



FCC RF Test Report

APPLICANT : TCL Communication Ltd.
EQUIPMENT : Vodafone USB Connect LPWA v2
BRAND NAME : Vodafone
MODEL NAME : IKM1GL
FCC ID : 2ACCJSCD007
STANDARD : 47 CFR Part 22(H), 24(E), 27(L), 27(F), 27(H)
CLASSIFICATION : PCS Licensed Transmitter (PCB)
TEST DATE(S) : Jun. 30, 2025 ~ Aug. 14, 2025

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

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

Approved by: Fly Liang



Sporton International Inc. (ShenZhen)

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People's Republic of China



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG561313	Rev. 01	Initial issue of report	Aug. 14, 2025

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	-	Report Only	-
	§22.913(a)(5)	Effective Radiated Power (Band 5)	ERP < 7 Watt	PASS	-
	§27.50(b)(10) §27.50(c)(10)	Effective Radiated Power (Band 12) (Band 13)	ERP < 3 Watt		-
	§24.232(c)	Equivalent Isotropic Radiated Power (Band 2)	EIRP < 2Watt		-
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4)	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)	< 43+10log10(P[Watts])	PASS	-
3.8	§2.1051 §22.917(a) §24.238(a) §27.53(c)(2) §27.53(g) §27.53(h)	Conducted Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 13)	< 43+10log10(P[Watts])	PASS	-
3.9	§2.1055 §22.355	Frequency Stability Temperature & Voltage	< 2.5 ppm for Part 22	PASS	-
	§2.1055 §24.235 §27.54		Within Authorized Band		
4.4	§2.1053 §22.917(a) §24.238(a) §27.53(c)(2) §27.53(f) §27.53(g) §27.53(h)	Radiated Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 13)	< 43+10log ₁₀ (P[Watts])	PASS	Under limit 7.68 dB at 1559.500 MHz

Conformity Assessment Condition:

- 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.
- The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty"

Disclaimer:

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



1 General Description

1.1 Applicant

TCL Communication Ltd.

5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong

1.2 Manufacturer

Vodafone Procurement Company S.à.r.l.

15 rue Edward Steichen, L-2540 Luxembourg, Grand-Duché de Luxembourg

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Vodafone USB Connect LPWA v2
Brand Name	Vodafone
Model Name	IKM1GL
FCC ID	2ACCJSCD007
SN/IMEI Code	Conducted: 2LPB0188GII001H Radiation: 35934565000038
HW Version	V3.0
SW Version	IKM1GL_ZZ_01.00_01
EUT Stage	Production Unit

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 Category M1 / NB-IOT: Band 2 : 1850 MHz ~ 1910 MHz Band 4 : 1710 MHz ~ 1755 MHz Band 5 : 824 MHz ~ 849 MHz Band 12 : 699 MHz ~ 716 MHz Band 13 : 777 MHz ~ 787 MHz
Rx Frequency	LTE Category M1 / NB-IOT: Band 2 : 1930 MHz ~ 1990 MHz Band 4 : 2110 MHz ~ 2155 MHz Band 5 : 869 MHz ~ 894 MHz Band 12 : 729 MHz ~ 746 MHz Band 13 : 746 MHz ~ 756 MHz
Bandwidth	LTE Category M1: Band 2 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz Band 4 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz Band 5 : 1.4MHz / 3MHz / 5MHz / 10MHz Band 12 : 1.4MHz / 3MHz / 5MHz / 10MHz Band 13 : 5MHz / 10MHz NB-IOT: 200kHz
Sub-carrier Speacing	NB-IOT: 3.75KHz /15 KHz
Maximum Output Power to Antenna	LTE Category M1: Band 2 : 22.96 dBm Band 4 : 22.94 dBm Band 5 : 22.88 dBm Band 12 : 23.28 dBm Band 13 : 23.11 dBm NB-IOT: Band 2 : 22.34 dBm Band 4 : 22.30 dBm Band 5 : 22.30 dBm Band 12 : 22.29 dBm Band 13 : 22.34 dBm
Antenna Type	FPC Antenna
Antenna Gain	LTE Category M1 / NB-IOT: Band 2 : 1.9 dBi Band 4 : 1.4 dBi Band 5 : 1.2 dBi Band 12 : 0.5 dBi Band 13 : 0.5 dBi
Type of Modulation	LTE Category M1: QPSK / 16QAM NB-IOT: BPSK / QPSK

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 Category M1:

