



FCC RF Test Report

APPLICANT : unitech electronics co., ltd.
EQUIPMENT : Rugged Handheld Computer
BRAND NAME : unitech
MODEL NAME : EA660
FCC ID : HLEEA660BWNW
STANDARD : 47 CFR Part 2, 22(H), 24(E), 27(L), 27(F), 27(H), 27(M)
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)
TEST DATE(S) : Aug. 07, 2023 ~ Aug. 31, 2023

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

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

Jason Jia

Approved by: Jason Jia



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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SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	-	Report Only	-
	§22.913(a)(5)	Effective Radiated Power (Band 5)	ERP < 7 Watt	PASS	-
	§27.50(b)(10) §27.50(c)(10)	Effective Radiated Power (Band 12) (Band 13) (Band 17)	ERP < 3 Watt		-
	§24.232(c) §27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 2) (Band 7) (Band 38) (Band 41)	EIRP < 2Watt		-
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4) (Band 66)	EIRP < 1Watt		-
3.5	§24.232(d)	Peak-to-Average Ratio	<13 dB		PASS
3.6	§2.1049	Occupied Bandwidth	-	Report Only	-
3.7	§2.1051 §22.917(a) §24.238(a) §27.53(c)(2)(4) §27.53(g) §27.53(h)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 17) (Band 66)	< 43+10log ₁₀ (P[Watts])	PASS	-
	§27.53(m)(4)	Conducted Band Edge Measurement (Band 7) (Band 38) (Band 41)	§27.53(m)(4)		
3.8	§2.1051 §22.917(a) §24.238(a) §27.53(c)(2) §27.53(g) §27.53(h)	Conducted Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 17) (Band 66)	< 43+10log ₁₀ (P[Watts])	PASS	-
	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (Band 7) (Band 38) (Band 41)	< 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		
4.4	§2.1053 §22.917(a) §24.238(a) §27.53(c)(2) §27.53(f) §27.53(g) §27.53(h)	Radiated Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 13) (Band 17) (Band 66)	< 43+10log ₁₀ (P[Watts])	PASS	Under limit 18.70 dB at 5160.00 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 7) (Band 38) (Band 41)	< 55+10log ₁₀ (P[Watts])		



Conformity Assessment Condition:

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

Disclaimer:

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



1 General Description

1.1 Applicant

unitech electronics co., ltd.

5F., No. 136, Ln. 235, Baoqiao Rd., Xindian Dist., New Taipei City, Taiwan

1.2 Manufacturer

unitech electronics co., ltd.

5F., No. 136, Ln. 235, Baoqiao Rd., Xindian Dist., New Taipei City, Taiwan

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Rugged Handheld Computer
Brand Name	unitech
Model Name	EA660
FCC ID	HLEEA660BWNW
IMEI Code	Conducted: 004400152020000 Radiation: 357458980006695
HW Version	V4
SW Version	ST6729A_1280_Unitech_patchbuild_20230815181058934
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.



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 12 : 699 MHz ~ 716 MHz LTE Band 13 : 777 MHz ~ 787 MHz LTE Band 17 : 704 MHz ~ 716 MHz LTE Band 38 : 2570 MHz ~ 2620 MHz LTE Band 41 : 2496 MHz ~ 2690 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 12 : 729 MHz ~ 746 MHz LTE Band 13 : 746 MHz ~ 756 MHz LTE Band 17 : 734 MHz ~ 746 MHz LTE Band 38 : 2570 MHz ~ 2620 MHz LTE Band 41 : 2496 MHz ~ 2690 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 12 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 13 : 5MHz / 10MHz LTE Band 17 : 5MHz / 10MHz LTE Band 38 : 5MHz / 10MHz / 15MHz / 20MHz LTE Band 41 : 5MHz / 10MHz / 15MHz / 20MHz LTE Band 66 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz
Maximum Output Power to Antenna	Ant.0 LTE Band 2 : 23.19 dBm LTE Band 4 : 23.18 dBm LTE Band 5 : 23.62 dBm LTE Band 12 : 23.73 dBm LTE Band 13 : 23.61 dBm LTE Band 17 : 23.64 dBm LTE Band 66 : 23.20 dBm Ant.1 LTE Band 5 : 23.18 dBm LTE Band 7 : 22.61 dBm LTE Band 12 : 22.95 dBm LTE Band 13 : 22.76 dBm LTE Band 17 : 22.81 dBm LTE Band 38 : 22.87 dBm LTE Band 41 : 22.95 dBm Ant.5 LTE Band 2 : 22.95 dBm LTE Band 7 : 22.33 dBm LTE Band 38 : 22.66 dBm



	LTE Band 41 : 22.71 dBm LTE Band 66 : 22.81 dBm Ant.6 LTE Band 7 : 22.45 dBm LTE Band 38 : 22.35 dBm LTE Band 41 : 22.59 dBm Ant.7 LTE Band 7 : 21.36 dBm LTE Band 38 : 21.66 dBm LTE Band 41 : 21.70 dBm
Antenna Gain	Ant.0 LTE Band 2 : 0.9 dBi LTE Band 4 : 0.9 dBi LTE Band 5 : 0.5 dBi LTE Band 12 : -0.5 dBi LTE Band 13 : -0.5 dBi LTE Band 17 : -0.5 dBi LTE Band 66 : 0.9 dBi Ant.1 LTE Band 5 : 0.5 dBi LTE Band 7 : -0.9 dBi LTE Band 12 : -0.5 dBi LTE Band 13 : -0.5 dBi LTE Band 17 : -0.5 dBi LTE Band 38 : -0.9 dBi LTE Band 41 : -0.9 dBi Ant.5 LTE Band 2 : -0.8 dBi LTE Band 7 : -1.8 dBi LTE Band 38 : -1.8 dBi LTE Band 41 : -1.8 dBi LTE Band 66 : -0.8 dBi Ant.6 LTE Band 7 : -0.9 dBi LTE Band 38 : -0.9 dBi LTE Band 41 : -0.9 dBi Ant.7 LTE Band 7 : -1.8 dBi LTE Band 38 : -1.8 dBi LTE Band 41 : -1.8 dBi
Type of Modulation	QPSK / 16QAM / 64QAM/256QAM

Note: The maximum ERP/EIRP is calculated from max output power and max antenna gain, only the maximum ERP/EIRP of Ant.0 for LTE Band 2/4/5/12/13/17/66, and Ant.1 for LTE Band 7/38/41 are shown in the report.

1.5 Modification of EUT

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



1.6 Maximum ERP/EIRP Power and Emission Designator

LTE Band 2		QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
1.4	1850.7 ~ 1909.3	0.2529	1M10G7D	0.2014	1M10W7D
3	1851.5 ~ 1908.5	0.2529	2M71G7D	0.2004	2M72W7D
5	1852.5 ~ 1907.5	0.2455	4M50G7D	0.2075	4M49W7D
10	1855.0 ~ 1905.0	0.2518	9M03G7D	0.2023	9M05W7D
15	1857.5 ~ 1902.5	0.2523	13M5G7D	0.2061	13M5W7D
20	1860.0 ~ 1900.0	0.2564	18M0G7D	0.2075	17M9W7D

LTE Band 4		QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
1.4	1710.7 ~ 1754.3	0.2535	1M09G7D	0.2080	1M09W7D
3	1711.5 ~ 1753.5	0.2547	2M72G7D	0.2070	2M73W7D
5	1712.5 ~ 1752.5	0.2495	4M49G7D	0.2080	4M50W7D
10	1715.0 ~ 1750.0	0.2466	9M03G7D	0.2046	9M03W7D
15	1717.5 ~ 1747.5	0.2489	13M5G7D	0.2032	13M5W7D
20	1720.0 ~ 1745.0	0.2559	18M4G7D	0.2099	18M4W7D

LTE Band 5		QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
1.4	824.7 ~ 848.3	0.1524	1M10G7D	0.1175	1M10W7D
3	825.5 ~ 847.5	0.1538	2M72G7D	0.1208	2M72W7D
5	826.5 ~ 846.5	0.1542	4M48G7D	0.1167	4M50W7D
10	829.0 ~ 844.0	0.1574	9M03G7D	0.1213	8M99W7D



LTE Band 7		QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
5	2502.5 ~ 2567.5	0.1472	4M49G7D	0.1159	4M49W7D
10	2505.0 ~ 2565.0	0.1435	9M05G7D	0.1159	9M07W7D
15	2507.5 ~ 2562.5	0.1459	13M5G7D	0.1135	13M5W7D
20	2510.0 ~ 2560.0	0.1483	18M0G7D	0.1175	17M9W7D

LTE Band 12		QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
1.4	699.7 ~ 715.3	0.1274	1M09G7D	0.1016	1M10W7D
3	700.5 ~ 714.5	0.1250	2M75G7D	0.1005	2M72W7D
5	701.5 ~ 713.5	0.1233	4M50G7D	0.1019	4M50W7D
10	704.0 ~ 711.0	0.1282	9M03G7D	0.1047	9M09W7D

LTE Band 13		QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
5	779.5 ~ 784.5	0.1233	4M56G7D	0.1021	4M51W7D
10	782.0	0.1247	9M09G7D	0.1050	9M01W7D

LTE Band 17		QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
5	706.5 ~ 713.5	0.1205	4M50G7D	0.0946	4M50W7D
10	709.0 ~ 711.0	0.1256	9M03G7D	0.0984	9M09W7D

LTE Band 38		QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
5	2572.5 ~ 2617.5	0.1538	4M52G7D	0.1230	4M50W7D
10	2575.0 ~ 2615.0	0.1524	9M09G7D	0.1202	9M07W7D
15	2577.5 ~ 2612.5	0.1549	13M4G7D	0.1233	13M4W7D
20	2580.0 ~ 2610.0	0.1574	17M9G7D	0.1256	17M9W7D



LTE Band 41		QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
5	2498.5 ~ 2687.5	0.1393	4M52G7D	0.1148	4M50W7D
10	2501.0 ~ 2685.0	0.1432	9M09G7D	0.1132	9M07W7D
15	2503.5 ~ 2682.5	0.1449	13M4G7D	0.1175	13M4W7D
20	2506.0 ~ 2680.0	0.1603	17M9G7D	0.1242	17M9W7D

LTE Band 66		QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
1.4	1710.7 ~ 1779.3	0.2564	1M09G7D	0.1954	1M09W7D
3	1711.5 ~ 1778.5	0.2500	2M72G7D	0.1954	2M73W7D
5	1712.5 ~ 1777.5	0.2489	4M49G7D	0.1954	4M50W7D
10	1715.0 ~ 1775.0	0.2460	9M03G7D	0.1954	9M03W7D
15	1717.5 ~ 1772.5	0.2472	13M5G7D	0.1968	13M5W7D
20	1720.0 ~ 1770.0	0.2570	18M4G7D	0.1972	18M4W7D

Note:

1. LTE Band 66 overlaps the entire frequency range of LTE Band 4. Therefore, the test results provided in this report covers Band 66 as well as Band 4.
2. LTE Band 12 overlaps the entire frequency range of LTE Band 17. Therefore, the test results provided in this report covers Band 12 as well as Band 17.
3. LTE Band 41 overlaps the entire frequency range of LTE Band 38. Therefore, the test results provided in this report covers Band 41 as well as Band 38.



1.7 Testing Location

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

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH03-KS TH01-KS	CN1257	314309

1.8 Test Software

Item	Site	Manufacture	Name	Version
1.	TH01-KS	SPORTON	FCC LTE_Ver2.0 Auto_china_210503	2.0
2.	03CH03-KS	AUDIX	E3	210616

1.9 Applicable Standards

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

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

Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel			
		1.4	3	5	10	15	20	QPSK	16 QAM	64 QAM	256 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	v
	4	v	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	v
	7	-	-	v	v	v	v	v	v	v	v	v		v	v	v	v
	12	v	v	v	v	-	-	v	v	v	v	v		v	v	v	v
	13	-	-	v	v	-	-	v	v	v	v	v		v	v	v	v
	17	-	-	v	v	-	-	v	v	v	v	v		v	v	v	v
	38	-	-	v	v	v	v	v	v	v	v	v		v	v	v	v
	41	-	-	v	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	v
Peak-to-Average Ratio	2						v	v	v	v	v			v		v	
	5				v	-	-	v	v	v	v			v		v	
	7	-	-				v	v	v	v	v			v		v	
	12				v	-	-	v	v	v	v			v		v	
	13	-	-		v	-	-	v	v	v	v			v		v	
	41	-	-				v	v	v	v	v			v		v	
	66						v	v	v	v	v			v		v	

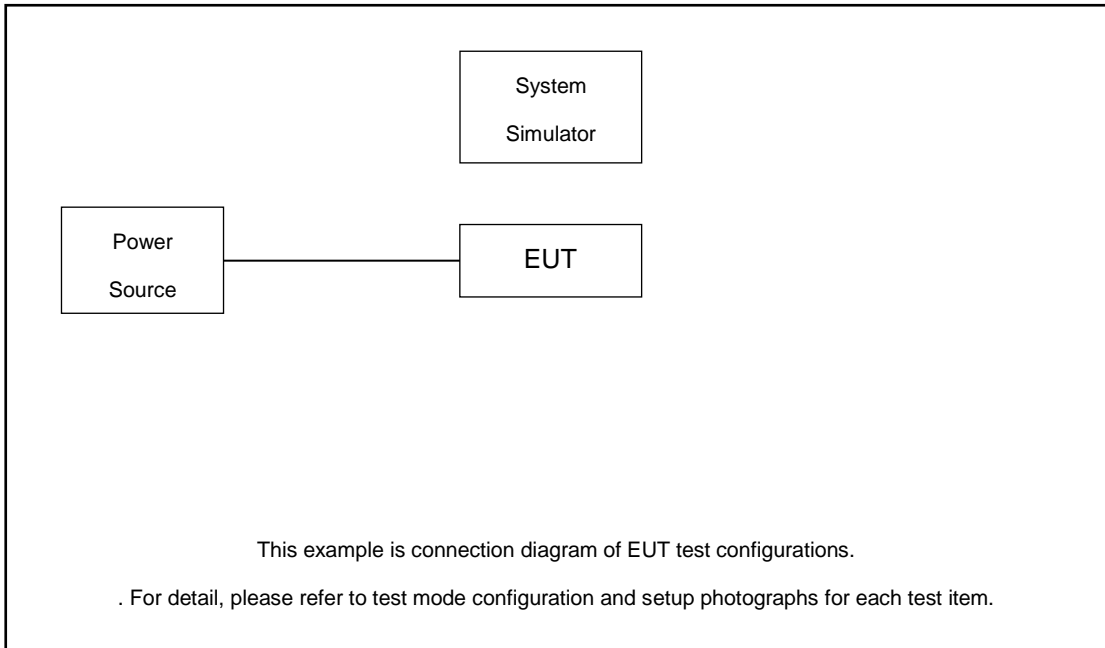


Test Items	Band	Bandwidth (MHz)						Modulation				RB #			Test Channel			
		1.4	3	5	10	15	20	QPSK	16 QAM	64 QAM	256 QAM	1	Half	Full	L	M	H	
26dB and 99% Bandwidth	2	v	v	v	v	v	v	v	v						v		v	
	5	v	v	v	v	-	-	v	v						v		v	
	7	-	-	v	v	v	v	v	v						v		v	
	12	v	v	v	v	-	-	v	v						v		v	
	13	-	-	v	v	-	-	v	v						v		v	
	41	-	-	v	v	v	v	v	v						v		v	
	66	v	v	v	v	v	v	v	v						v		v	
Conducted Band Edge	2	v			v		v	v	v	v	v	v	v		v	v		v
	5	v	v		v	-	-	v	v	v	v	v	v		v	v		v
	7	-	-	v	v		v	v	v	v	v	v	v		v	v		v
	12	v	v		v	-	-	v	v	v	v	v	v		v	v		v
	13	-	-	v	v	-	-	v	v	v	v	v	v		v	v		v
	41	-	-	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
Conducted Spurious Emission	2	v			v		v	v					v				v	v
	5	v	v		v	-	-	v					v				v	v
	7	-	-	v	v		v	v					v				v	v
	12	v	v		v	-	-	v					v				v	v
	13	-	-	v	v	-	-	v					v				v	v
	41	-	-	v	v		v	v					v				v	v
	66	v			v		v	v					v				v	v
Frequency Stability	2				v			v							v		v	
	5				v	-	-	v							v		v	
	7	-	-		v			v							v		v	
	12				v	-	-	v							v		v	
	13	-	-		v	-	-	v							v		v	
	41	-	-		v			v							v		v	
	66				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	256 QAM	1	Half	Full	L	M	H	
E.R.P / E.I.R.P	2	v	v	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	v	v
	5	v	v	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	v	v
	12	v	v	v	v	-	-	v	v	v	v	v	v		v	v	v	v
	13	-	-	v	v	-	-	v	v	v	v	v	v		v	v	v	v
	17	-	-	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	v	v
	41	-	-	v	v	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	v	v
Radiated Spurious Emission	2	Worst Case													v	v	v	
	4	Worst Case													v	v	v	
	5	Worst Case													v	v	v	
	7	Worst Case													v	v	v	
	13	Worst Case													v	v	v	
	17	Worst Case													v	v	v	
	38	Worst Case													v	v	v	
Note	<ol style="list-style-type: none"> The mark "v " means that this configuration is chosen for testing The mark "- " means that this bandwidth is not supported. 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. 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. LTE Band 12 overlaps the entire frequency range of LTE Band 17. Therefore, the test results provided in this report covers Band 12 as well as Band 17. LTE Band 41 overlaps the entire frequency range of LTE Band 38. Therefore, the test results provided in this report covers Band 41 as well as Band 38. 																	

