-11.29 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91102 GHz	-38.25 dBm	-25.25 dB

Date: 16.AUG.2022 21:29:07

Lowest Band Edge / Full RB

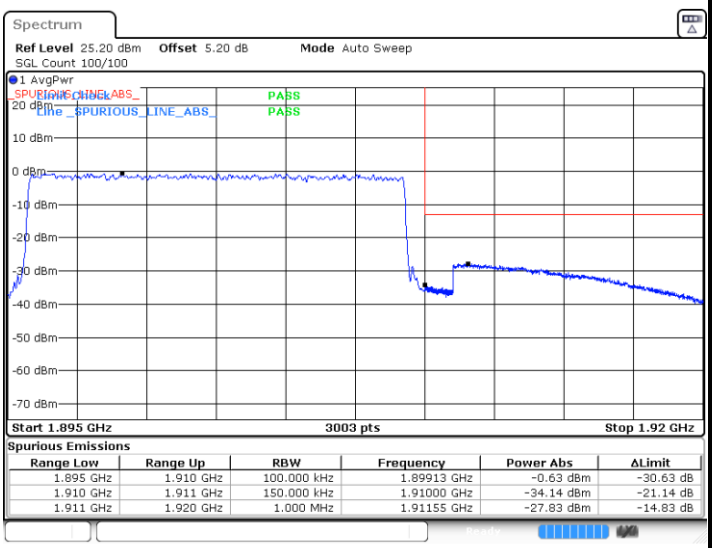


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84847 GHz	-27.09 dBm	-14.09 dB
1.849 GHz	1.850 GHz	150.000 kHz	1.84998 GHz	-34.18 dBm	-21.18 dB
1.850 GHz	1.865 GHz	100.000 kHz	1.86116 GHz	-0.17 dBm	-30.17 dB

Date: 16.AUG.2022 21:23:44

Highest Band Edge / Full RB



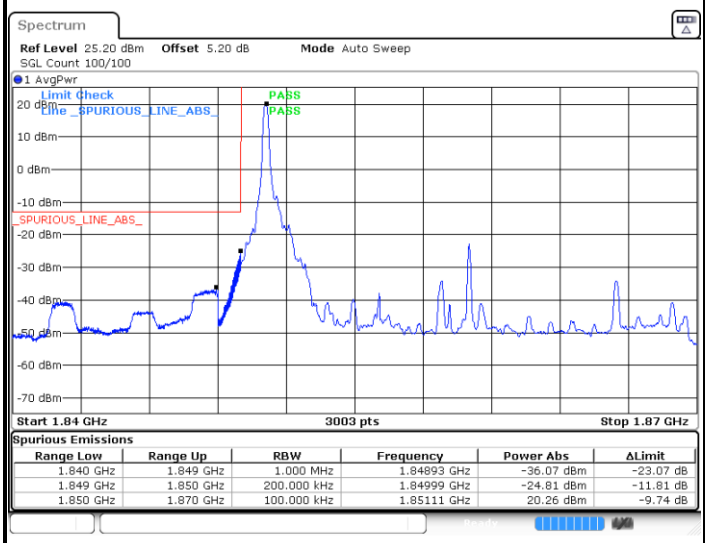
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.895 GHz	1.910 GHz	100.000 kHz	1.89913 GHz	-0.63 dBm	-30.63 dB
1.910 GHz	1.911 GHz	150.000 kHz	1.91000 GHz	-34.14 dBm	-21.14 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91155 GHz	-27.83 dBm	-14.83 dB

