FCC RF Test Report

APPLICANT	: Motorola Mobility LLC
EQUIPMENT	: Mobile Cellular Phone
BRAND NAME	: Motorola
MODEL NAME	: XT2345-2
FCC ID	: IHDT56AK1
STANDARD	: 47 CFR Part 2, 22(H), 24(E), 27(L), 27(M), 27(F)
CLASSIFICATION	: PCS Licensed Transmitter Held to Ear (PCE)
TEST DATE(S)	: Oct. 12, 2022 ~ Nov. 12, 2022

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

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

Jason Jia

Approved by: Jason Jia

ACCREDITED Cert #5145.02

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

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG292306B	Rev. 01	Initial issue of report	Nov. 21, 2022
FG292306B	Rev. 02	Removed relevant test data of LTE 64QAM Modulation	Nov. 28, 2022

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	-	Report Only	-
	§22.913(a)(5)	Effective Radiated Power (Band 5) (Band 26)	ERP < 7 Watt	PASS	-
	§27.50(b)(10)	Effective Radiated Power (Band 13)	ERP < 3 Watt		-
	§24.232(c) §27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 2) (Band 7) (Band 38)	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(h)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 5) (Band 13) (Band 26) (Band 66)	< 43+10log10(P[Watts])	PASS	-
	§27.53(m)(4)	Conducted Band Edge Measurement (Band 7) (Band 38)	§27.53(m)(4)		
3.8	§2.1051 §22.917(a) §24.238(a) §27.53(c)(2) §27.53(h)	Conducted Spurious Emission (Band 2) (Band 4) (Band 5) (Band 13) (Band 26) (Band 66)	< 43+10log10(P[Watts])	PASS	-
	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (Band 7) (Band 38)	< 55+10log$_{10}$(P[Watts])		
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		

Report Section	FCC Rule	Description	Limit	Result	Remark
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 4) (Band 5) (Band 13) (Band 26) (Band 66)	< 43+10log$_{10}$(P[Watts])	PASS	Under limit 21.97 dB at 1559.500 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 7) (Band 38)	< 55+10log$_{10}$(P[Watts])		

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

Motorola Mobility LLC
222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

1.2 Manufacturer

Motorola Mobility LLC
222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2345-2
FCC ID	IHDT56AK1
IMEI Code	Conducted: 355292980005510/355292980005528 Radiation: 355292980013118/355292980013126
HW Version	DVT2
SW Version	TLA33.30
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	LTE Band 2 : 1850 MHz ~ 1910 MHz LTE Band 4 : 1710 MHz ~ 1755 MHz LTE Band 5 : 824 MHz ~ 849 MHz LTE Band 7 : 2500 MHz ~ 2570 MHz LTE Band 13 : 777 MHz ~ 787 MHz LTE Band 26 : 824 MHz ~ 849 MHz LTE Band 38 : 2570 MHz ~ 2620 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 7 : 2620 MHz ~ 2690 MHz LTE Band 13 : 746 MHz ~ 756 MHz LTE Band 26 : 869 MHz ~ 894 MHz LTE Band 38: 2570 MHz ~ 2620 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 7 : 5MHz/ 10MHz / 15MHz / 20MHz LTE Band 13 : 5MHz / 10MHz LTE Band 26 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz LTE Band 38 : 5MHz / 10MHz / 15MHz / 20MHz LTE Band 66 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz
Maximum Output Power to Antenna	LTE Band 2 : 22.87 dBm LTE Band 4 : 22.95 dBm LTE Band 5 : 22.91 dBm LTE Band 7 : 22.93 dBm LTE Band 13 : 23.40 dBm LTE Band 26 : 22.94 dBm LTE Band 38 : 23.12 dBm LTE Band 66 : 23.05 dBm
Antenna Gain	LTE Band 2 : -1.0 dBi LTE Band 4 : 0.2 dBi LTE Band 5 : -3.0 dBi LTE Band 7 : 0.7 dBi LTE Band 13 : -3.0 dBi LTE Band 26 : -3.0 dBi LTE Band 38 : 0.7 dBi LTE Band 66 : 0.2 dBi
Type of Modulation	QPSK / 16QAM

1.5 Specification of Accessory

Specification of Accessory				
AC Adapter 1 (US)	**Brand Name**	Motorola(aohai)	**Model Name**	MC-101
AC Adapter 1 (EU)	**Brand Name**	Motorola(aohai)	**Model Name**	MC-102
AC Adapter 1 (UK)	**Brand Name**	Motorola(aohai)	**Model Name**	MC-103
AC Adapter 1 (IN)	**Brand Name**	Motorola(aohai)	**Model Name**	MC-104
AC Adapter 1 (AU)	**Brand Name**	Motorola(aohai)	**Model Name**	MC-105
AC Adapter 1 (AR)	**Brand Name**	Motorola(aohai)	**Model Name**	MC-106
AC Adapter 2 (US)	**Brand Name**	Motorola(chenyang)	**Model Name**	MC-101
AC Adapter 2 (EU)	**Brand Name**	Motorola(chenyang)	**Model Name**	MC-102
AC Adapter 2 (UK)	**Brand Name**	Motorola(chenyang)	**Model Name**	MC-103
AC Adapter 2 (IN)	**Brand Name**	Motorola(chenyang)	**Model Name**	MC-104
AC Adapter 2 (AU)	**Brand Name**	Motorola(chenyang)	**Model Name**	MC-105
AC Adapter 2 (AR)	**Brand Name**	Motorola(chenyang)	**Model Name**	MC-106
AC Adapter 2 (BR)	**Brand Name**	Motorola(chenyang)	**Model Name**	MC-107
AC Adapter 3 (US)	**Brand Name**	Motorola(Salcomp)	**Model Name**	MC-101
AC Adapter 3 (EU)	**Brand Name**	Motorola(Salcomp)	**Model Name**	MC-102
AC Adapter 3 (UK)	**Brand Name**	Motorola(Salcomp)	**Model Name**	MC-103
AC Adapter 3 (AU)	**Brand Name**	Motorola(Salcomp)	**Model Name**	MC-105
AC Adapter 3 (AR)	**Brand Name**	Motorola(Salcomp)	**Model Name**	MC-106
AC Adapter 3 (CHILE)	**Brand Name**	Motorola(Salcomp)	**Model Name**	MC-109
Battery 1	**Brand Name**	Motorola(ATL)	**Model Name**	NH50
Battery 2	**Brand Name**	Motorola(SUNWODA)	**Model Name**	NH50
Earphone 1	**Brand Name**	Motorola(New leader)	**Model Name**	NLD-EM313A-20SF
Earphone 2	**Brand Name**	Motorola(JWELL)	**Model Name**	JWEP1205-L20H
USB Cable 1	**Brand Name**	Motorola (SAIBAO)	**Model Name**	SLQ-A214A
USB Cable 2	**Brand Name**	Motorola (JIEYE)	**Model Name**	JY-C03-410

1.6 Modification of EUT

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

1.7 Maximum ERP/EIRP and Emission Designator

LTE Band 2		QPSK		16QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
20	1860.0 ~ 1900.0	0.1538	17M9G7D	0.1247	17M9W7D
LTE Band 4		**QPSK**		**16QAM**	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
20	1720.0 ~ 1745.0	0.2113	17M9G7D	0.1690	17M9W7D
LTE Band 5		**QPSK**		**16QAM**	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
10	829.0 ~ 844.0	0.0593	9M07G7D	0.0474	8M99W7D
LTE Band 7		**QPSK**		**16QAM**	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
20	2510.0 ~ 2560.0	0.2307	17M9G7D	0.1950	17M9W7D
LTE Band 13		**QPSK**		**16QAM**	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
10	782.0	0.0668	9M01G7D	0.0552	9M01W7D
LTE Band 26		**QPSK**		**16QAM**	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
15	831.5 ~ 841.5	0.0601	13M6G7D	0.0486	13M4W7D
CH26790	824	0.0596	13M4G7D	0.0483	13M5W7D
LTE Band 38		**QPSK**		**16QAM**	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
20	2580.0 ~ 2610.0	0.2410	17M9G7D	0.1950	17M9W7D
LTE Band 66		**QPSK**		**16QAM**	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
20	1720.0 ~ 1770.0	0.2113	17M9G7D	0.1690	17M9W7D

Note:

1. LTE Band 26 overlaps the entire frequency range of LTE Band 5. Therefore, the test results provided in this report covers Band 26 as well as Band 5.
2. 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.
3. All modulations have been tested, only the maximum bandwidth and the worst test results of PSK & QAM are shown in the report.

1.8 Testing Location

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

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

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	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City Guangdong Province China 518103 TEL: +86-755-33202398		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH01-SZ	CN1256	421272

Test data subcontracted: Radiated test case in section 4 of this report.

1.9 Test Software

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

1.10 Applicable Standards

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

- 47 CFR Part 2, 22(H), 24(E), 27(L), 27(M), 27(F)
- 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

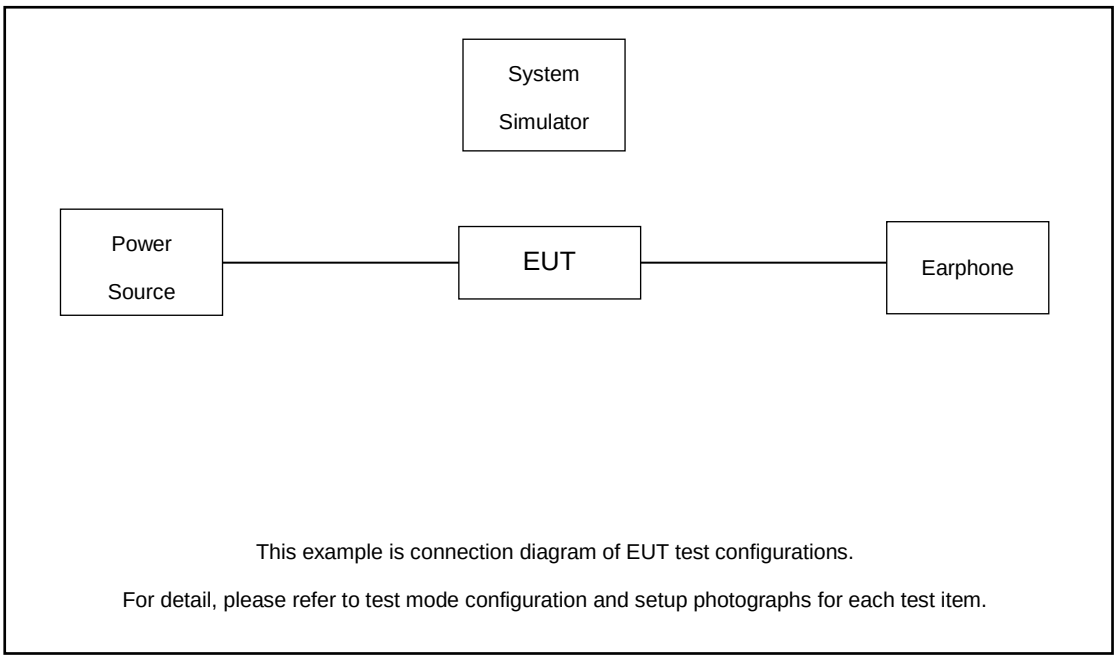
Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas License Digital Systems v03r01 with maximum output power.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission(X Plane for LTE B7/38, Y Plane for LTE B2/13/66, Z Plane for LTE B26).

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
	7	-	-	v	v	v	v	v	v	-	v	v	v	v	v	v
	13	-	-	v	v	-	-	v	v	-	v	v	v	v	v	v
	26	v	v	v	v	v	-	v	v	-	v	v	v	v	v	v
	38	-	-	v	v	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	
	7	-	-				v	v	v	-			v		v	
	13	-	-		v	-	-	v	v	-			v		v	
	26					v	-	v	v	-			v		v	
	38	-	-				v	v	v	-			v		v	
	66						v	v	v	-			v		v	
26dB and 99% Bandwidth	2						v	v	v	-			v		v	
	7	-	-				v	v	v	-			v		v	
	13	-	-		v	-	-	v	v	-			v		v	
	26				v	v	-	v	v	-			v		v	
	38	-	-				v	v	v	-			v		v	
	66						v	v	v	-			v		v	

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
Conducted Band Edge	2	v	v	v	v	v	v	v	v	-	v		v	v		v
	7	-	-	v	v	v	v	v	v	-	v		v	v		v
	13	-	-	v	v	-	-	v	v	-	v		v	v		v
	26	v	v	v	v	v	-	v	v	-	v		v	v		v
	38	-	-	v	v	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
	7	-	-	v	v	v	v	v		-	v			v	v	v
	13	-	-	v	v	-	-	v		-	v			v	v	v
	26	v	v	v	v	v	-	v		-	v			v	v	v
	38	-	-	v	v	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	
	7	-	-		v			v		-			v		v	
	13	-	-		v	-	-	v		-			v		v	
	26				v		-	v		-			v		v	
	38	-	-		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
	7	-	-	v	v	v	v	v	v	-	v			v	v	v
	13	-	-	v	v	-	-	v	v	-	v			v	v	v
	26	v	v	v	v	v	-	v	v	-	v			v	v	v
	38	-	-	v	v	v	v	v	v	-	v			v	v	v
	66	v	v	v	v	v	v	v	v	-	v			v	v	v
Radiated Spurious Emission	2	Worst Case													v	
	7	Worst Case													v	
	13	Worst Case													v	
	26	Worst Case													v	
	38	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.	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 between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss.

Offset = RF cable loss.

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

Example :

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

= 5.4 (dB)

2.5 Frequency List of Low/Middle/High Channels

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

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

LTE Band 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 7 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	20850	21100	21350
	Frequency	2510	2535	2560
15	Channel	20825	21100	21375
	Frequency	2507.5	2535	2562.5
10	Channel	20800	21100	21400
	Frequency	2505	2535	2565
5	Channel	20775	21100	21425
	Frequency	2502.5	2535	2567.5

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

LTE Band 38 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	37850	38000	38150
	Frequency	2580	2595	2610
15	Channel	37825	38000	38175
	Frequency	2577.5	2595	2612.5
10	Channel	37800	38000	38200
	Frequency	2575	2595	2615
5	Channel	37775	38000	38225
	Frequency	2572.5	2595	2617.5

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

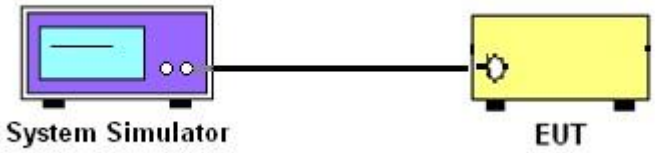
3 Conducted Test Items

3.1 Measuring Instruments

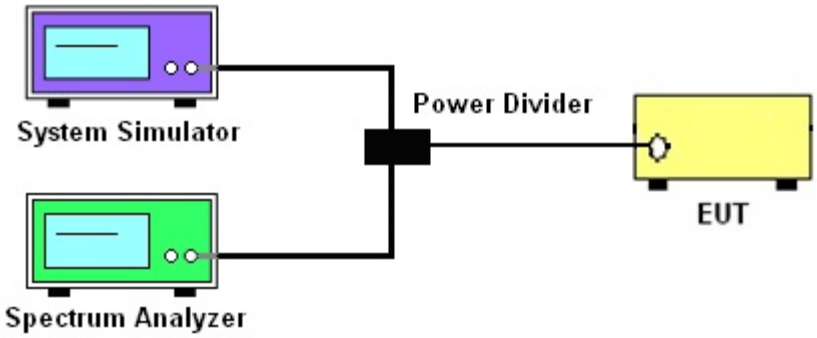
See list of measuring instruments of this test report.

3.2 Test Setup

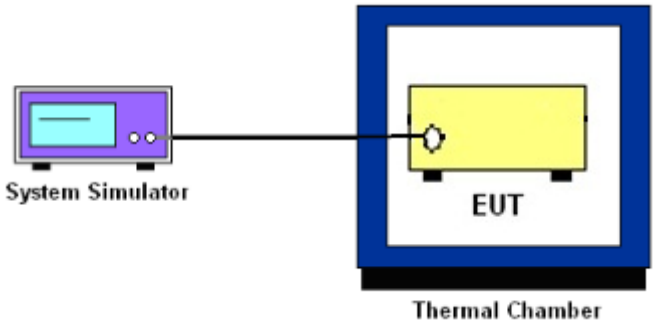
3.2.1 Conducted Output Power



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 and Band 26.

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

The EIRP of mobile transmitters must not exceed 2 Watts for LTE Band 2 and Band 7 and Band 38.

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 (h)

For operations in the 1710 – 1755 MHz and 1710 – 1780 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.

27.53(m)(4)

For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

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%/2% EBW in the 1MHz band immediately outside and adjacent to the band edge.
5. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
6. Set spectrum analyzer with RMS detector.
7. Offset has included the duty factor for LTE Band 38. Duty factor =10 log (1/x), where x is the measured duty cycle.
8. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
9. 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.
10. For LTE Band 7, 38, the other 40 dB, and 55 dB have additionally applied same calculation above.
11. 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.

For Band 7,38:

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 55 + 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. Offset has included the duty factor for LTE Band 38. Duty factor =10 log (1/x), where x is the measured duty cycle.
9. Taking the record of maximum spurious emission.
10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
11. 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.
12. For Band 7, 38
    The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [55+ 10log(P)] (dB)
    = [30+ 10log(P)] (dBm) - [55+ 10log(P)] (dB)
    = -25dBm.

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.

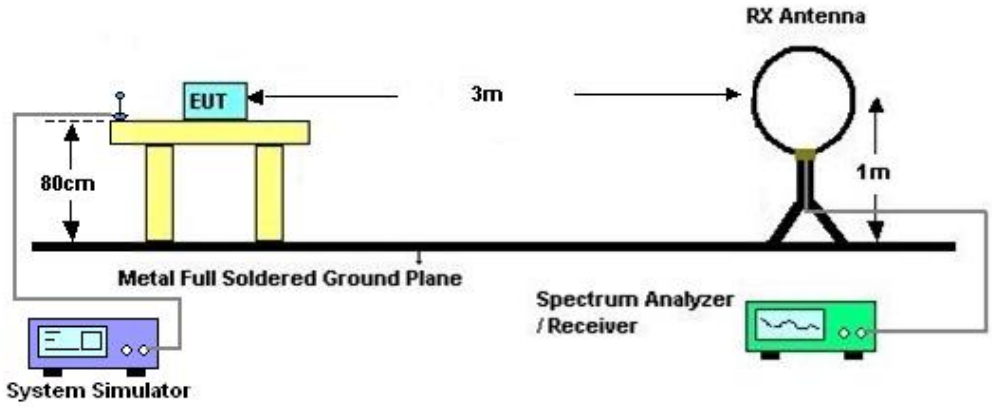
4 Radiated Test Items

4.1 Measuring Instruments

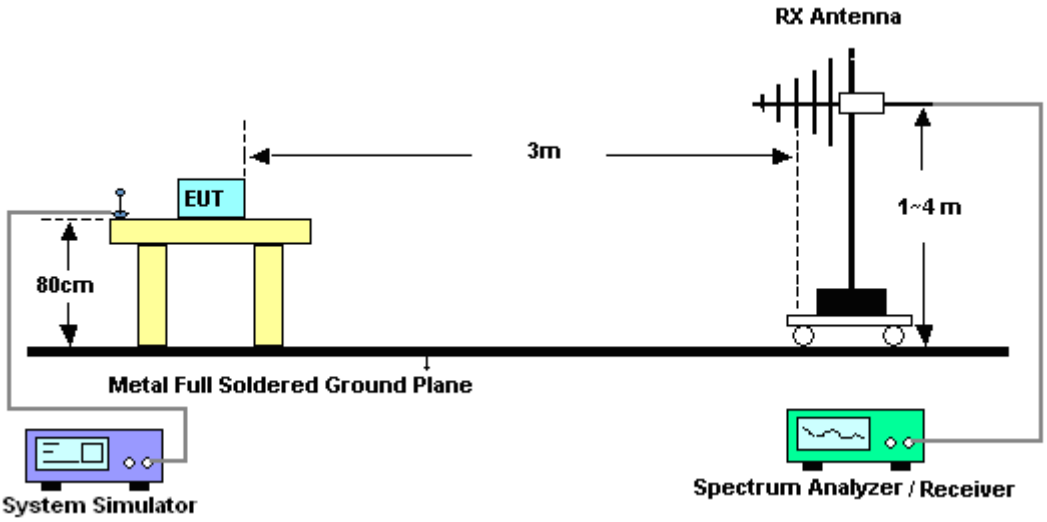
See list of measuring instruments of this test report.