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

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

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss 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

$$\text{Offset} = \text{RF cable loss}$$

Following shows an offset computation example with cable loss 5.20 dB

Example :

$$\begin{aligned} \text{Offset(dB)} &= \text{RF cable loss(dB)} \\ &= 5.20 \text{ (dB)} \end{aligned}$$



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



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

LTE Band 17 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	23780	23790	23800
	Frequency	709	710	711
5	Channel	23755	23790	23825
	Frequency	706.5	710	713.5

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 41 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	39750	40620	41490
	Frequency	2506	2593	2680
15	Channel	39725	40620	41515
	Frequency	2503.5	2593	2682.5
10	Channel	39700	40620	41540
	Frequency	2501	2593	2685
5	Channel	39675	40620	41565
	Frequency	2498.5	2593	2687.5



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

3 Conducted Test Items

3.1 Measuring Instruments

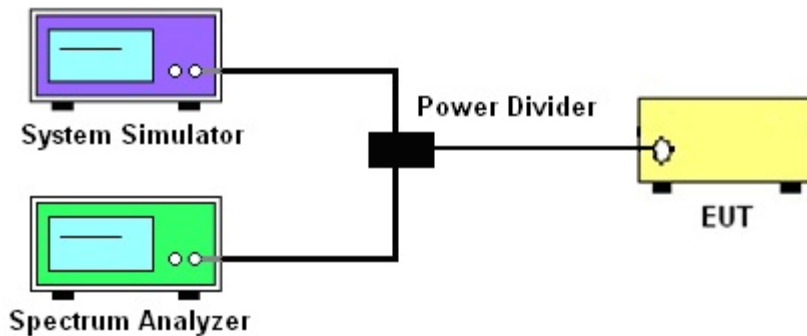
See list of measuring instruments of this test report.

3.2 Test Setup

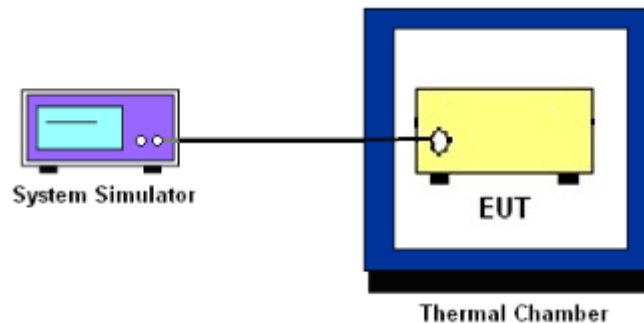
3.2.1 Conducted Output Power



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



3.2.3 Frequency Stability



3.3 Test Result of Conducted Test

Please refer to Appendix A.



3.4 Conducted Output Power and ERP/EIRP

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

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

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

The ERP of mobile transmitters must not exceed 3 Watts for LTE Band 12, Band 13 and Band 17

The EIRP of mobile transmitters must not exceed 2 Watts for LTE Band 2 and Band 7 and Band 38 and Band 41.

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 $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ 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 $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ 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 $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ 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 $65 + 10 \log_{10} p(\text{watts})$, dB, for mobile and portable equipment.

27.53 (g)

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

27.53 (h)

For operations in the 1710 – 1755 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ 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 \geq 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
5. Beyond the 1 MHz band from the band edge, RBW=1MHz was used or a narrower RBW was used and the measured power was integrated over the full required measurement bandwidth of 1 MHz.
6. Set spectrum analyzer with RMS detector.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. Checked that all the results comply with the emission limit line.

Example:

The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
= $P(W) - [43 + 10\log(P)]$ (dB)
= $[30 + 10\log(P)]$ (dBm) - $[43 + 10\log(P)]$ (dB) = -13dBm.

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



3.8 Conducted Spurious Emission

3.8.1 Description of Conducted Spurious Emission Measurement

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

For Band 7,38,41:

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 10th harmonic.

3.8.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
4. The middle channel for the highest RF power within the transmitting frequency was measured.
5. The conducted spurious emission for the whole frequency range was taken.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
7. Set spectrum analyzer with RMS detector.
8. Taking the record of maximum spurious emission.
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
10. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)]$ (dB)
 $= [30 + 10\log(P)]$ (dBm) - $[43 + 10\log(P)]$ (dB)
 $= -13$ dBm.
11. For Band 7, 38, 41
The limit line is derived from $55 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [55 + 10\log(P)]$ (dB)
 $= [30 + 10\log(P)]$ (dBm) - $[55 + 10\log(P)]$ (dB)
 $= -25$ dBm.



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 $\pm 0.00025\%$ ($\pm 2.5\text{ppm}$) 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 $20\pm 5^{\circ}\text{C}$ 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.

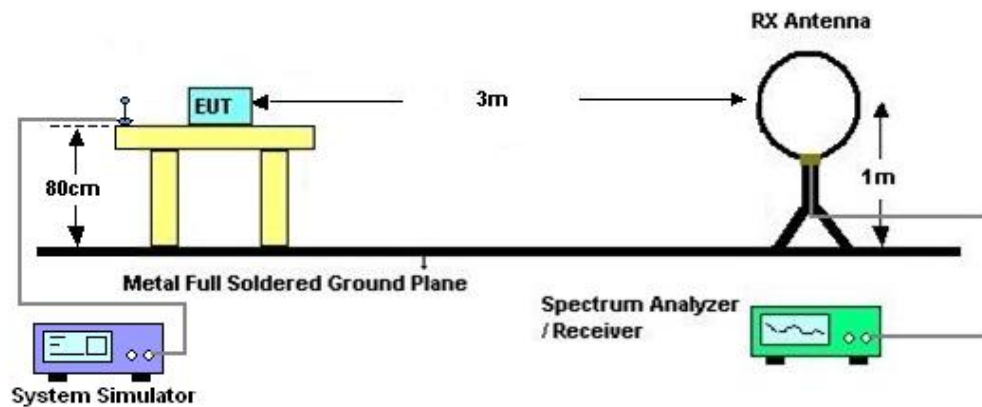
4 Radiated Test Items

4.1 Measuring Instruments

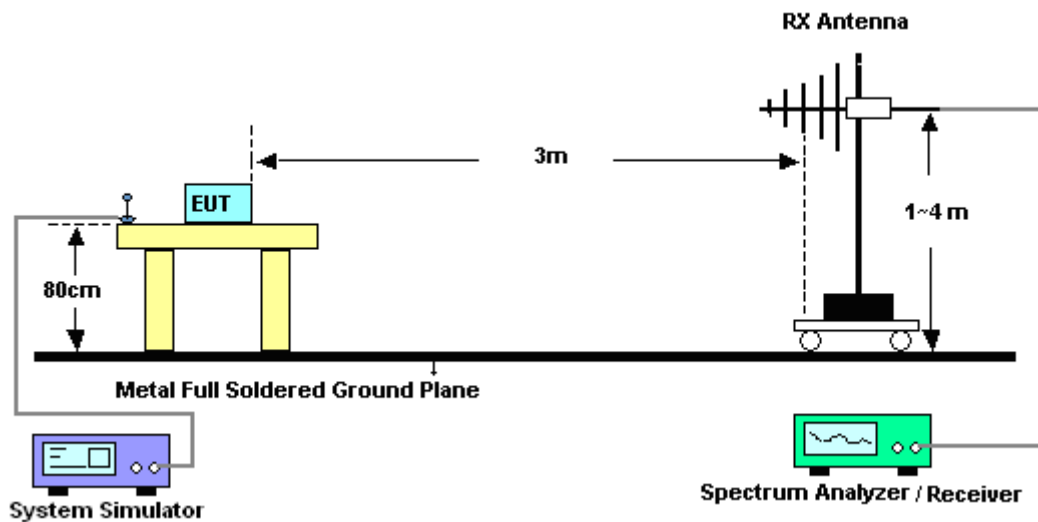
See list of measuring instruments of this test report.

4.2 Test Setup

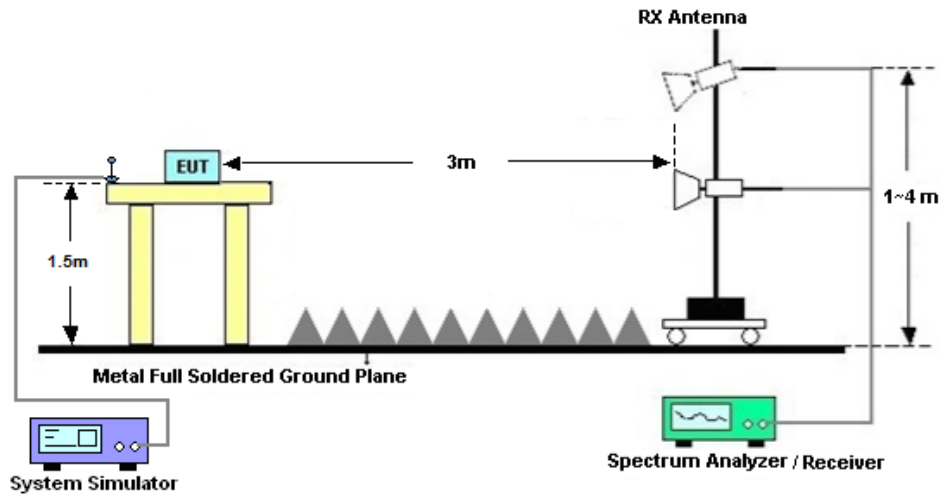
4.2.1 For radiated test below 30MHz



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, 41

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.



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 12, 2022	Aug. 07, 2023~ Aug. 12, 2023	Oct. 11, 2023	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	NCR	Aug. 07, 2023~ Aug. 12, 2023	NCR	Conducted (TH01-KS)
Temperature & humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 06, 2023	Aug. 07, 2023~ Aug. 12, 2023	Jul. 05, 2024	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz~44GHz	May 15, 2023	Aug. 31, 2023	May 14, 2024	Radiation (03CH03-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 16, 2022	Aug. 31, 2023	Oct. 15, 2023	Radiation (03CH03-KS)
Bilog Antenna	TeseQ	CBL6112D	23182	30MHz~1GHz	Dec. 23, 2022	Aug. 31, 2023	Dec. 22, 2023	Radiation (03CH03-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Nov. 15, 2022	Aug. 31, 2023	Nov. 14, 2023	Radiation (03CH03-KS)
SHF-EHF Horn	com-power	AH-840	101116	18GHz~40GHz	Oct. 17, 2022	Aug. 31, 2023	Oct. 16, 2023	Radiation (03CH03-KS)
Amplifier	SONOMA	310N	413740	30MHz ~1000MHz	Jan. 05, 2023	Aug. 31, 2023	Jan. 04, 2024	Radiation (03CH03-KS)
high gain Amplifier	MITEQ	AMF-7D-001 01800-30-10 P	2082394	1Ghz-18Ghz	Jan. 05, 2023	Aug. 31, 2023	Jan. 04, 2024	Radiation (03CH03-KS)
Amplifier	Keysight	83017A	MY53270319	1GHz~26.5GHz	Oct. 12, 2022	Aug. 31, 2023	Oct. 11, 2023	Radiation (03CH03-KS)
Amplifier	EM	EM18G40GA	060851	18~40GHz	Jan. 05, 2023	Aug. 31, 2023	Jan. 04, 2024	Radiation (03CH03-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Aug. 31, 2023	NCR	Radiation (03CH03-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Aug. 31, 2023	NCR	Radiation (03CH03-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Aug. 31, 2023	NCR	Radiation (03CH03-KS)

NCR: No Calibration Required



6 Measurement Uncertainty

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

Uncertainty of Conducted Measurement

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

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.0dB
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.0dB
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Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.0dB
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Appendix A. Test Results of Conducted Test

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

Conducted Output Power(Average power) and ERP/EIRP

LTE Band 2_Ant.0:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP(W)		
							L	M	H
Channel				18700	18900	19100	EIRP(W)		
Frequency (MHz)				1860	1880	1900	L	M	H
20	QPSK	1	0	23.14	23.19	23.13	0.2535	0.2564	0.2529
20	QPSK	1	99	23.11	22.99	22.95	0.2518	0.2449	0.2427
20	QPSK	100	0	22.21	22.22	21.98	0.2046	0.2051	0.1941
20	16QAM	1	0	22.11	22.23	22.27	0.2000	0.2056	0.2075
20	64QAM	1	0	21.13	21.09	21.23	0.1596	0.1581	0.1633
20	256QAM	1	0	18.05	18.21	18.14	0.0785	0.0815	0.0802
Channel				18675	18900	19125	EIRP(W)		
Frequency (MHz)				1857.5	1880	1902.5	L	M	H
15	QPSK	1	0	22.95	23.12	22.92	0.2427	0.2523	0.2410
15	16QAM	1	0	21.95	22.24	22.09	0.1928	0.2061	0.1991
Channel				18650	18900	19150	EIRP(W)		
Frequency (MHz)				1855	1880	1905	L	M	H
10	QPSK	1	0	22.96	23.11	22.92	0.2432	0.2518	0.2410
10	16QAM	1	0	22.10	22.16	22.15	0.1995	0.2023	0.2018
Channel				18625	18900	19175	EIRP(W)		
Frequency (MHz)				1852.5	1880	1907.5	L	M	H
5	QPSK	1	0	22.94	23.00	22.92	0.2421	0.2455	0.2410
5	16QAM	1	0	22.02	22.25	22.27	0.1959	0.2065	0.2075
Channel				18615	18900	19185	EIRP(W)		
Frequency (MHz)				1851.5	1880	1908.5	L	M	H
3	QPSK	1	0	23.02	22.97	23.13	0.2466	0.2438	0.2529
3	16QAM	1	0	21.90	22.09	22.12	0.1905	0.1991	0.2004
Channel				18607	18900	19193	EIRP(W)		
Frequency (MHz)				1850.7	1880	1909.3	L	M	H
1.4	QPSK	1	0	23.11	23.00	23.13	0.2518	0.2455	0.2529
1.4	16QAM	1	0	22.14	22.01	21.90	0.2014	0.1954	0.1905



LTE Band 4_Ant.0:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP(W)		
Channel				20050	20175	20300			
Frequency (MHz)				1720	1732.5	1745	L	M	H
20	QPSK	1	0	23.11	23.18	23.13	0.2518	0.2559	0.2529
20	QPSK	1	99	22.89	23.09	23.03	0.2393	0.2506	0.2472
20	QPSK	100	0	21.93	22.08	22.04	0.1919	0.1986	0.1968
20	16QAM	1	0	22.30	22.32	22.27	0.2089	0.2099	0.2075
20	64QAM	1	0	21.15	21.21	21.17	0.1603	0.1626	0.1611
20	256QAM	1	0	18.04	17.93	17.98	0.0783	0.0764	0.0773
Channel				20025	20175	20325	EIRP(W)		
Frequency (MHz)				1717.5	1732.5	1747.5	L	M	H
15	QPSK	1	0	22.96	23.01	23.06	0.2432	0.2460	0.2489
15	16QAM	1	0	22.10	22.18	22.18	0.1995	0.2032	0.2032
Channel				20000	20175	20350	EIRP(W)		
Frequency (MHz)				1715	1732.5	1750	L	M	H
10	QPSK	1	0	23.01	23.02	22.91	0.2460	0.2466	0.2404
10	16QAM	1	0	22.21	22.19	22.17	0.2046	0.2037	0.2028
Channel				19975	20175	20375	EIRP(W)		
Frequency (MHz)				1712.5	1732.5	1752.5	L	M	H
5	QPSK	1	0	22.91	23.06	23.07	0.2404	0.2489	0.2495
5	16QAM	1	0	22.14	22.21	22.28	0.2014	0.2046	0.2080
Channel				19965	20175	20385	EIRP(W)		
Frequency (MHz)				1711.5	1732.5	1753.5	L	M	H
3	QPSK	1	0	23.07	23.16	23.12	0.2495	0.2547	0.2523
3	16QAM	1	0	22.25	22.21	22.26	0.2065	0.2046	0.2070
Channel				19950	20175	20393	EIRP(W)		
Frequency (MHz)				1710	1732.5	1754.3	L	M	H
1.4	QPSK	1	0	23.02	23.14	23.13	0.2466	0.2535	0.2529
1.4	16QAM	1	0	22.17	22.28	22.15	0.2028	0.2080	0.2018



LTE Band 5_Ant.0:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel				20450	20525	20600	ERP(W)		
Frequency (MHz)				829	836.5	844	L	M	H
10	QPSK	1	0	23.55	23.62	23.58	0.1549	0.1574	0.1560
10	QPSK	1	49	23.46	23.53	23.55	0.1517	0.1542	0.1549
10	QPSK	50	0	22.32	22.52	22.51	0.1167	0.1222	0.1219
10	16QAM	1	0	22.38	22.38	22.49	0.1183	0.1183	0.1213
10	64QAM	1	0	21.59	21.54	21.63	0.0986	0.0975	0.0995
10	256QAM	1	0	18.87	18.82	18.91	0.0527	0.0521	0.0532
Channel				20425	20525	20625	ERP(W)		
Frequency (MHz)				826.5	836.5	846.5	L	M	H
5	QPSK	1	0	23.53	23.46	23.46	0.1542	0.1517	0.1517
5	16QAM	1	0	22.28	22.25	22.32	0.1156	0.1148	0.1167
Channel				20415	20525	20635	ERP(W)		
Frequency (MHz)				825.5	836.5	847.5	L	M	H
3	QPSK	1	0	23.52	23.49	23.42	0.1538	0.1528	0.1503
3	16QAM	1	0	22.31	22.39	22.47	0.1164	0.1186	0.1208
Channel				20407	20525	20643	ERP(W)		
Frequency (MHz)				824.7	836.5	848.3	L	M	H
1.4	QPSK	1	0	23.45	23.41	23.48	0.1514	0.1500	0.1524
1.4	16QAM	1	0	22.30	22.32	22.35	0.1161	0.1167	0.1175