Date: 16.AUG.2022 21:34:29

LTE Band 2 / 20MHz / QPSK

Lowest Band Edge / 1 RB

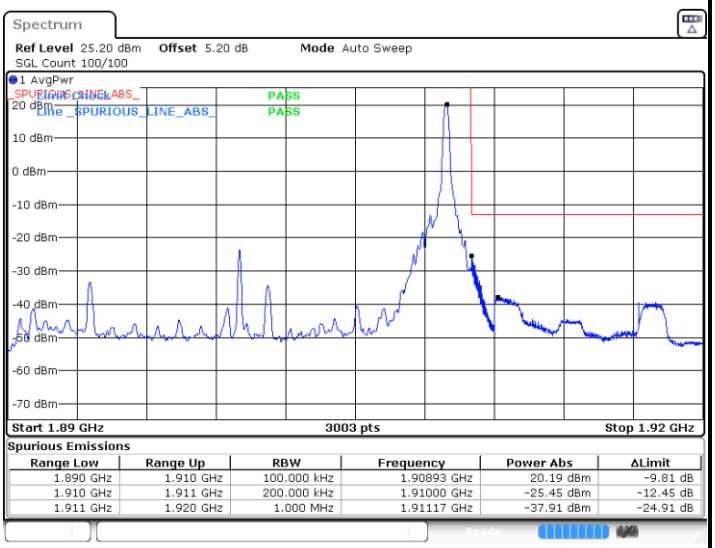


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84893 GHz	-36.07 dBm	-23.07 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84999 GHz	-24.81 dBm	-11.81 dB
1.850 GHz	1.870 GHz	100.000 kHz	1.85111 GHz	20.26 dBm	-9.74 dB

Date: 16.AUG.2022 21:37:36

Highest Band Edge / 1 RB

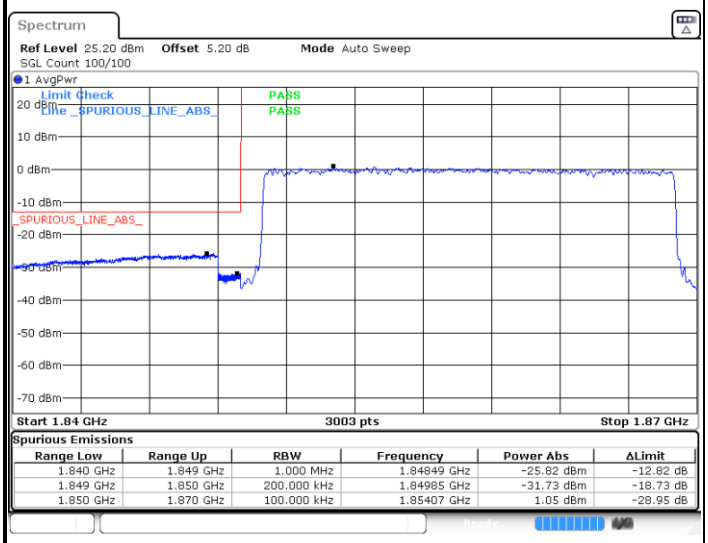


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.890 GHz	1.910 GHz	100.000 kHz	1.90893 GHz	20.19 dBm	-9.81 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91000 GHz	-25.45 dBm	-12.45 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91117 GHz	-37.91 dBm	-24.91 dB

Date: 16.AUG.2022 21:48:20

Lowest Band Edge / Full RB

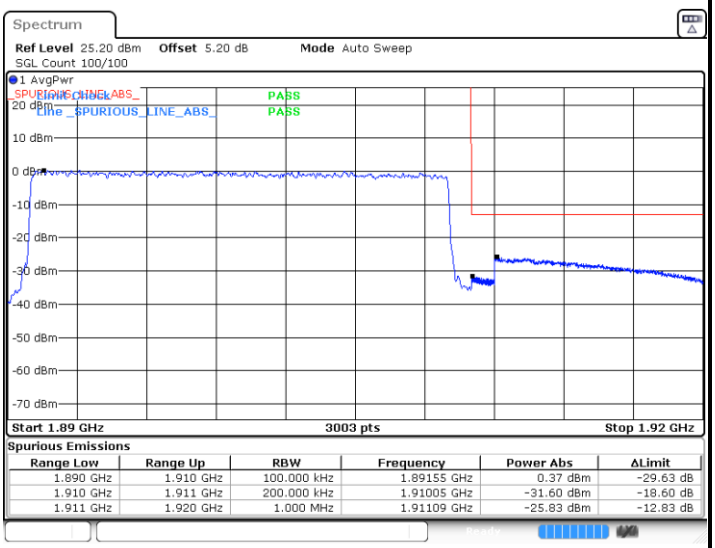


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84849 GHz	-25.82 dBm	-12.82 dB
1.849 GHz	1.850 GHz	200.000 kHz	1.84985 GHz	-31.73 dBm	-18.73 dB
1.850 GHz	1.870 GHz	100.000 kHz	1.85407 GHz	1.05 dBm	-28.95 dB