LTE Band 2		QPSK		16QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
1.4	1850.7 ~ 1909.3	0.2992	1M09G7D	0.2535	0M91W7D
3	1851.5 ~ 1908.5	0.3027	1M19G7D	0.2529	1M05W7D
5	1852.5 ~ 1907.5	0.3041	1M22G7D	0.2992	1M05W7D
10	1855.0 ~ 1905.0	0.2972	1M40G7D	0.2931	1M46W7D
15	1857.5 ~ 1902.5	0.2972	1M83G7D	0.3006	1M53W7D
20	1860.0 ~ 1900.0	0.3062	1M48G7D	0.2944	1M52W7D
LTE Band 4		QPSK		16QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
1.4	1710.7 ~ 1754.3	0.2685	1M09G7D	0.2339	0M91W7D
3	1711.5 ~ 1753.5	0.2692	1M19G7D	0.2317	1M00W7D
5	1712.5 ~ 1752.5	0.2642	1M15G7D	0.2624	1M01W7D
10	1715.0 ~ 1750.0	0.2692	1M60G7D	0.2692	1M28W7D
15	1717.5 ~ 1747.5	0.2655	1M44G7D	0.2667	1M29W7D
20	1720.0 ~ 1745.0	0.2716	1M64G7D	0.2642	1M32W7D
LTE Band 5		QPSK		16QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
1.4	824.7 ~ 848.3	0.1549	1M08G7D	0.1327	0M91W7D
3	825.5 ~ 847.5	0.1545	1M19G7D	0.1306	1M03W7D
5	826.5 ~ 846.5	0.1552	1M17G7D	0.1542	1M00W7D
10	829.0 ~ 844.0	0.1560	1M54G7D	0.1528	1M28W7D
LTE Band 12		QPSK		16QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
1.4	699.7 ~ 715.3	0.1442	1M10G7D	0.1211	0M93W7D
3	700.5 ~ 714.5	0.1445	1M16G7D	0.1227	1M07W7D
5	701.5 ~ 713.5	0.1449	1M16G7D	0.1432	0M98W7D
10	704.0 ~ 711.0	0.1455	1M46G7D	0.1432	1M28W7D



LTE Band 13		QPSK		16QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
5	779.5 ~ 784.5	0.1396	1M20G7D	0.1393	1M01W7D
10	782.0	0.1400	1M44G7D	0.1387	1M24W7D

NB-IOT:

Band 2		BPSK / QPSK	
BW (KHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)
3.75	1850.1 ~ 1909.9	0.2655	5K72G7D
15	1850.1 ~ 1909.9	0.2630	191KG7D
Band 4		BPSK / QPSK	
BW (KHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)
3.75	1710.1 ~ 1754.9	0.2344	5K74G7D
15	1710.1 ~ 1754.9	0.2323	190KG7D
Band 5		BPSK / QPSK	
BW (KHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)
3.75	824.1 ~ 848.9	0.1365	5K74G7D
15	824.1 ~ 848.9	0.1358	191KG7D
Band 12		BPSK / QPSK	
BW (KHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)
3.75	699.1 ~ 715.9	0.1159	5K74G7D
15	699.1 ~ 715.9	0.1146	188KG7D
Band 13		BPSK / QPSK	
BW (KHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)
3.75	777.1 ~ 786.9	0.1172	5K72G7D
15	777.1 ~ 786.9	0.1143	190KG7D

1.7 Testing Location

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

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City, Guangdong Province 518103 People's Republic of China TEL: +86-755-86066985		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	TH01-SZ 03CH01-SZ	CN1256	421272

1.8 Test Software

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

1.9 Applicable Standards

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

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

Remark:

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



2 Test Configuration of Equipment Under Test

2.1 Test Mode

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

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

LTE Category M1:

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



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

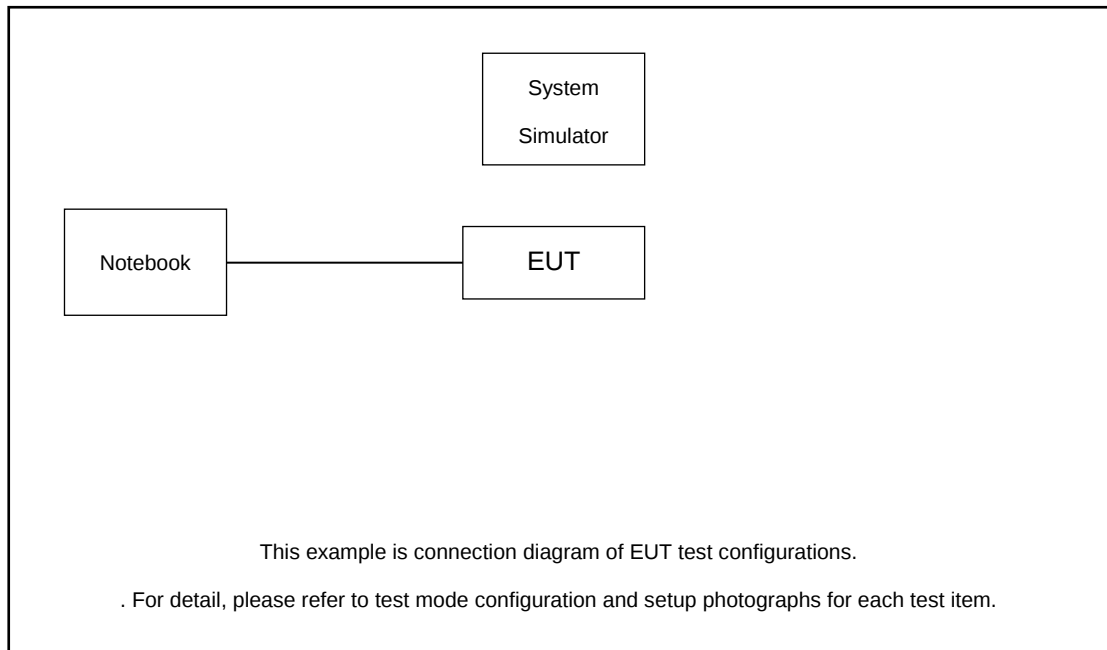
NB-IOT :