LTE Band 7_Ant.1:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP(W)		
Channel				20850	20850	21350			
Frequency (MHz)				2510	2535	2560	L	M	H
20	QPSK	1	0	22.39	22.61	22.55	0.1409	0.1483	0.1462
20	QPSK	1	99	22.30	22.47	22.34	0.1380	0.1435	0.1393
20	QPSK	100	0	21.51	21.72	21.51	0.1151	0.1208	0.1151
20	16QAM	1	0	21.54	21.60	21.48	0.1159	0.1175	0.1143
20	64QAM	1	0	20.66	20.61	20.52	0.0946	0.0935	0.0916
20	256QAM	1	0	17.77	17.76	17.73	0.0486	0.0485	0.0482
Channel				20825	21100	21375	EIRP(W)		
Frequency (MHz)				2507.5	2535	2562.5	L	M	H
15	QPSK	1	0	22.28	22.47	22.54	0.1374	0.1435	0.1459
15	16QAM	1	0	21.45	21.43	21.44	0.1135	0.1130	0.1132
Channel				20800	21100	21400	EIRP(W)		
Frequency (MHz)				2505	2535	2565	L	M	H
10	QPSK	1	0	22.30	22.47	22.35	0.1380	0.1435	0.1396
10	16QAM	1	0	21.43	21.54	21.40	0.1130	0.1159	0.1122
Channel				20775	21100	21425	EIRP(W)		
Frequency (MHz)				2502.5	2535	2567.5	L	M	H
5	QPSK	1	0	22.22	22.58	22.53	0.1355	0.1472	0.1455
5	16QAM	1	0	21.44	21.54	21.32	0.1132	0.1159	0.1102



LTE Band 12_Ant.0:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel				23060	23095	23130			
Frequency (MHz)				704	707.5	711	L	M	H
10	QPSK	1	0	23.69	23.73	23.67	0.1271	0.1282	0.1265
10	QPSK	1	49	23.71	23.66	23.61	0.1276	0.1262	0.1247
10	QPSK	50	0	22.54	22.61	22.49	0.0975	0.0991	0.0964
10	16QAM	1	0	22.76	22.66	22.85	0.1026	0.1002	0.1047
10	64QAM	1	0	21.56	21.69	21.61	0.0778	0.0802	0.0787
10	256QAM	1	0	18.66	18.69	18.93	0.0399	0.0402	0.0425
Channel				23035	23095	23155	ERP(W)		
Frequency (MHz)				701.5	707.5	713.5	L	M	H
5	QPSK	1	0	23.56	23.54	23.46	0.1233	0.1227	0.1205
5	16QAM	1	0	22.73	22.49	22.66	0.1019	0.0964	0.1002
Channel				23025	23095	23165	ERP(W)		
Frequency (MHz)				700.5	707.5	714.5	L	M	H
3	QPSK	1	0	23.58	23.57	23.62	0.1239	0.1236	0.1250
3	16QAM	1	0	22.67	22.58	22.63	0.1005	0.0984	0.0995
Channel				23017	23095	23173	ERP(W)		
Frequency (MHz)				699.7	707.5	715.3	L	M	H
1.4	QPSK	1	0	23.70	23.54	23.59	0.1274	0.1227	0.1242
1.4	16QAM	1	0	22.67	22.60	22.72	0.1005	0.0989	0.1016

LTE Band 13_Ant.0:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel				23230					
Frequency (MHz)				782				M	
10	QPSK	1	0		23.61			0.1247	
10	QPSK	1	49		23.51			0.1219	
10	QPSK	50	0		22.61			0.0991	
10	16QAM	1	0		22.86			0.1050	
10	64QAM	1	0		21.75			0.0813	
10	256QAM	1	0		19.04			0.0436	
Channel				23205	23230	23255	ERP(W)		
Frequency (MHz)				779.5	782	784.5	L	M	H
5	QPSK	1	0	23.56	23.53	23.56	0.1233	0.1225	0.1233
5	16QAM	1	0	22.66	22.73	22.74	0.1002	0.1019	0.1021



LTE Band 17_Ant.0:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel				23780	23790	23800			
Frequency (MHz)				709	710	711	L	M	H
10	QPSK	1	0	23.53	23.64	23.58	0.1225	0.1256	0.1239
10	QPSK	1	49	23.49	23.47	23.37	0.1213	0.1208	0.1180
10	QPSK	50	0	22.51	22.60	22.58	0.0968	0.0989	0.0984
10	16QAM	1	0	22.44	22.40	22.58	0.0953	0.0944	0.0984
10	64QAM	1	0	21.61	21.66	21.65	0.0787	0.0796	0.0794
10	256QAM	1	0	18.70	18.67	18.88	0.0403	0.0400	0.0420
Channel				23755	23790	23825	ERP(W)		
Frequency (MHz)				706.5	710	713.5	L	M	H
5	QPSK	1	0	23.33	23.44	23.46	0.1169	0.1199	0.1205
5	16QAM	1	0	22.22	22.36	22.41	0.0906	0.0935	0.0946

LTE Band 38_Ant.1:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP(W)		
Channel				37850	38000	38150			
Frequency (MHz)				2580	2595	2610	L	M	H
20	QPSK	1	0	22.67	22.87	22.67	0.1503	0.1574	0.1503
20	QPSK	1	99	22.64	22.73	22.56	0.1493	0.1524	0.1466
20	QPSK	100	0	21.63	21.93	21.75	0.1183	0.1268	0.1216
20	16QAM	1	0	21.56	21.89	21.59	0.1164	0.1256	0.1172
20	64QAM	1	0	20.56	20.66	20.67	0.0925	0.0946	0.0948
20	256QAM	1	0	17.59	17.93	17.56	0.0467	0.0505	0.0463
Channel				37825	38000	38175	EIRP(W)		
Frequency (MHz)				2577.5	2595	2612.5	L	M	H
15	QPSK	1	0	22.47	22.80	22.48	0.1435	0.1549	0.1439
15	16QAM	1	0	21.50	21.81	21.56	0.1148	0.1233	0.1164
Channel				37800	38000	38200	EIRP(W)		
Frequency (MHz)				2575	2595	2615	L	M	H
10	QPSK	1	0	22.56	22.73	22.53	0.1466	0.1524	0.1455
10	16QAM	1	0	21.45	21.70	21.51	0.1135	0.1202	0.1151
Channel				37775	38000	38225	EIRP(W)		
Frequency (MHz)				2572.5	2595	2617.5	L	M	H
5	QPSK	1	0	22.59	22.77	22.60	0.1476	0.1538	0.1479
5	16QAM	1	0	21.36	21.80	21.37	0.1112	0.1230	0.1114



LTE Band 41_Ant.1:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP(W)		
Channel				39750	40620	41490			
Frequency (MHz)				2506	2593	2680	L	M	H
20	QPSK	1	0	22.53	22.95	22.83	0.1455	0.1603	0.1560
20	QPSK	1	99	22.56	22.90	22.82	0.1466	0.1585	0.1556
20	QPSK	100	0	21.42	21.82	21.67	0.1127	0.1236	0.1194
20	16QAM	1	0	21.71	21.84	21.64	0.1205	0.1242	0.1186
20	64QAM	1	0	20.52	20.86	20.80	0.0916	0.0991	0.0977
20	256QAM	1	0	17.58	17.84	17.86	0.0466	0.0494	0.0497
Channel				39725	40620	41515	EIRP(W)		
Frequency (MHz)				2503.5	2593	2682.5	L	M	H
15	QPSK	1	0	22.51	22.34	22.34	0.1449	0.1393	0.1393
15	16QAM	1	0	21.56	21.51	21.60	0.1164	0.1151	0.1175
Channel				39700	40620	41540	EIRP(W)		
Frequency (MHz)				2501	2593	2685	L	M	H
10	QPSK	1	0	22.46	22.34	22.18	0.1432	0.1393	0.1343
10	16QAM	1	0	21.34	21.29	21.44	0.1107	0.1094	0.1132
Channel				39675	40620	41565	EIRP(W)		
Frequency (MHz)				2498.5	2593	2687.5	L	M	H
5	QPSK	1	0	22.34	22.12	22.30	0.1393	0.1324	0.1380
5	16QAM	1	0	21.50	21.42	21.39	0.1148	0.1127	0.1119



LTE Band 66_Ant.0:

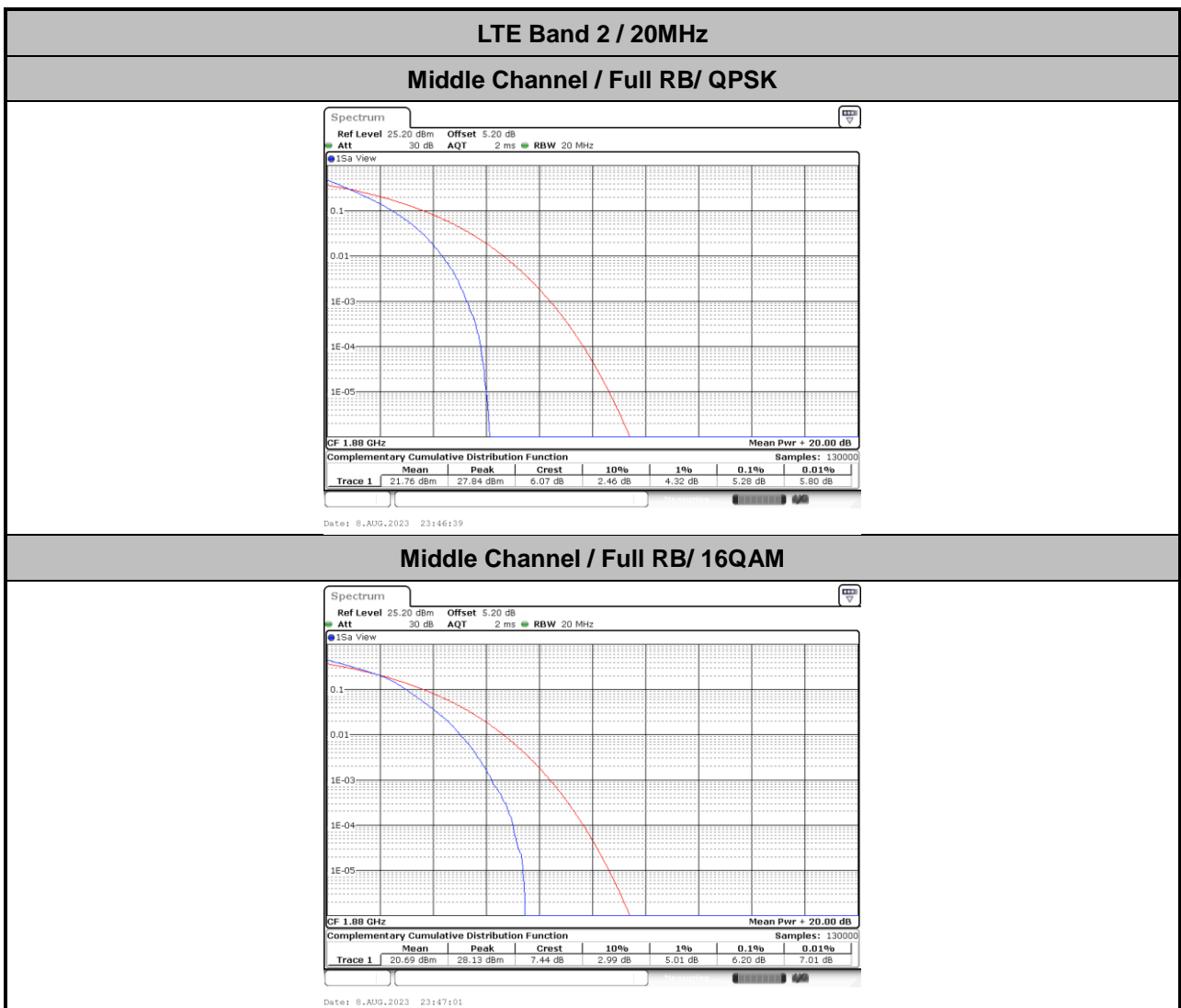
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP(W)		
Channel				132072	132322	132572	EIRP(W)		
Frequency (MHz)				1720	1745	1770	L	M	H
20	QPSK	1	0	23.14	23.20	22.97	0.2535	0.2570	0.2438
20	QPSK	1	99	22.99	23.16	22.82	0.2449	0.2547	0.2355
20	QPSK	100	0	22.00	22.09	21.92	0.1950	0.1991	0.1914
20	16QAM	1	0	22.01	22.05	22.03	0.1954	0.1972	0.1963
20	64QAM	1	0	21.13	21.16	20.99	0.1596	0.1607	0.1545
20	256QAM	1	0	18.29	18.06	18.06	0.0830	0.0787	0.0787
Channel				132047	132322	132597	EIRP(W)		
Frequency (MHz)				1717.5	1745	1772.5	L	M	H
15	QPSK	1	0	23.03	23.01	22.84	0.2472	0.2460	0.2366
15	16QAM	1	0	21.80	21.96	22.04	0.1862	0.1932	0.1968
Channel				132022	132322	132622	EIRP(W)		
Frequency (MHz)				1715	1745	1775	L	M	H
10	QPSK	1	0	22.93	23.01	22.85	0.2415	0.2460	0.2371
10	16QAM	1	0	21.98	22.01	21.88	0.1941	0.1954	0.1897
Channel				131997	132322	132647	EIRP(W)		
Frequency (MHz)				1712.5	1745	1777.5	L	M	H
5	QPSK	1	0	23.04	23.06	22.96	0.2477	0.2489	0.2432
5	16QAM	1	0	21.90	21.85	22.01	0.1905	0.1884	0.1954
Channel				131987	132322	132657	EIRP(W)		
Frequency (MHz)				1711.5	1745	1778.5	L	M	H
3	QPSK	1	0	22.92	23.08	22.76	0.2410	0.2500	0.2323
3	16QAM	1	0	22.01	21.93	22.01	0.1954	0.1919	0.1954
Channel				131979	132322	132665	EIRP(W)		
Frequency (MHz)				1710.7	1745	1779.3	L	M	H
1.4	QPSK	1	0	23.10	23.19	22.78	0.2512	0.2564	0.2333
1.4	16QAM	1	0	21.86	22.01	21.91	0.1888	0.1954	0.1910



LTE Band 2

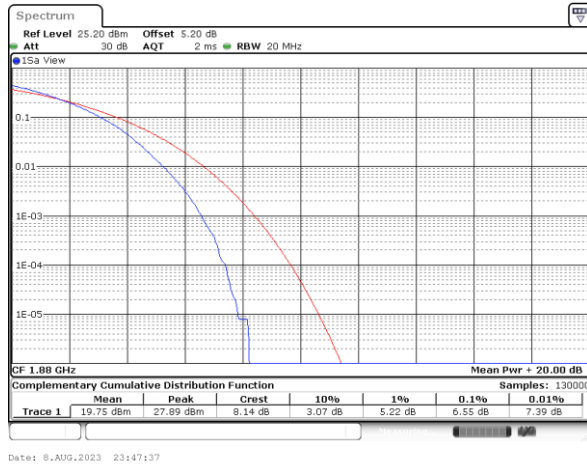
Peak-to-Average Ratio

Mode	LTE Band 2 / 20MHz				
Mod.	QPSK	16QAM	64QAM	256QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	5.28	6.20	6.55	6.75	PASS

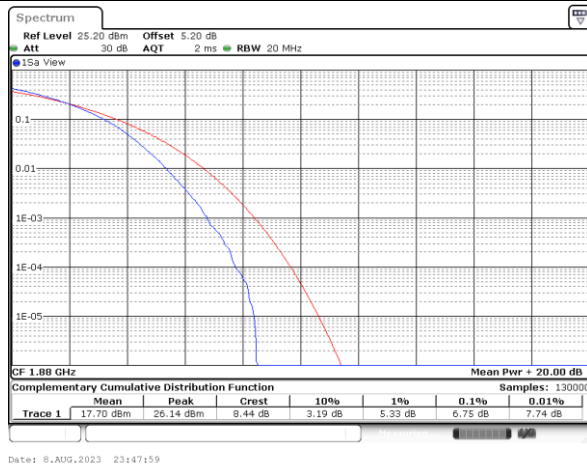




Middle Channel / Full RB/ 64QAM



Middle Channel / Full RB/ 256QAM





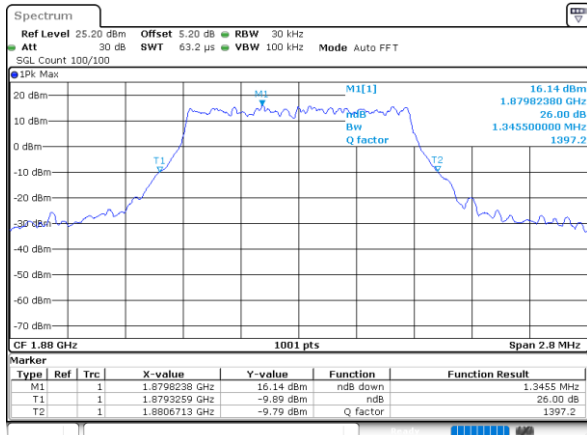
26dB Bandwidth

Mode	LTE Band 2 : 26dB BW(MHz)	
BW	1.4MHz	
Mod.	QPSK	16QAM
Middle CH	1.35	1.31
BW	3MHz	
Mod.	QPSK	16QAM
Middle CH	3.05	3.04
BW	5MHz	
Mod.	QPSK	16QAM
Middle CH	4.96	5.06
BW	10MHz	
Mod.	QPSK	16QAM
Middle CH	9.93	10.09
BW	15MHz	
Mod.	QPSK	16QAM
Middle CH	14.30	14.33
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	18.90	19.14