4.2 Test Setup

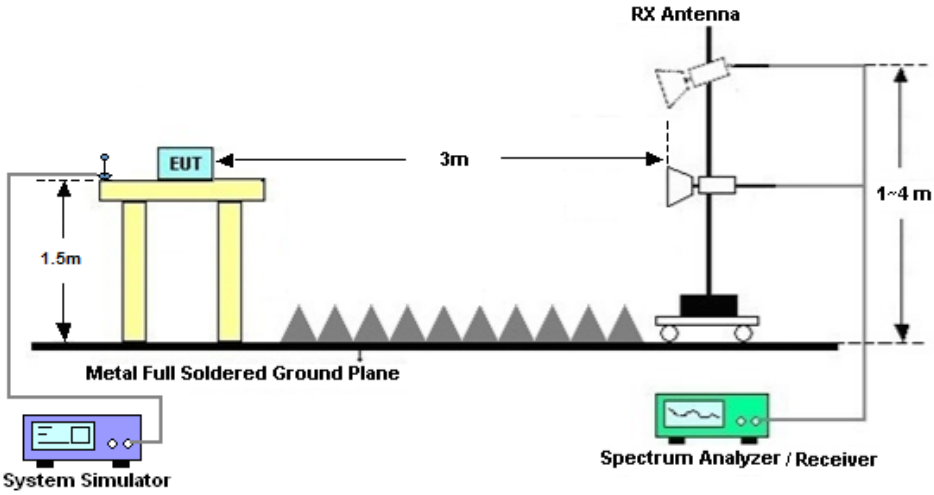
4.2.1 For radiated test below 30MHz



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 Band 7, 38

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 55 + 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.
13. For Band 7, 38:
    The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 12, 2022	Oct. 12, 2022~ Oct. 16, 2022	Oct. 11, 2023	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	Aug. 25, 2022	Oct. 12, 2022~ Oct. 16, 2022	Aug. 24, 2023	Conducted (TH01-KS)
Temperature & humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 15, 2022	Oct. 12, 2022~ Oct. 16, 2022	Jul. 14, 2023	Conducted (TH01-KS)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Dec. 27, 2021	Nov. 12, 2022	Dec. 26, 2022	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jul. 28, 2022	Nov. 12, 2022	Jul. 27, 2023	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5Ghz	Oct. 19, 2022	Nov. 12, 2022	Oct. 18, 2023	Radiation (03CH01-SZ
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz-2GHz	Sep. 28, 2022	Nov. 12, 2022	Sep. 27, 2023	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Jul. 07, 2022	Nov. 12, 2022	Jul. 06, 2023	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Apr. 10, 2022	Nov. 12, 2022	Apr. 09, 2023	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 06, 2022	Nov. 12, 2022	Apr. 05, 2023	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-00 101800-30-1 0P-R	1943528	1GHz~18GHz	Oct. 19, 2022	Nov. 12, 2022	Oct. 18, 2023	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	TTA1840-35 -HG	1871923	18GHz~40GHz	Jul. 06, 2022	Nov. 12, 2022	Jul. 05, 2023	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	Nov. 10, 2022	Nov. 12, 2022	Nov. 09, 2023	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Nov. 12, 2022	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Nov. 12, 2022	NCR	Radiation (03CH01-SZ)

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))	2.48dB

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

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

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

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

Appendix A. Test Results of Conducted Test

Test Engineer :	Smile Wang	Temperature :	24~26℃
		Relative Humidity :	50~53%

Conducted Output Power(Average power)

LTE Band 2:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				18700	18900	19100
Frequency (MHz)				1860	1880	1900
20	QPSK	1	0	22.82	22.87	22.75
20	QPSK	1	49	22.66	22.77	22.64
20	QPSK	1	99	22.62	22.80	22.64
20	QPSK	50	0	21.81	21.97	21.79
20	QPSK	50	24	21.77	21.92	21.84
20	QPSK	50	50	21.78	21.90	21.79
20	QPSK	100	0	21.79	21.88	21.85
20	16QAM	1	0	21.64	21.84	21.72
20	16QAM	1	49	21.89	21.94	21.87
20	16QAM	1	99	21.77	21.96	21.76
20	16QAM	50	0	20.80	20.90	20.81
20	16QAM	50	24	20.83	21.00	20.91
20	16QAM	50	50	20.73	20.79	20.69
20	16QAM	100	0	20.67	20.86	20.80
Channel				18675	18900	19125
Frequency (MHz)				1857.5	1880	1902.5
15	QPSK	1	0	22.79	22.76	22.64
15	QPSK	1	37	22.55	22.63	22.58
15	QPSK	1	74	22.59	22.75	22.61
15	QPSK	36	0	21.67	21.83	21.68
15	QPSK	36	20	21.59	21.71	21.65
15	QPSK	36	39	21.69	21.78	21.57
15	QPSK	75	0	21.67	21.69	21.71
15	16QAM	1	0	21.46	21.78	21.51
15	16QAM	1	37	21.80	21.83	21.85
15	16QAM	1	74	21.57	21.75	21.56
15	16QAM	36	0	20.63	20.84	20.65
15	16QAM	36	20	20.71	20.81	20.88
15	16QAM	36	39	20.69	20.77	20.55
15	16QAM	75	0	20.56	20.72	20.74
Channel				18650	18900	19150
Frequency (MHz)				1855	1880	1905
10	QPSK	1	0	22.60	22.83	22.56
10	QPSK	1	25	22.47	22.56	22.56
10	QPSK	1	49	22.56	22.66	22.57
10	QPSK	25	0	21.71	21.76	21.77

10	QPSK	25	12	21.70	21.73	21.68
10	QPSK	25	25	21.64	21.84	21.64
10	QPSK	50	0	21.76	21.82	21.80
10	16QAM	1	0	21.52	21.82	21.56
10	16QAM	1	25	21.74	21.86	21.75
10	16QAM	1	49	21.56	21.77	21.65
10	16QAM	25	0	20.77	20.71	20.70
10	16QAM	25	12	20.63	20.89	20.86
10	16QAM	25	25	20.53	20.69	20.58
10	16QAM	50	0	20.50	20.82	20.67
Channel				18625	18900	19175
Frequency (MHz)				1852.5	1880	1907.5
5	QPSK	1	0	22.66	22.70	22.70
5	QPSK	1	12	22.54	22.68	22.46
5	QPSK	1	24	22.54	22.63	22.60
5	QPSK	12	0	21.64	21.89	21.71
5	QPSK	12	7	21.61	21.90	21.69
5	QPSK	12	13	21.61	21.68	21.76
5	QPSK	25	0	21.65	21.67	21.70
5	16QAM	1	0	21.47	21.79	21.65
5	16QAM	1	12	21.78	21.79	21.65
5	16QAM	1	24	21.59	21.83	21.62
5	16QAM	12	0	20.74	20.81	20.73
5	16QAM	12	7	20.64	20.93	20.85
5	16QAM	12	13	20.65	20.76	20.65
5	16QAM	25	0	20.60	20.81	20.74
Channel				18615	18900	19185
Frequency (MHz)				1851.5	1880	1908.5
3	QPSK	1	0	22.61	22.70	22.54
3	QPSK	1	8	22.53	22.62	22.58
3	QPSK	1	14	22.52	22.73	22.62
3	QPSK	8	0	21.68	21.87	21.62
3	QPSK	8	4	21.55	21.78	21.65
3	QPSK	8	7	21.62	21.71	21.58
3	QPSK	15	0	21.57	21.82	21.74
3	16QAM	1	0	21.53	21.70	21.59
3	16QAM	1	8	21.70	21.73	21.66
3	16QAM	1	14	21.68	21.81	21.69
3	16QAM	8	0	20.60	20.85	20.66
3	16QAM	8	4	20.75	20.82	20.83
3	16QAM	8	7	20.65	20.67	20.64
3	16QAM	15	0	20.52	20.79	20.65
Channel				18607	18900	19193
Frequency (MHz)				1850.7	1880	1909.3
1.4	QPSK	1	0	22.70	22.80	22.60
1.4	QPSK	1	3	22.55	22.63	22.49
1.4	QPSK	1	5	22.57	22.69	22.57
1.4	QPSK	3	0	22.67	22.81	22.64
1.4	QPSK	3	1	22.57	22.71	22.78
1.4	QPSK	3	3	22.75	22.76	22.58

1.4	QPSK	6	0	21.77	21.70	21.70
1.4	16QAM	1	0	21.56	21.68	21.52
1.4	16QAM	1	3	21.77	21.77	21.82
1.4	16QAM	1	5	21.71	21.89	21.59
1.4	16QAM	3	0	21.64	21.71	21.66
1.4	16QAM	3	1	21.63	21.93	21.72
1.4	16QAM	3	3	21.57	21.62	21.49
1.4	16QAM	6	0	20.46	20.65	20.62

LTE Band 4:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				20050	20175	20300
Frequency (MHz)				1720	1732.5	1745
20	QPSK	1	0	22.77	22.95	22.83
20	QPSK	1	49	22.70	22.84	22.75
20	QPSK	1	99	22.69	22.90	22.69
20	QPSK	50	0	21.75	21.96	21.93
20	QPSK	50	24	21.70	21.90	21.73
20	QPSK	50	50	21.78	21.94	21.79
20	QPSK	100	0	21.96	22.03	21.84
20	16QAM	1	0	22.04	22.16	22.07
20	16QAM	1	49	21.99	22.10	21.89
20	16QAM	1	99	21.92	22.01	21.99
20	16QAM	50	0	20.83	21.04	20.95
20	16QAM	50	24	20.98	21.16	20.99
20	16QAM	50	50	20.96	21.08	21.01
20	16QAM	100	0	20.96	21.12	20.93
Channel				20025	20175	20325
Frequency (MHz)				1717.5	1732.5	1747.5
15	QPSK	1	0	22.70	22.75	22.67
15	QPSK	1	37	22.67	22.75	22.71
15	QPSK	1	74	22.64	22.76	22.56
15	QPSK	36	0	21.62	21.83	21.80
15	QPSK	36	20	21.68	21.82	21.55
15	QPSK	36	39	21.65	21.76	21.59
15	QPSK	75	0	21.82	21.88	21.78
15	16QAM	1	0	21.90	21.96	21.98
15	16QAM	1	37	21.92	21.92	21.82
15	16QAM	1	74	21.71	21.99	21.95
15	16QAM	36	0	20.76	20.92	20.79
15	16QAM	36	20	20.89	21.12	20.84
15	16QAM	36	39	20.85	21.04	20.89
15	16QAM	75	0	20.89	21.01	20.72
Channel				20000	20175	20350
Frequency (MHz)				1715	1732.5	1750
10	QPSK	1	0	22.61	22.92	22.69
10	QPSK	1	25	22.61	22.79	22.71
10	QPSK	1	49	22.52	22.73	22.66

10	QPSK	25	0	21.73	21.78	21.74
10	QPSK	25	12	21.57	21.81	21.68
10	QPSK	25	25	21.73	21.79	21.63
10	QPSK	50	0	21.81	21.85	21.76
10	16QAM	1	0	21.97	22.06	21.85
10	16QAM	1	25	21.89	21.98	21.86
10	16QAM	1	49	21.72	21.96	21.96
10	16QAM	25	0	20.72	20.85	20.92
10	16QAM	25	12	20.86	21.04	20.94
10	16QAM	25	25	20.81	21.01	20.84
10	16QAM	50	0	20.77	21.01	20.79
Channel				19975	20175	20375
Frequency (MHz)				1712.5	1732.5	1752.5
5	QPSK	1	0	22.66	22.84	22.73
5	QPSK	1	12	22.63	22.68	22.69
5	QPSK	1	24	22.61	22.78	22.58
5	QPSK	12	0	21.72	21.93	21.87
5	QPSK	12	7	21.59	21.87	21.52
5	QPSK	12	13	21.72	21.88	21.64
5	QPSK	25	0	21.90	22.00	21.78
5	16QAM	1	0	21.98	21.98	22.00
5	16QAM	1	12	21.93	21.90	21.79
5	16QAM	1	24	21.87	21.91	21.97
5	16QAM	12	0	20.70	20.85	20.91
5	16QAM	12	7	20.79	21.10	20.80
5	16QAM	12	13	20.94	20.95	20.96
5	16QAM	25	0	20.81	20.97	20.89
Channel				19965	20175	20385
Frequency (MHz)				1711.5	1732.5	1753.5
3	QPSK	1	0	22.64	22.87	22.76
3	QPSK	1	8	22.60	22.69	22.64
3	QPSK	1	14	22.57	22.69	22.57
3	QPSK	8	0	21.67	21.76	21.82
3	QPSK	8	4	21.65	21.73	21.56
3	QPSK	8	7	21.64	21.89	21.58
3	QPSK	15	0	21.83	21.85	21.67
3	16QAM	1	0	21.83	22.00	21.91
3	16QAM	1	8	21.90	22.08	21.82
3	16QAM	1	14	21.90	21.92	21.97
3	16QAM	8	0	20.73	20.97	20.76
3	16QAM	8	4	20.86	21.09	20.86
3	16QAM	8	7	20.92	20.97	20.89
3	16QAM	15	0	20.79	21.07	20.79
Channel				19957	20175	20393
Frequency (MHz)				1710.7	1732.5	1754.3
1.4	QPSK	1	0	22.65	22.84	22.69
1.4	QPSK	1	3	22.56	22.81	22.57
1.4	QPSK	1	5	22.56	22.81	22.49
1.4	QPSK	3	0	22.54	22.88	22.74
1.4	QPSK	3	1	22.64	22.78	22.59

1.4	QPSK	3	3	22.58	22.83	22.60
1.4	QPSK	6	0	21.90	21.93	21.81
1.4	16QAM	1	0	21.95	22.04	21.94
1.4	16QAM	1	3	21.85	21.95	21.79
1.4	16QAM	1	5	21.89	21.92	21.91
1.4	16QAM	3	0	21.71	21.89	21.91
1.4	16QAM	3	1	21.91	22.03	21.83
1.4	16QAM	3	3	21.90	21.97	21.96
1.4	16QAM	6	0	20.94	20.94	20.85

LTE Band 5:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				20450	20525	20600
Frequency (MHz)				829	836.5	844
10	QPSK	1	0	22.87	22.91	22.90
10	QPSK	1	25	22.76	22.90	22.83
10	QPSK	1	49	22.76	22.88	22.80
10	QPSK	25	0	21.98	22.11	21.93
10	QPSK	25	12	21.92	22.06	21.88
10	QPSK	25	25	21.88	21.99	21.89
10	QPSK	50	0	21.85	22.01	21.83
10	16QAM	1	0	22.16	22.23	22.12
10	16QAM	1	25	22.08	22.17	22.06
10	16QAM	1	49	21.96	22.11	22.06
10	16QAM	25	0	21.01	21.14	20.95
10	16QAM	25	12	21.00	21.07	20.93
10	16QAM	25	25	20.98	21.03	20.90
10	16QAM	50	0	20.96	21.12	21.04
Channel				20425	20525	20625
Frequency (MHz)				826.5	836.5	846.5
5	QPSK	1	0	22.83	22.82	22.79
5	QPSK	1	12	22.67	22.78	22.66
5	QPSK	1	24	22.66	22.70	22.63
5	QPSK	12	0	21.93	21.93	21.88
5	QPSK	12	7	21.88	21.87	21.82
5	QPSK	12	13	21.77	21.84	21.75
5	QPSK	25	0	21.68	21.92	21.76
5	16QAM	1	0	22.06	22.06	21.98
5	16QAM	1	12	21.92	22.12	21.96
5	16QAM	1	24	21.92	21.92	21.93
5	16QAM	12	0	20.88	20.98	20.75
5	16QAM	12	7	20.91	20.99	20.88
5	16QAM	12	13	20.89	20.91	20.78
5	16QAM	25	0	20.90	20.95	20.96
Channel				20415	20525	20635
Frequency (MHz)				825.5	836.5	847.5
3	QPSK	1	0	22.78	22.81	22.73
3	QPSK	1	8	22.57	22.79	22.76

3	QPSK	1	14	22.69	22.69	22.71
3	QPSK	8	0	21.87	21.99	21.88
3	QPSK	8	4	21.86	21.98	21.69
3	QPSK	8	7	21.80	21.93	21.73
3	QPSK	15	0	21.73	21.96	21.68
3	16QAM	1	0	22.11	22.15	21.98
3	16QAM	1	8	21.90	22.08	21.90
3	16QAM	1	14	21.82	22.02	21.92
3	16QAM	8	0	20.97	21.07	20.77
3	16QAM	8	4	20.80	20.93	20.86
3	16QAM	8	7	20.86	20.86	20.85
3	16QAM	15	0	20.81	21.01	20.86
Channel				20407	20525	20643
Frequency (MHz)				824.7	836.5	848.3
1.4	QPSK	1	0	22.67	22.84	22.83
1.4	QPSK	1	3	22.58	22.70	22.73
1.4	QPSK	1	5	22.66	22.82	22.69
1.4	QPSK	3	0	22.78	22.89	22.85
1.4	QPSK	3	1	22.75	22.88	22.80
1.4	QPSK	3	3	22.70	22.89	22.78
1.4	QPSK	6	0	21.80	21.92	21.64
1.4	16QAM	1	0	22.09	22.03	22.02
1.4	16QAM	1	3	21.96	22.00	21.95
1.4	16QAM	1	5	21.78	21.98	21.91
1.4	16QAM	3	0	21.82	22.06	21.86
1.4	16QAM	3	1	21.91	22.00	21.75
1.4	16QAM	3	3	21.94	21.91	21.71
1.4	16QAM	6	0	20.85	21.07	20.91

LTE Band 7:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				20850	21100	21350
Frequency (MHz)				2510	2535	2560
20	QPSK	1	0	22.88	22.93	22.92
20	QPSK	1	49	22.68	22.85	22.76
20	QPSK	1	99	22.75	22.81	22.76
20	QPSK	50	0	21.78	21.91	21.77
20	QPSK	50	24	21.63	21.75	21.67
20	QPSK	50	50	21.65	21.82	21.68
20	QPSK	100	0	21.71	21.88	21.85
20	16QAM	1	0	22.10	22.20	22.00
20	16QAM	1	49	21.94	22.12	21.92
20	16QAM	1	99	21.96	22.15	22.03
20	16QAM	50	0	21.06	21.17	21.10
20	16QAM	50	24	20.93	21.11	20.96
20	16QAM	50	50	20.97	21.07	20.94
20	16QAM	100	0	20.86	21.01	20.86
Channel				20825	21100	21375
Frequency (MHz)				2507.5	2535	2562.5
15	QPSK	1	0	22.74	22.79	22.78
15	QPSK	1	37	22.64	22.79	22.65
15	QPSK	1	74	22.64	22.65	22.60
15	QPSK	36	0	21.60	21.79	21.60
15	QPSK	36	20	21.48	21.61	21.63
15	QPSK	36	39	21.60	21.70	21.49
15	QPSK	75	0	21.63	21.84	21.68
15	16QAM	1	0	21.91	22.12	21.90
15	16QAM	1	37	21.77	21.92	21.88
15	16QAM	1	74	21.86	22.07	21.91
15	16QAM	36	0	20.97	21.08	21.01
15	16QAM	36	20	20.85	20.94	20.91
15	16QAM	36	39	20.81	20.96	20.84
15	16QAM	75	0	20.82	20.88	20.77
Channel				20800	21100	21400
Frequency (MHz)				2505	2535	2565
10	QPSK	1	0	22.83	22.78	22.82
10	QPSK	1	25	22.50	22.77	22.69
10	QPSK	1	49	22.60	22.73	22.72
10	QPSK	25	0	21.65	21.70	21.64
10	QPSK	25	12	21.46	21.64	21.59
10	QPSK	25	25	21.58	21.63	21.58
10	QPSK	50	0	21.61	21.78	21.67
10	16QAM	1	0	22.04	22.12	21.88
10	16QAM	1	25	21.87	22.01	21.77
10	16QAM	1	49	21.90	22.02	21.98
10	16QAM	25	0	20.89	21.11	20.96
10	16QAM	25	12	20.75	20.97	20.92

10	16QAM	25	25	20.78	20.99	20.81
10	16QAM	50	0	20.68	20.88	20.69
Channel				20775	21100	21425
Frequency (MHz)				2502.5	2535	2567.5
5	QPSK	1	0	22.83	22.81	22.76
5	QPSK	1	12	22.63	22.76	22.60
5	QPSK	1	24	22.68	22.73	22.57
5	QPSK	12	0	21.65	21.79	21.62
5	QPSK	12	7	21.49	21.64	21.50
5	QPSK	12	13	21.52	21.62	21.48
5	QPSK	25	0	21.57	21.82	21.74
5	16QAM	1	0	21.91	22.16	21.96
5	16QAM	1	12	21.75	22.07	21.87
5	16QAM	1	24	21.83	22.01	21.90
5	16QAM	12	0	20.87	21.07	20.97
5	16QAM	12	7	20.83	20.94	20.87
5	16QAM	12	13	20.91	20.98	20.80
5	16QAM	25	0	20.69	20.96	20.73

LTE Band 13:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel					23230	
Frequency (MHz)					782	
10	QPSK	1	0		23.40	
10	QPSK	1	25		23.28	
10	QPSK	1	49		23.21	
10	QPSK	25	0		22.48	
10	QPSK	25	12		22.30	
10	QPSK	25	25		22.23	
10	QPSK	50	0		22.32	
10	16QAM	1	0		22.57	
10	16QAM	1	25		22.43	
10	16QAM	1	49		22.43	
10	16QAM	25	0		21.48	
10	16QAM	25	12		21.48	
10	16QAM	25	25		21.31	
10	16QAM	50	0		21.38	
Channel				23205	23230	23255
Frequency (MHz)				779.5	782	784.5
5	QPSK	1	0	23.35	23.28	23.31
5	QPSK	1	12	23.18	23.19	23.11
5	QPSK	1	24	23.01	23.02	23.06
5	QPSK	12	0	22.31	22.38	22.29
5	QPSK	12	7	22.15	22.18	22.20
5	QPSK	12	13	22.06	22.02	22.08
5	QPSK	25	0	22.13	22.26	22.13
5	16QAM	1	0	22.53	22.48	22.47
5	16QAM	1	12	22.39	22.33	22.36

5	16QAM	1	24	22.33	22.24	22.26
5	16QAM	12	0	21.40	21.31	21.40
5	16QAM	12	7	21.35	21.41	21.35
5	16QAM	12	13	21.21	21.17	21.26
5	16QAM	25	0	21.20	21.32	21.32

LTE Band 26:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				26865	26915	26965
Frequency (MHz)				831.5	836.5	841.5
15	QPSK	1	0	22.84	22.94	22.90
15	QPSK	1	37	22.78	22.87	22.83
15	QPSK	1	74	22.71	22.91	22.75
15	QPSK	36	0	21.74	21.91	21.83
15	QPSK	36	20	21.71	21.88	21.70
15	QPSK	36	39	21.70	21.80	21.69
15	QPSK	75	0	21.81	21.86	21.67
15	16QAM	1	0	21.96	22.02	21.94
15	16QAM	1	37	21.77	21.90	21.75
15	16QAM	1	74	21.93	21.99	21.94
15	16QAM	36	0	21.01	21.06	20.93
15	16QAM	36	20	20.82	21.00	20.90
15	16QAM	36	39	20.83	20.92	20.81
15	16QAM	75	0	20.79	20.99	20.94
Channel				26840	26915	26990
Frequency (MHz)				829	836.5	844
10	QPSK	1	0	22.73	22.88	22.85
10	QPSK	1	25	22.69	22.72	22.74
10	QPSK	1	49	22.66	22.85	22.62
10	QPSK	25	0	21.69	21.81	21.65
10	QPSK	25	12	21.57	21.78	21.64
10	QPSK	25	25	21.65	21.65	21.66
10	QPSK	50	0	21.67	21.82	21.52
10	16QAM	1	0	21.87	21.87	21.78
10	16QAM	1	25	21.65	21.81	21.67
10	16QAM	1	49	21.86	21.91	21.76
10	16QAM	25	0	20.88	20.89	20.89
10	16QAM	25	12	20.75	20.84	20.87
10	16QAM	25	25	20.72	20.80	20.73
10	16QAM	50	0	20.62	20.93	20.83
Channel				26815	26915	27015
Frequency (MHz)				826.5	836.5	846.5
5	QPSK	1	0	22.74	22.81	22.81
5	QPSK	1	12	22.69	22.81	22.72
5	QPSK	1	24	22.54	22.77	22.58
5	QPSK	12	0	21.70	21.88	21.78
5	QPSK	12	7	21.54	21.74	21.56
5	QPSK	12	13	21.55	21.67	21.52