Test Items	Band	Bandwidth (KHz)						Modulation			RB #			Test Channel		
		3.75	15	5	10	15	20	BPSK	QPSK	16 QAM	1	Half	Full	L	M	H
Max. Output Power	2	v	v	-	-	-	-	v	v	-	v		v	v	v	v
	4	v	v	-	-	-	-	v	v	-	v		v	v	v	v
	5	v	v	-	-	-	-	v	v	-	v		v	v	v	v
	12	v	v	-	-	-	-	v	v	-	v		v	v	v	v
	13	v	v	-	-	-	-	v	v	-	v		v	v	v	v
Peak-to-Average Ratio	2	v	v	-	-	-	-	v	v	-			v	v	v	v
	4	v	v	-	-	-	-	v	v	-			v	v	v	v
	5	v	v	-	-	-	-	v	v	-			v	v	v	v
	12	v	v	-	-	-	-	v	v	-			v	v	v	v
	13	v	v	-	-	-	-	v	v	-			v	v	v	v
26dB and 99% Bandwidth	2	v	v	-	-	-	-	v	v	-			v	v	v	v
	4	v	v	-	-	-	-	v	v	-			v	v	v	v
	5	v	v	-	-	-	-	v	v	-			v	v	v	v



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

2.2 Connection Diagram of Test System



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	MT8821C	N/A	N/A	Unshielded, 1.8 m
3.	Notebook	DELL	Latiude 3400	N/A	N/A	Unshielded,1.8m

2.4 Measurement Results Explanation Example

For all conducted test items:

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

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

Offset = RF cable loss + attenuator factor.

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

Example :

$$\begin{aligned}
 \text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)}. \\
 &= 4.5 + 10 = 14.5 \text{ (dB)}
 \end{aligned}$$



2.5 Frequency List of Low/Middle/High Channels

LTE Category M1:

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

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



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

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

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



NB-IOT:

LTE Band 2 Channel and Frequency List				
BW [KHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
3.75	Channel	18601	18900	19199
	Frequency	1850.1	1880	1909.9
15	Channel	18601	18900	19199
	Frequency	1850.1	1880	1909.9

LTE Band 4 Channel and Frequency List				
BW [KHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
3.75	Channel	19952	20175	20398
	Frequency	1710.2	1732.5	1754.8
15	Channel	19952	20175	20398
	Frequency	1710.2	1732.5	1754.8

LTE Band 5 Channel and Frequency List				
BW [KHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
3.75	Channel	20401	20525	20649
	Frequency	824.1	836.5	848.9
15	Channel	20401	20525	20649
	Frequency	824.1	836.5	848.9

LTE Band 12 Channel and Frequency List				
BW [KHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
3.75	Channel	23011	23095	23179
	Frequency	699.1	707.5	715.9
15	Channel	23011	23095	23179
	Frequency	699.1	707.5	715.9

LTE Band 13 Channel and Frequency List				
BW [KHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
3.75	Channel	23181	23230	23279
	Frequency	777.1	782	786.9
15	Channel	23181	23230	23279
	Frequency	777.1	782	786.9