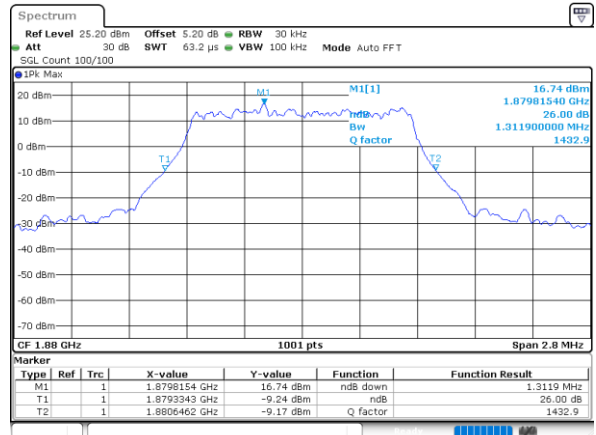
LTE Band 2

Middle Channel / 1.4MHz / QPSK



Date: 8.AUG.2023 22:01:58

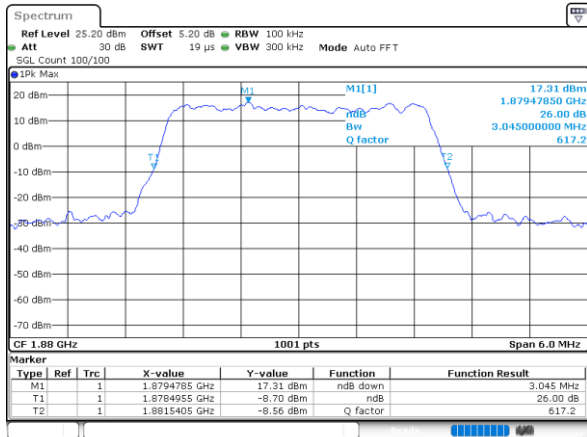
Middle Channel / 1.4MHz / 16QAM



Date: 8.AUG.2023 22:02:19

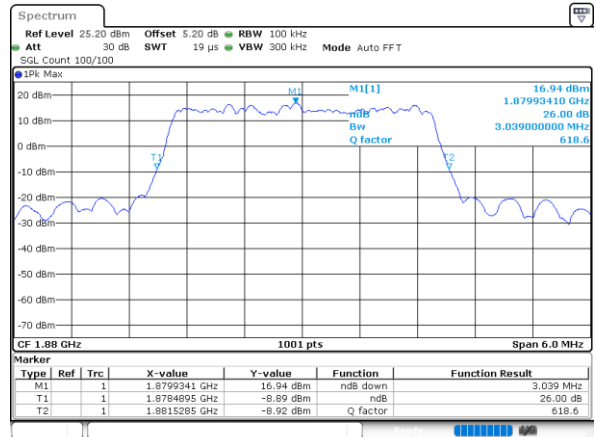
LTE Band 2

Middle Channel / 3MHz / QPSK



Date: 8.AUG.2023 22:20:43

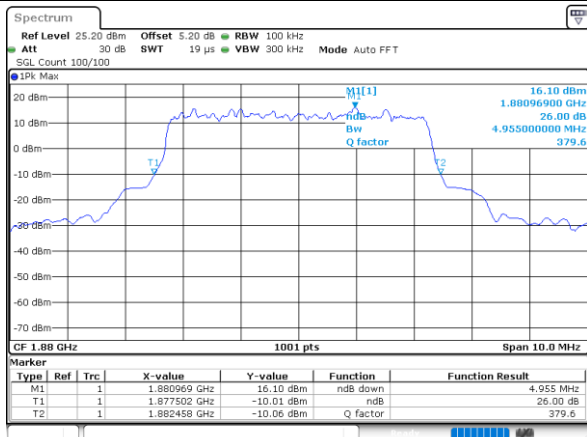
Middle Channel / 3MHz / 16QAM



Date: 8.AUG.2023 22:21:04

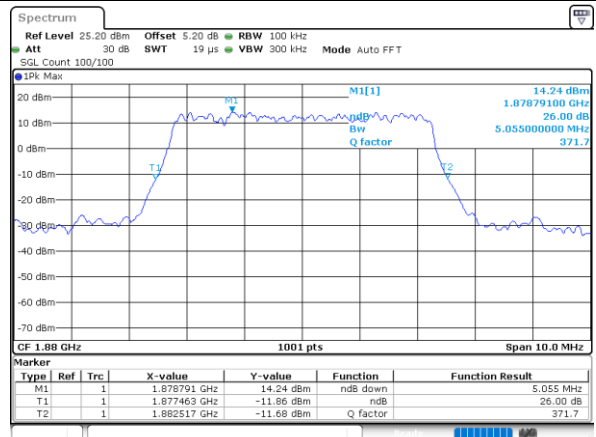
LTE Band 2

Middle Channel / 5MHz / QPSK



Date: 8.AUG.2023 22:22:09

Middle Channel / 5MHz / 16QAM

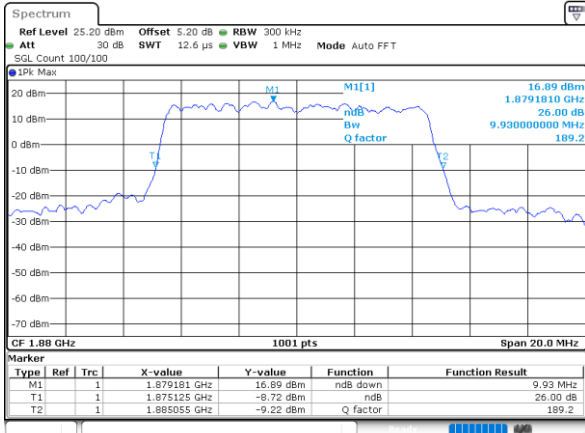


Date: 8.AUG.2023 22:22:30



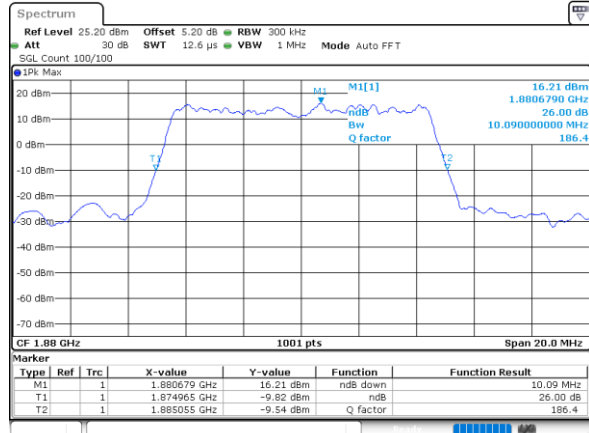
LTE Band 2

Middle Channel / 10MHz / QPSK



Date: 8.AUG.2023 22:45:15

Middle Channel / 10MHz / 16QAM



Date: 8.AUG.2023 22:45:36

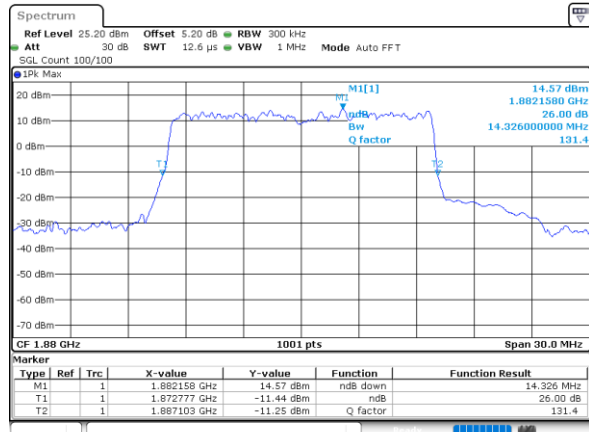
LTE Band 2

Middle Channel / 15MHz / QPSK



Date: 8.AUG.2023 23:10:55

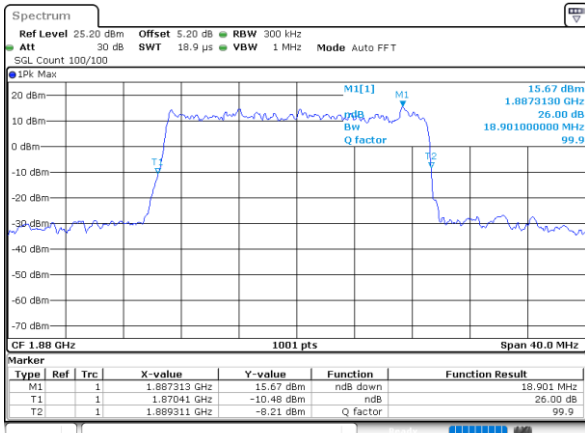
Middle Channel / 15MHz / 16QAM



Date: 8.AUG.2023 23:11:16

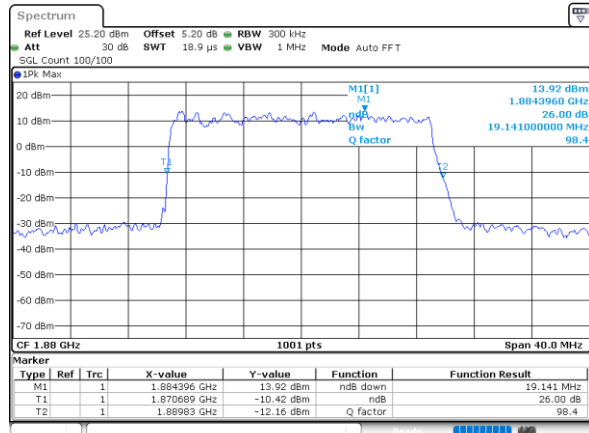
LTE Band 2

Middle Channel / 20MHz / QPSK



Date: 8.AUG.2023 23:45:35

Middle Channel / 20MHz / 16QAM



Date: 8.AUG.2023 23:45:56



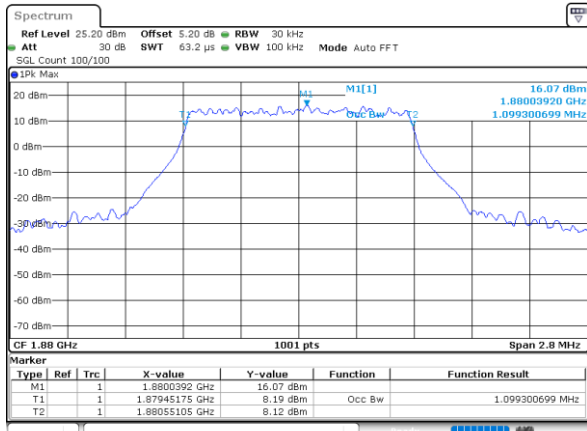
Occupied Bandwidth

Mode	LTE Band 2 : 99%OBW(MHz)	
BW	1.4MHz	
Mod.	QPSK	16QAM
Middle CH	1.10	1.10
BW	3MHz	
Mod.	QPSK	16QAM
Middle CH	2.71	2.72
BW	5MHz	
Mod.	QPSK	16QAM
Middle CH	4.50	4.49
BW	10MHz	
Mod.	QPSK	16QAM
Middle CH	9.03	9.05
BW	15MHz	
Mod.	QPSK	16QAM
Middle CH	13.49	13.46
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	17.98	17.90