5	QPSK	25	0	21.65	21.77	21.60
5	16QAM	1	0	21.88	21.91	21.91
5	16QAM	1	12	21.68	21.78	21.71
5	16QAM	1	24	21.88	21.86	21.84
5	16QAM	12	0	20.87	20.97	20.82
5	16QAM	12	7	20.66	20.82	20.86
5	16QAM	12	13	20.66	20.87	20.77
5	16QAM	25	0	20.73	20.97	20.81
Channel				26805	26915	27025
Frequency (MHz)				825.5	836.5	847.5
3	QPSK	1	0	22.77	22.81	22.83
3	QPSK	1	8	22.69	22.69	22.76
3	QPSK	1	14	22.65	22.79	22.71
3	QPSK	8	0	21.70	21.73	21.80
3	QPSK	8	4	21.61	21.78	21.57
3	QPSK	8	7	21.65	21.70	21.60
3	QPSK	15	0	21.76	21.80	21.50
3	16QAM	1	0	21.85	21.88	21.84
3	16QAM	1	8	21.64	21.74	21.62
3	16QAM	1	14	21.76	21.95	21.90
3	16QAM	8	0	20.92	20.97	20.76
3	16QAM	8	4	20.68	20.87	20.83
3	16QAM	8	7	20.80	20.76	20.68
3	16QAM	15	0	20.77	20.85	20.92
Channel				26797	26915	27033
Frequency (MHz)				824.7	836.5	848.3
1.4	QPSK	1	0	22.77	22.77	22.75
1.4	QPSK	1	3	22.70	22.69	22.68
1.4	QPSK	1	5	22.57	22.79	22.59
1.4	QPSK	3	0	22.57	22.75	22.81
1.4	QPSK	3	1	22.60	22.81	22.60
1.4	QPSK	3	3	22.63	22.62	22.55
1.4	QPSK	6	0	21.72	21.82	21.52
1.4	16QAM	1	0	21.89	21.99	21.87
1.4	16QAM	1	3	21.67	21.84	21.60
1.4	16QAM	1	5	21.83	21.84	21.85
1.4	16QAM	3	0	21.85	21.89	21.88
1.4	16QAM	3	1	21.79	21.90	21.77
1.4	16QAM	3	3	21.70	21.77	21.66
1.4	16QAM	6	0	20.67	20.86	20.88

LTE Band 38:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				37850	38000	38150
Frequency (MHz)				2580	2595	2610
20	QPSK	1	0	23.03	23.12	22.96
20	QPSK	1	49	22.94	23.09	23.06
20	QPSK	1	99	22.94	22.99	22.89
20	QPSK	50	0	21.99	22.16	22.06
20	QPSK	50	24	22.03	22.12	21.96
20	QPSK	50	50	21.87	22.01	21.90
20	QPSK	100	0	21.95	22.08	22.02
20	16QAM	1	0	22.02	22.20	22.10
20	16QAM	1	49	22.13	22.15	22.06
20	16QAM	1	99	22.03	22.07	21.91
20	16QAM	50	0	21.04	21.22	21.07
20	16QAM	50	24	20.96	21.07	20.93
20	16QAM	50	50	20.98	21.09	21.01
20	16QAM	100	0	20.88	21.03	21.01
Channel				37825	38000	38175
Frequency (MHz)				2577.5	2595	2612.5
15	QPSK	1	0	22.87	22.97	22.92
15	QPSK	1	37	22.78	23.00	22.93
15	QPSK	1	74	22.81	22.89	22.80
15	QPSK	36	0	21.81	22.00	22.02
15	QPSK	36	20	21.88	22.06	21.85
15	QPSK	36	39	21.72	21.86	21.78
15	QPSK	75	0	21.92	21.92	21.97
15	16QAM	1	0	21.96	22.03	21.94
15	16QAM	1	37	21.99	22.01	21.96
15	16QAM	1	74	21.95	21.93	21.82
15	16QAM	36	0	20.87	21.10	21.02
15	16QAM	36	20	20.93	21.02	20.80
15	16QAM	36	39	20.86	20.92	20.84
15	16QAM	75	0	20.84	21.00	20.97
Channel				37800	38000	38200
Frequency (MHz)				2575	2595	2615
10	QPSK	1	0	22.89	22.99	22.85
10	QPSK	1	25	22.89	23.06	22.92
10	QPSK	1	49	22.81	22.83	22.85
10	QPSK	25	0	21.83	22.11	21.99
10	QPSK	25	12	21.97	22.03	21.88
10	QPSK	25	25	21.83	21.91	21.74
10	QPSK	50	0	21.86	22.02	21.90
10	16QAM	1	0	21.96	22.05	21.94
10	16QAM	1	25	22.02	22.04	21.99
10	16QAM	1	49	21.93	21.90	21.77
10	16QAM	25	0	20.92	21.15	20.99
10	16QAM	25	12	20.81	20.93	20.86

10	16QAM	25	25	20.90	21.01	20.90
10	16QAM	50	0	20.83	20.98	20.88
Channel				37775	38000	38225
Frequency (MHz)				2572.5	2595	2617.5
5	QPSK	1	0	22.85	23.00	22.85
5	QPSK	1	12	22.85	22.99	22.95
5	QPSK	1	24	22.79	22.82	22.80
5	QPSK	12	0	21.84	22.02	22.00
5	QPSK	12	7	21.94	22.02	21.89
5	QPSK	12	13	21.75	21.98	21.73
5	QPSK	25	0	21.88	21.92	21.84
5	16QAM	1	0	21.91	22.15	22.08
5	16QAM	1	12	21.99	22.12	22.03
5	16QAM	1	24	21.87	21.92	21.82
5	16QAM	12	0	20.99	21.15	21.04
5	16QAM	12	7	20.94	21.05	20.82
5	16QAM	12	13	20.83	20.92	20.92
5	16QAM	25	0	20.79	20.90	20.85

LTE Band 66:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				132072	132322	132572
Frequency (MHz)				1720	1745	1770
20	QPSK	1	0	22.99	23.05	22.90
20	QPSK	1	49	22.88	23.04	22.94
20	QPSK	1	99	22.76	22.90	22.88
20	QPSK	50	0	22.08	22.17	22.04
20	QPSK	50	24	21.96	22.05	21.92
20	QPSK	50	50	22.00	22.12	21.96
20	QPSK	100	0	21.83	21.96	21.84
20	16QAM	1	0	21.85	22.02	21.88
20	16QAM	1	49	21.99	22.08	22.04
20	16QAM	1	99	21.82	21.97	21.85
20	16QAM	50	0	21.09	21.15	21.06
20	16QAM	50	24	20.97	21.12	21.00
20	16QAM	50	50	21.06	21.10	21.03
20	16QAM	100	0	20.71	20.87	20.76
Channel				132047	132322	132597
Frequency (MHz)				1717.5	1745	1772.5
15	QPSK	1	0	22.91	22.95	22.83
15	QPSK	1	37	22.80	23.01	22.77
15	QPSK	1	74	22.60	22.80	22.82
15	QPSK	36	0	21.98	22.15	21.96
15	QPSK	36	20	21.78	21.88	21.88
15	QPSK	36	39	21.94	22.00	21.81
15	QPSK	75	0	21.73	21.80	21.78
15	16QAM	1	0	21.81	21.97	21.73
15	16QAM	1	37	21.88	21.90	22.00

15	16QAM	1	74	21.73	21.84	21.75
15	16QAM	36	0	20.92	21.02	21.04
15	16QAM	36	20	20.94	21.04	20.83
15	16QAM	36	39	20.93	21.03	20.92
15	16QAM	75	0	20.60	20.70	20.62
Channel				132022	132322	132622
Frequency (MHz)				1715	1745	1775
10	QPSK	1	0	22.81	22.96	22.82
10	QPSK	1	25	22.72	22.88	22.82
10	QPSK	1	49	22.59	22.73	22.80
10	QPSK	25	0	22.02	22.15	21.91
10	QPSK	25	12	21.87	22.00	21.77
10	QPSK	25	25	21.91	21.94	21.85
10	QPSK	50	0	21.67	21.89	21.79
10	16QAM	1	0	21.79	21.86	21.84
10	16QAM	1	25	21.82	22.06	21.98
10	16QAM	1	49	21.65	21.91	21.72
10	16QAM	25	0	21.04	21.09	20.99
10	16QAM	25	12	20.91	20.98	20.83
10	16QAM	25	25	20.93	20.98	20.99
10	16QAM	50	0	20.68	20.76	20.79
Channel				131997	132322	132647
Frequency (MHz)				1712.5	1745	1777.5
5	QPSK	1	0	22.93	23.02	22.77
5	QPSK	1	12	22.71	22.96	22.79
5	QPSK	1	24	22.61	22.84	22.74
5	QPSK	12	0	22.04	22.12	21.94
5	QPSK	12	7	21.81	21.90	21.86
5	QPSK	12	13	21.98	21.95	21.81
5	QPSK	25	0	21.72	21.78	21.80
5	16QAM	1	0	21.81	21.86	21.83
5	16QAM	1	12	21.85	21.91	21.91
5	16QAM	1	24	21.78	21.94	21.74
5	16QAM	12	0	21.07	20.98	20.90
5	16QAM	12	7	20.85	20.96	20.93
5	16QAM	12	13	20.95	20.95	20.89
5	16QAM	25	0	20.71	20.80	20.73
Channel				131987	132322	132657
Frequency (MHz)				1711.5	1745	1778.5
3	QPSK	1	0	22.90	22.92	22.75
3	QPSK	1	8	22.83	22.98	22.79
3	QPSK	1	14	22.62	22.85	22.74
3	QPSK	8	0	22.04	22.14	21.97
3	QPSK	8	4	21.83	21.95	21.89
3	QPSK	8	7	21.92	22.08	21.85
3	QPSK	15	0	21.70	21.92	21.68
3	16QAM	1	0	21.83	21.87	21.71
3	16QAM	1	8	21.86	21.95	21.92
3	16QAM	1	14	21.70	21.80	21.76
3	16QAM	8	0	20.99	21.05	21.00

3	16QAM	8	4	20.88	20.94	20.89
3	16QAM	8	7	21.02	20.96	20.85
3	16QAM	15	0	20.72	20.83	20.80
Channel				131979	132322	132665
Frequency (MHz)				1710.7	1745	1779.3
1.4	QPSK	1	0	22.86	22.90	22.80
1.4	QPSK	1	3	22.83	22.95	22.81
1.4	QPSK	1	5	22.60	22.73	22.70
1.4	QPSK	3	0	23.02	23.00	22.99
1.4	QPSK	3	1	22.93	22.99	22.75
1.4	QPSK	3	3	22.91	22.97	22.93
1.4	QPSK	6	0	21.70	21.93	21.72
1.4	16QAM	1	0	21.74	21.99	21.77
1.4	16QAM	1	3	21.95	22.06	21.92
1.4	16QAM	1	5	21.74	21.84	21.72
1.4	16QAM	3	0	22.01	22.10	21.94
1.4	16QAM	3	1	21.88	21.98	21.85
1.4	16QAM	3	3	22.04	22.00	21.89
1.4	16QAM	6	0	20.69	20.79	20.74

ERP/EIRP

LTE Band 2 (GT - LC = -1.0 dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	18607	18900	19193	18615	18900	19185	18625	18900	19175
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	1850.7	1880	1909.3	1851.5	1880	1908.5	1852.5	1880	1907.5
Conducted Power (dBm)	22.67	22.81	22.64	22.52	22.73	22.62	22.66	22.70	22.70
Conducted Power (Watts)	0.1849	0.1910	0.1837	0.1786	0.1875	0.1828	0.1845	0.1862	0.1862
EIRP(dBm)	21.67	21.81	21.64	21.52	21.73	21.62	21.66	21.70	21.70
EIRP(Watts)	0.1469	0.1517	0.1459	0.1419	0.1489	0.1452	0.1466	0.1479	0.1479

LTE Band 2 (GT - LC = -1.0 dB) QPSK									
Bandwidth	10M			15M			20M		
Channel	18650	18900	19150	18675	18900	19125	18650	18900	19100
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	1855	1880	1905	1857.5	1880	1902.5	1860	1880	1900
Conducted Power (dBm)	22.60	22.83	22.56	22.79	22.76	22.64	22.82	22.87	22.75
Conducted Power (Watts)	0.1820	0.1919	0.1803	0.1901	0.1888	0.1837	0.1914	0.1936	0.1884
EIRP(dBm)	21.60	21.83	21.56	21.79	21.76	21.64	21.82	21.87	21.75
EIRP(Watts)	0.1445	0.1524	0.1432	0.1510	0.1500	0.1459	0.1521	0.1538	0.1496

LTE Band 2 (GT - LC = -1.0 dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	18607	18900	19193	18615	18900	19185	18625	18900	19175
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	1850.7	1880	1909.3	1851.5	1880	1908.5	1852.5	1880	1907.5
Conducted Power (dBm)	21.63	21.93	21.72	21.68	21.81	21.69	21.59	21.83	21.62
Conducted Power (Watts)	0.1455	0.1560	0.1486	0.1472	0.1517	0.1476	0.1442	0.1524	0.1452
EIRP(dBm)	20.63	20.93	20.72	20.68	20.81	20.69	20.59	20.83	20.62
EIRP(Watts)	0.1156	0.1239	0.1180	0.1169	0.1205	0.1172	0.1146	0.1211	0.1153

LTE Band 2 (GT - LC = -1.0 dB) 16QAM									
Bandwidth	10M			15M			20M		
Channel	18650	18900	19150	18675	18900	19125	18650	18900	19100
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	1855	1880	1905	1857.5	1880	1902.5	1860	1880	1900
Conducted Power (dBm)	21.74	21.86	21.75	21.80	21.83	21.85	21.77	21.96	21.76
Conducted Power (Watts)	0.1493	0.1535	0.1496	0.1514	0.1524	0.1531	0.1503	0.1570	0.1500
EIRP(dBm)	20.74	20.86	20.75	20.80	20.83	20.85	20.77	20.96	20.76
EIRP(Watts)	0.1186	0.1219	0.1189	0.1202	0.1211	0.1216	0.1194	0.1247	0.1191

LTE Band 7 (GT - LC = 0.7 dB) QPSK			
Bandwidth	5M		
Channel	20775	21100	21425
	(Low)	(Mid)	(High)
Frequency (MHz)	2502.5	2535	2567.5
Conducted Power (dBm)	22.83	22.81	22.76
Conducted Power (Watts)	0.1919	0.1910	0.1888
EIRP(dBm)	23.53	23.51	23.46
EIRP(Watts)	0.2254	0.2244	0.2218

LTE Band 7 (GT - LC = 0.7 dB) QPSK									
Bandwidth	10M			15M			20M		
Channel	20800	21100	21400	20825	21100	21375	20850	21100	21350
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	2505	2535	2565	2507.5	2535	2562.5	2510	2535	2560
Conducted Power (dBm)	22.83	22.78	22.82	22.74	22.79	22.78	22.88	22.93	22.92
Conducted Power (Watts)	0.1919	0.1897	0.1914	0.1879	0.1901	0.1897	0.1941	0.1963	0.1959
EIRP(dBm)	23.53	23.48	23.52	23.44	23.49	23.48	23.58	23.63	23.62
EIRP(Watts)	0.2254	0.2228	0.2249	0.2208	0.2234	0.2228	0.2280	0.2307	0.2301

LTE Band 7 (GT - LC = 0.7 dB) 16QAM			
Bandwidth	5M		
Channel	20775	21100	21425
	(Low)	(Mid)	(High)
Frequency (MHz)	2502.5	2535	2567.5
Conducted Power (dBm)	21.91	22.16	21.96
Conducted Power (Watts)	0.1552	0.1644	0.1570
EIRP(dBm)	22.61	22.86	22.66
EIRP(Watts)	0.1824	0.1932	0.1845

LTE Band 7 (GT - LC = 0.7 dB) 16QAM									
Bandwidth	10M			15M			20M		
Channel	20800	21100	21400	20825	21100	21375	20850	21100	21350
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	2505	2535	2565	2507.5	2535	2562.5	2510	2535	2560
Conducted Power (dBm)	22.04	22.12	21.88	21.91	22.12	21.90	22.10	22.20	22.00
Conducted Power (Watts)	0.1600	0.1629	0.1542	0.1552	0.1629	0.1549	0.1622	0.1660	0.1585
EIRP(dBm)	22.74	22.82	22.58	22.61	22.82	22.60	22.80	22.90	22.70
EIRP(Watts)	0.1879	0.1914	0.1811	0.1824	0.1914	0.1820	0.1905	0.1950	0.1862

LTE Band 13 (GT - LC = -3.0 dB) QPSK						
Bandwidth	5M			10M		
Channel	23205	23230	23255	23230		
	(Low)	(Mid)	(High)	-	(Mid)	-
Frequency (MHz)	779.5	782	784.5	-	782	-
Conducted Power (dBm)	23.35	23.28	23.31	-	23.40	-
Conducted Power (Watts)	0.2163	0.2128	0.2143	-	0.2188	-
ERP(dBm)	18.20	18.13	18.16	-	18.25	-
ERP(Watts)	0.0661	0.0650	0.0655	-	0.0668	-

LTE Band 13 (GT - LC = -3.0 dB) 16QAM						
Bandwidth	5M			10M		
Channel	23205	23230	23255	23230		
	(Low)	(Mid)	(High)	-	(Mid)	-
Frequency (MHz)	779.5	782	784.5	-	782	-
Conducted Power (dBm)	22.53	22.48	22.47	-	22.57	-
Conducted Power (Watts)	0.1791	0.1770	0.1766	-	0.1807	-
ERP(dBm)	17.38	17.33	17.32	-	17.42	-
ERP(Watts)	0.0547	0.0541	0.0540	-	0.0552	-

LTE Band 26 (GT - LC = -3.0 dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	26797	26915	27033	26805	26915	27025	26815	26915	27015
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
Conducted Power (dBm)	22.60	22.81	22.60	22.77	22.81	22.83	22.74	22.81	22.81
Conducted Power (Watts)	0.1820	0.1910	0.1820	0.1892	0.1910	0.1919	0.1879	0.1910	0.1910
ERP(dBm)	17.45	17.66	17.45	17.62	17.66	17.68	17.59	17.66	17.66
ERP(Watts)	0.0556	0.0583	0.0556	0.0578	0.0583	0.0586	0.0574	0.0583	0.0583

LTE Band 26 (GT - LC = -3.0 dB) QPSK							
Bandwidth	10M			15M			15M
Channel	26840	26915	26990	26865	26915	26965	26790
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)
Frequency (MHz)	829	836.5	844	831.5	836.5	841.5	824
Conducted Power (dBm)	22.73	22.88	22.85	22.84	22.94	22.90	22.90
Conducted Power (Watts)	0.1875	0.1941	0.1928	0.1923	0.1968	0.1950	0.1950
ERP(dBm)	17.58	17.73	17.70	17.69	17.79	17.75	17.75
ERP(Watts)	0.0573	0.0593	0.0589	0.0587	0.0601	0.0596	0.0596

LTE Band 26 (GT - LC = -3.0 dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	26797	26915	27033	26805	26915	27025	26815	26915	27015
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	824.7	836.5	848.3	825.5	836.5	847.5	826.5	836.5	846.5
Conducted Power (dBm)	21.89	21.99	21.87	21.76	21.95	21.90	21.88	21.91	21.91
Conducted Power (Watts)	0.1545	0.1581	0.1538	0.1500	0.1567	0.1549	0.1542	0.1552	0.1552
ERP(dBm)	16.74	16.84	16.72	16.61	16.80	16.75	16.73	16.76	16.76
ERP(Watts)	0.0472	0.0483	0.0470	0.0458	0.0479	0.0473	0.0471	0.0474	0.0474

LTE Band 26 (GT - LC = -3.0 dB) 16QAM							
Bandwidth	10M			15M			15M
Channel	26840	26915	26990	26865	26915	26965	26790
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)
Frequency (MHz)	829	836.5	844	831.5	836.5	841.5	824
Conducted Power (dBm)	21.86	21.91	21.76	21.96	22.02	21.94	21.99
Conducted Power (Watts)	0.1535	0.1552	0.1500	0.1570	0.1592	0.1563	0.1581
ERP(dBm)	16.71	16.76	16.61	16.81	16.87	16.79	16.84
ERP(Watts)	0.0469	0.0474	0.0458	0.0480	0.0486	0.0478	0.0483

LTE Band 38 (GT - LC = 0.7 dB) QPSK			
Bandwidth	**5M**		
Channel	**37775**	**38000**	**38225**
	(Low)	**(Mid)**	**(High)**
Frequency (MHz)	**2572.5**	**2595**	**2617.5**
Conducted Power (dBm)	22.85	23.00	22.85
Conducted Power (Watts)	0.1928	0.1995	0.1928
EIRP(dBm)	23.55	23.70	23.55
EIRP(Watts)	0.2265	0.2344	0.2265

LTE Band 38 (GT - LC = 0.7 dB) QPSK									
Bandwidth	**10M**			**15M**			**20M**		
Channel	**37800**	**38000**	**38200**	**37825**	**38000**	**38175**	**37850**	**38000**	**38150**
	(Low)	**(Mid)**	**(High)**	**(Low)**	**(Mid)**	**(High)**	**(Low)**	**(Mid)**	**(Mid)**
Frequency (MHz)	**2575**	**2595**	**2615**	**2577.5**	**2595**	**2612.5**	**2580**	**2595**	**2610**
Conducted Power (dBm)	22.89	23.06	22.92	22.78	23.00	22.93	23.03	23.12	22.96
Conducted Power (Watts)	0.1945	0.2023	0.1959	0.1897	0.1995	0.1963	0.2009	0.2051	0.1977
EIRP(dBm)	23.59	23.76	23.62	23.48	23.70	23.63	23.73	23.82	23.66
EIRP(Watts)	0.2286	0.2377	0.2301	0.2228	0.2344	0.2307	0.2360	0.2410	0.2323

LTE Band 38 (GT - LC = 0.7 dB) 16QAM			
Bandwidth	5M		
Channel	37775	38000	38225
	(Low)	(Mid)	(High)
Frequency (MHz)	2572.5	2595	2617.5
Conducted Power (dBm)	21.91	22.15	22.08
Conducted Power (Watts)	0.1552	0.1641	0.1614
EIRP(dBm)	22.61	22.85	22.78
EIRP(Watts)	0.1824	0.1928	0.1897