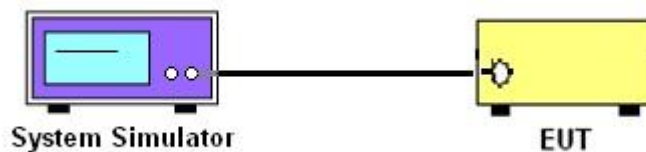
3 Conducted Test Items

3.1 Measuring Instruments

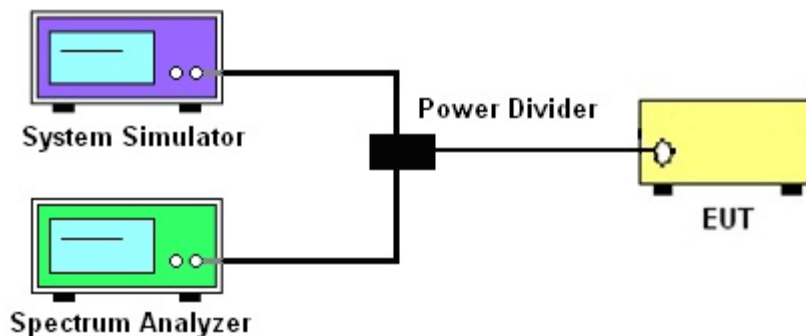
See list of measuring instruments of this test report.

3.2 Test Setup

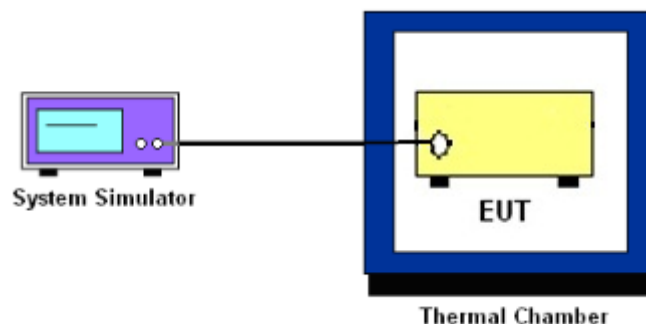
3.2.1 Conducted Output Power



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



3.2.3 Frequency Stability



3.3 Test Result of Conducted Test

Please refer to Appendix A.

3.4 Conducted Output Power and ERP/EIRP

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

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

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

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

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

The EIRP of mobile transmitters must not exceed 1 Watts for LTE Band 4.

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.

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)

$$= P(W) - [43 + 10\log(P)] \text{ (dB)}$$

$$= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)} = -13\text{dBm}.$$

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

3.8 Conducted Spurious Emission

3.8.1 Description of Conducted Spurious Emission Measurement

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

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

3.8.2 Test Procedures

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

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.

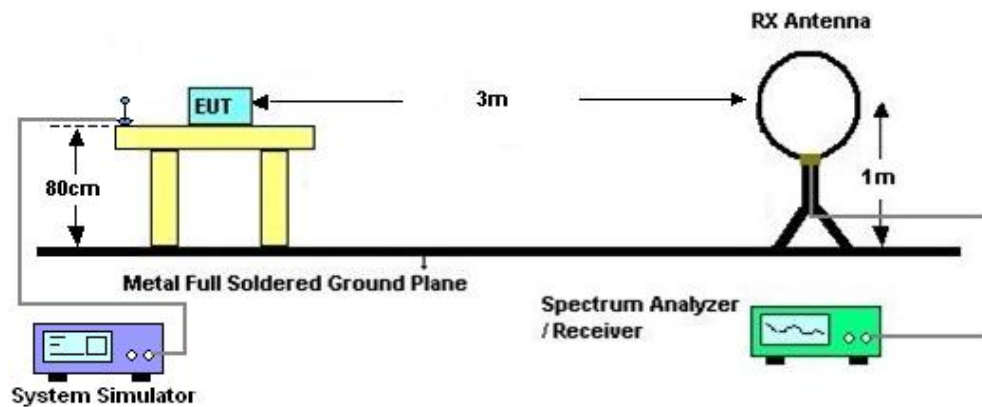
4 Radiated Test Items

4.1 Measuring Instruments

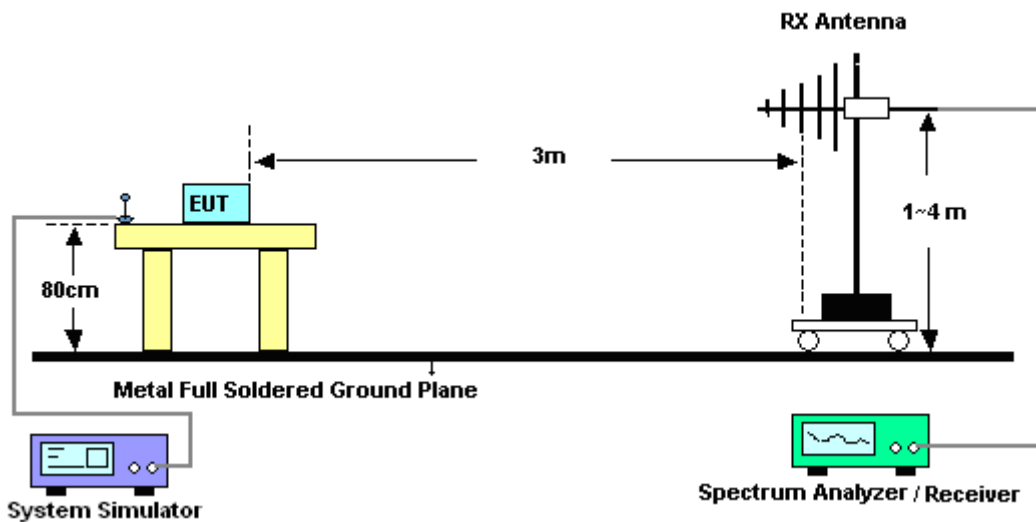
See list of measuring instruments of this test report.