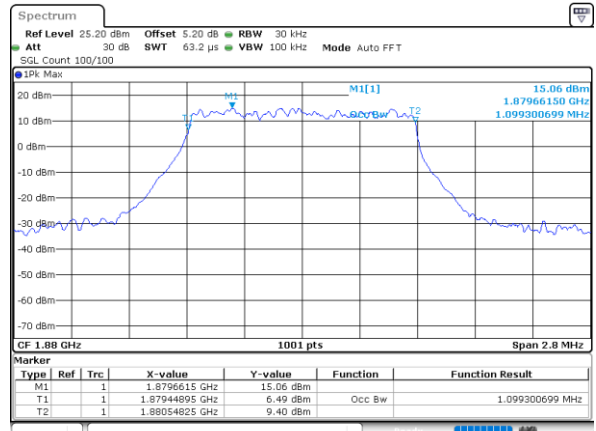
LTE Band 2

Middle Channel / 1.4MHz / QPSK



Date: 8.AUG.2023 22:01:37

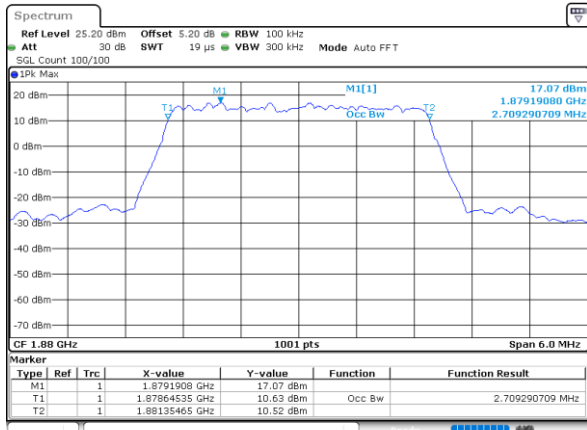
Middle Channel / 1.4MHz / 16QAM



Date: 8.AUG.2023 22:02:40

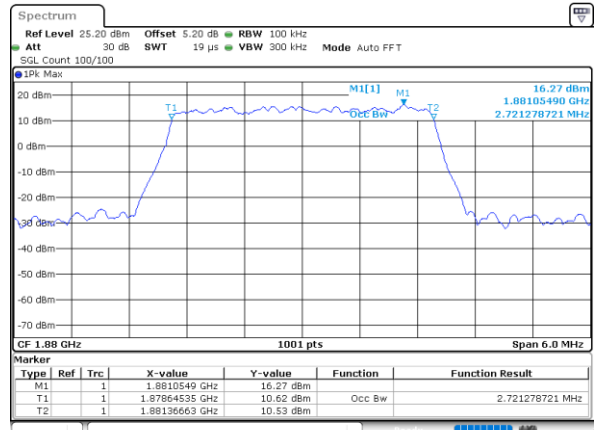
LTE Band 2

Middle Channel / 3MHz / QPSK



Date: 8.AUG.2023 22:20:22

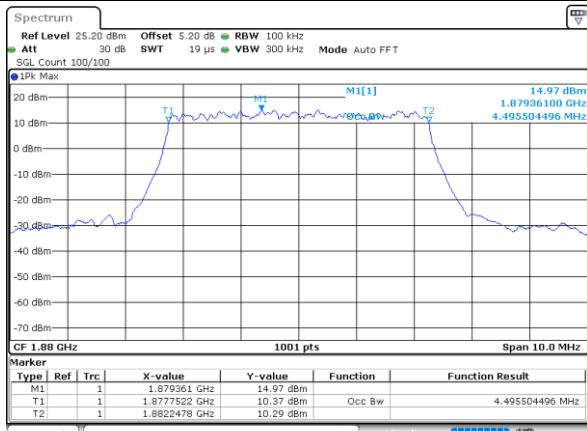
Middle Channel / 3MHz / 16QAM



Date: 8.AUG.2023 22:21:26

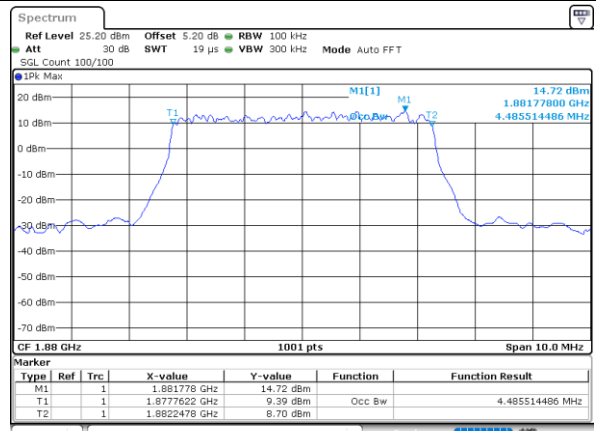
LTE Band 2

Middle Channel / 5MHz / QPSK



Date: 8.AUG.2023 22:21:48

Middle Channel / 5MHz / 16QAM

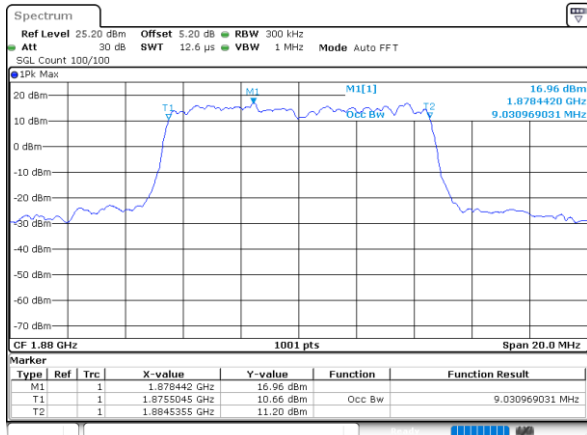


Date: 8.AUG.2023 22:22:50



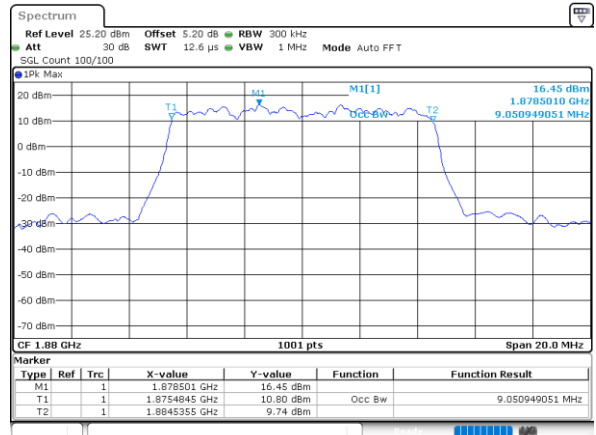
LTE Band 2

Middle Channel / 10MHz / QPSK



Date: 8.AUG.2023 22:44:54

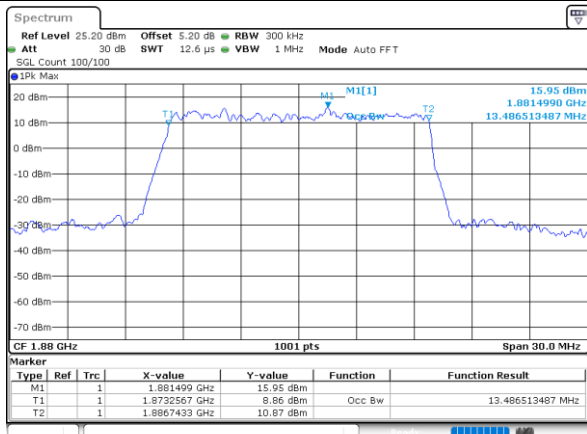
Middle Channel / 10MHz / 16QAM



Date: 8.AUG.2023 22:45:57

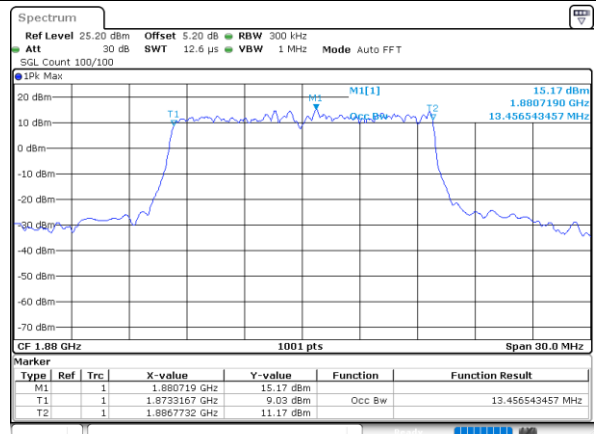
LTE Band 2

Middle Channel / 15MHz / QPSK



Date: 8.AUG.2023 23:10:34

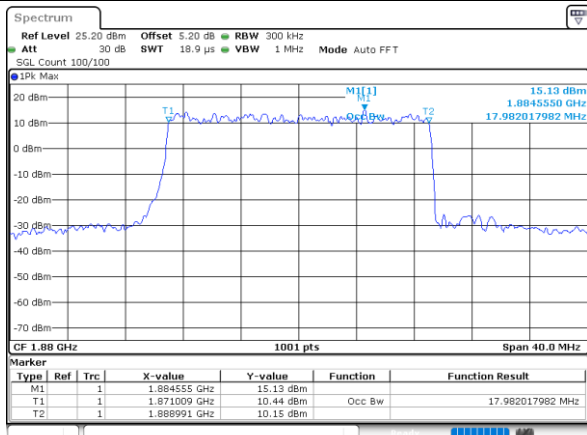
Middle Channel / 15MHz / 16QAM



Date: 8.AUG.2023 23:11:37

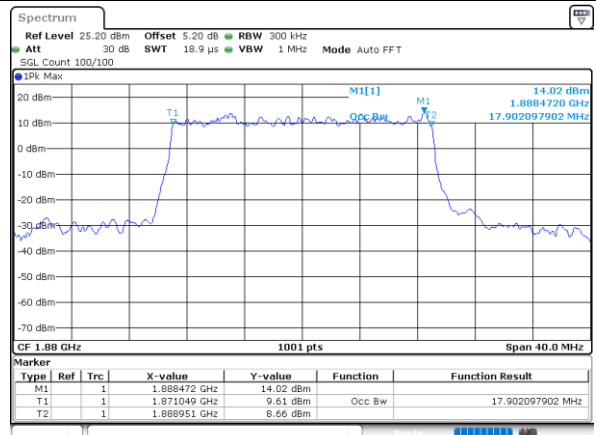
LTE Band 2

Middle Channel / 20MHz / QPSK



Date: 8.AUG.2023 23:45:14

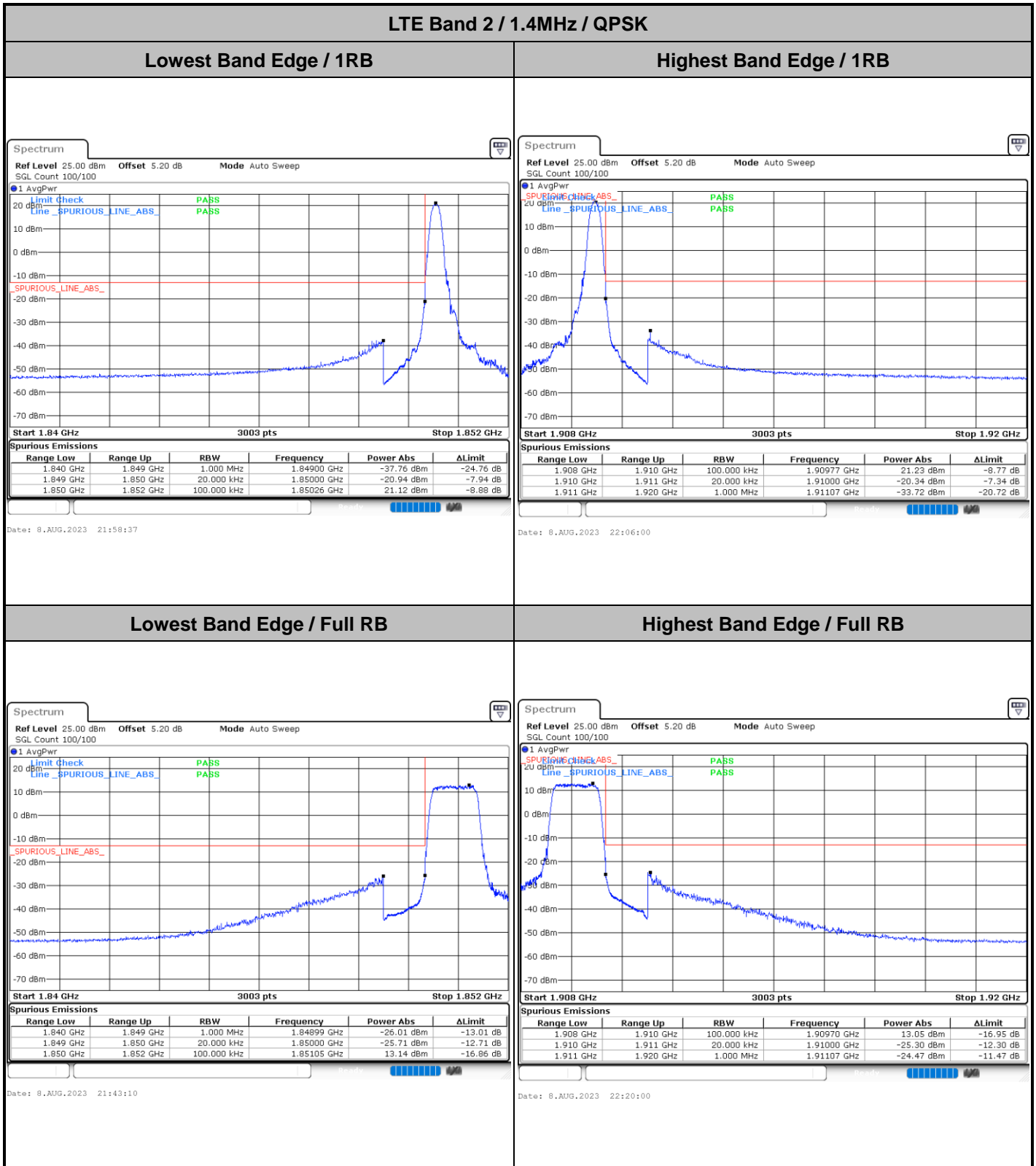
Middle Channel / 20MHz / 16QAM



Date: 8.AUG.2023 23:46:17



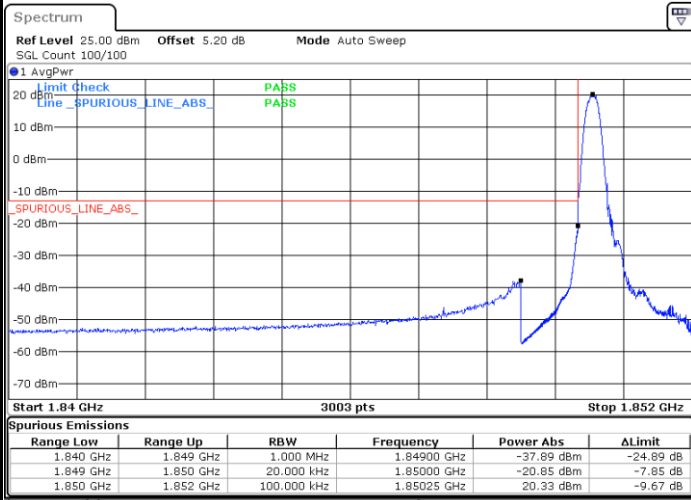
Conducted Band Edge





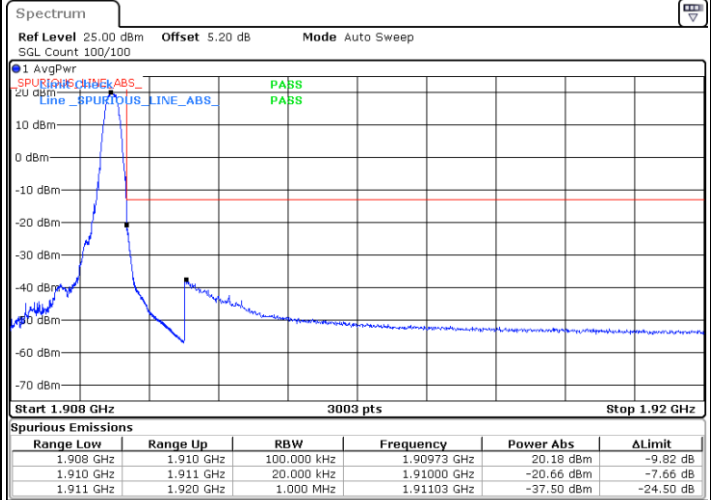
LTE Band 2 / 1.4MHz / 16QAM

Lowest Band Edge / 1 RB



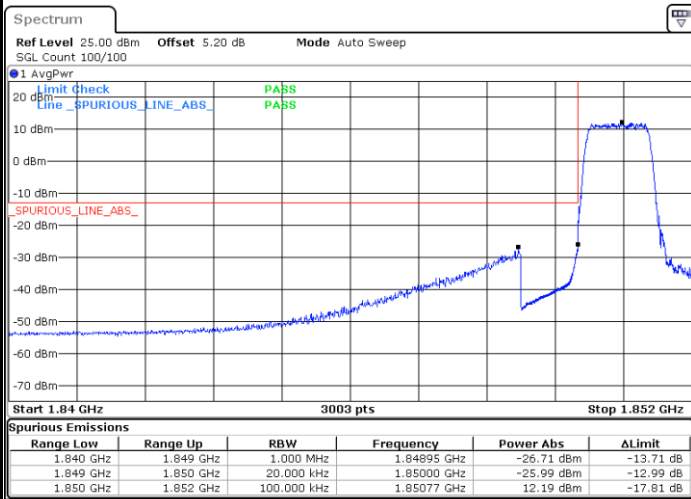
Date: 8.AUG.2023 21:56:37

Highest Band Edge / 1 RB



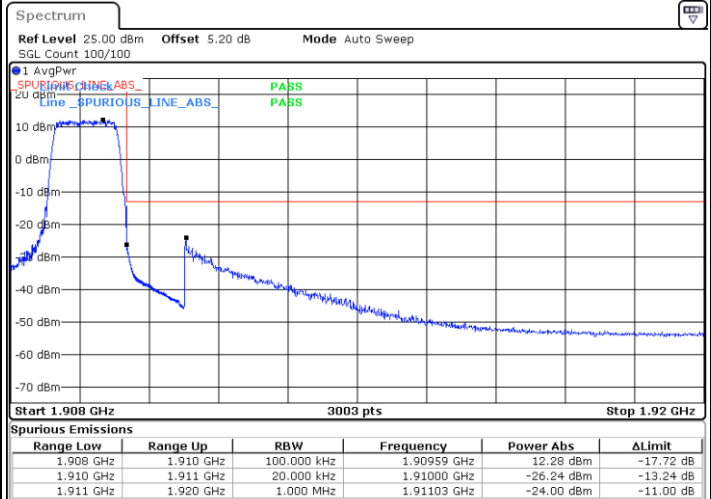
Date: 8.AUG.2023 22:08:00

Lowest Band Edge / Full RB



Date: 8.AUG.2023 21:45:10

Highest Band Edge / Full RB

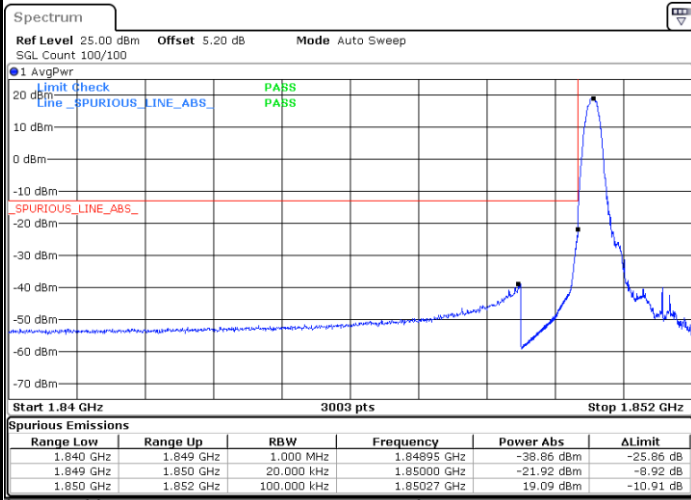


Date: 8.AUG.2023 22:18:01



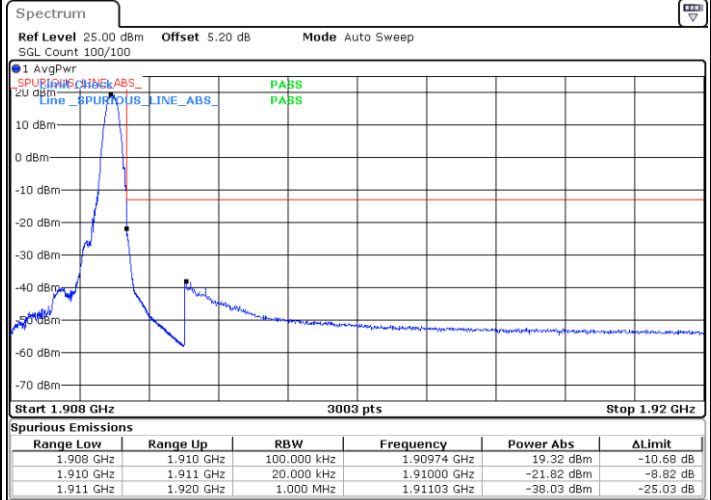
LTE Band 2 / 1.4MHz / 64QAM