LTE Band 38 (GT - LC = 0.7 dB) 16QAM									
Bandwidth	10M			15M			20M		
Channel	37800	38000	38200	37825	38000	38175	37850	38000	38150
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(Mid)
Frequency (MHz)	2575	2595	2615	2577.5	2595	2612.5	2580	2595	2610
Conducted Power (dBm)	21.96	22.05	21.94	21.96	22.03	21.94	22.02	22.20	22.10
Conducted Power (Watts)	0.1570	0.1603	0.1563	0.1570	0.1596	0.1563	0.1592	0.1660	0.1622
EIRP(dBm)	22.66	22.75	22.64	22.66	22.73	22.64	22.72	22.90	22.80
EIRP(Watts)	0.1845	0.1884	0.1837	0.1845	0.1875	0.1837	0.1871	0.1950	0.1905

LTE Band 66 (GT - LC = 0.2 dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	131979	132322	132665	131987	132322	132657	131997	132322	132647
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	1710.7	1745	1779.3	1711.5	1745	1778.5	1712.5	1745	1777.5
Conducted Power (dBm)	23.02	23.00	22.99	22.83	22.98	22.79	22.93	23.02	22.77
Conducted Power (Watts)	0.2004	0.1995	0.1991	0.1919	0.1986	0.1901	0.1963	0.2004	0.1892
EIRP(dBm)	23.22	23.20	23.19	23.03	23.18	22.99	23.13	23.22	22.97
EIRP(Watts)	0.2099	0.2089	0.2084	0.2009	0.2080	0.1991	0.2056	0.2099	0.1982

LTE Band 66 (GT - LC = 0.2 dB) QPSK									
Bandwidth	10M			15M			20M		
Channel	132022	132322	132622	132047	132322	132597	132072	132322	132572
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(Mid)
Frequency (MHz)	1715	1745	1775	1717.5	1745	1772.5	1720	1745	1770
Conducted Power (dBm)	22.81	22.96	22.82	22.80	23.01	22.77	22.99	23.05	22.90
Conducted Power (Watts)	0.1910	0.1977	0.1914	0.1905	0.2000	0.1892	0.1991	0.2018	0.1950
EIRP(dBm)	23.01	23.16	23.02	23.00	23.21	22.97	23.19	23.25	23.10
EIRP(Watts)	0.2000	0.2070	0.2004	0.1995	0.2094	0.1982	0.2084	0.2113	0.2042

LTE Band 66 (GT - LC = 0.2 dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	131979	132322	132665	131987	132322	132657	131997	132322	132647
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency (MHz)	1710.7	1745	1779.3	1711.5	1745	1778.5	1712.5	1745	1777.5
Conducted Power (dBm)	22.01	22.10	21.94	21.86	21.95	21.92	21.78	21.94	21.74
Conducted Power (Watts)	0.1589	0.1622	0.1563	0.1535	0.1567	0.1556	0.1507	0.1563	0.1493
EIRP(dBm)	22.21	22.30	22.14	22.06	22.15	22.12	21.98	22.14	21.94
EIRP(Watts)	0.1663	0.1698	0.1637	0.1607	0.1641	0.1629	0.1578	0.1637	0.1563

LTE Band 66 (GT - LC = 0.2 dB) 16QAM									
Bandwidth	10M			15M			20M		
Channel	132022	132322	132622	132047	132322	132597	132072	132322	132572
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(Mid)
Frequency (MHz)	1715	1745	1775	1717.5	1745	1772.5	1720	1745	1770
Conducted Power (dBm)	21.82	22.06	21.98	21.88	21.90	22.00	21.99	22.08	22.04
Conducted Power (Watts)	0.1521	0.1607	0.1578	0.1542	0.1549	0.1585	0.1581	0.1614	0.1600
EIRP(dBm)	22.02	22.26	22.18	22.08	22.10	22.20	22.19	22.28	22.24
EIRP(Watts)	0.1592	0.1683	0.1652	0.1614	0.1622	0.1660	0.1656	0.1690	0.1675

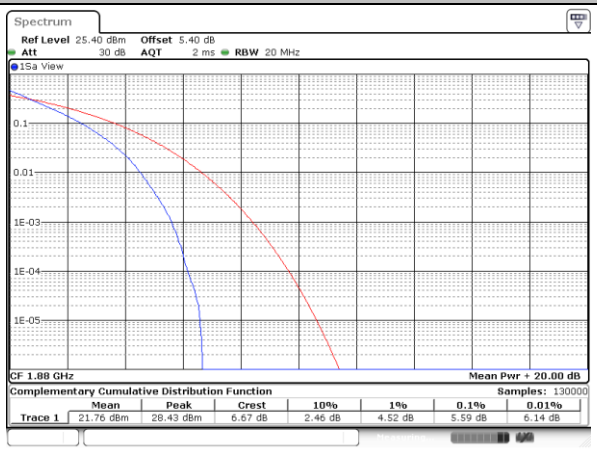
LTE Band 2

Peak-to-Average Ratio

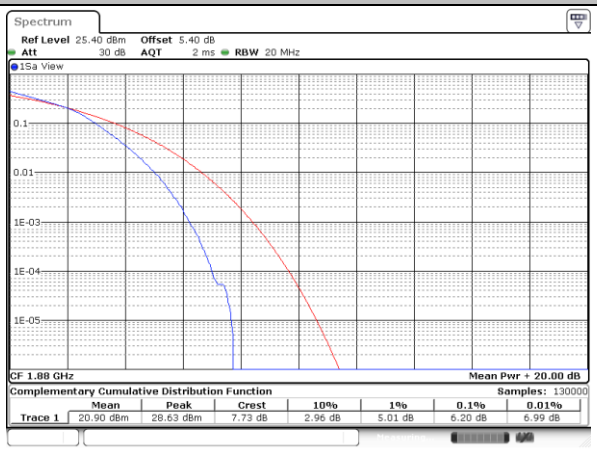
Mode	LTE Band 2 / 20MHz		
Mod.	QPSK	16QAM	Limit: 13dB
RB Size	Full RB	Full RB	Result
Middle CH	5.59	6.20	PASS

LTE Band 2 / 20MHz

Middle Channel / Full RB/ QPSK



Middle Channel / Full RB/ 16QAM

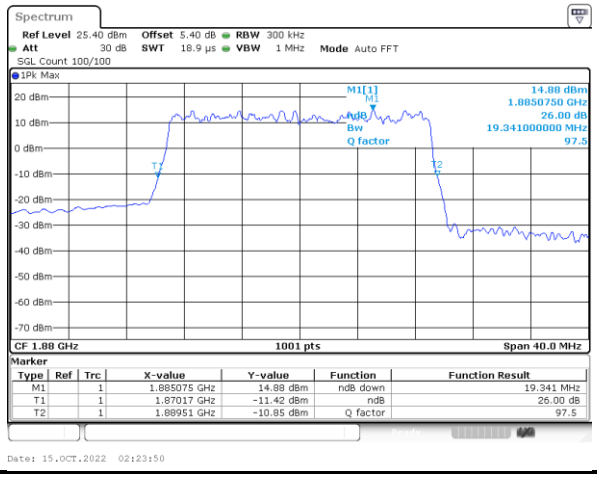


26dB Bandwidth

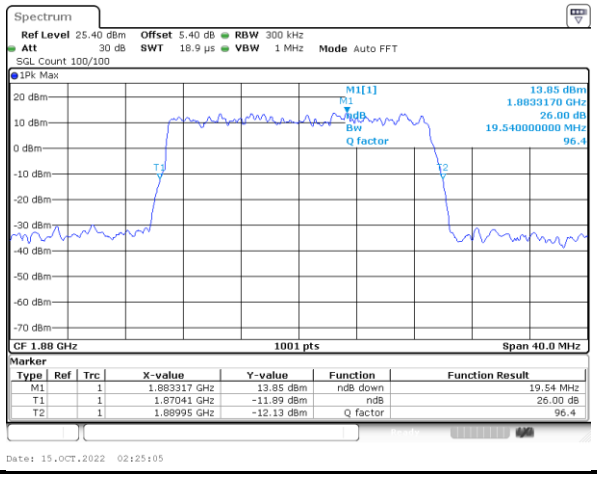
Mode	LTE Band 2 : 26dB BW(MHz)	
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	19.34	19.54

LTE Band 2

Middle Channel / 20MHz / QPSK



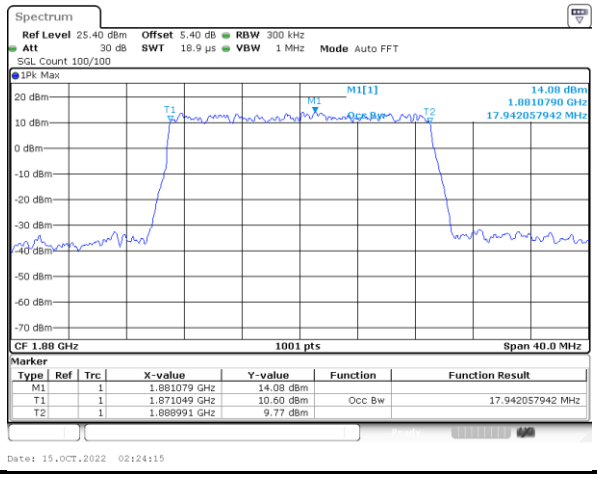
Middle Channel / 20MHz / 16QAM

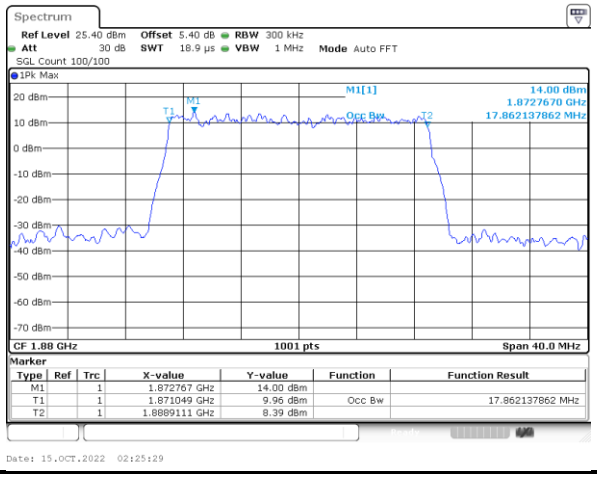


Occupied Bandwidth

Mode	LTE Band 2 : 99%OBW(MHz)	
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	17.94	17.86

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

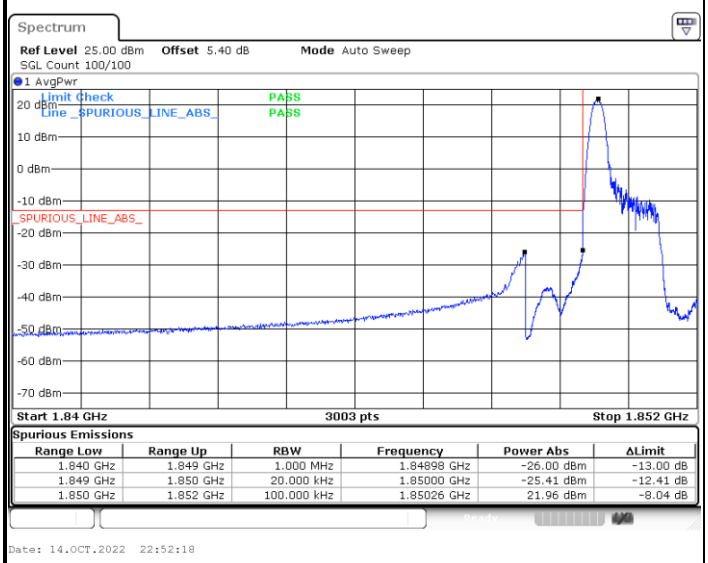




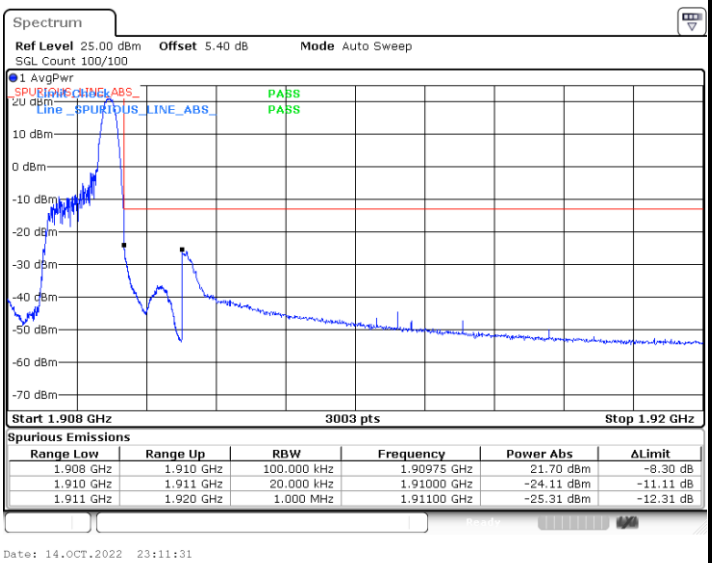
Conducted Band Edge

LTE Band 2 / 1.4MHz / QPSK

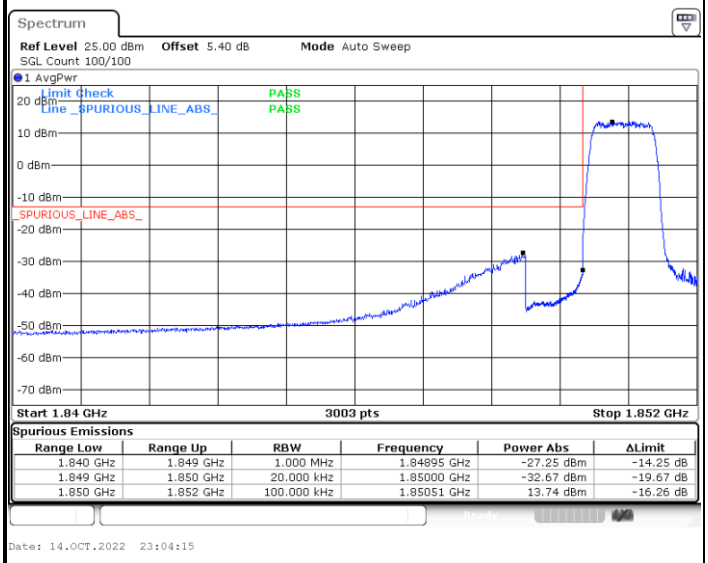
Lowest Band Edge / 1RB



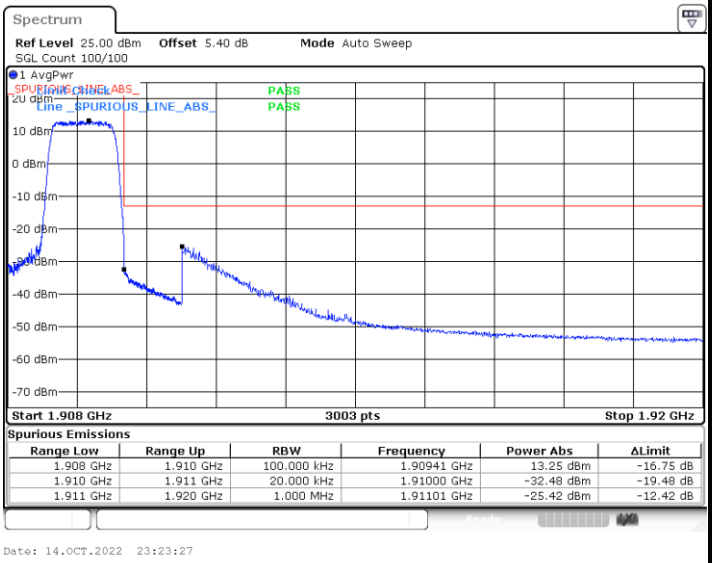
Highest Band Edge / 1RB



Lowest Band Edge / Full RB

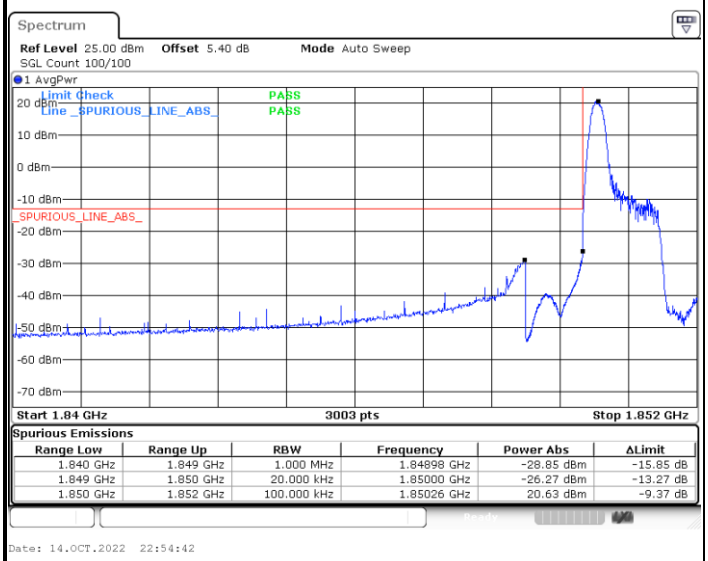


Highest Band Edge / Full RB

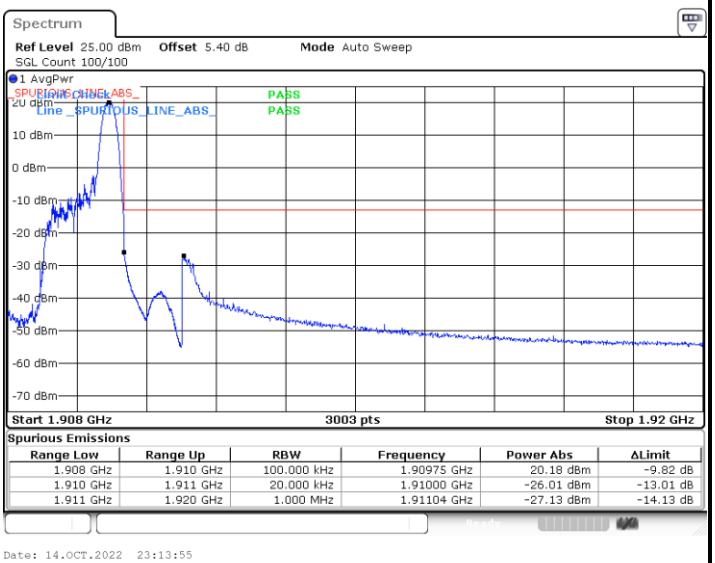


LTE Band 2 / 1.4MHz / 16QAM

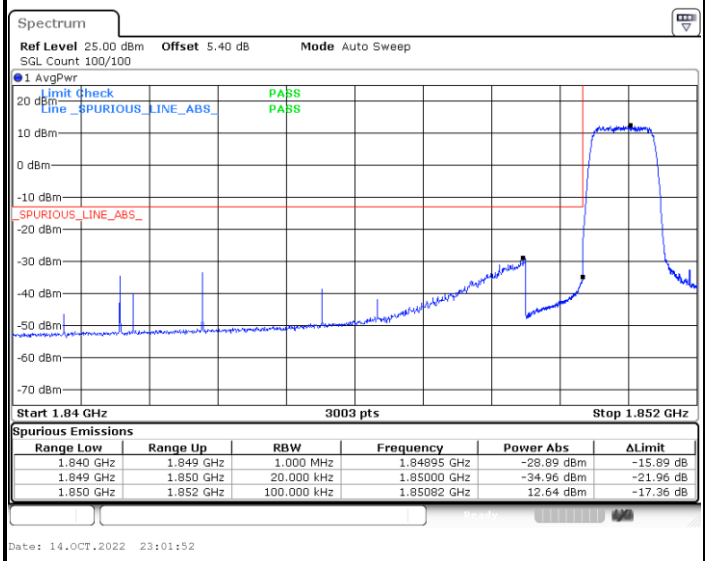
Lowest Band Edge / 1 RB



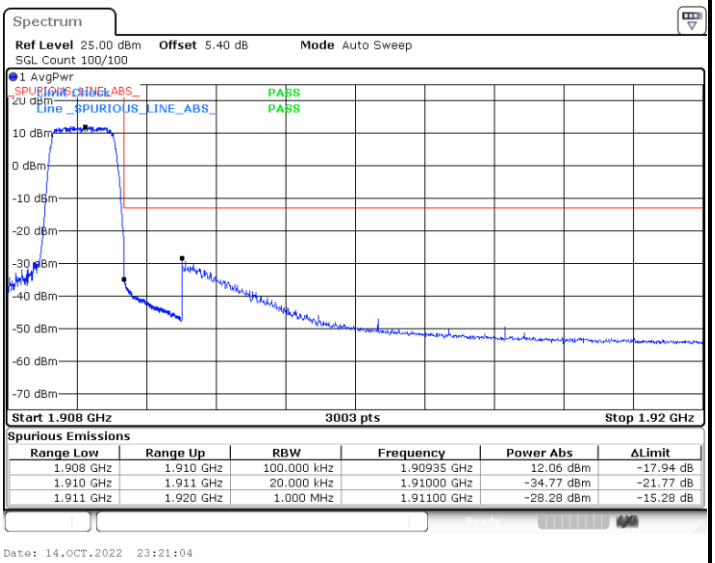
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB

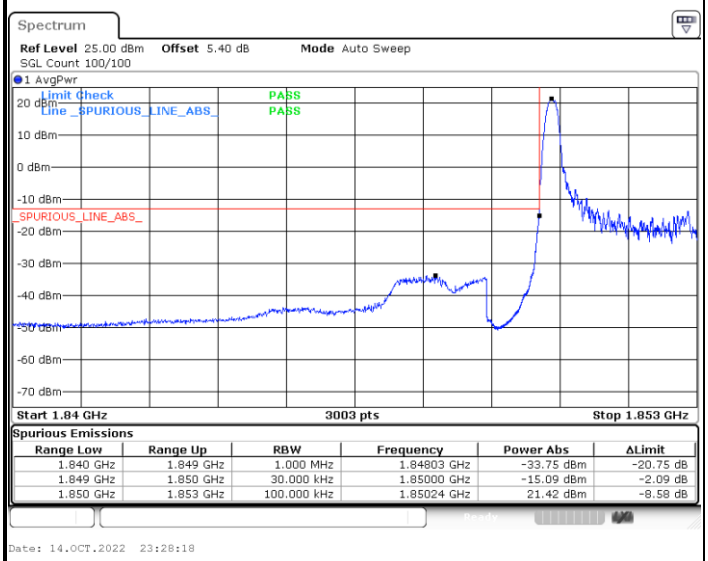


Highest Band Edge / Full RB



LTE Band 2 / 3MHz / QPSK

Lowest Band Edge / 1RB

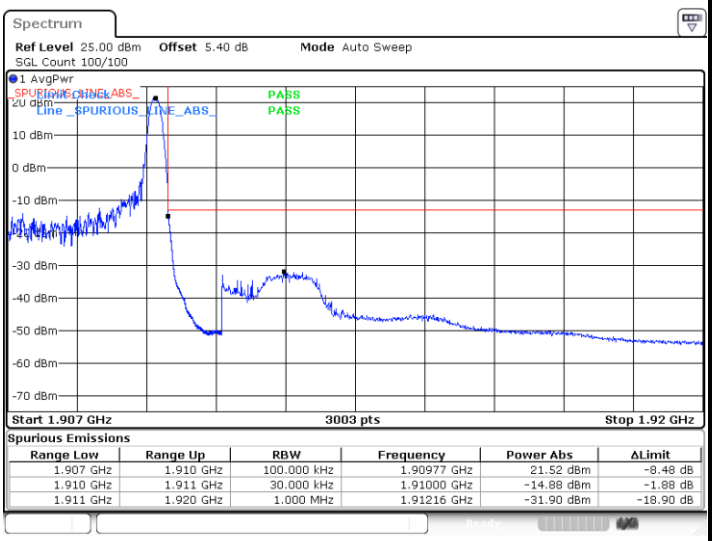


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84803 GHz	-33.75 dBm	-20.75 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.85000 GHz	-15.09 dBm	-2.09 dB
1.850 GHz	1.853 GHz	100.000 kHz	1.85024 GHz	21.42 dBm	-8.58 dB