4.2 Test Setup

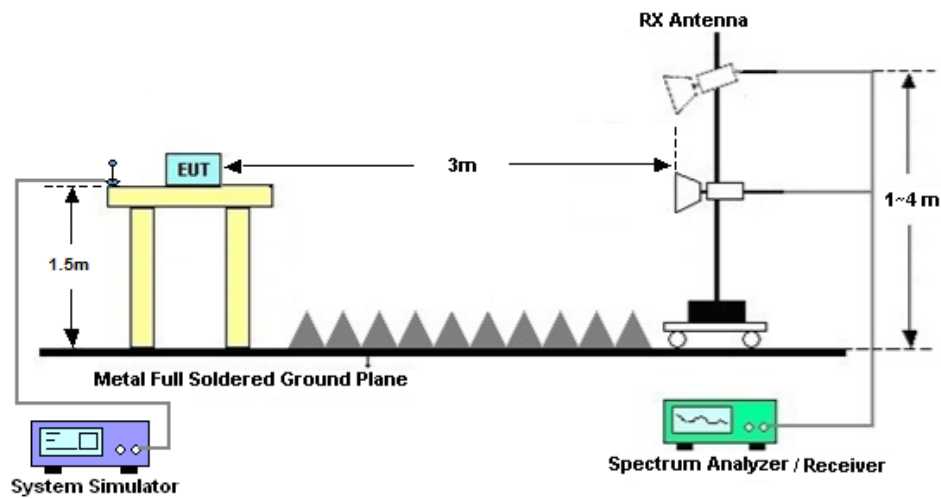
4.2.1 For radiated test below 30MHz



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 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. $\text{EIRP (dBm)} = \text{S.G. Power} - \text{Tx Cable Loss} + \text{Tx Antenna Gain}$
11. $\text{ERP (dBm)} = \text{EIRP} - 2.15$
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

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



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	Apr. 02, 2025	Jun. 30, 2025~ Aug. 14, 2025	Apr. 01, 2026	Conducted (TH01-SZ)
DC Power Supply	TTI	PL330P	290070	Max 32V, 3A	Oct. 15, 2024	Jun. 30, 2025~ Aug. 14, 2025	Oct. 14, 2025	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04 265	60.06.020.007 7	0.4GHz~26.5GHz	Dec. 24, 2024	Jun. 30, 2025~ Aug. 14, 2025	Dec. 23, 2025	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 03, 2024	Jun. 30, 2025~ Aug. 14, 2025	Jul. 02, 2025	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 02, 2025		Jul. 01, 2026	Conducted (TH01-SZ)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Dec. 25, 2024	Jul. 12, 2025	Dec. 24, 2025	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2E	101141	9kHz~30MHz	Dec. 28, 2024	Jul. 12, 2025	Dec. 27, 2025	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5Ghz	Oct. 14,2024	Jul. 12, 2025	Oct. 13,2025	Radiation (03CH01-SZ)
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz-2GHz	Oct. 24, 2023	Jul. 12, 2025	Oct. 23, 2025	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Jul. 04, 2025	Jul. 12, 2025	Jul. 03, 2026	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Apr. 03,2025	Jul. 12, 2025	Apr. 02,2027	Radiation (03CH01-SZ)
LF Amplifier	EM Electronics	EM330	060788	20MHz-3GHz	Dec. 25, 2024	Jul. 12, 2025	Dec. 24, 2025	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-00 101800-30-1 0P-R	1943528	1GHz~18GHz	Oct. 14,2024	Jul. 12, 2025	Oct. 13,2025	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	TTA1840-35 -HG	1871923	18GHz~40GHz	Jul. 03, 2025	Jul. 12, 2025	Jul. 02, 2026	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	Oct. 14,2024	Jul. 12, 2025	Oct. 13,2025	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Jul. 12, 2025	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Jul. 12, 2025	NCR	Radiation (03CH01-SZ)