Date: 16.AUG.2022 21:42:58

Highest Band Edge / Full RB



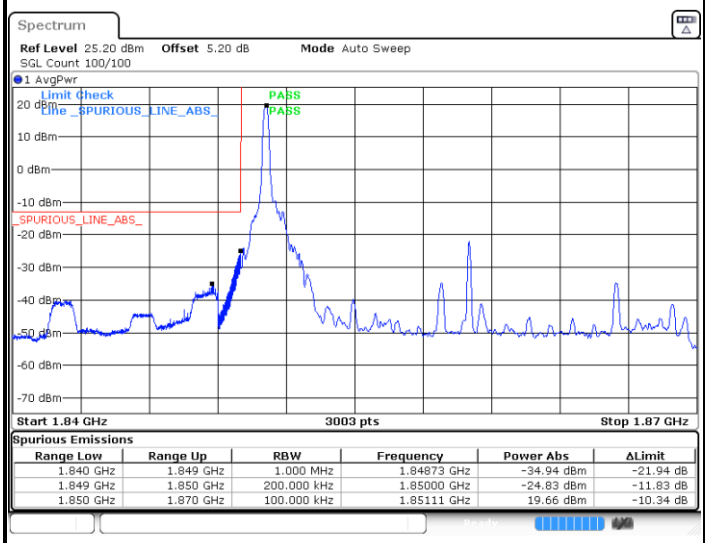
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.890 GHz	1.910 GHz	100.000 kHz	1.89155 GHz	0.37 dBm	-29.63 dB
1.910 GHz	1.911 GHz	200.000 kHz	1.91005 GHz	-31.60 dBm	-18.60 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91109 GHz	-25.83 dBm	-12.83 dB