Lowest Band Edge / 1 RB



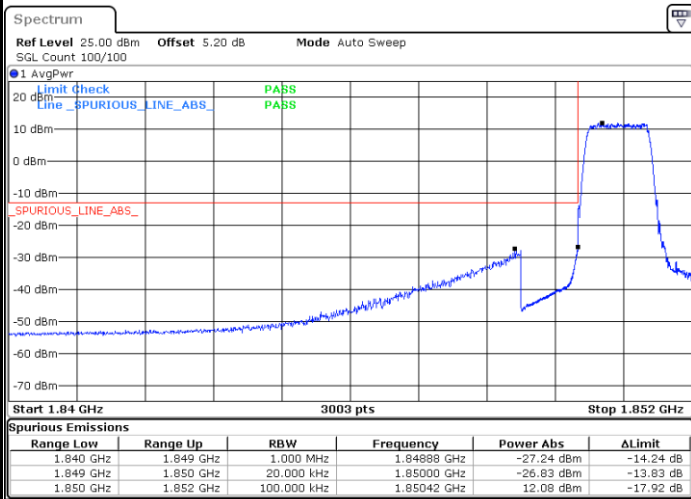
Date: 8.AUG.2023 21:54:38

Highest Band Edge / 1 RB



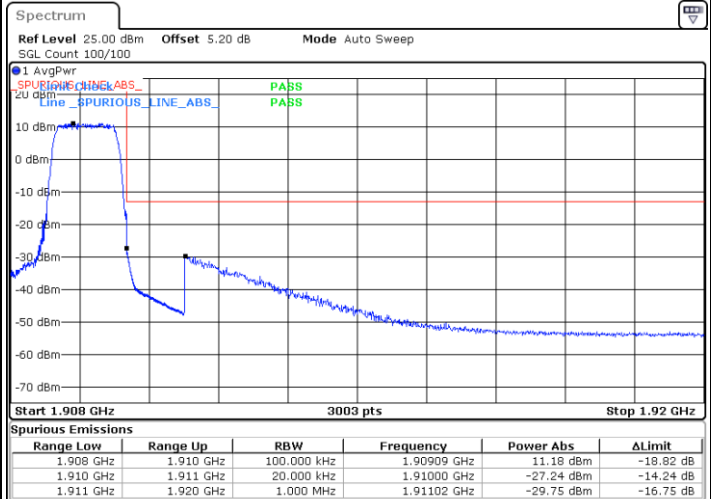
Date: 8.AUG.2023 22:09:59

Lowest Band Edge / Full RB



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

Highest Band Edge / Full RB

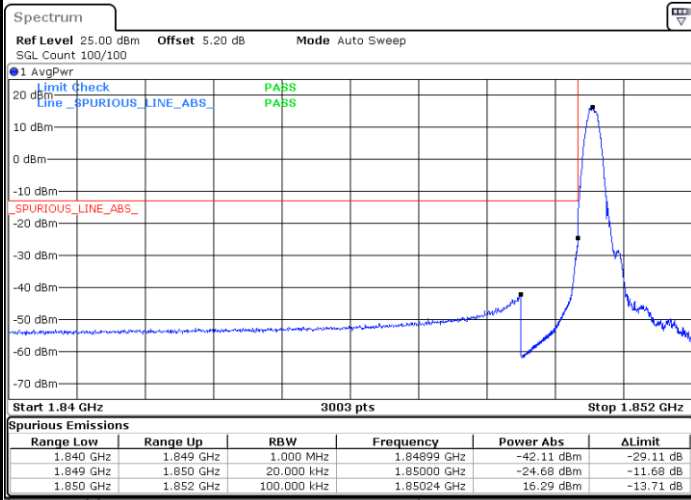


Date: 8.AUG.2023 22:16:01



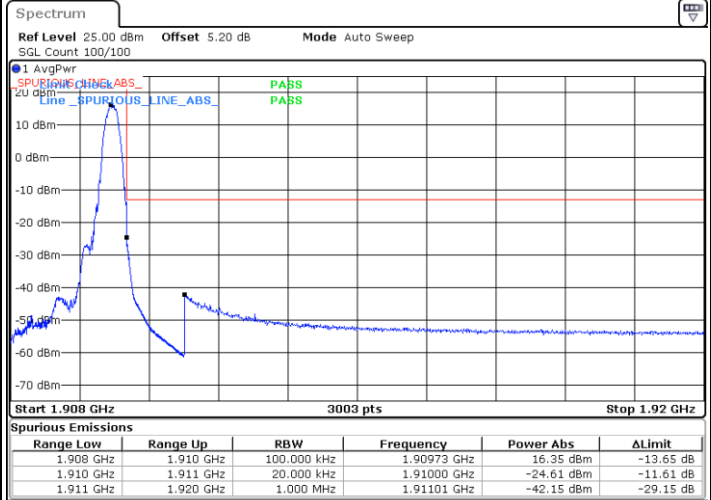
LTE Band 2 / 1.4MHz / 256QAM

Lowest Band Edge / 1 RB



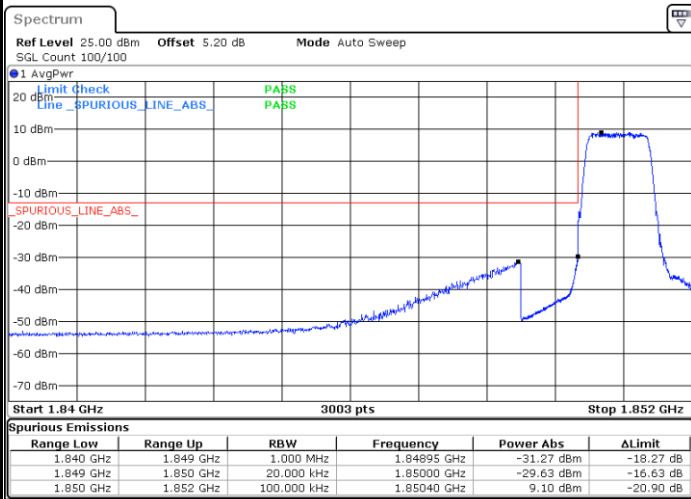
Date: 8.AUG.2023 21:52:34

Highest Band Edge / 1 RB



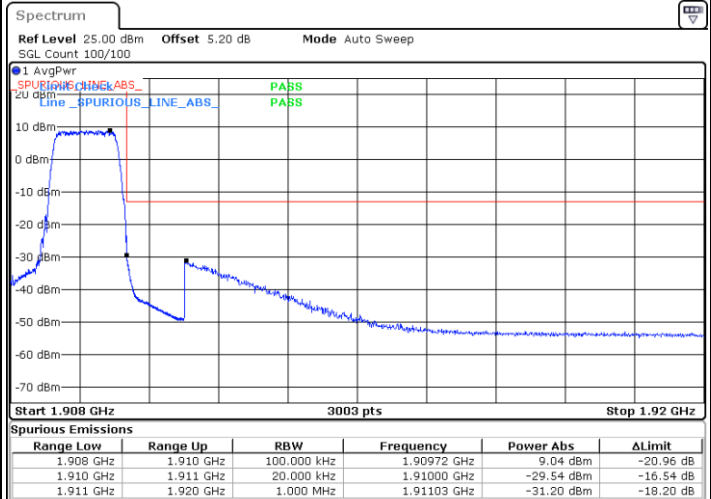
Date: 8.AUG.2023 22:11:59

Lowest Band Edge / Full RB



Date: 8.AUG.2023 21:49:10

Highest Band Edge / Full RB

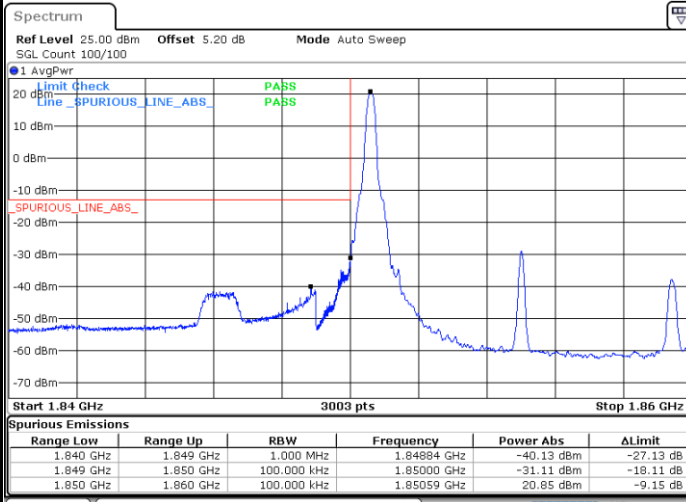


Date: 8.AUG.2023 22:13:59



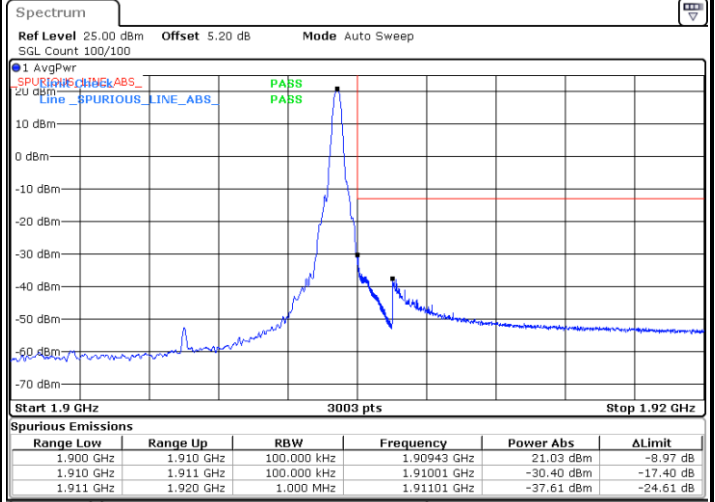
LTE Band 2 / 10MHz / QPSK

Lowest Band Edge / 1 RB



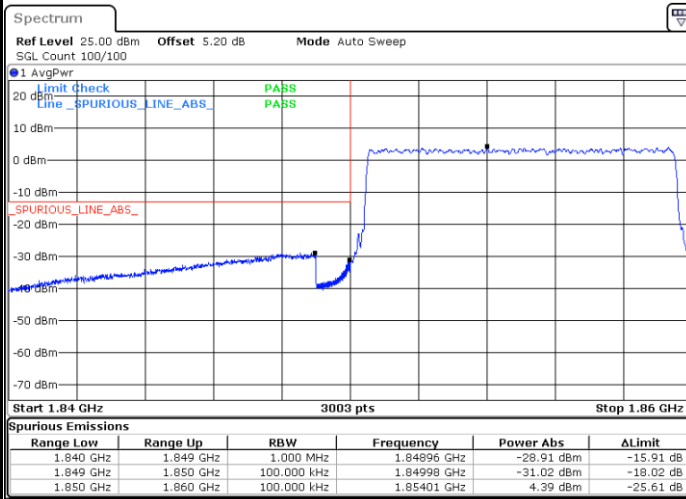
Date: 8.AUG.2023 22:41:54

Highest Band Edge / 1 RB



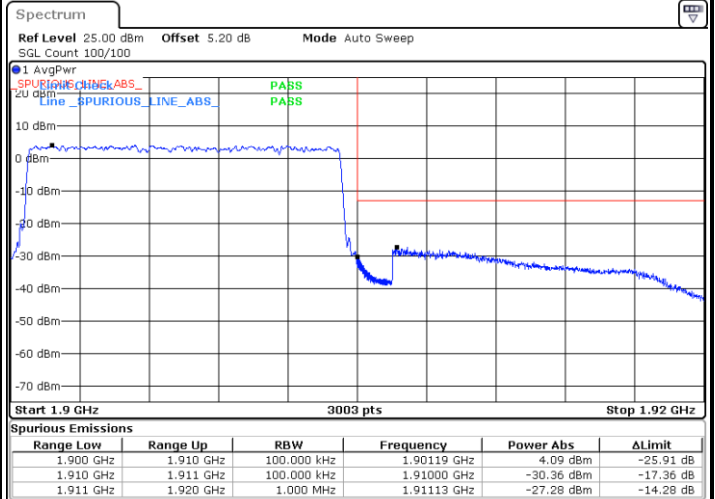
Date: 8.AUG.2023 22:48:57

Lowest Band Edge / Full RB



Date: 8.AUG.2023 22:24:51

Highest Band Edge / Full RB

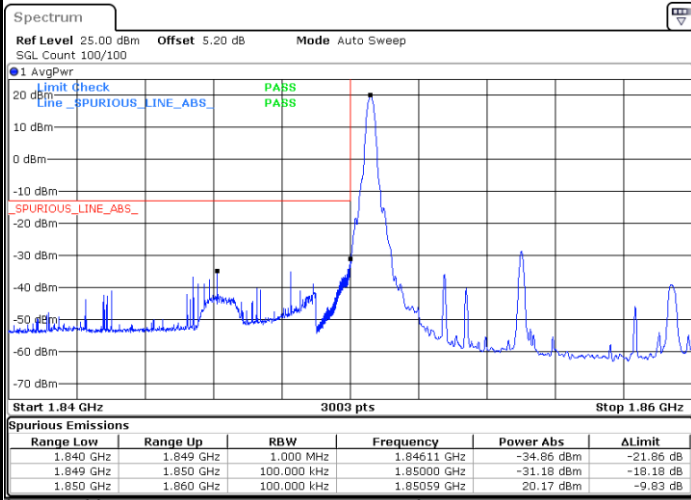


Date: 8.AUG.2023 23:10:13



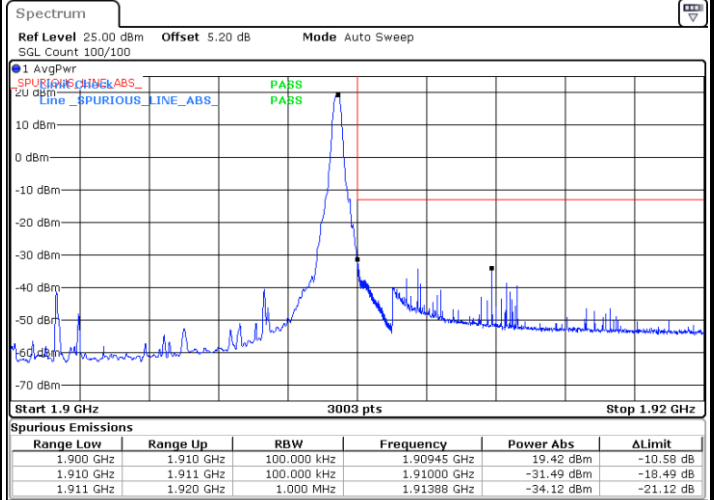
LTE Band 2 / 10MHz / 16QAM

Lowest Band Edge / 1 RB



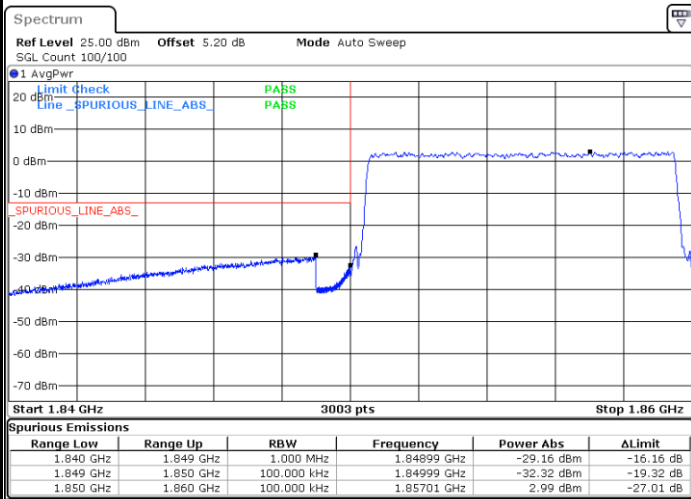
Date: 8.AUG.2023 22:40:15

Highest Band Edge / 1 RB



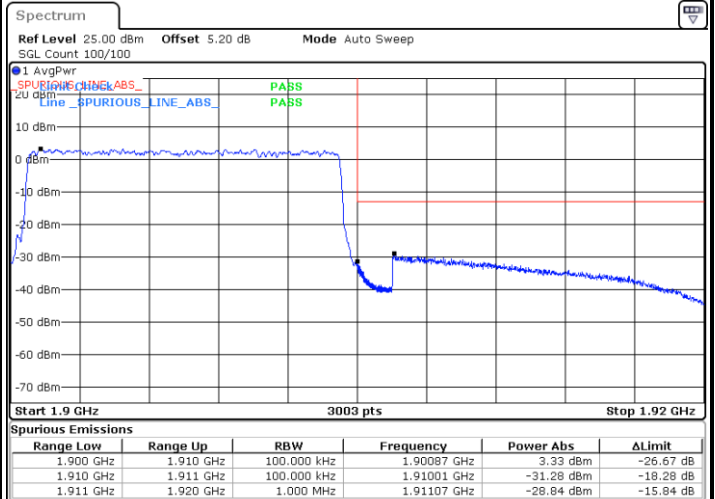
Date: 8.AUG.2023 22:50:36

Lowest Band Edge / Full RB



Date: 8.AUG.2023 22:26:50

Highest Band Edge / Full RB

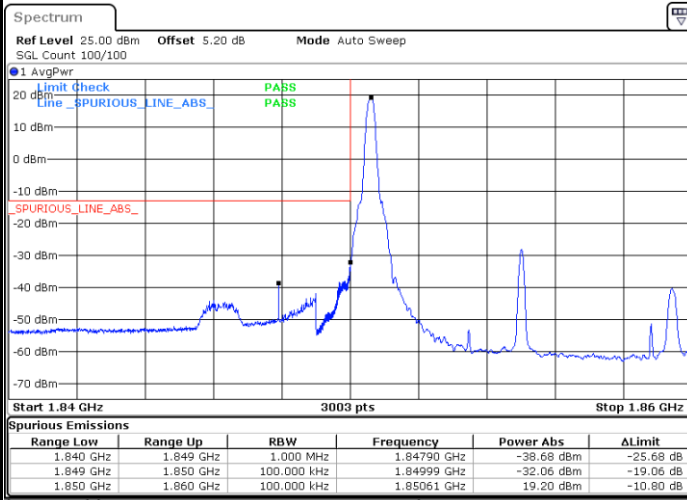


Date: 8.AUG.2023 23:08:33



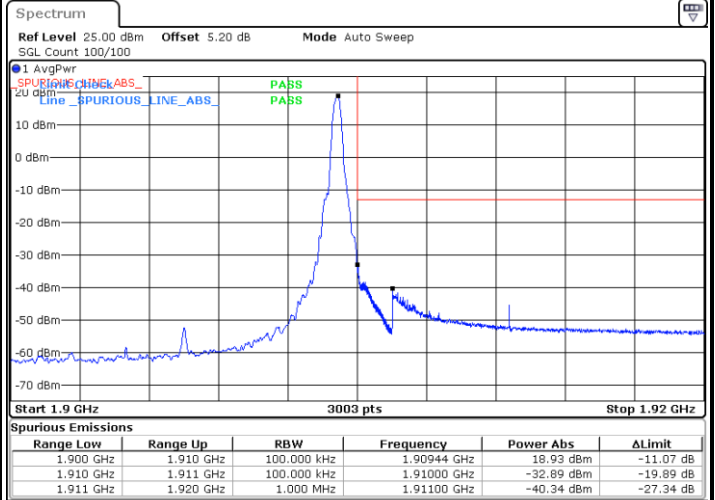
LTE Band 2 / 10MHz / 64QAM

Lowest Band Edge / 1 RB



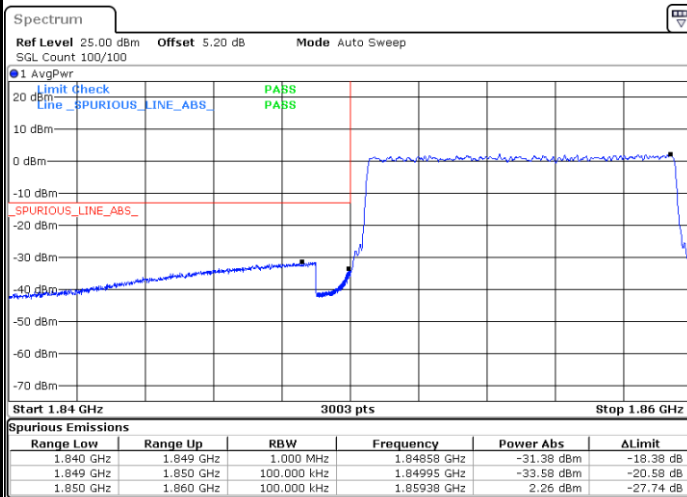
Date: 8.AUG.2023 22:38:35

Highest Band Edge / 1 RB



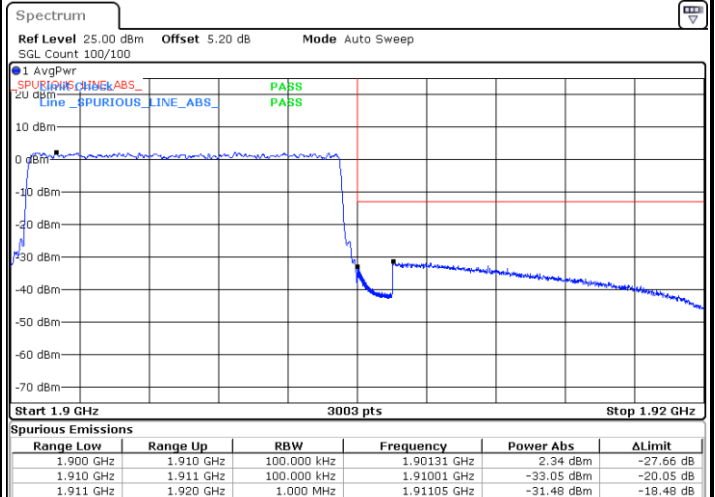