NCR: No Calibration Required

6 Measurement Uncertainty

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

Uncertainty of Conducted Measurement

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

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.48 dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.53 dB
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

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



Appendix A. Test Results of Conducted Test

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

Conducted Output Power(Average power) and ERP/EIRP

LTE Category M1:

LTE Band 2:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP(W)		
Channel				18700	18900	19100			
Frequency (MHz)				1860	1880	1900	L	M	H
20	QPSK	1	0	22.93	22.96	22.88	0.3041	0.3062	0.3006
20	QPSK	1	5	22.77	22.80	22.69	0.2931	0.2951	0.2877
20	QPSK	3	0	22.69	22.72	22.65	0.2877	0.2897	0.2851
20	QPSK	3	3	22.68	22.72	22.63	0.2871	0.2897	0.2838
20	QPSK	6	0	22.68	22.72	22.55	0.2871	0.2897	0.2786
20	16QAM	1	0	22.79	22.78	22.71	0.2944	0.2938	0.2891
20	16QAM	1	5	22.77	22.78	22.66	0.2931	0.2938	0.2858
20	16QAM	3	0	22.72	22.72	22.66	0.2897	0.2897	0.2858
20	16QAM	3	3	22.68	22.67	22.62	0.2871	0.2864	0.2831
20	16QAM	5	0	22.73	22.76	22.66	0.2904	0.2924	0.2858
Channel				18675	18900	19125	EIRP(W)		
Frequency (MHz)				1857.5	1880	1902.5	L	M	H
15	QPSK	1	0	22.81	22.83	22.74	0.2958	0.2972	0.2911
15	QPSK	1	5	22.77	22.81	22.71	0.2931	0.2958	0.2891
15	QPSK	3	0	22.73	22.75	22.66	0.2904	0.2917	0.2858
15	QPSK	3	3	22.79	22.78	22.66	0.2944	0.2938	0.2858
15	QPSK	6	0	22.75	22.79	22.66	0.2917	0.2944	0.2858
15	16QAM	1	0	22.88	22.86	22.78	0.3006	0.2992	0.2938
15	16QAM	1	5	22.81	22.87	22.74	0.2958	0.2999	0.2911
15	16QAM	3	0	22.78	22.83	22.72	0.2938	0.2972	0.2897
15	16QAM	3	3	22.81	22.87	22.72	0.2958	0.2999	0.2897
15	16QAM	5	0	22.80	22.80	22.67	0.2951	0.2951	0.2864
Channel				18650	18900	19150	EIRP(W)		
Frequency (MHz)				1855	1880	1905	L	M	H
10	QPSK	1	0	22.82	22.83	22.72	0.2965	0.2972	0.2897
10	QPSK	1	5	22.72	22.72	22.59	0.2897	0.2897	0.2812
10	QPSK	3	0	22.55	22.58	22.51	0.2786	0.2805	0.2761
10	QPSK	3	3	22.61	22.64	22.53	0.2825	0.2844	0.2773
10	QPSK	6	0	22.00	22.05	21.90	0.2455	0.2483	0.2399
10	16QAM	1	0	22.77	22.75	22.66	0.2931	0.2917	0.2858
10	16QAM	1	5	22.68	22.71	22.60	0.2871	0.2891	0.2818