Date: 16.AUG.2022 21:53:42

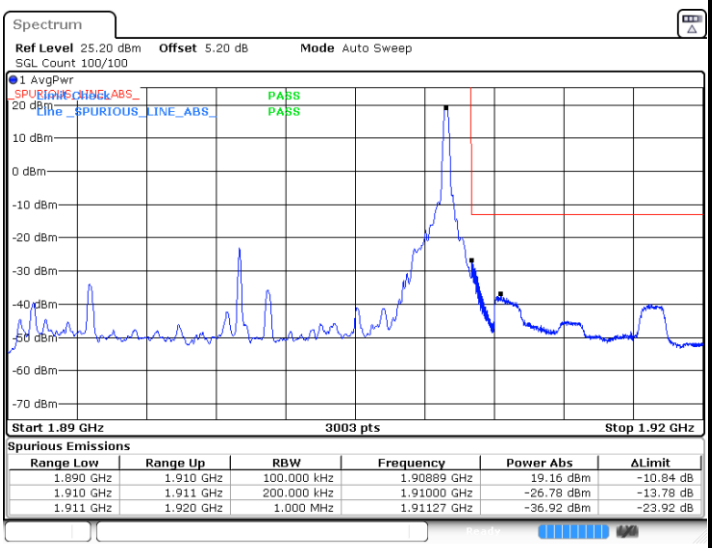
LTE Band 2 / 20MHz / 16QAM

Lowest Band Edge / 1 RB



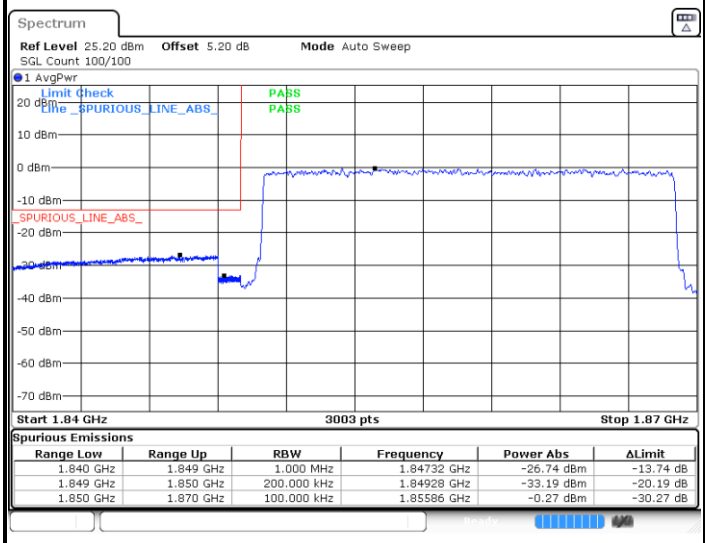
Date: 16.AUG.2022 21:38:57

Highest Band Edge / 1 RB



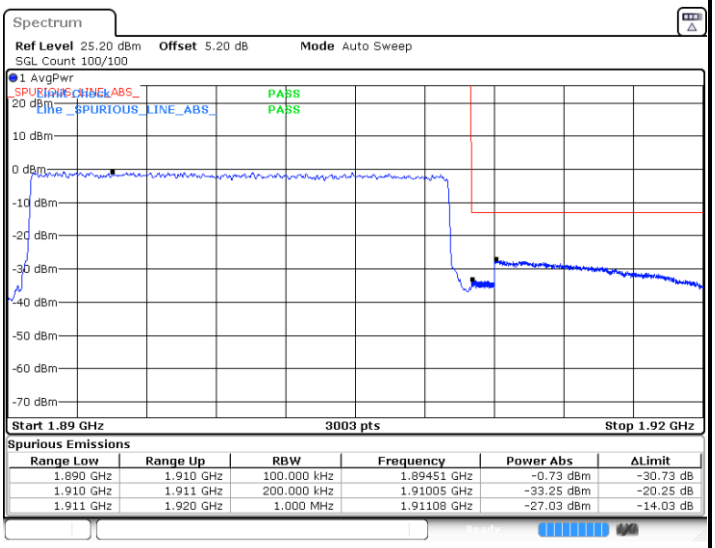
Date: 16.AUG.2022 21:49:40

Lowest Band Edge / Full RB



Date: 16.AUG.2022 21:44:18

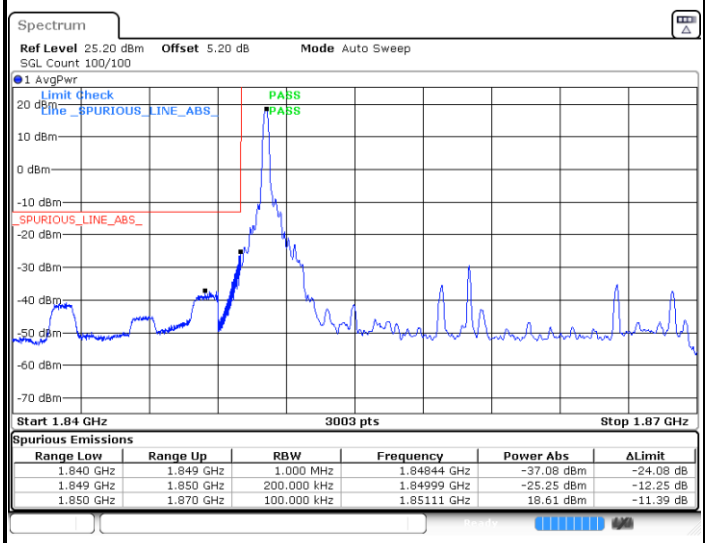
Highest Band Edge / Full RB



Date: 16.AUG.2022 21:55:03

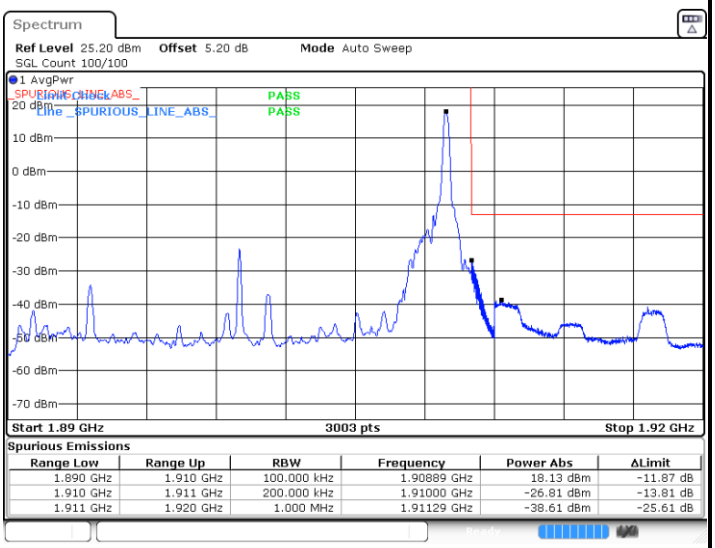