Date: 8.AUG.2023 22:52:16

Lowest Band Edge / Full RB



Date: 8.AUG.2023 22:28:50

Highest Band Edge / Full RB

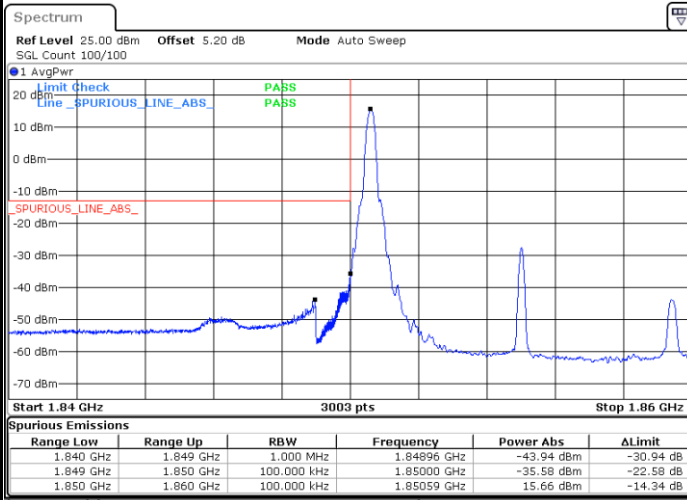


Date: 8.AUG.2023 23:06:54



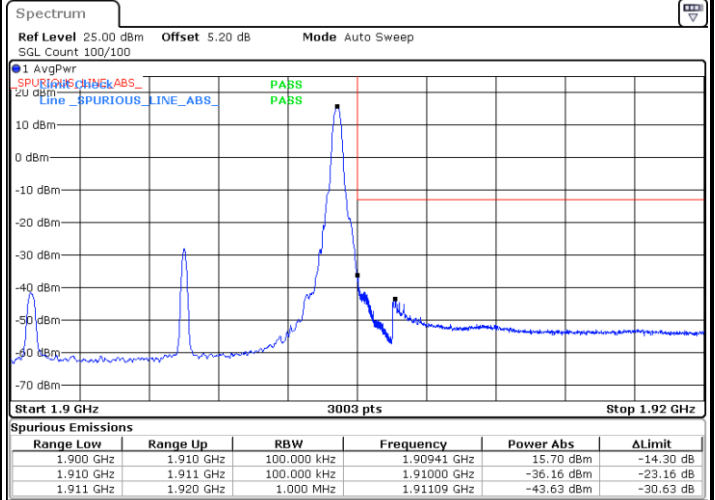
LTE Band 2 / 10MHz / 256QAM

Lowest Band Edge / 1 RB



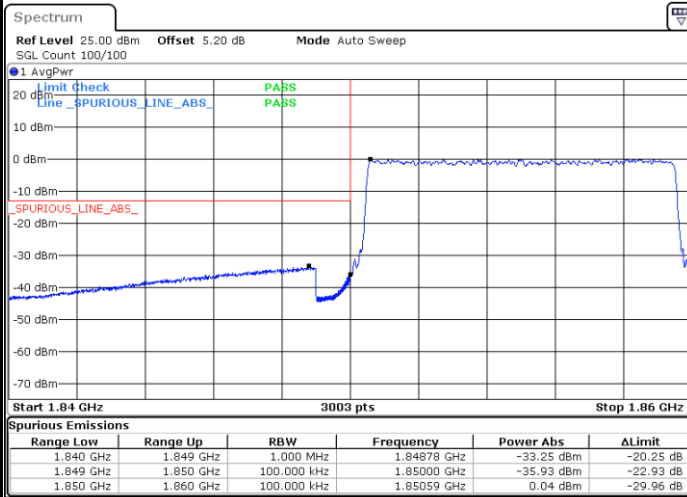
Date: 8.AUG.2023 22:36:55

Highest Band Edge / 1 RB



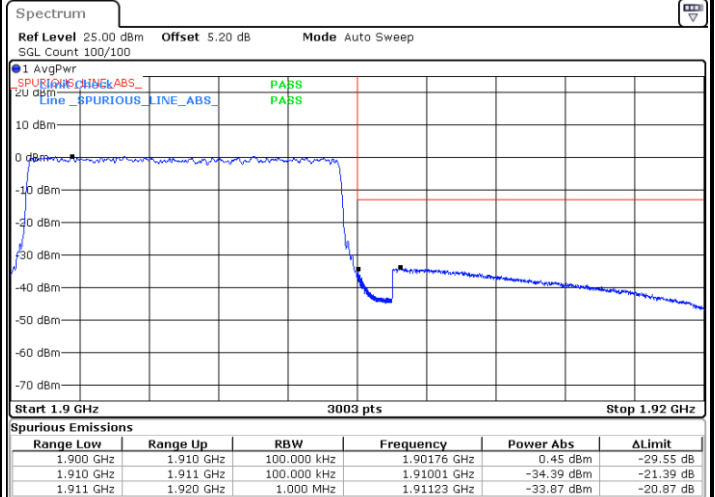
Date: 8.AUG.2023 22:53:56

Lowest Band Edge / Full RB



Date: 8.AUG.2023 22:30:50

Highest Band Edge / Full RB

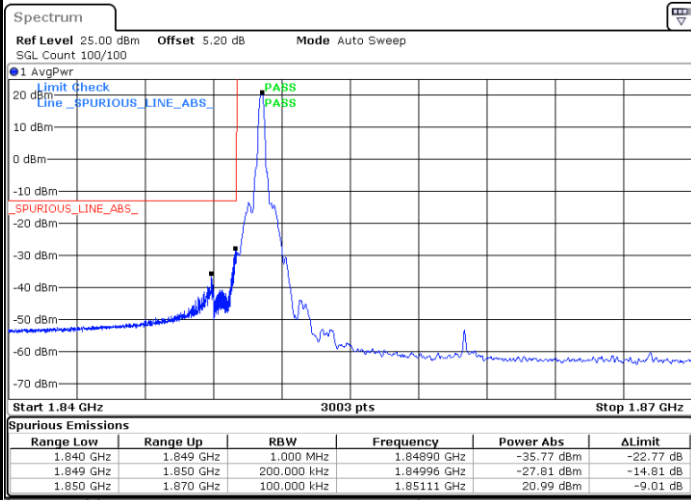


Date: 8.AUG.2023 22:58:52



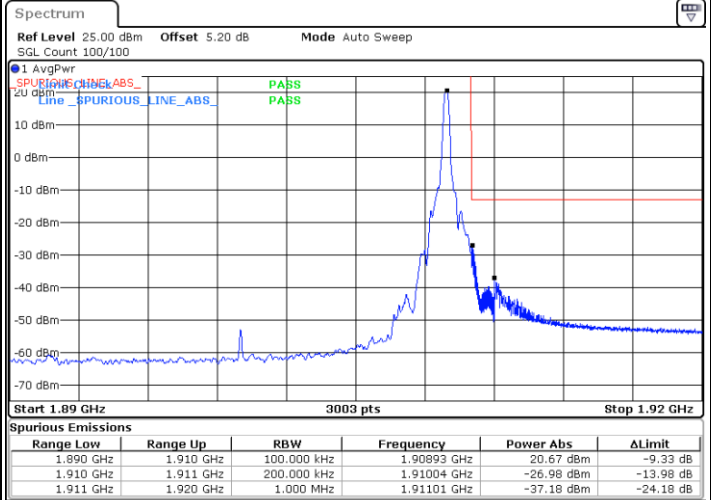
LTE Band 2 / 20MHz / QPSK

Lowest Band Edge / 1 RB



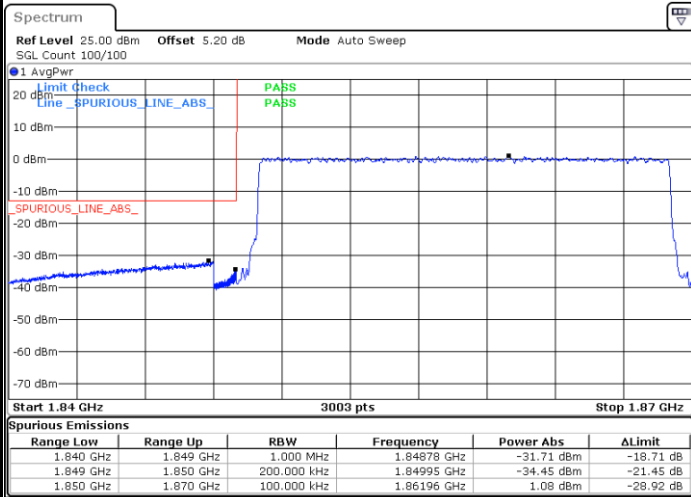
Date: 8.AUG.2023 23:26:03

Highest Band Edge / 1 RB



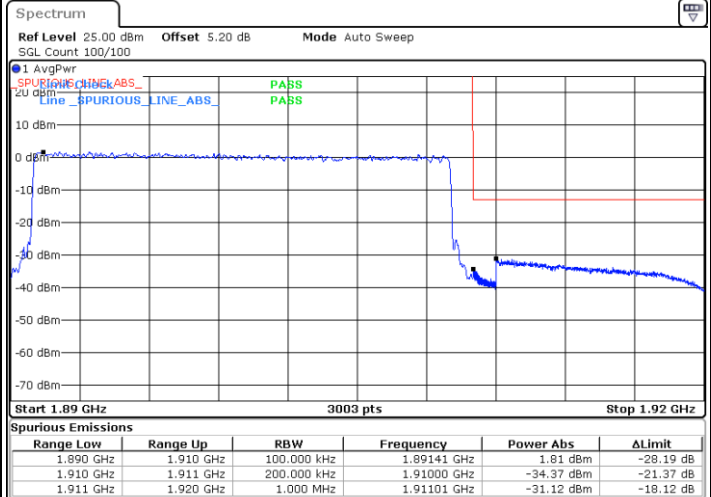
Date: 8.AUG.2023 23:31:41

Lowest Band Edge / Full RB



Date: 8.AUG.2023 23:13:18

Highest Band Edge / Full RB

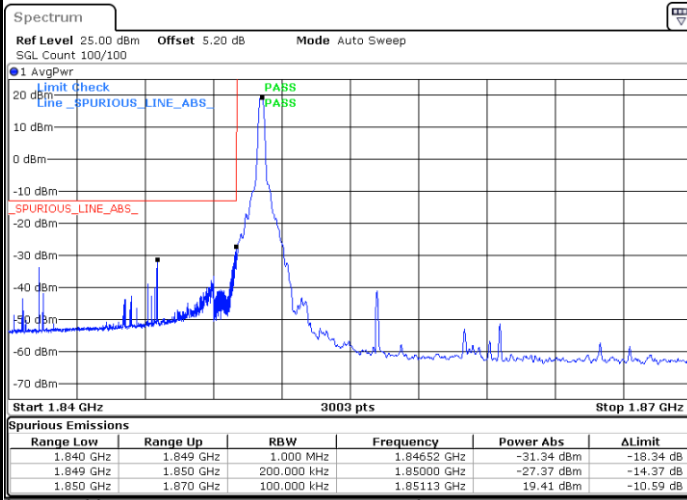


Date: 8.AUG.2023 23:44:53



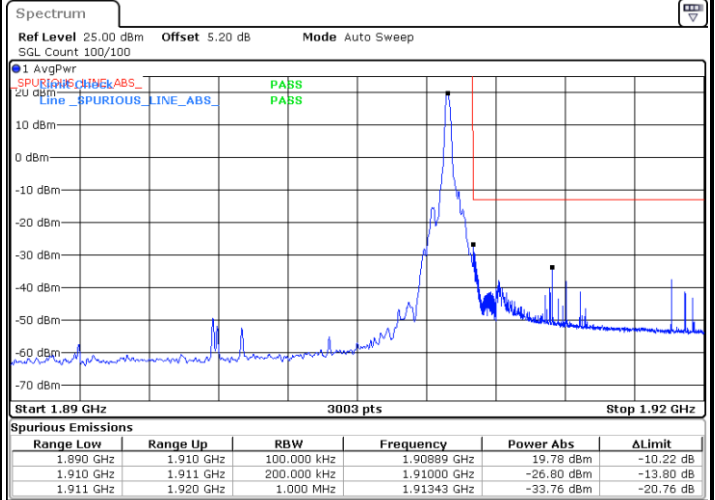
LTE Band 2 / 20MHz / 16QAM

Lowest Band Edge / 1 RB



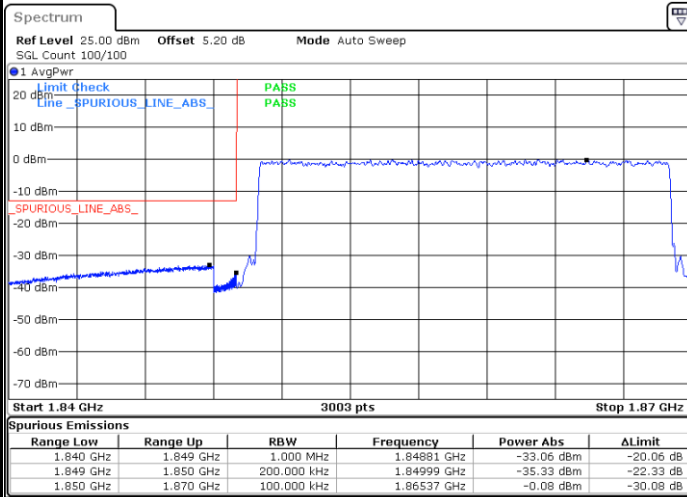
Date: 8.AUG.2023 23:24:23

Highest Band Edge / 1 RB



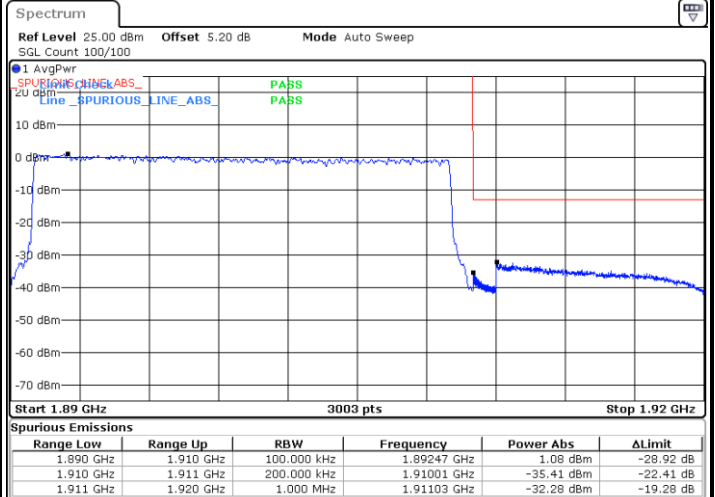
Date: 8.AUG.2023 23:33:21

Lowest Band Edge / Full RB



Date: 8.AUG.2023 23:14:57

Highest Band Edge / Full RB

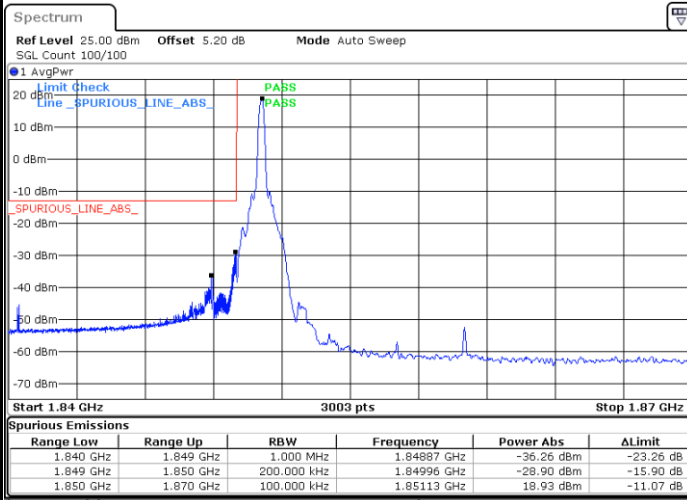


Date: 8.AUG.2023 23:43:14



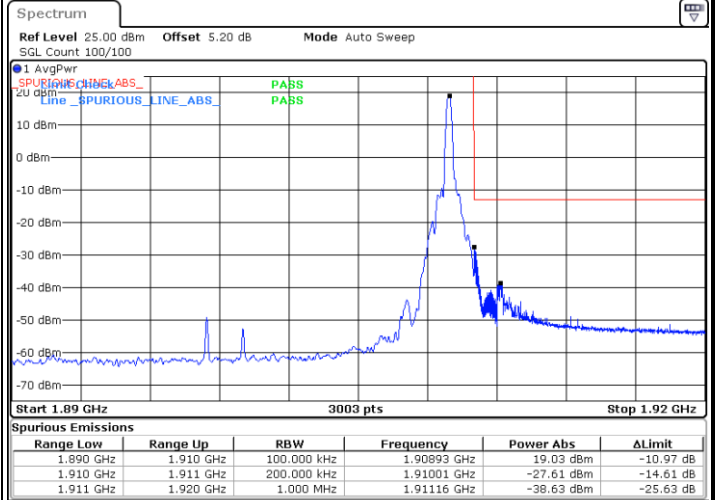
LTE Band 2 / 20MHz / 64QAM

Lowest Band Edge / 1 RB



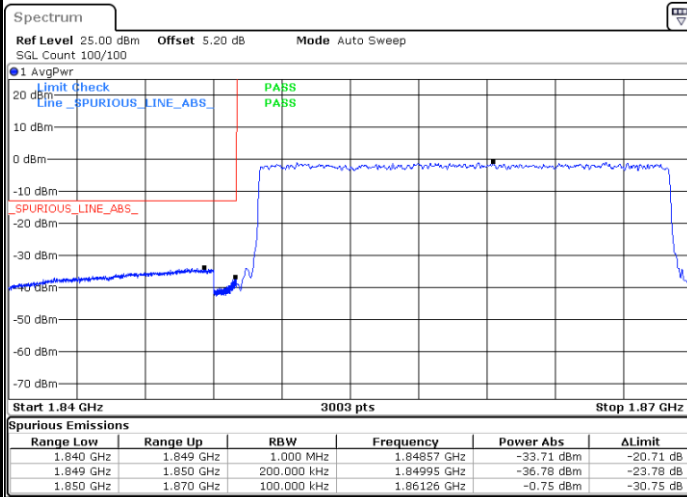
Date: 8.AUG.2023 23:22:43

Highest Band Edge / 1 RB



Date: 8.AUG.2023 23:35:01

Lowest Band Edge / Full RB



Date: 8.AUG.2023 23:16:37

Highest Band Edge / Full RB

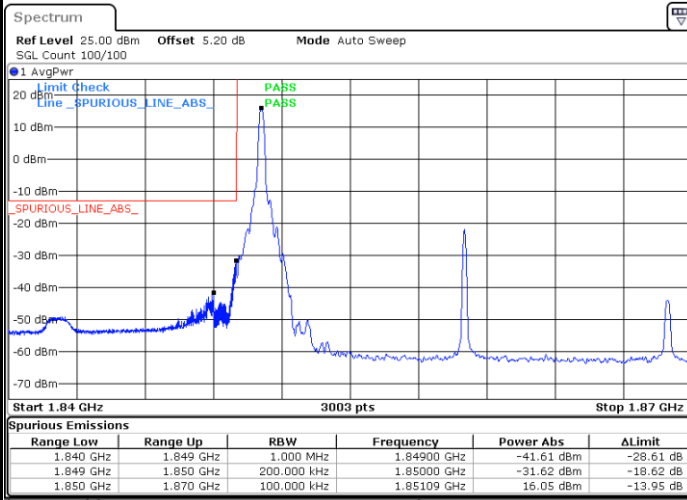


Date: 8.AUG.2023 23:41:34



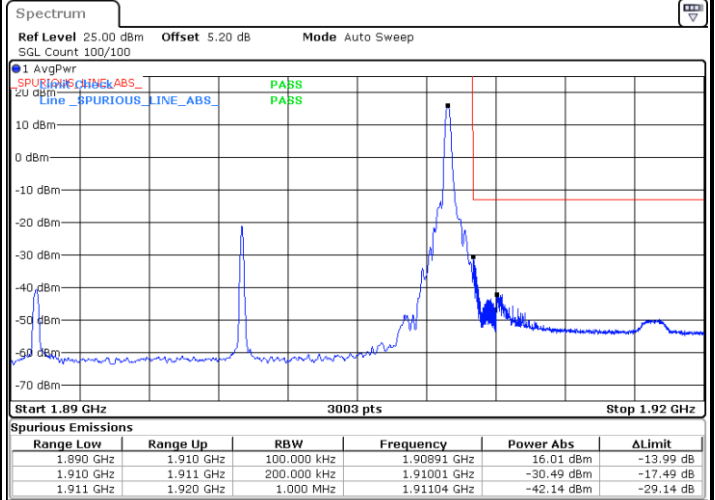