10	16QAM	3	0	22.58	22.60	22.48	0.2805	0.2818	0.2742
10	16QAM	3	3	22.61	22.59	22.51	0.2825	0.2812	0.2761
10	16QAM	5	0	21.94	21.94	21.85	0.2421	0.2421	0.2371
Channel				18625	18900	19175	EIRP(W)		
Frequency (MHz)				1852.5	1880	1907.5	L	M	H
5	QPSK	1	0	22.84	22.83	22.69	0.2979	0.2972	0.2877
5	QPSK	1	5	22.82	22.93	22.78	0.2965	0.3041	0.2938
5	QPSK	3	0	22.04	22.06	21.94	0.2477	0.2489	0.2421
5	QPSK	3	3	22.04	22.08	21.98	0.2477	0.2500	0.2443
5	QPSK	6	0	22.14	22.15	22.05	0.2535	0.2541	0.2483
5	16QAM	1	0	22.85	22.86	22.71	0.2985	0.2992	0.2891
5	16QAM	1	5	22.82	22.82	22.69	0.2965	0.2965	0.2877
5	16QAM	3	0	22.08	22.09	21.95	0.2500	0.2506	0.2427
5	16QAM	3	3	21.98	22.03	21.92	0.2443	0.2472	0.2410
5	16QAM	5	0	20.98	20.96	20.86	0.1941	0.1932	0.1888
Channel				18615	18900	19185	EIRP(W)		
Frequency (MHz)				1851.5	1880	1908.5	L	M	H
3	QPSK	1	0	22.83	22.83	22.74	0.2972	0.2972	0.2911
3	QPSK	1	5	22.80	22.91	22.80	0.2951	0.3027	0.2951
3	QPSK	3	0	22.04	22.02	21.91	0.2477	0.2466	0.2404
3	QPSK	3	3	22.08	22.05	21.96	0.2500	0.2483	0.2432
3	QPSK	6	0	21.11	21.09	21.01	0.2000	0.1991	0.1954
3	16QAM	1	0	22.05	22.07	21.98	0.2483	0.2495	0.2443
3	16QAM	1	5	22.11	22.13	22.01	0.2518	0.2529	0.2460
3	16QAM	3	0	20.94	21.02	20.85	0.1923	0.1959	0.1884
3	16QAM	3	3	21.08	21.09	21.02	0.1986	0.1991	0.1959
3	16QAM	5	0	21.00	21.03	20.93	0.1950	0.1963	0.1919
Channel				18607	18900	19193	EIRP(W)		
Frequency (MHz)				1850.7	1880	1909.3	L	M	H
1.4	QPSK	1	0	22.81	22.84	22.74	0.2958	0.2979	0.2911
1.4	QPSK	1	5	22.83	22.86	22.70	0.2972	0.2992	0.2884
1.4	QPSK	3	0	21.97	22.03	21.89	0.2438	0.2472	0.2393
1.4	QPSK	3	3	22.00	22.01	21.86	0.2455	0.2460	0.2377
1.4	QPSK	6	0	20.96	21.01	20.85	0.1932	0.1954	0.1884
1.4	16QAM	1	0	22.14	22.12	22.02	0.2535	0.2523	0.2466
1.4	16QAM	1	5	21.96	21.98	21.87	0.2432	0.2443	0.2382
1.4	16QAM	3	0	20.91	20.91	20.82	0.1910	0.1910	0.1871
1.4	16QAM	3	3	21.00	20.98	20.87	0.1950	0.1941	0.1892
1.4	16QAM	5	0	21.00	21.04	20.90	0.1950	0.1968	0.1905



LTE Band 4:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP(W)		
Channel				20050	20175	20300			
Frequency (MHz)				1720	1732.5	1745	L	M	H
20	QPSK	1	0	22.76	22.94	22.44	0.2606	0.2716	0.2421
20	QPSK	1	5	22.65	22.76	22.32	0.2541	0.2606	0.2355
20	QPSK	3	0	22.66	22.73	22.29	0.2547	0.2588	0.2339
20	QPSK	3	3	22.72	22.81	22.39	0.2582	0.2636	0.2393
20	QPSK	6	0	22.67	22.73	22.34	0.2553	0.2588	0.2366
20	16QAM	1	0	22.65	22.66	22.31	0.2541	0.2547	0.2350
20	16QAM	1	5	22.79	22.82	22.40	0.2624	0.2642	0.2399
20	16QAM	3	0	22.70	22.72	22.30	0.2570	0.2582	0.2344
20	16QAM	3	3	22.61	22.70	22.27	0.2518	0.2570	0.2328
20	16QAM	5	0	22.71	22.77	22.31	0.2576	0.2612	0.2350
Channel				20025	20175	20325	EIRP(W)		
Frequency (MHz)				1717.5	1732.5	1747.5	L	M	H
15	QPSK	1	0	22.80	22.84	22.39	0.2630	0.2655	0.2393
15	QPSK	1	5	22.69	22.78	22.34	0.2564	0.2618	0.2366
15	QPSK	3	0	22.64	22.71	22.33	0.2535	0.2576	0.2360
15	QPSK	3	3	22.72	22.77	22.39	0.2582	0.2612	0.2393
15	QPSK	6	0	22.76	22.77	22.38	0.2606	0.2612	0.2388
15	16QAM	1	0	22.67	22.72	22.34	0.2553	0.2582	0.2366
15	16QAM	1	5	22.77	22.82	22.44	0.2612	0.2642	0.2421
15	16QAM	3	0	22.80	22.86	22.43	0.2630	0.2667	0.2415
15	16QAM	3	3	22.67	22.72	22.30	0.2553	0.2582	0.2344
15	16QAM	5	0	22.78	22.85	22.45	0.2618	0.2661	0.2427
Channel				20000	20175	20350	EIRP(W)		
Frequency (MHz)				1715	1732.5	1750	L	M	H
10	QPSK	1	0	22.76	22.82	22.43	0.2606	0.2642	0.2415
10	QPSK	1	5	22.69	22.80	22.37	0.2564	0.2630	0.2382
10	QPSK	3	0	22.77	22.85	22.41	0.2612	0.2661	0.2404
10	QPSK	3	3	22.86	22.90	22.48	0.2667	0.2692	0.2443
10	QPSK	6	0	22.22	22.34	21.87	0.2301	0.2366	0.2123
10	16QAM	1	0	22.80	22.81	22.40	0.2630	0.2636	0.2399
10	16QAM	1	5	22.79	22.90	22.50	0.2624	0.2692	0.2455
10	16QAM	3	0	22.71	22.80	22.39	0.2576	0.2630	0.2393
10	16QAM	3	3	22.86	22.89	22.50	0.2667	0.2685	0.2455
10	16QAM	5	0	22.18	22.23	21.79	0.2280	0.2307	0.2084
Channel				19975	20175	20375	EIRP(W)		
Frequency (MHz)				1712.5	1732.5	1752.5	L	M	H
5	QPSK	1	0	22.78	22.82	22.43	0.2618	0.2642	0.2415
5	QPSK	1	5	22.70	22.73	22.37	0.2570	0.2588	0.2382
5	QPSK	3	0	22.07	22.12	21.69	0.2223	0.2249	0.2037
5	QPSK	3	3	22.09	22.17	21.77	0.2234	0.2275	0.2075