LTE Band 2 / 20MHz / 64QAM

Lowest Band Edge / 1 RB



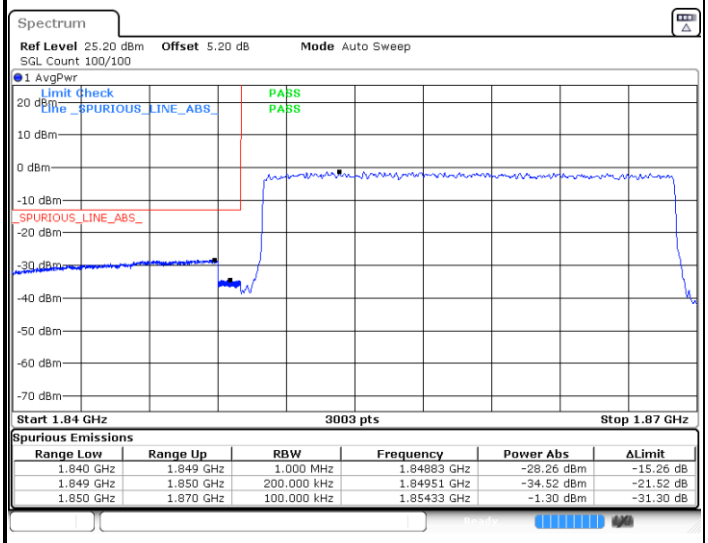
Date: 16.AUG.2022 21:40:17

Highest Band Edge / 1 RB



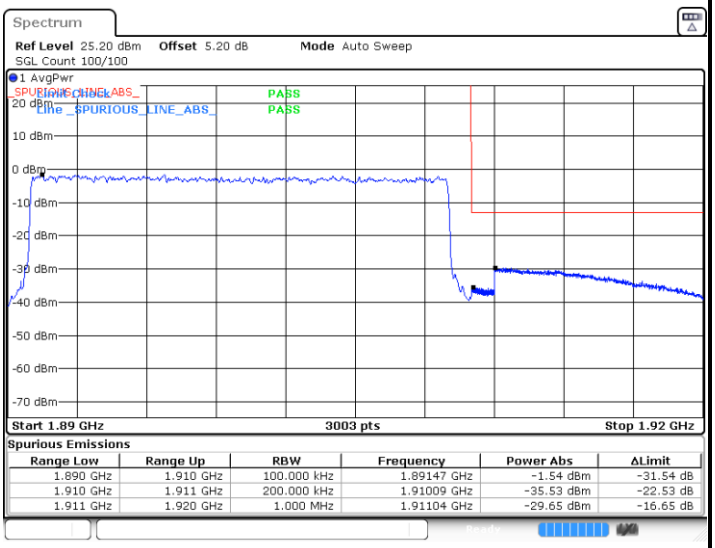
Date: 16.AUG.2022 21:51:01

Lowest Band Edge / Full RB



Date: 16.AUG.2022 21:45:39

Highest Band Edge / Full RB

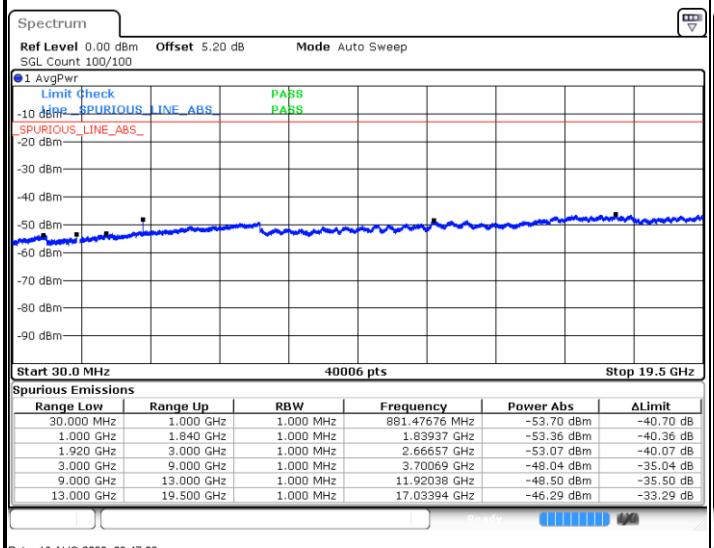


Date: 16.AUG.2022 21:56:24

Conducted Spurious Emission

LTE Band 2 / 1.4MHz

Lowest Channel / QPSK

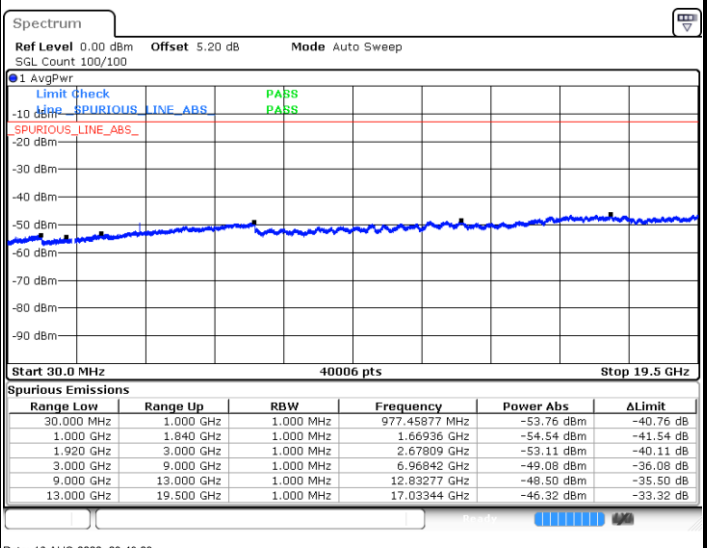


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	881.47676 MHz	-53.70 dBm	-40.70 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83937 GHz	-53.36 dBm	-40.36 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.66657 GHz	-53.07 dBm	-40.07 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70069 GHz	-48.04 dBm	-35.04 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.92038 GHz	-48.50 dBm	-35.50 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.03394 GHz	-46.29 dBm	-33.29 dB