LTE Band 2 / 20MHz / 256QAM

Lowest Band Edge / 1 RB



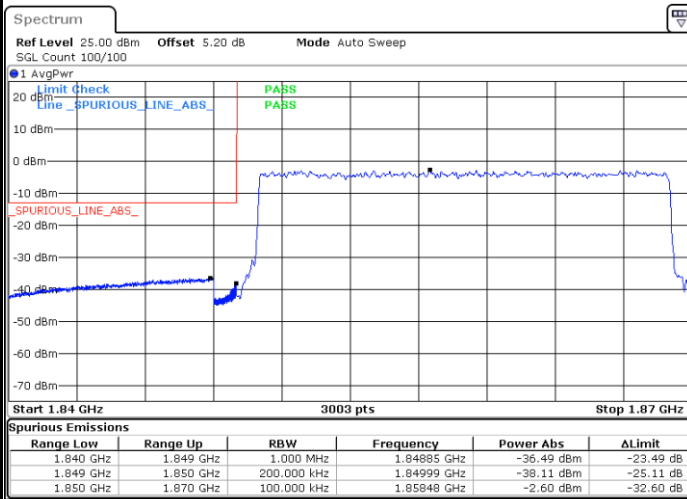
Date: 8.AUG.2023 23:21:03

Highest Band Edge / 1 RB



Date: 8.AUG.2023 23:36:40

Lowest Band Edge / Full RB



Date: 8.AUG.2023 23:18:17

Highest Band Edge / Full RB



Date: 8.AUG.2023 23:39:54

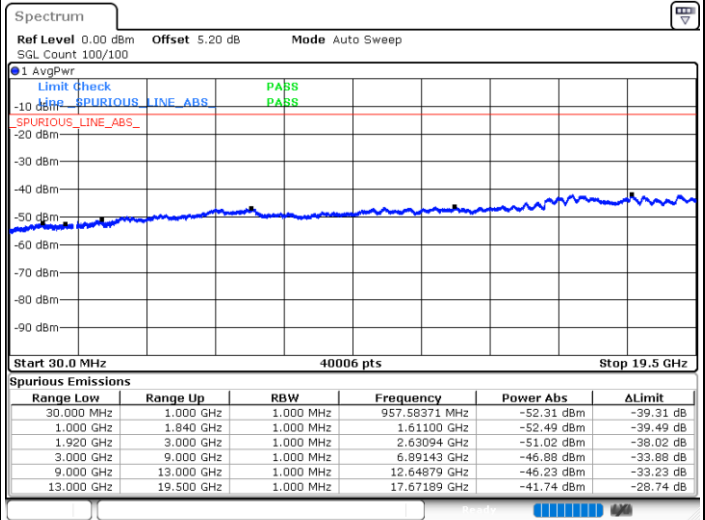
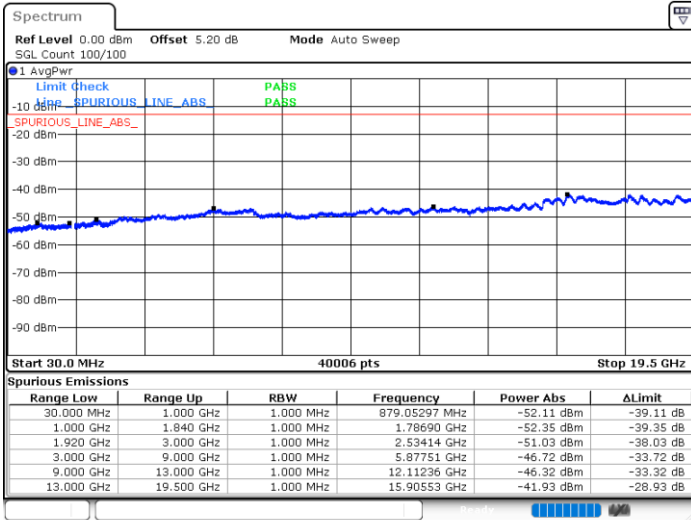


Conducted Spurious Emission

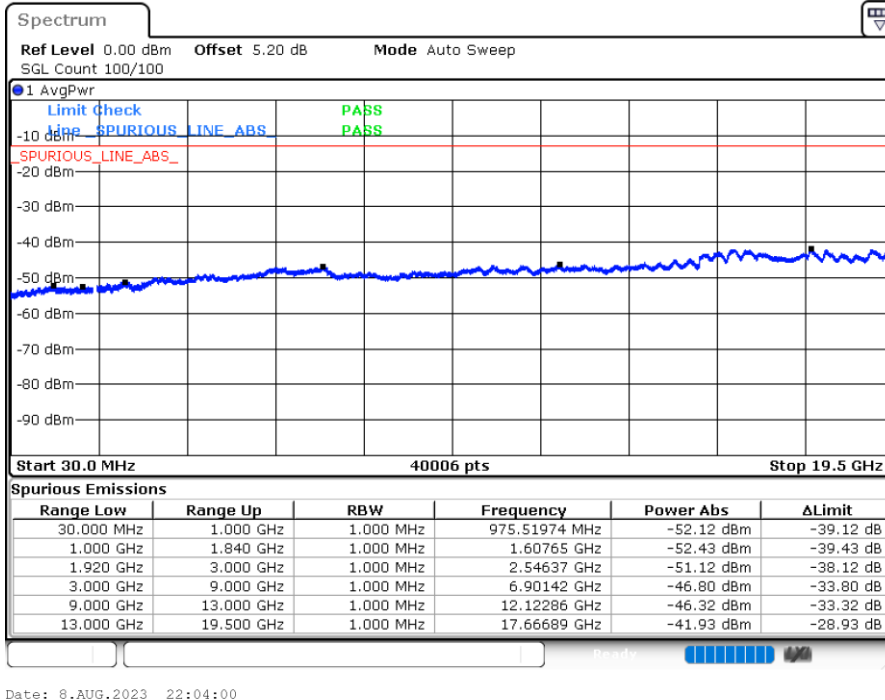
LTE Band 2 / 1.4MHz

Lowest Channel / QPSK

Middle Channel / QPSK



Highest Channel / QPSK

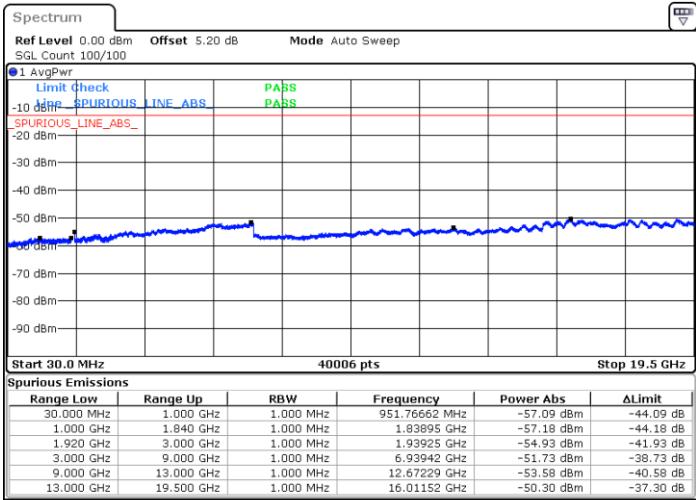




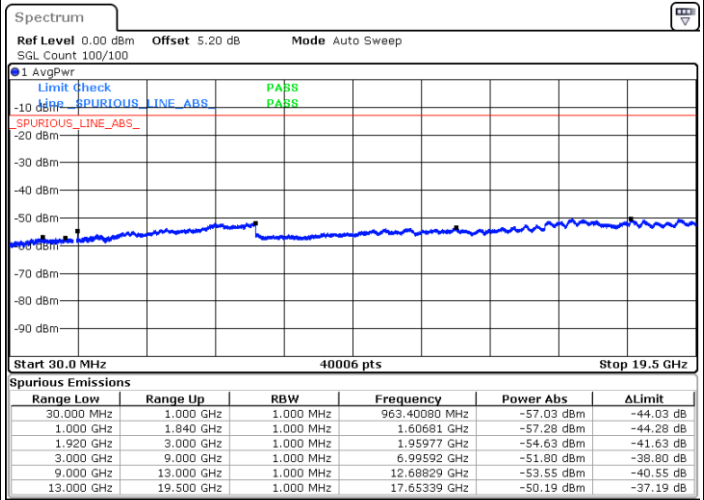
LTE Band 2 / 10MHz

Lowest Channel / QPSK

Middle Channel / QPSK

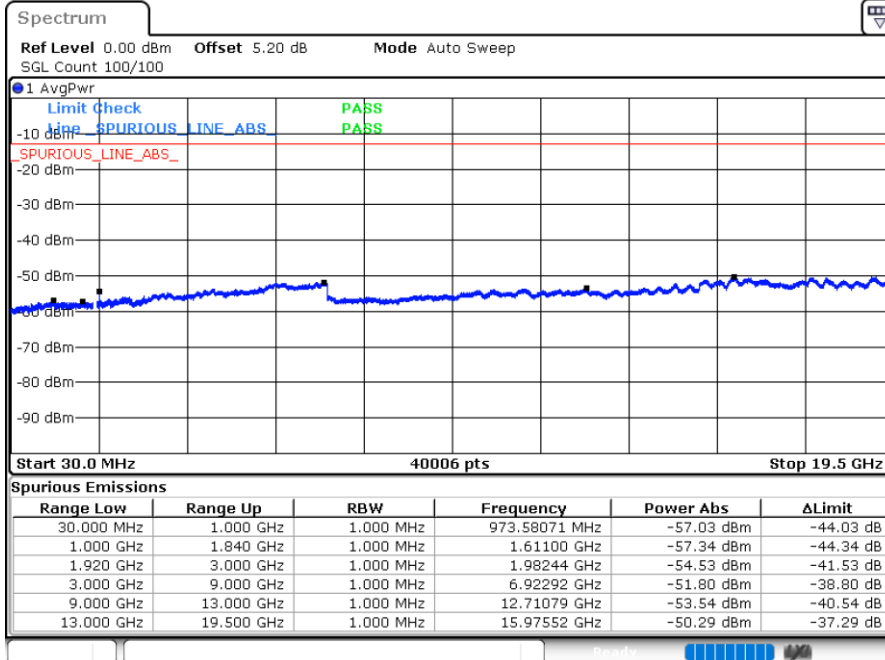


Date: 8.AUG.2023 22:43:14



Date: 8.AUG.2023 22:44:33

Highest Channel / QPSK



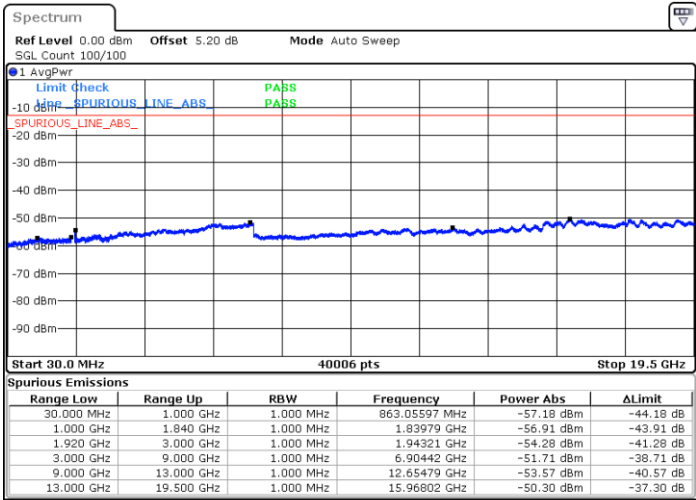
Date: 8.AUG.2023 22:47:17



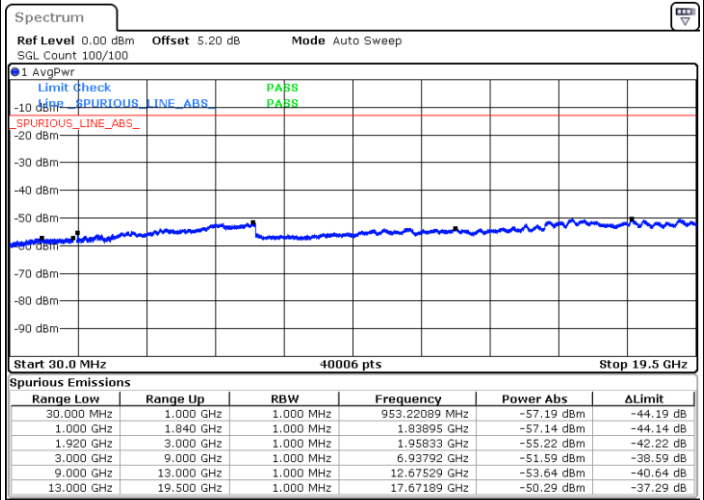
LTE Band 2 / 20MHz

Lowest Channel / QPSK

Middle Channel / QPSK

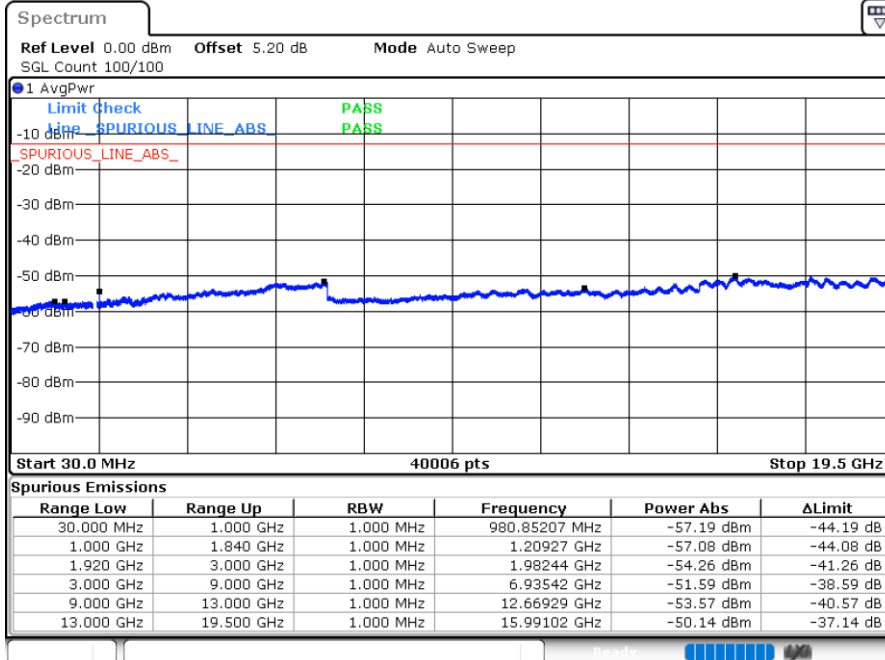


Date: 8.AUG.2023 23:27:22



Date: 8.AUG.2023 23:28:41

Highest Channel / QPSK



Date: 8.AUG.2023 23:30:01



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	0.0037	PASS
40	Normal Voltage	0.0012	
30	Normal Voltage	0.0029	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0016	
0	Normal Voltage	0.0027	
-10	Normal Voltage	0.0012	
-20	Normal Voltage	0.0031	
-30	Normal Voltage	0.0011	
20	Maximum Voltage	0.0018	
20	Normal Voltage	0.0013	
20	Battery End Point	0.0026	

Note:

1. Normal Voltage =3.87 V. ; Battery End Point (BEP) =3.4 V. ; Maximum Voltage =4.45 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



LTE Band 5

Peak-to-Average Ratio

Mode	LTE Band 5 / 10MHz				
Mod.	QPSK	16QAM	64QAM	256QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	4.96	5.86	6.41	6.72	PASS