Date: 14.OCT.2022 23:28:18

Highest Band Edge / 1 RB

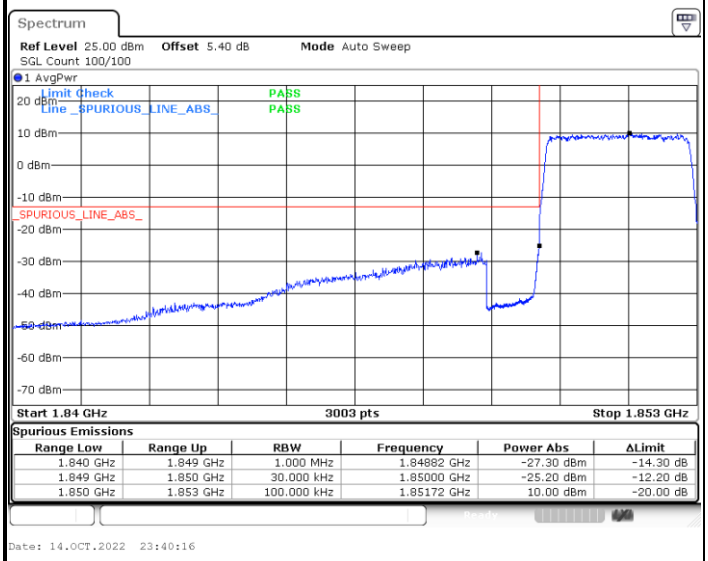


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.907 GHz	1.910 GHz	100.000 kHz	1.90977 GHz	21.52 dBm	-8.48 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91000 GHz	-14.88 dBm	-1.88 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91216 GHz	-31.90 dBm	-18.90 dB

Date: 14.OCT.2022 23:47:32

Lowest Band Edge / Full RB

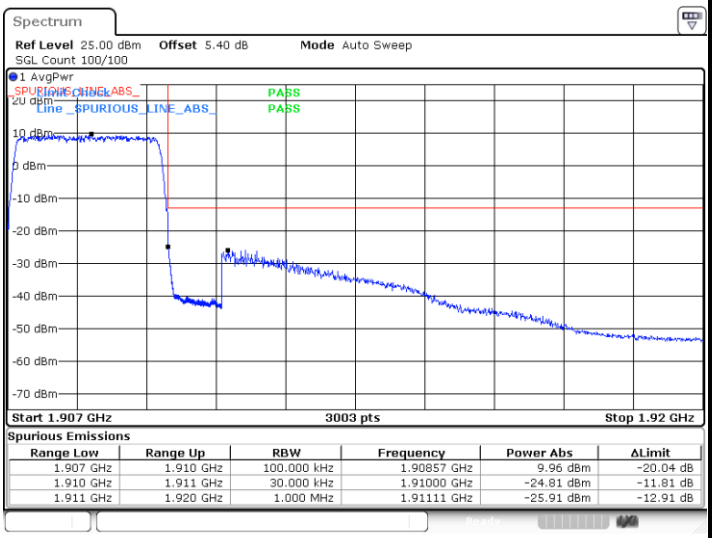


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84882 GHz	-27.30 dBm	-14.30 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.85000 GHz	-25.20 dBm	-12.20 dB
1.850 GHz	1.853 GHz	100.000 kHz	1.85172 GHz	10.00 dBm	-20.00 dB

Date: 14.OCT.2022 23:40:16

Highest Band Edge / Full RB



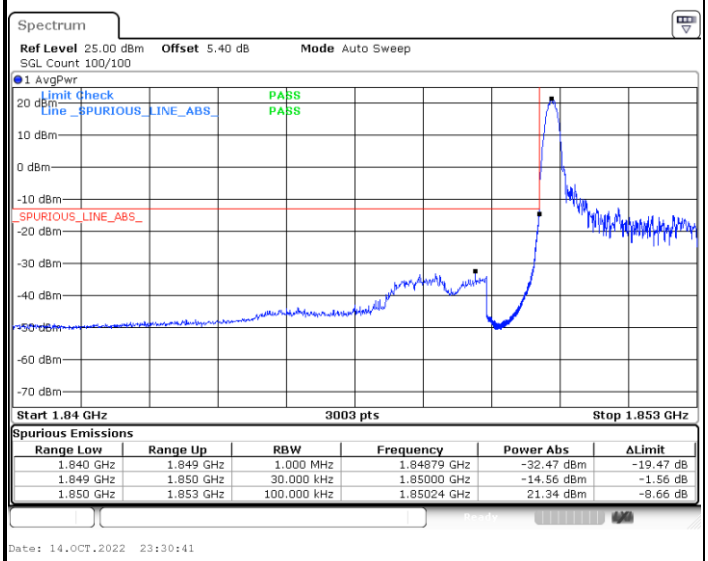
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.907 GHz	1.910 GHz	100.000 kHz	1.90857 GHz	9.96 dBm	-20.04 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91000 GHz	-24.81 dBm	-11.81 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91111 GHz	-25.91 dBm	-12.91 dB

Date: 14.OCT.2022 23:59:28

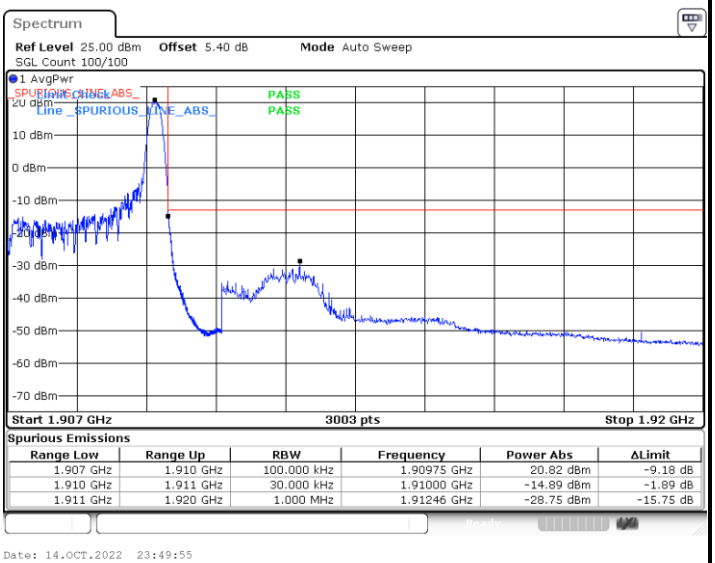
LTE Band 2 / 3MHz / 16QAM

Lowest Band Edge / 1 RB



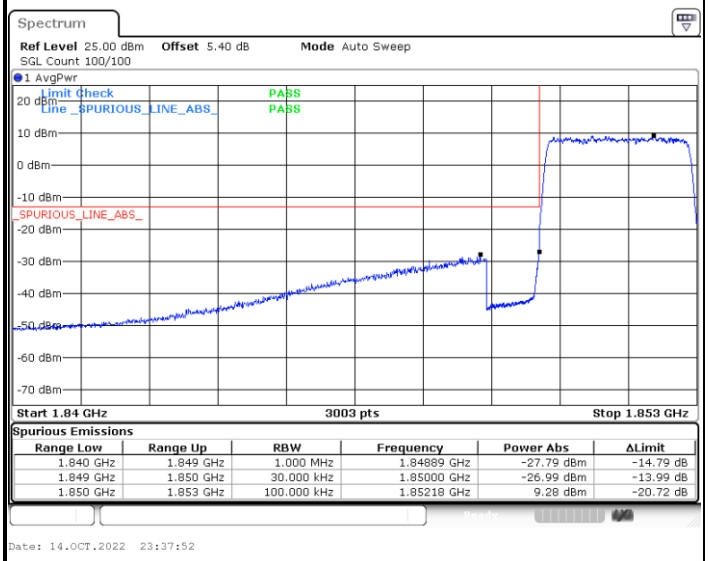
Date: 14.OCT.2022 23:30:41

Highest Band Edge /1 RB



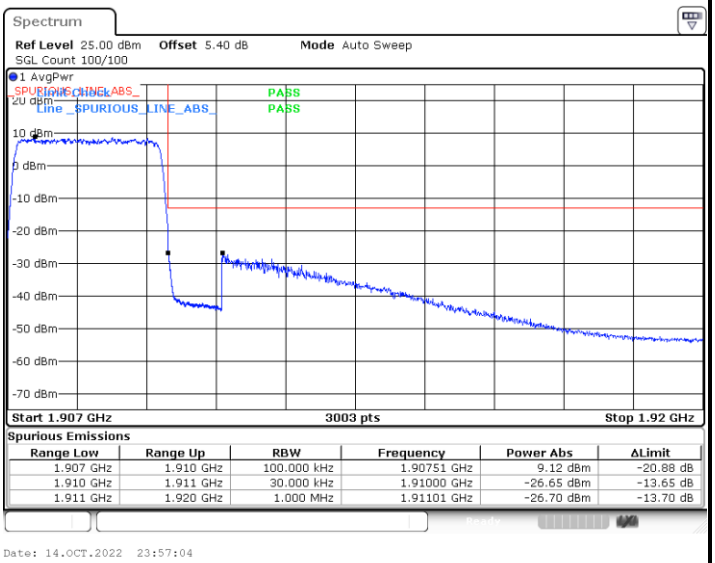
Date: 14.OCT.2022 23:49:55

Lowest Band Edge / Full RB



Date: 14.OCT.2022 23:37:52

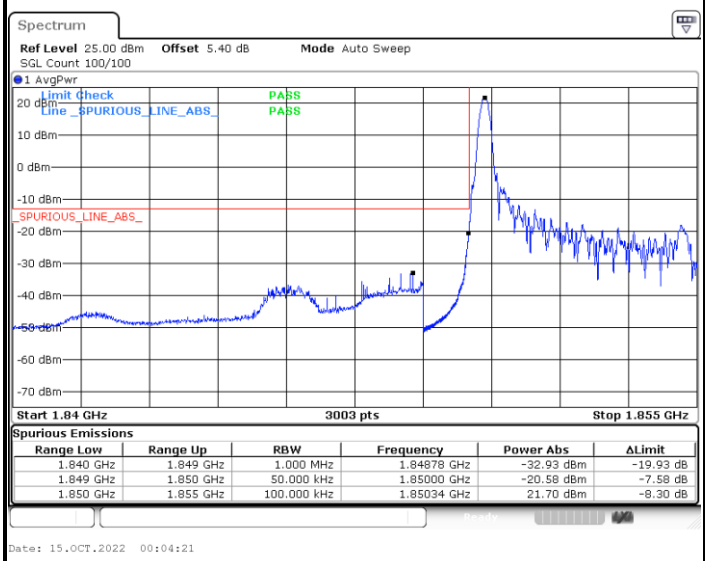
Highest Band Edge / Full RB



Date: 14.OCT.2022 23:57:04

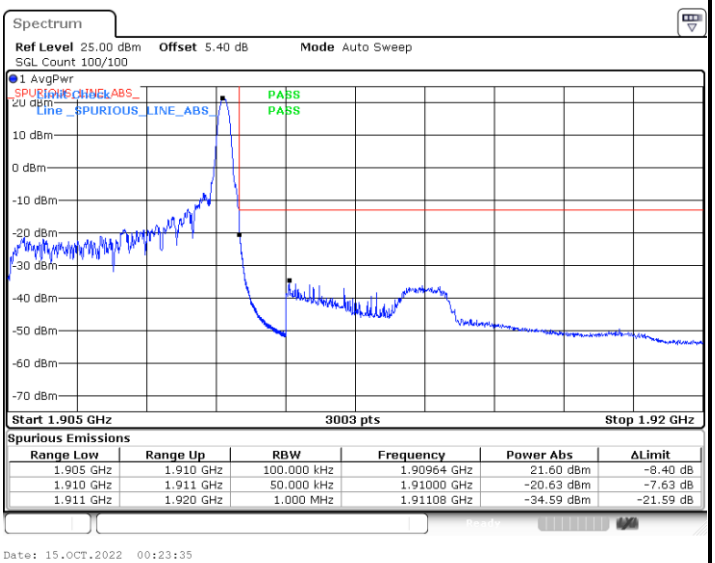
LTE Band 2 / 5MHz / QPSK

Lowest Band Edge / 1 RB



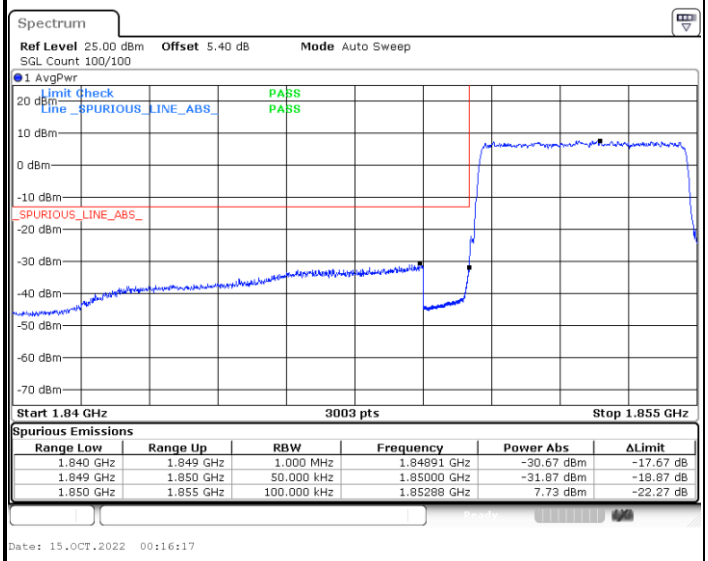
Date: 15.OCT.2022 00:04:21

Highest Band Edge / 1 RB



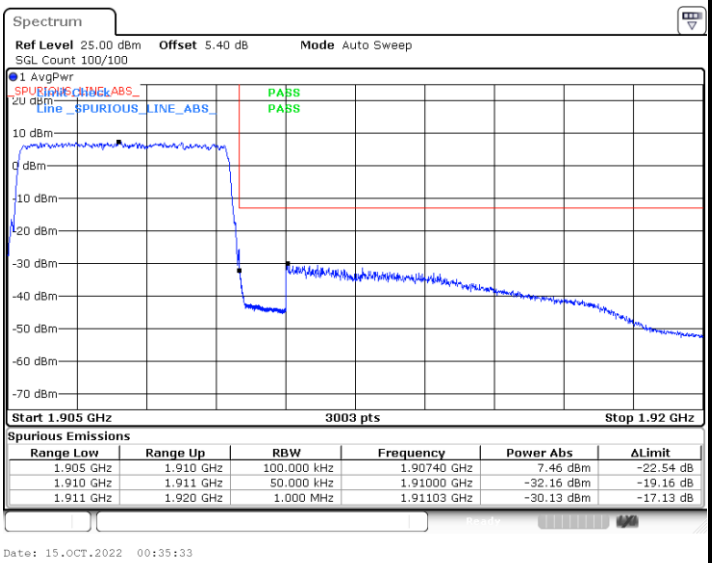
Date: 15.OCT.2022 00:23:35

Lowest Band Edge / Full RB



Date: 15.OCT.2022 00:16:17

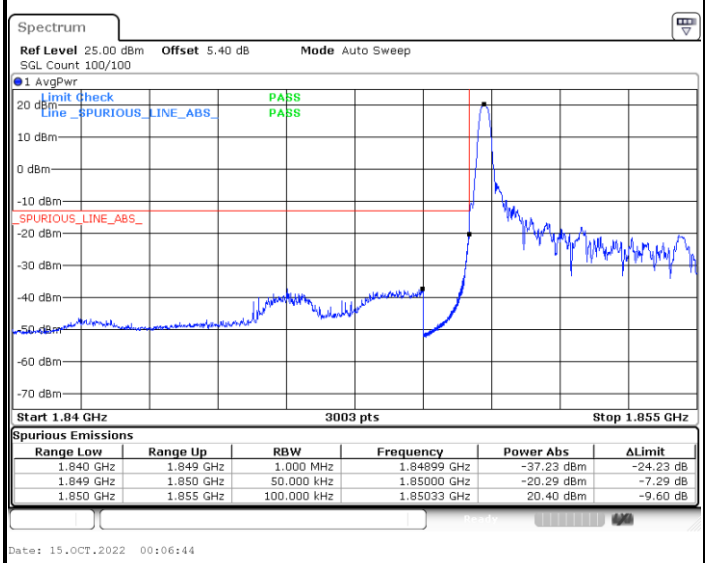
Highest Band Edge / Full RB



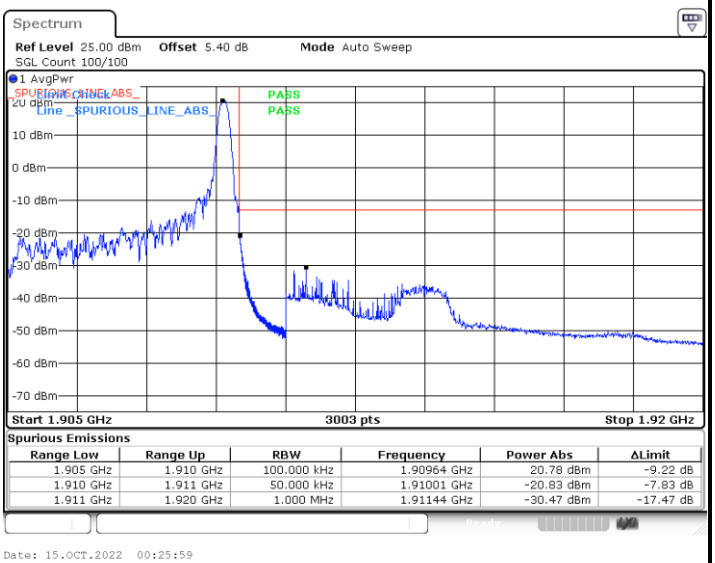
Date: 15.OCT.2022 00:35:33

LTE Band 2 / 5MHz / 16QAM

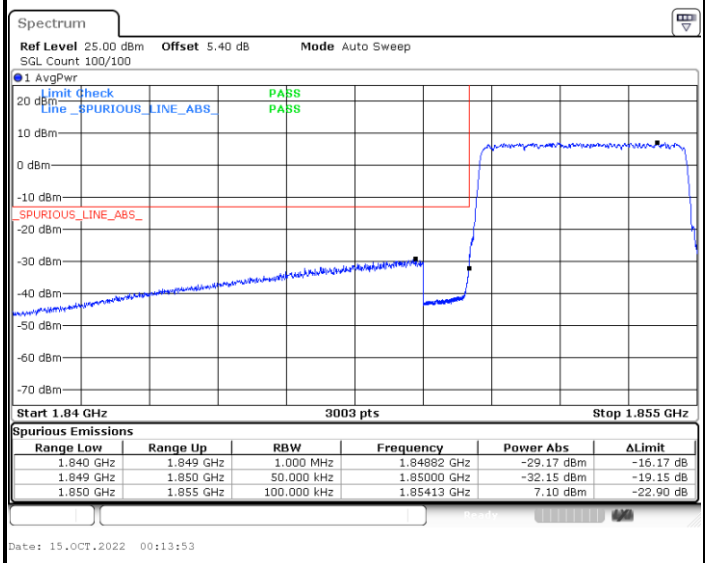
Lowest Band Edge / 1RB



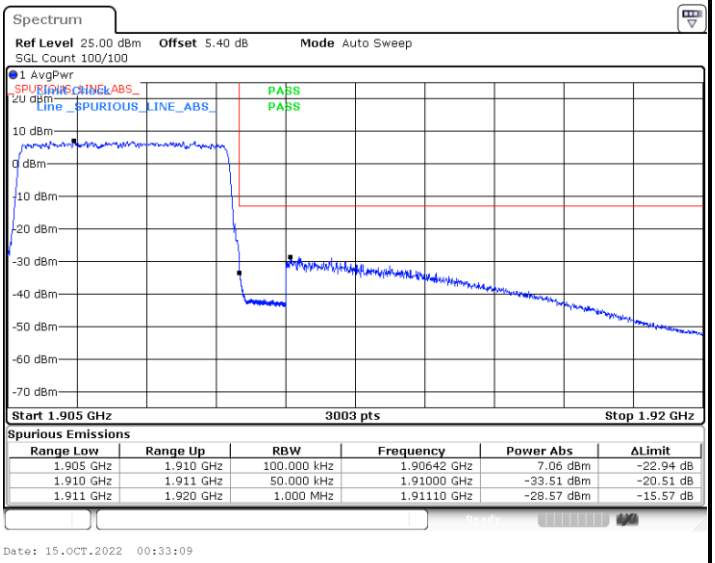
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB

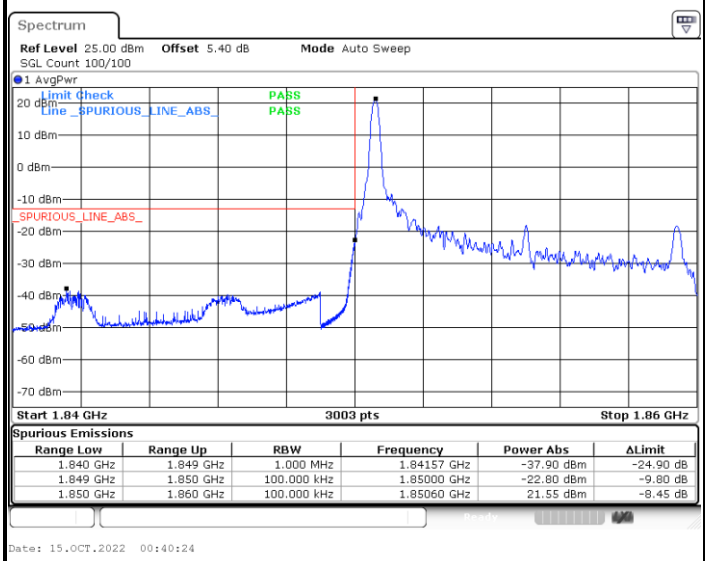


Highest Band Edge / Full RB



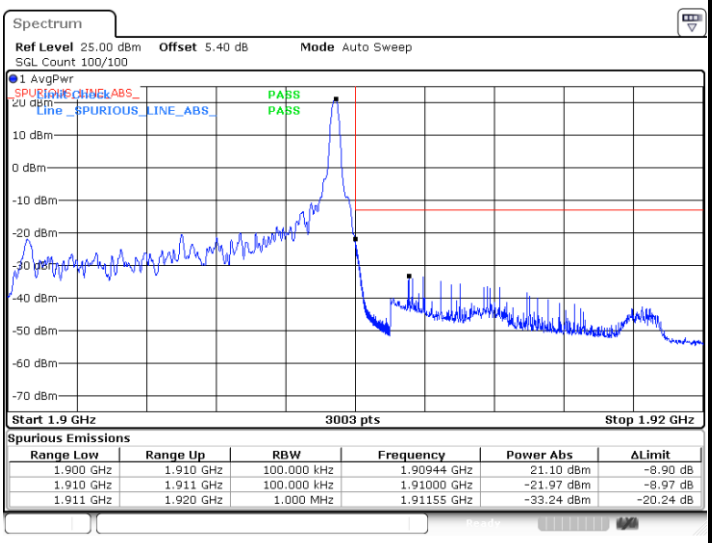
LTE Band 2 / 10MHz / QPSK

Lowest Band Edge / 1 RB



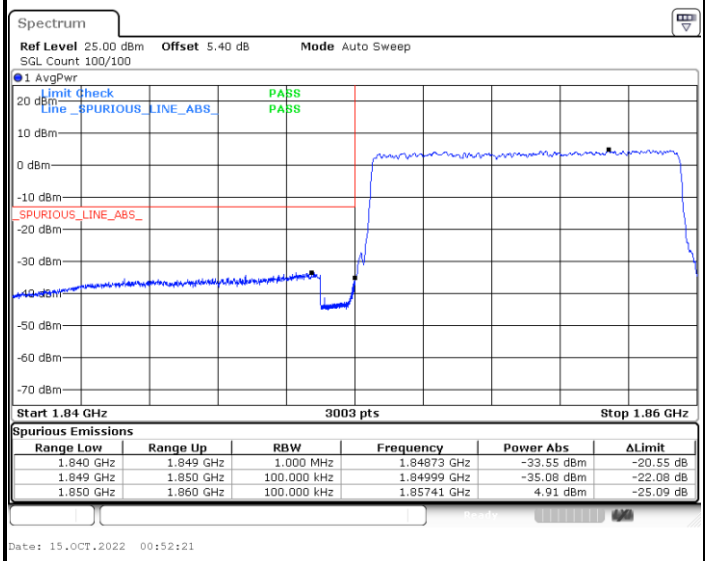
Date: 15.OCT.2022 00:40:24

Highest Band Edge / 1 RB



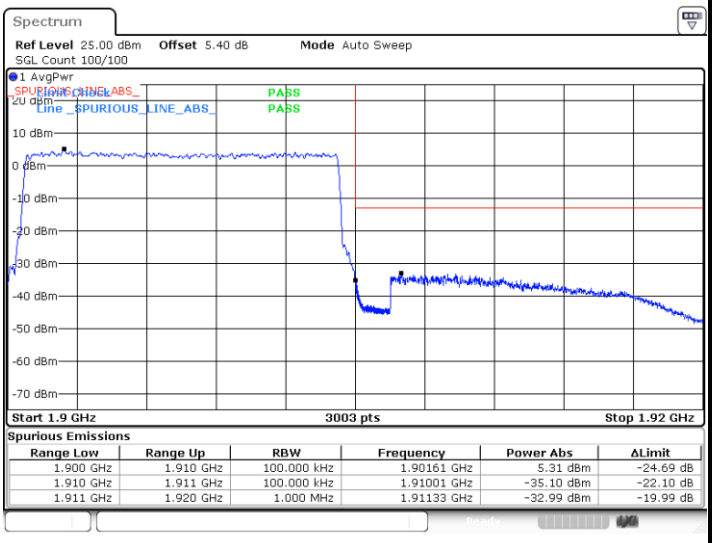
Date: 15.OCT.2022 00:59:39

Lowest Band Edge / Full RB



Date: 15.OCT.2022 00:52:21

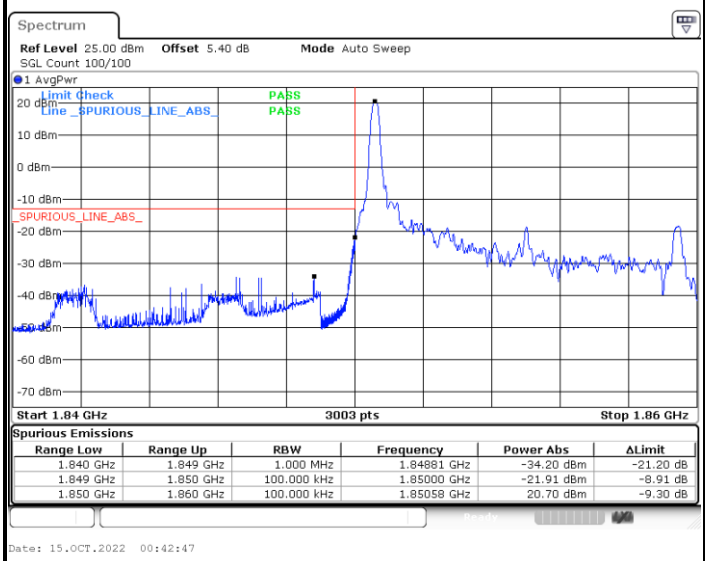
Highest Band Edge / Full RB



Date: 15.OCT.2022 01:11:35

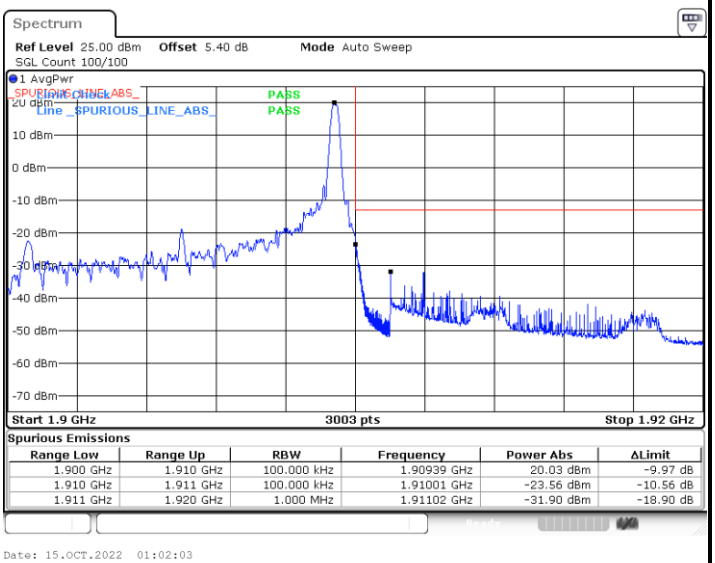
LTE Band 2 / 10MHz / 16QAM

Lowest Band Edge / 1 RB



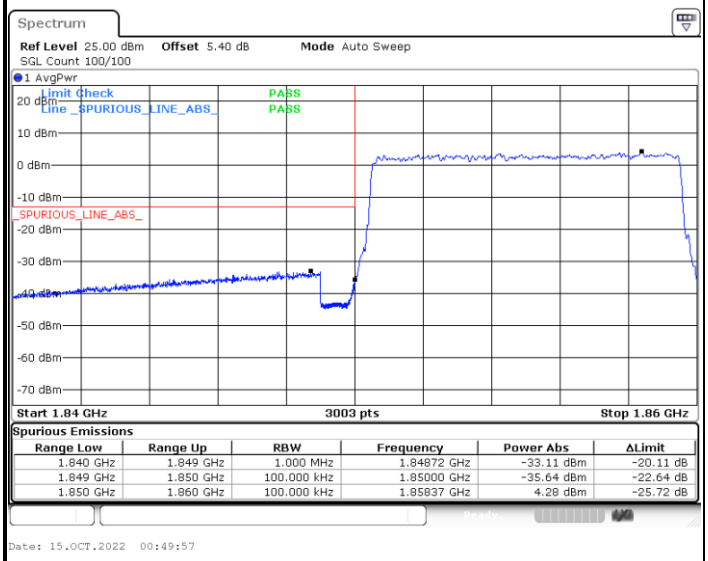
Date: 15.OCT.2022 00:42:47

Highest Band Edge / 1 RB



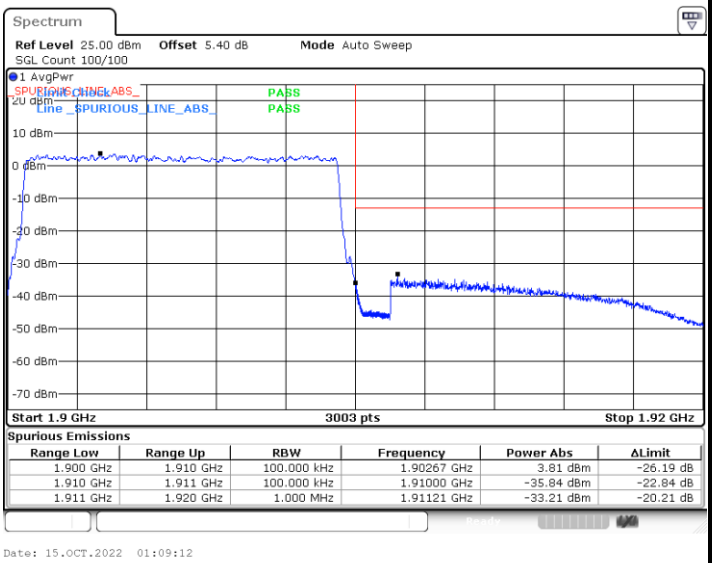
Date: 15.OCT.2022 01:02:03

Lowest Band Edge / Full RB



Date: 15.OCT.2022 00:49:57

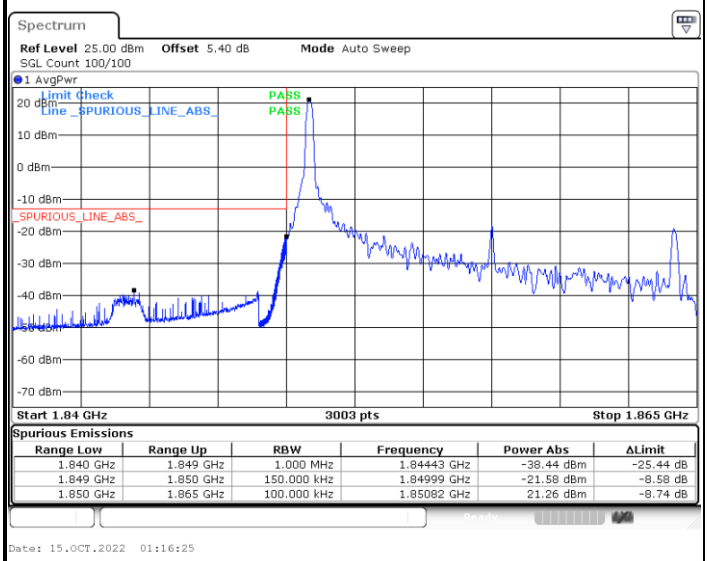
Highest Band Edge / Full RB



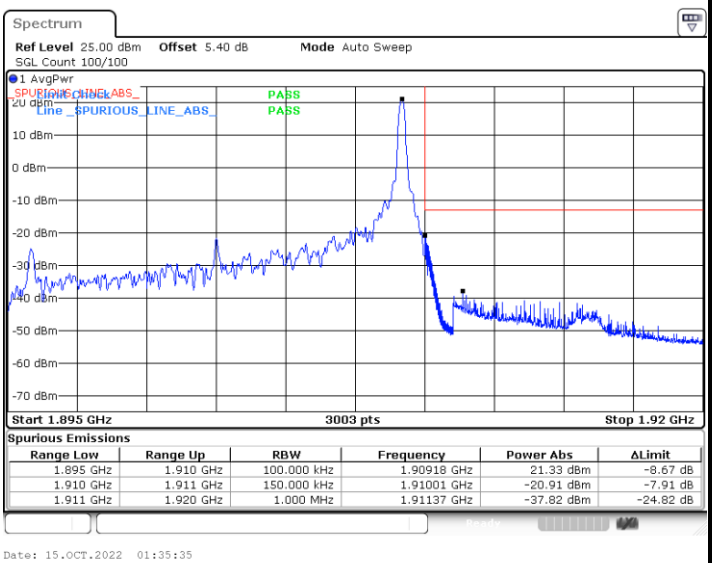
Date: 15.OCT.2022 01:09:12

LTE Band 2 / 15MHz / QPSK

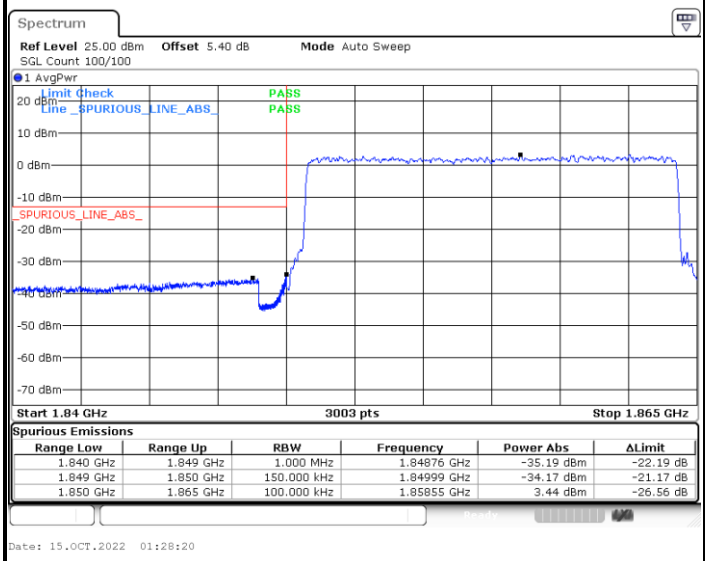
Lowest Band Edge / 1 RB



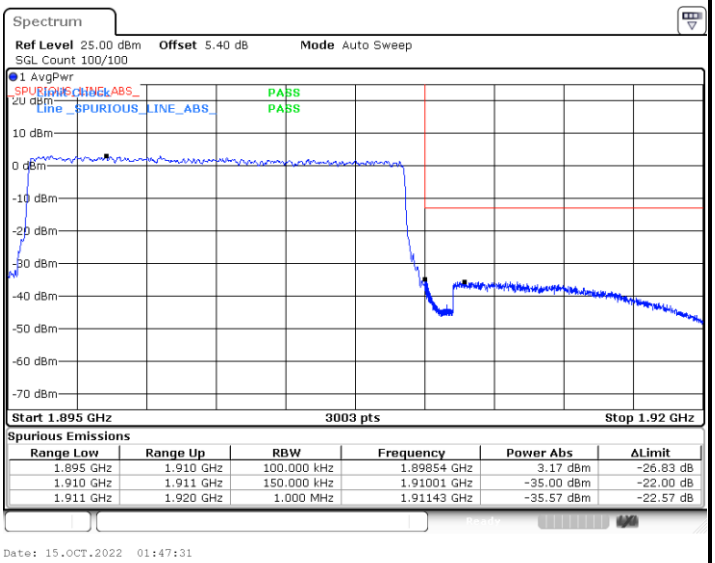
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB

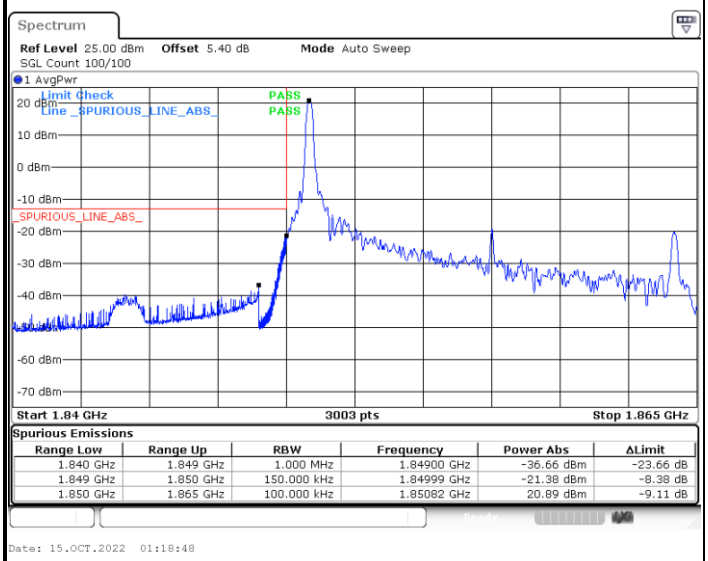


Highest Band Edge / Full RB



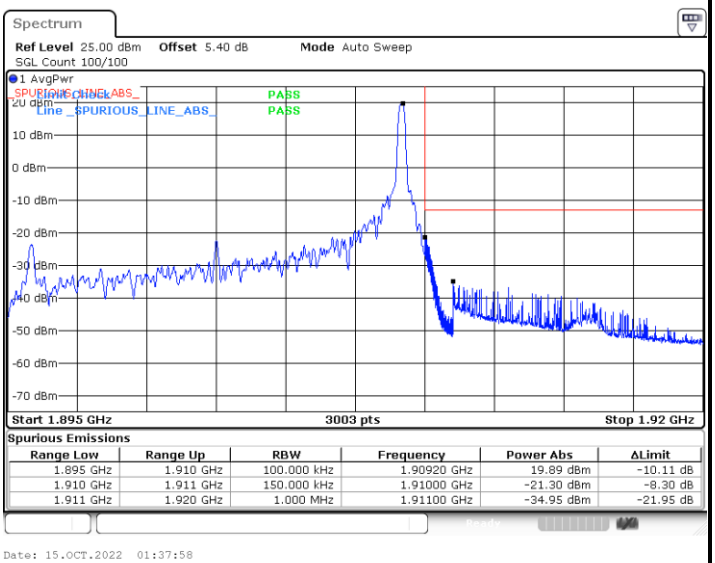
LTE Band 2 / 15MHz / 16QAM

Lowest Band Edge / 1 RB



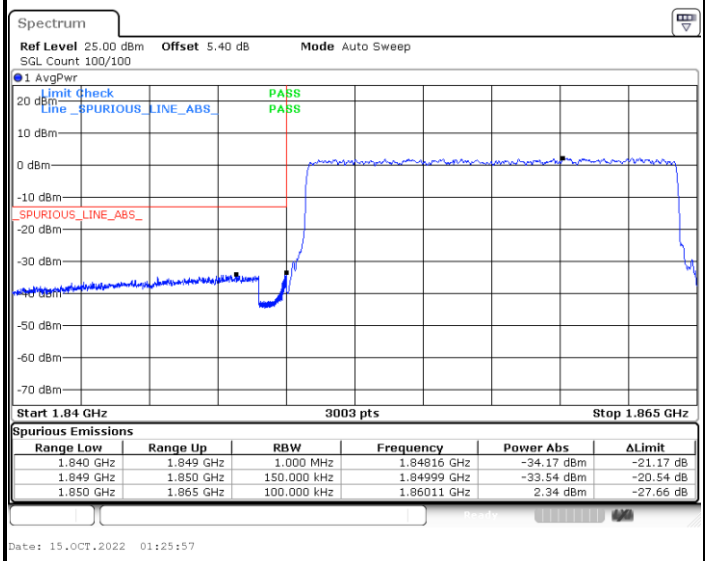
Date: 15.OCT.2022 01:18:48

Highest Band Edge / 1 RB



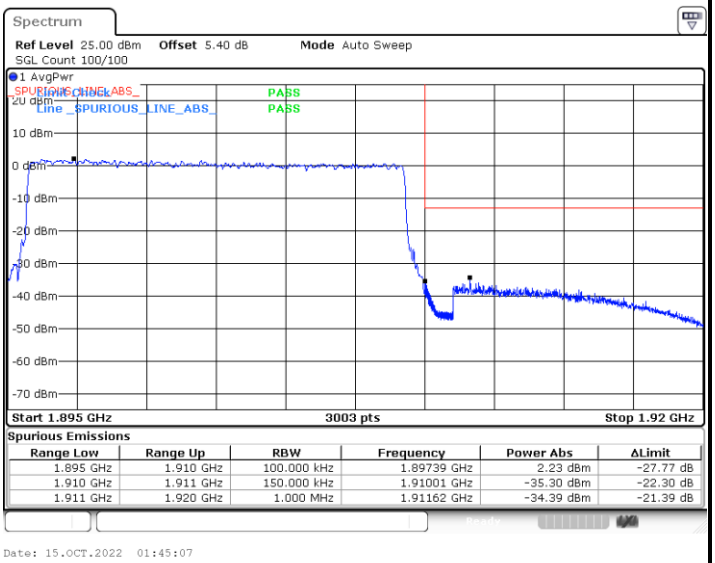
Date: 15.OCT.2022 01:37:58

Lowest Band Edge / Full RB

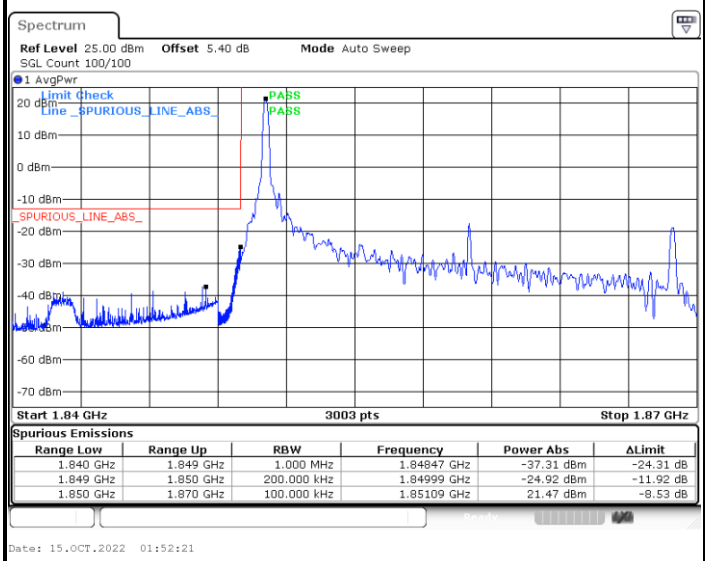
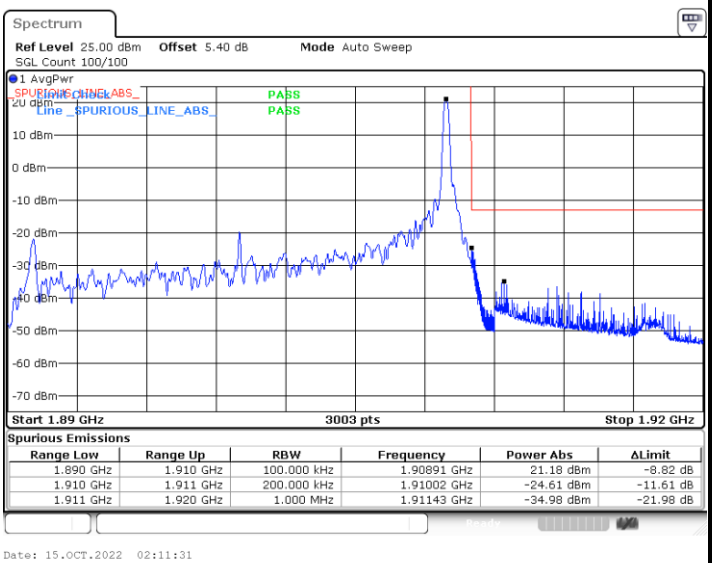
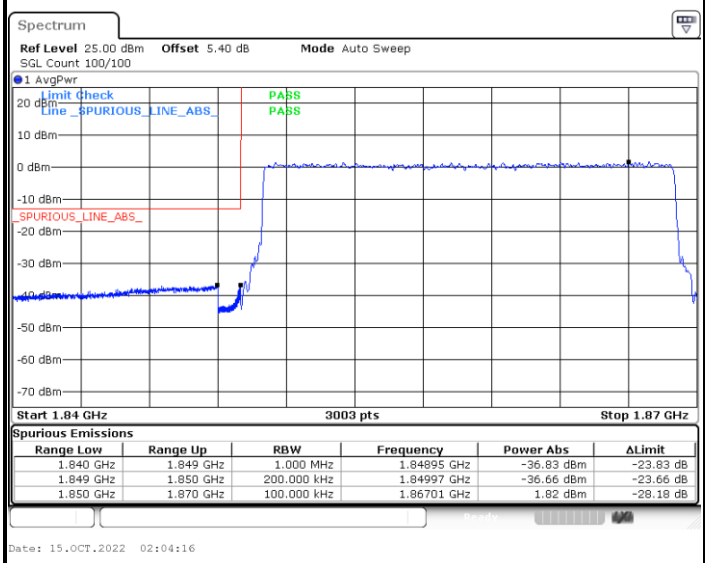
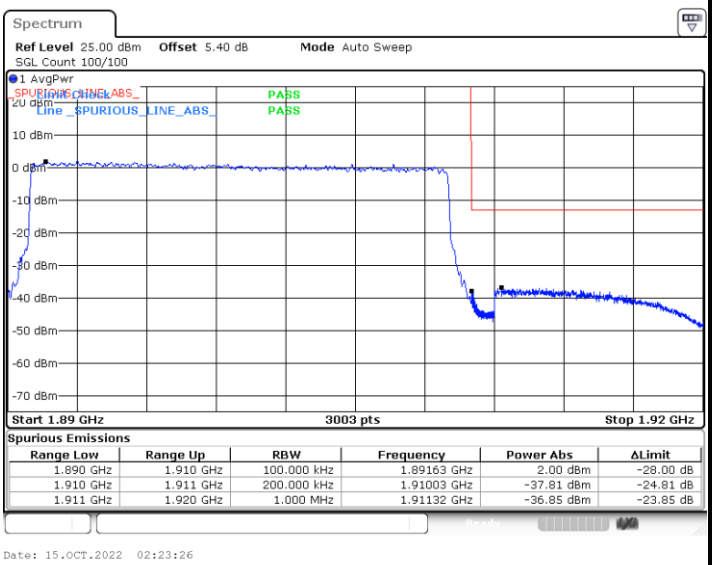


Date: 15.OCT.2022 01:25:57

Highest Band Edge / Full RB

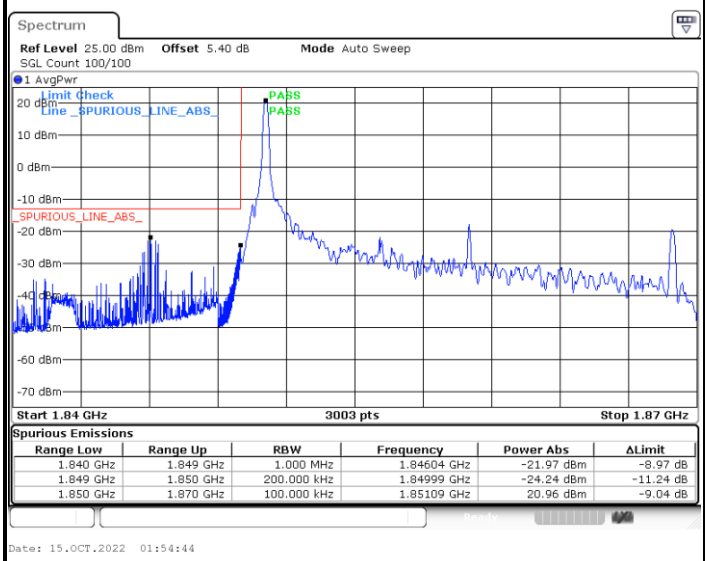


Date: 15.OCT.2022 01:45:07

LTE Band 2 / 20MHz / QPSK	
Lowest Band Edge / 1 RB	**Highest Band Edge / 1 RB**
	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**
	

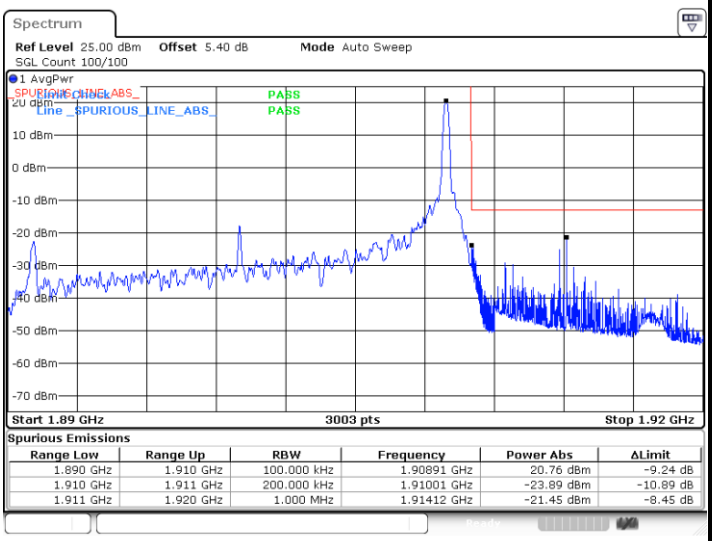
LTE Band 2 / 20MHz / 16QAM

Lowest Band Edge / 1 RB



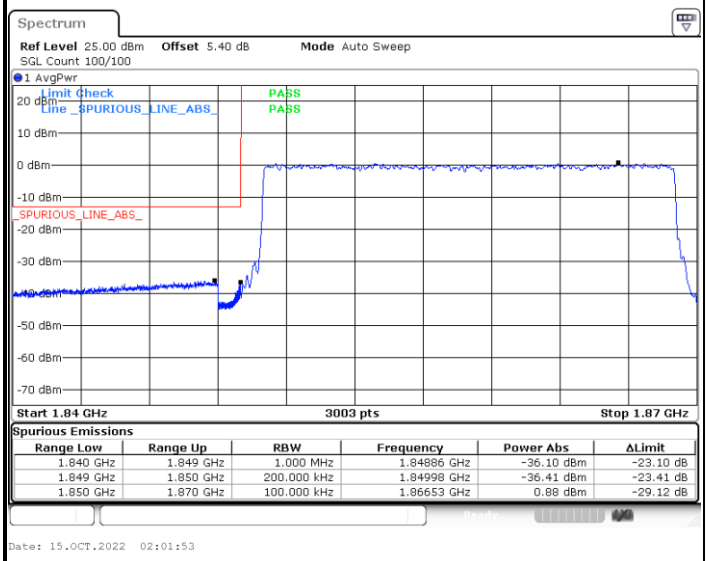
Date: 15.OCT.2022 01:54:44

Highest Band Edge / 1 RB



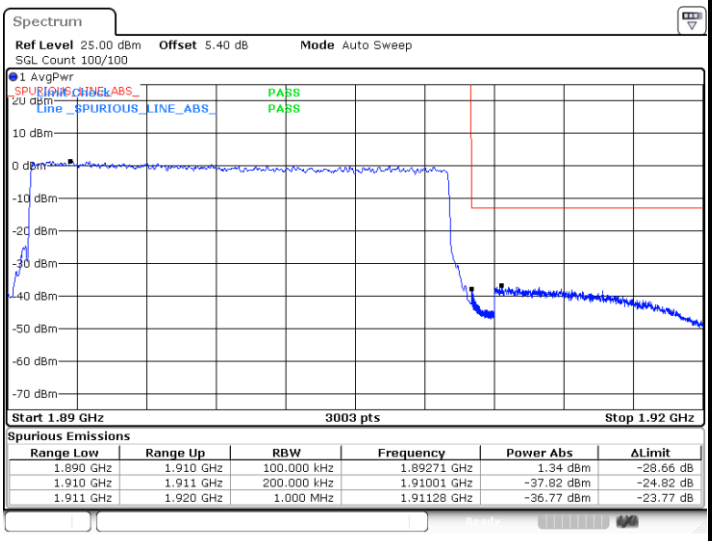
Date: 15.OCT.2022 02:13:55

Lowest Band Edge / Full RB



Date: 15.OCT.2022 02:01:53

Highest Band Edge / Full RB

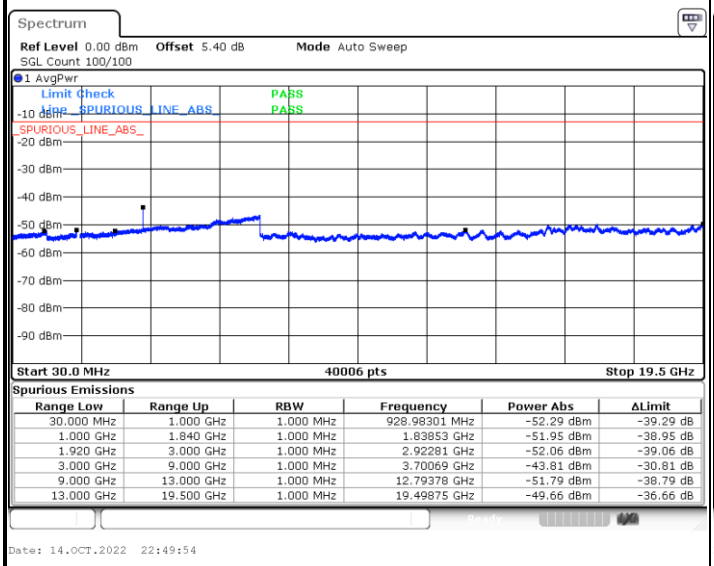


Date: 15.OCT.2022 02:21:03

Conducted Spurious Emission

LTE Band 2 / 1.4MHz

Lowest Channel / QPSK

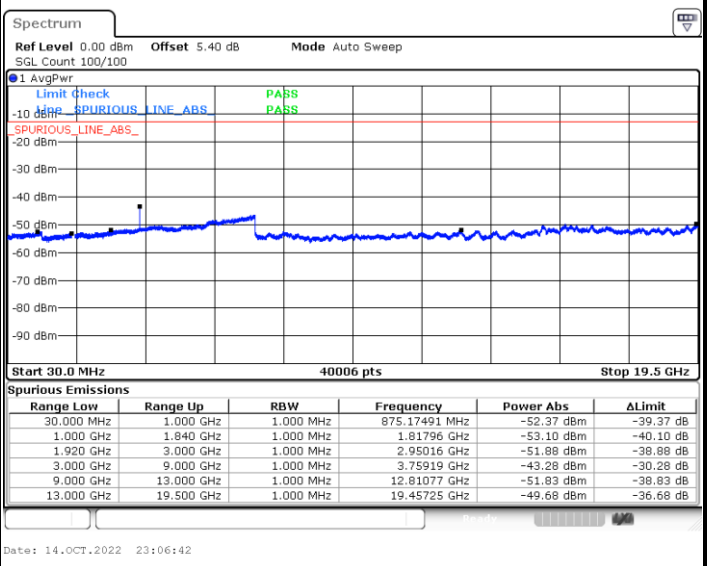


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	928.98301 MHz	-52.29 dBm	-39.29 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83853 GHz	-51.95 dBm	-38.95 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.92281 GHz	-52.06 dBm	-39.06 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70069 GHz	-43.81 dBm	-30.81 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.79378 GHz	-51.79 dBm	-38.79 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.49875 GHz	-49.66 dBm	-36.66 dB

Date: 14.OCT.2022 22:49:54

Middle Channel / QPSK

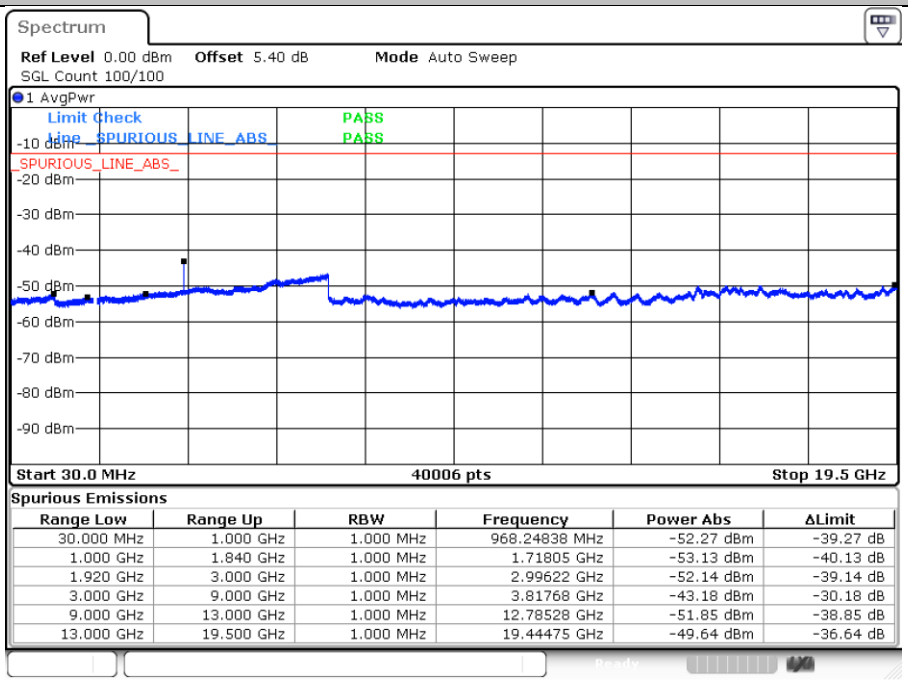


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	875.17491 MHz	-52.37 dBm	-39.37 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.81796 GHz	-53.10 dBm	-40.10 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.95016 GHz	-51.88 dBm	-38.88 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.75919 GHz	-43.28 dBm	-30.28 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.81077 GHz	-51.83 dBm	-38.83 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.45725 GHz	-49.68 dBm	-36.68 dB

Date: 14.OCT.2022 23:06:42

Highest Channel / QPSK



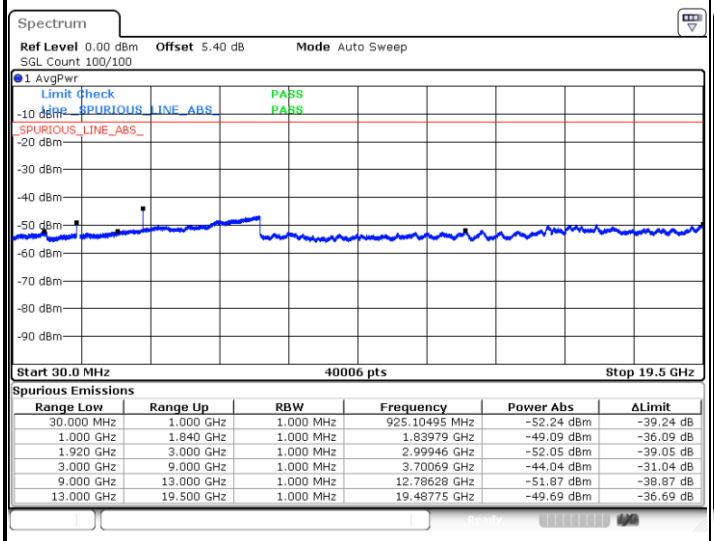
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	968.24838 MHz	-52.27 dBm	-39.27 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.71805 GHz	-53.13 dBm	-40.13 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.99622 GHz	-52.14 dBm	-39.14 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.81768 GHz	-43.18 dBm	-30.18 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.78528 GHz	-51.85 dBm	-38.85 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.44475 GHz	-49.64 dBm	-36.64 dB

Date: 14.OCT.2022 23:09:07

LTE Band 2 / 3MHz

Lowest Channel / QPSK

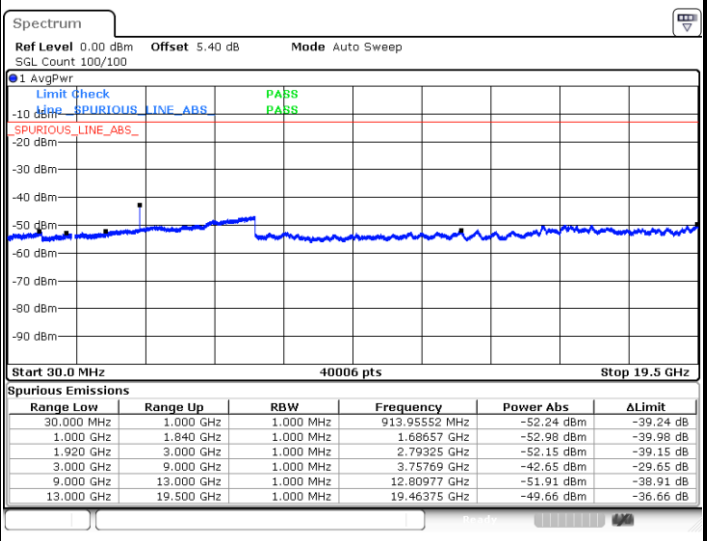


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	925.10495 MHz	-52.24 dBm	-39.24 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83979 GHz	-49.09 dBm	-36.09 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.99946 GHz	-52.05 dBm	-39.05 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70069 GHz	-44.04 dBm	-31.04 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.78628 GHz	-51.87 dBm	-38.87 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.48775 GHz	-49.69 dBm	-36.69 dB

Date: 14.OCT.2022 23:25:54

Middle Channel / QPSK

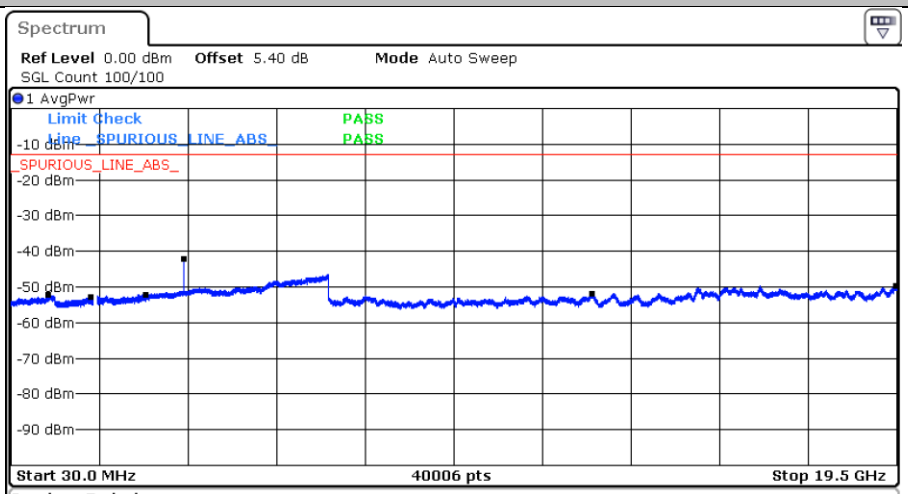


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	913.95552 MHz	-52.24 dBm	-39.24 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.68657 GHz	-52.98 dBm	-39.98 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.79325 GHz	-52.15 dBm	-39.15 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.75769 GHz	-42.65 dBm	-29.65 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.80977 GHz	-51.91 dBm	-38.91 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.46375 GHz	-49.66 dBm	-36.66 dB

Date: 14.OCT.2022 23:42:41

Highest Channel / QPSK



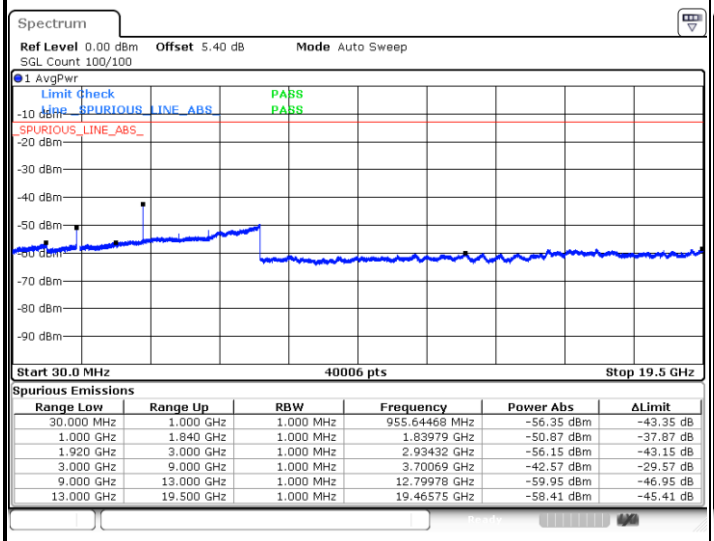
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	845.11994 MHz	-52.30 dBm	-39.30 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.78228 GHz	-52.97 dBm	-39.97 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.99190 GHz	-52.05 dBm	-39.05 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.81518 GHz	-42.02 dBm	-29.02 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.80427 GHz	-51.84 dBm	-38.84 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.46425 GHz	-49.74 dBm	-36.74 dB