Date: 16.AUG.2022 23:47:02

Middle Channel / QPSK

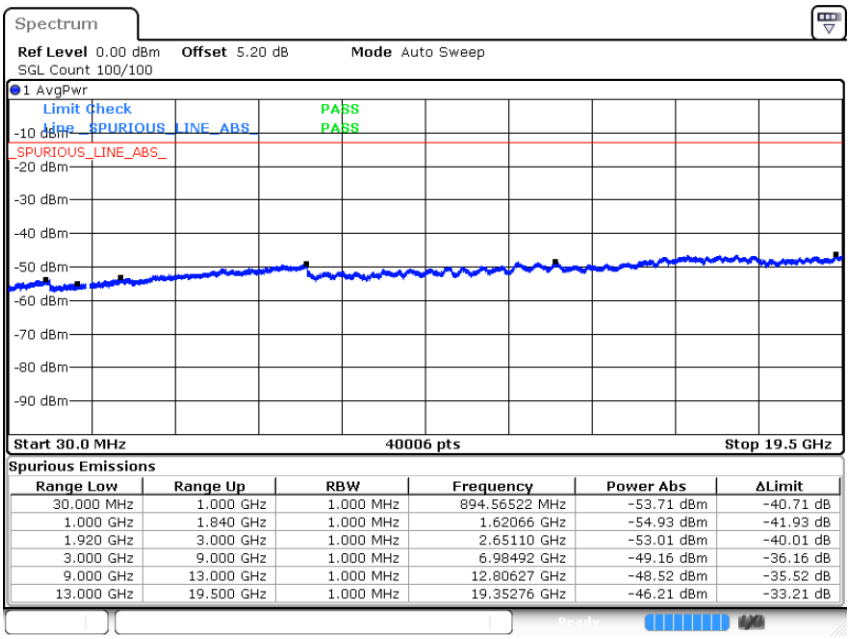


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	977.45877 MHz	-53.76 dBm	-40.76 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.66936 GHz	-54.54 dBm	-41.54 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.67809 GHz	-53.11 dBm	-40.11 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.96842 GHz	-49.08 dBm	-36.08 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.83277 GHz	-48.50 dBm	-35.50 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.03344 GHz	-46.32 dBm	-33.32 dB

Date: 16.AUG.2022 23:48:23

Highest Channel / QPSK



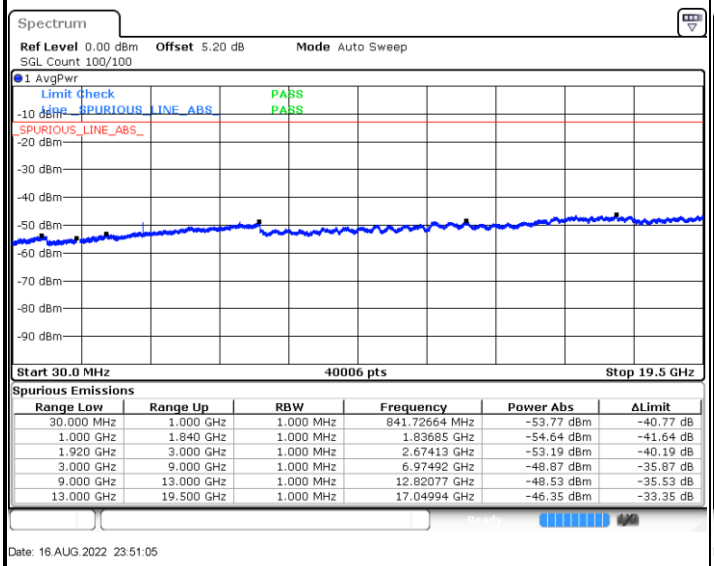
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	894.56522 MHz	-53.71 dBm	-40.71 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.62066 GHz	-54.93 dBm	-41.93 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.65110 GHz	-53.01 dBm	-40.01 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.98492 GHz	-49.16 dBm	-36.16 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.80627 GHz	-48.52 dBm	-35.52 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.35276 GHz	-46.21 dBm	-33.21 dB

Date: 16.AUG.2022 23:49:43

LTE Band 2 / 3MHz

Lowest Channel / QPSK

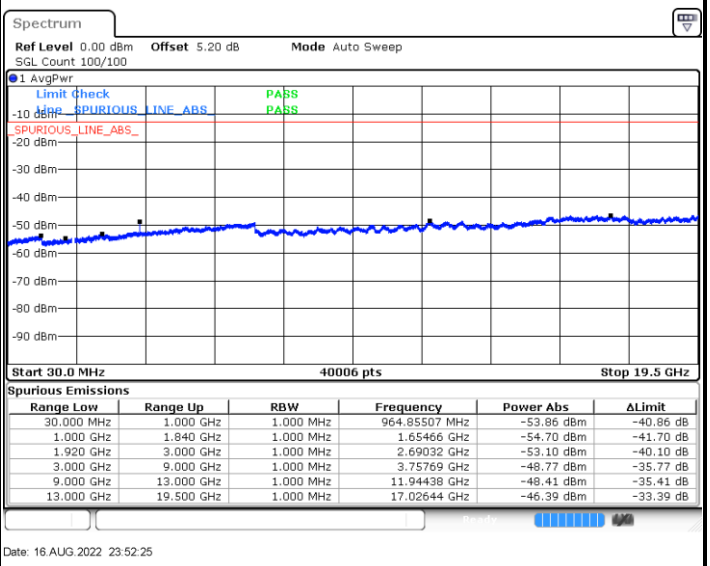


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	841.72664 MHz	-53.77 dBm	-40.77 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83685 GHz	-54.64 dBm	-41.64 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.67413 GHz	-53.19 dBm	-40.19 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.97492 GHz	-48.87 dBm	-35.87 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.82077 GHz	-48.53 dBm	-35.53 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.04994 GHz	-46.35 dBm	-33.35 dB

Date: 16.AUG.2022 23:51:05

Middle Channel / QPSK

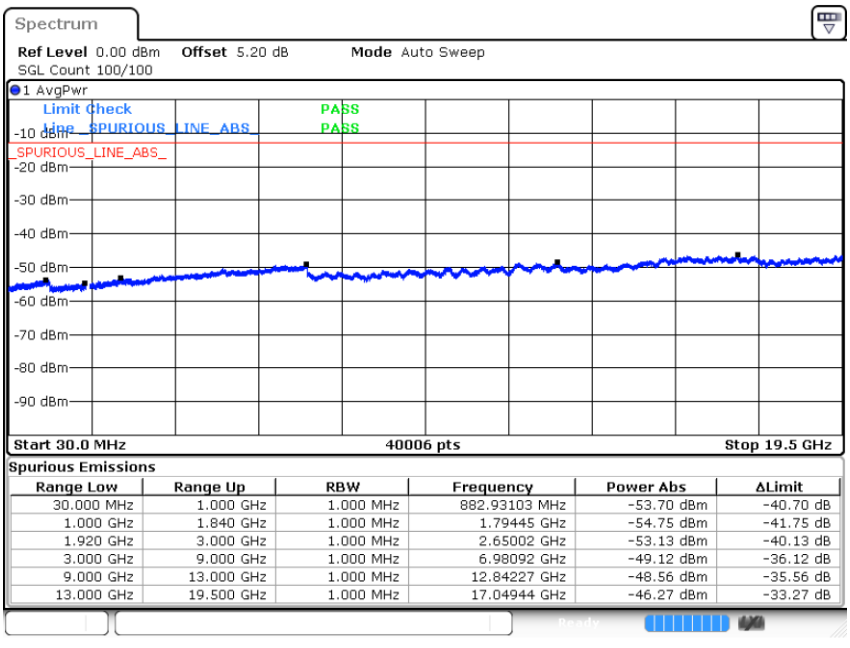


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	964.85507 MHz	-53.86 dBm	-40.86 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.65466 GHz	-54.70 dBm	-41.70 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.69032 GHz	-53.10 dBm	-40.10 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.75769 GHz	-48.77 dBm	-35.77 dB
9.000 GHz	13.000 GHz	1.000 MHz	11.94438 GHz	-48.41 dBm	-35.41 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.02644 GHz	-46.39 dBm	-33.39 dB

Date: 16.AUG.2022 23:52:25

Highest Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	882.93103 MHz	-53.70 dBm	-40.70 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.79445 GHz	-54.75 dBm	-41.75 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.65002 GHz	-53.13 dBm	-40.13 dB
3.000 GHz	9.000 GHz	1.000 MHz	6.98092 GHz	-49.12 dBm	-36.12 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.84227 GHz	-48.56 dBm	-35.56 dB
13.000 GHz	19.500 GHz	1.000 MHz	17.04944 GHz	-46.27 dBm	-33.27 dB

Date: 16.AUG.2022 23:55:00