Date: 14.OCT.2022 23:45:08

LTE Band 2 / 5MHz

Lowest Channel / QPSK

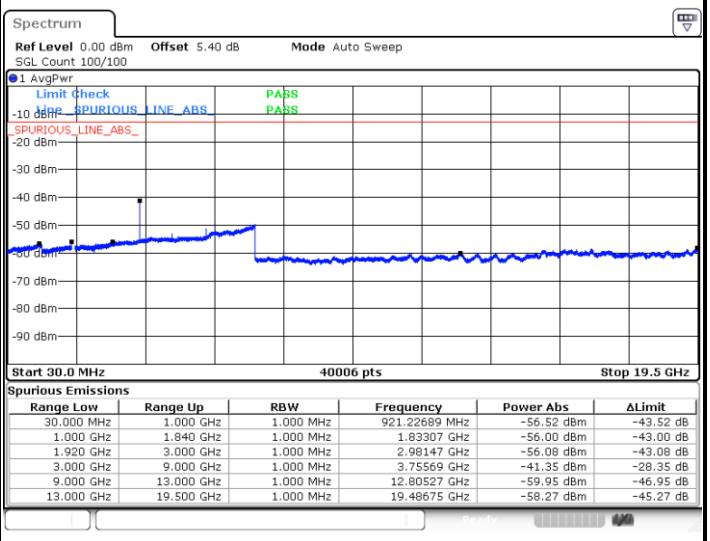


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	955.64468 MHz	-56.35 dBm	-43.35 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83979 GHz	-50.87 dBm	-37.87 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.93432 GHz	-56.15 dBm	-43.15 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70069 GHz	-42.57 dBm	-29.57 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.79978 GHz	-59.95 dBm	-46.95 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.46575 GHz	-58.41 dBm	-45.41 dB

Date: 15.OCT.2022 00:01:57

Middle Channel / QPSK

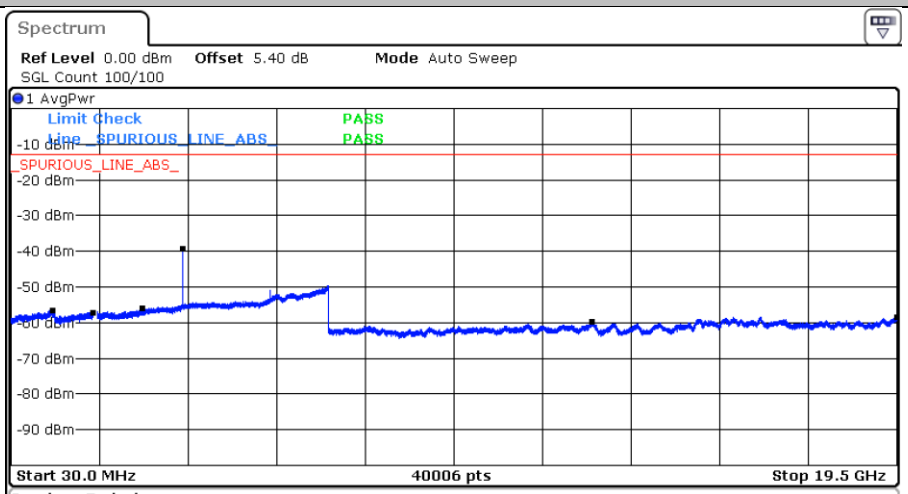


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	921.22689 MHz	-56.52 dBm	-43.52 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83307 GHz	-56.00 dBm	-43.00 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98147 GHz	-56.08 dBm	-43.08 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.75569 GHz	-41.35 dBm	-28.35 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.80527 GHz	-59.95 dBm	-46.95 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.48675 GHz	-58.27 dBm	-45.27 dB

Date: 15.OCT.2022 00:18:44

Highest Channel / QPSK



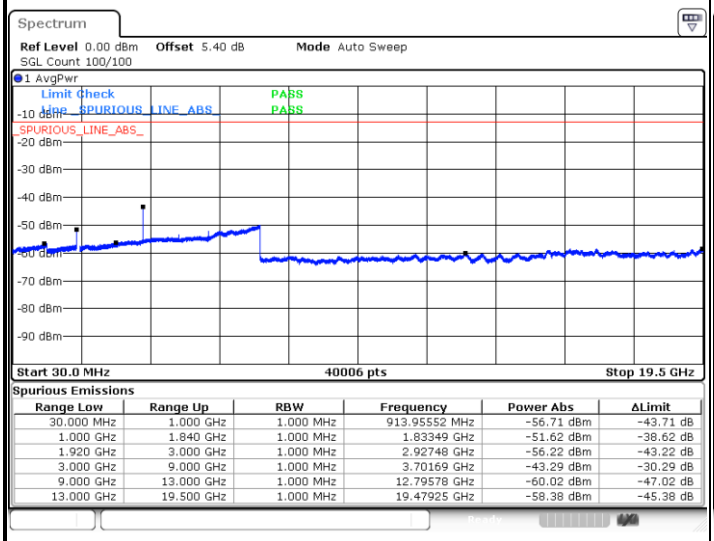
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	931.40680 MHz	-56.53 dBm	-43.53 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83475 GHz	-57.11 dBm	-44.11 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.90589 GHz	-56.02 dBm	-43.02 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.81068 GHz	-39.40 dBm	-26.40 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.80777 GHz	-59.90 dBm	-46.90 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.49525 GHz	-58.35 dBm	-45.35 dB

Date: 15.OCT.2022 00:21:11

LTE Band 2 / 10MHz

Lowest Channel / QPSK

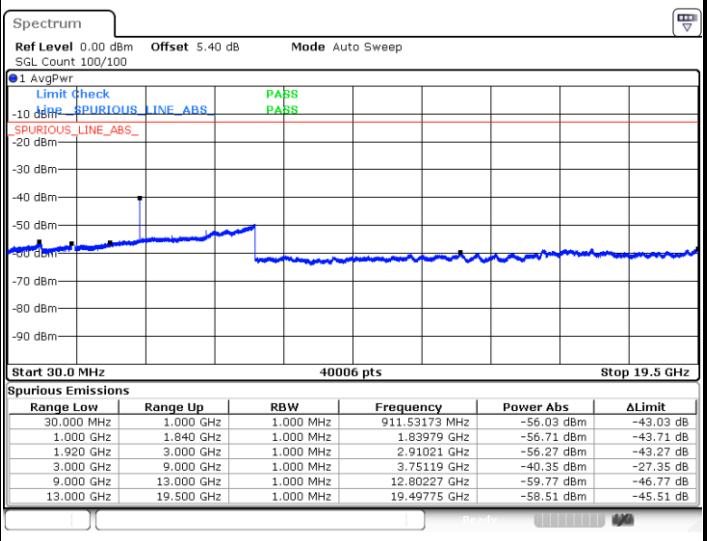


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	913.95552 MHz	-56.71 dBm	-43.71 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83349 GHz	-51.62 dBm	-38.62 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.92748 GHz	-56.22 dBm	-43.22 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70169 GHz	-43.29 dBm	-30.29 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.79578 GHz	-60.02 dBm	-47.02 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.47925 GHz	-58.38 dBm	-45.38 dB

Date: 15.OCT.2022 00:38:00

Middle Channel / QPSK

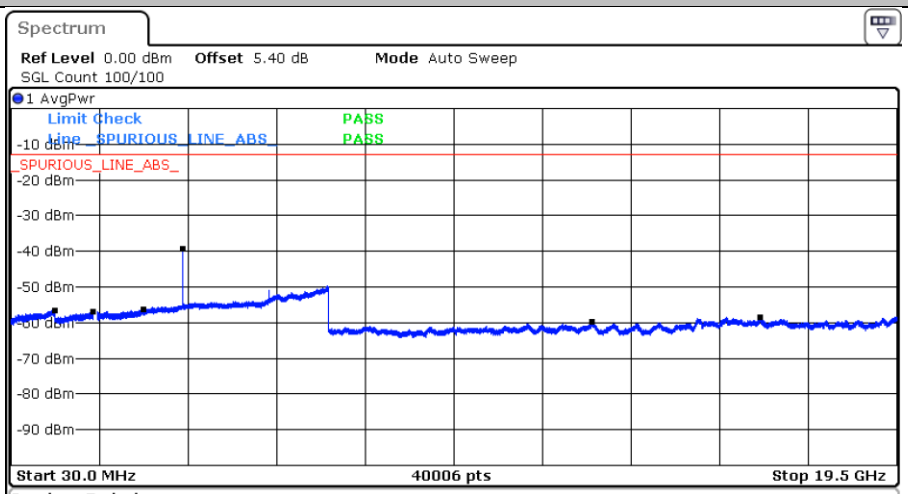


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	911.53173 MHz	-56.03 dBm	-43.03 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83979 GHz	-56.71 dBm	-43.71 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.91021 GHz	-56.27 dBm	-43.27 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.75119 GHz	-40.35 dBm	-27.35 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.80227 GHz	-59.77 dBm	-46.77 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.49775 GHz	-58.51 dBm	-45.51 dB

Date: 15.OCT.2022 00:54:48

Highest Channel / QPSK



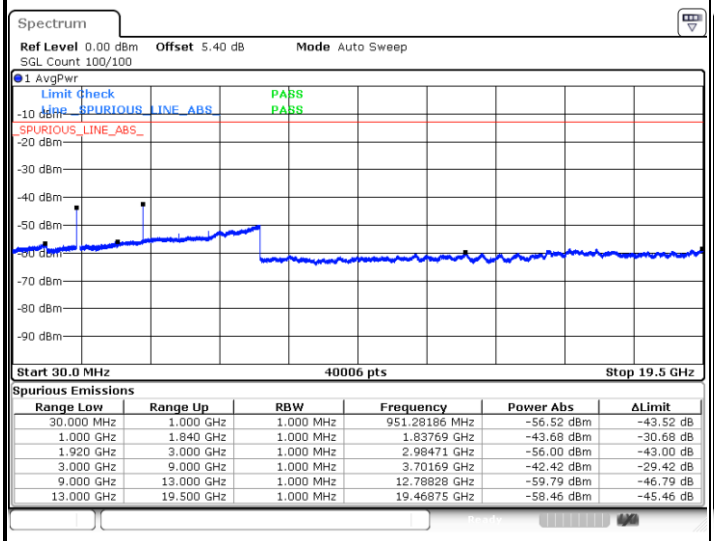
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	993.45577 MHz	-56.60 dBm	-43.60 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83937 GHz	-56.89 dBm	-43.89 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.94728 GHz	-56.22 dBm	-43.22 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.80118 GHz	-39.34 dBm	-26.34 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.80627 GHz	-59.69 dBm	-46.69 dB
13.000 GHz	19.500 GHz	1.000 MHz	16.49298 GHz	-58.41 dBm	-45.41 dB

Date: 15.OCT.2022 00:57:15

LTE Band 2 / 15MHz

Lowest Channel / QPSK

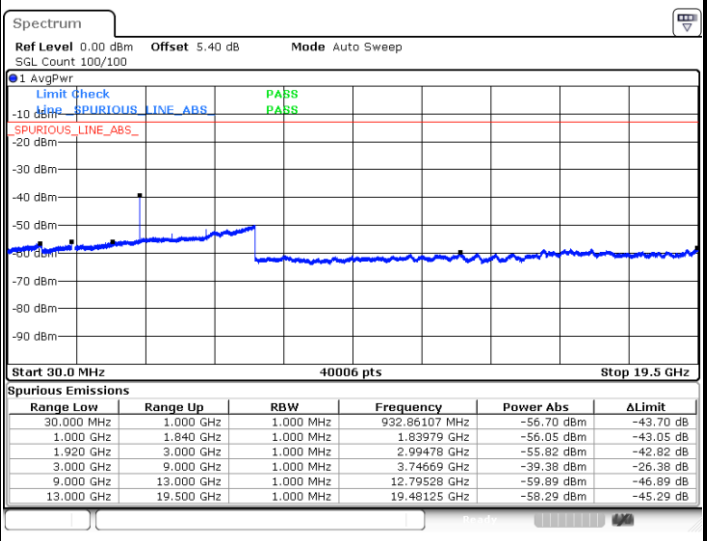


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	951.28186 MHz	-56.52 dBm	-43.52 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83769 GHz	-43.68 dBm	-30.68 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98471 GHz	-56.00 dBm	-43.00 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70169 GHz	-42.42 dBm	-29.42 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.78828 GHz	-59.79 dBm	-46.79 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.46875 GHz	-58.46 dBm	-45.46 dB

Date: 15.OCT.2022 01:14:02

Middle Channel / QPSK

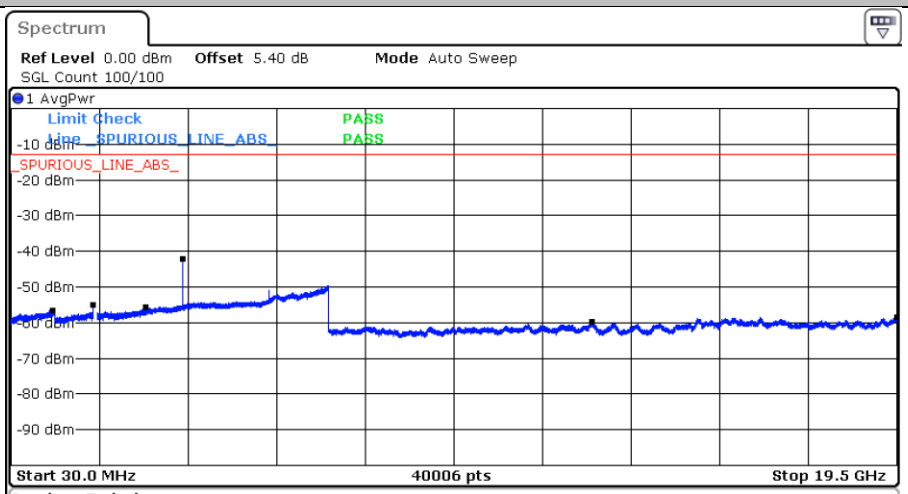


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	932.86107 MHz	-56.70 dBm	-43.70 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83979 GHz	-56.05 dBm	-43.05 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.99478 GHz	-55.82 dBm	-42.82 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.74669 GHz	-39.38 dBm	-26.38 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.79528 GHz	-59.89 dBm	-46.89 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.48125 GHz	-58.29 dBm	-45.29 dB

Date: 15.OCT.2022 01:30:46

Highest Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	947.40380 MHz	-56.49 dBm	-43.49 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83475 GHz	-55.14 dBm	-42.14 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.99478 GHz	-55.69 dBm	-42.69 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.79218 GHz	-42.14 dBm	-29.14 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.79978 GHz	-59.87 dBm	-46.87 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.49075 GHz	-58.45 dBm	-45.45 dB

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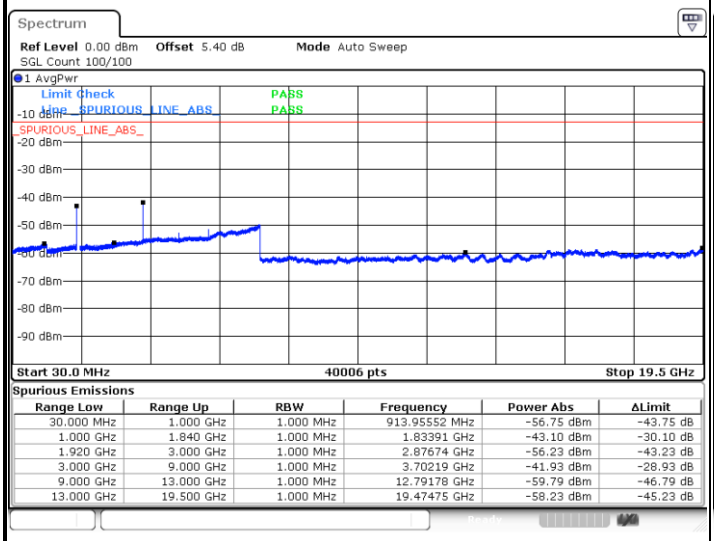
LTE Band 2 / 20MHz

Lowest Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	913.95552 MHz	-56.75 dBm	-43.75 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83391 GHz	-43.10 dBm	-30.10 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.87674 GHz	-56.23 dBm	-43.23 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.70219 GHz	-41.93 dBm	-28.93 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.79178 GHz	-59.79 dBm	-46.79 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.47475 GHz	-58.23 dBm	-45.23 dB

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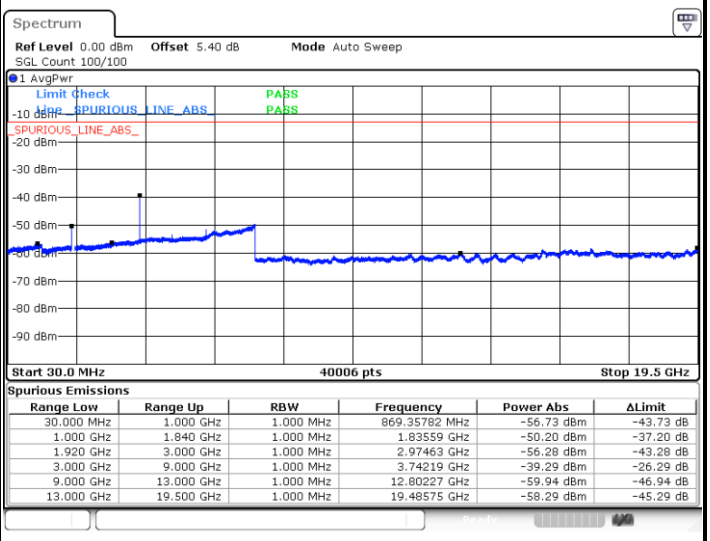
Middle Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	869.35782 MHz	-56.73 dBm	-43.73 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83559 GHz	-50.20 dBm	-37.20 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.97463 GHz	-56.28 dBm	-43.28 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.74219 GHz	-39.29 dBm	-26.29 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.80227 GHz	-59.94 dBm	-46.94 dB
13.000 GHz	19.500 GHz	1.000 MHz	19.48575 GHz	-58.29 dBm	-45.29 dB

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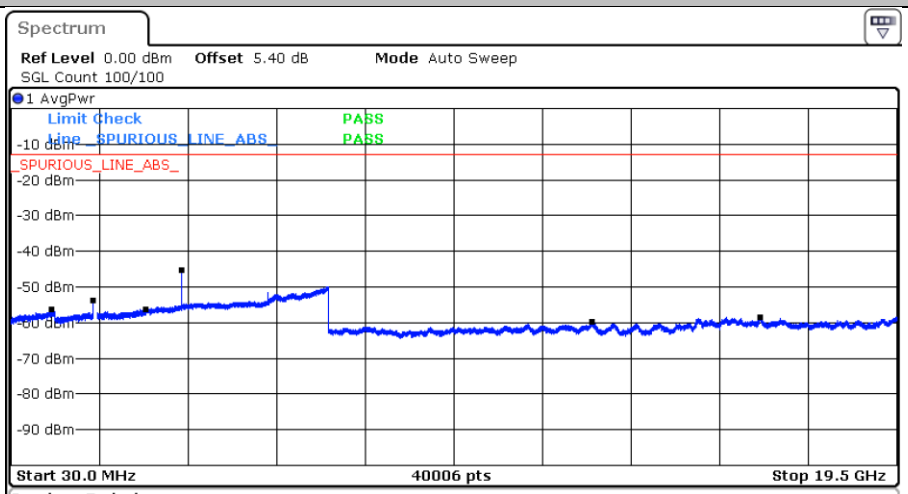
Highest Channel / QPSK



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	1.000 MHz	925.58971 MHz	-56.44 dBm	-43.44 dB
1.000 GHz	1.840 GHz	1.000 MHz	1.83013 GHz	-53.66 dBm	-40.66 dB
1.920 GHz	3.000 GHz	1.000 MHz	2.98938 GHz	-56.14 dBm	-43.14 dB
3.000 GHz	9.000 GHz	1.000 MHz	3.78268 GHz	-45.18 dBm	-32.18 dB
9.000 GHz	13.000 GHz	1.000 MHz	12.79128 GHz	-59.81 dBm	-46.81 dB
13.000 GHz	19.500 GHz	1.000 MHz	16.50248 GHz	-58.47 dBm	-45.47 dB

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Frequency Stability

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

Note:

1. Normal Voltage =3.87 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.4 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

LTE Band 7

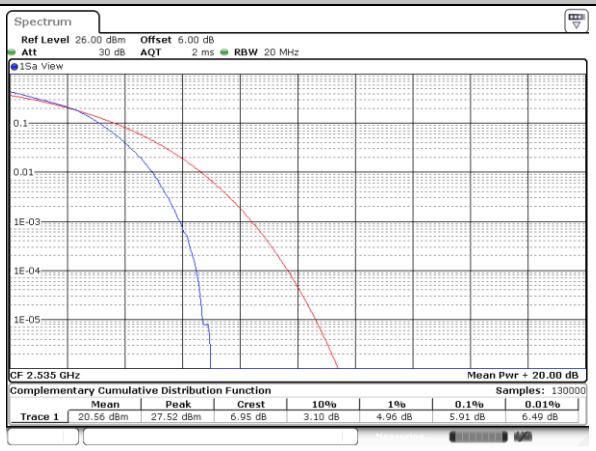
Peak-to-Average Ratio

Mode	LTE Band 7 / 20MHz		
Mod.	QPSK	16QAM	Limit: 13dB
RB Size	Full RB	Full RB	Result
Middle CH	5.19	5.91	PASS

LTE Band 7 / 20MHz

Middle Channel / Full RB/ QPSK

Middle Channel / Full RB/ 16QAM

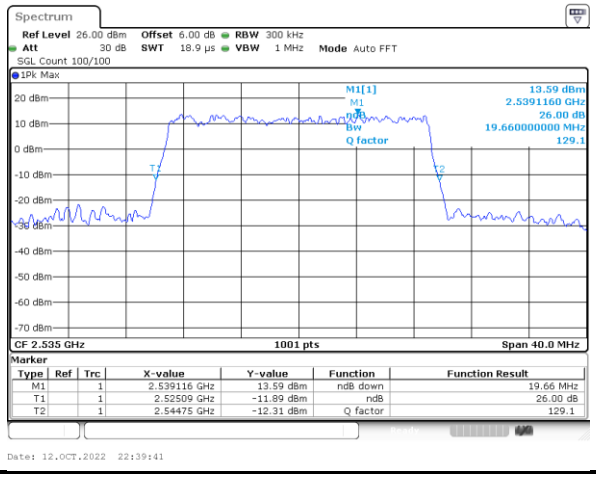


26dB Bandwidth

Mode	LTE Band 7 : 26dB BW(MHz)	
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	19.66	19.42

LTE Band 7

Middle Channel / 20MHz / QPSK



Middle Channel / 20MHz / 16QAM