5	QPSK	6	0	22.14	22.24	21.80	0.2259	0.2312	0.2089
5	16QAM	1	0	22.72	22.77	22.36	0.2582	0.2612	0.2377
5	16QAM	1	5	22.73	22.79	22.36	0.2588	0.2624	0.2377
5	16QAM	3	0	22.05	22.16	21.72	0.2213	0.2270	0.2051
5	16QAM	3	3	22.10	22.16	21.73	0.2239	0.2270	0.2056
5	16QAM	5	0	21.05	21.08	20.69	0.1758	0.1770	0.1618
Channel				19965	20175	20385	EIRP(W)		
Frequency (MHz)				1711.5	1732.5	1753.5	L	M	H
3	QPSK	1	0	22.78	22.82	22.39	0.2618	0.2642	0.2393
3	QPSK	1	5	22.87	22.90	22.58	0.2673	0.2692	0.2500
3	QPSK	3	0	22.20	22.27	21.88	0.2291	0.2328	0.2128
3	QPSK	3	3	22.22	22.23	21.84	0.2301	0.2307	0.2109
3	QPSK	6	0	21.22	21.26	20.88	0.1828	0.1845	0.1690
3	16QAM	1	0	22.18	22.23	21.81	0.2280	0.2307	0.2094
3	16QAM	1	5	22.19	22.25	21.86	0.2286	0.2317	0.2118
3	16QAM	3	0	21.12	21.18	20.79	0.1786	0.1811	0.1656
3	16QAM	3	3	21.19	21.26	20.86	0.1816	0.1845	0.1683
3	16QAM	5	0	21.04	21.10	20.73	0.1754	0.1778	0.1633
Channel				19950	20175	20393	EIRP(W)		
Frequency (MHz)				1710	1732.5	1754.3	L	M	H
1.4	QPSK	1	0	22.80	22.80	22.41	0.2630	0.2630	0.2404
1.4	QPSK	1	5	22.85	22.89	22.48	0.2661	0.2685	0.2443
1.4	QPSK	3	0	22.20	22.22	21.86	0.2291	0.2301	0.2118
1.4	QPSK	3	3	22.19	22.22	21.84	0.2286	0.2301	0.2109
1.4	QPSK	6	0	21.01	21.03	20.62	0.1742	0.1750	0.1592
1.4	16QAM	1	0	22.24	22.29	21.87	0.2312	0.2339	0.2123
1.4	16QAM	1	5	22.15	22.25	21.84	0.2265	0.2317	0.2109
1.4	16QAM	3	0	21.14	21.19	20.78	0.1795	0.1816	0.1652
1.4	16QAM	3	3	21.10	21.13	20.69	0.1778	0.1791	0.1618
1.4	16QAM	5	0	21.06	21.10	20.70	0.1762	0.1778	0.1622



LTE Band 5:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel				20450	20525	20600			
Frequency (MHz)				829	836.5	844	L	M	H
10	QPSK	1	0	22.81	22.88	22.74	0.1535	0.1560	0.1510
10	QPSK	1	5	22.77	22.81	22.67	0.1521	0.1535	0.1486
10	QPSK	3	0	22.70	22.79	22.63	0.1496	0.1528	0.1472
10	QPSK	3	3	22.78	22.81	22.70	0.1524	0.1535	0.1496
10	QPSK	6	0	21.98	22.06	21.92	0.1268	0.1291	0.1250
10	16QAM	1	0	22.75	22.79	22.72	0.1514	0.1528	0.1503
10	16QAM	1	5	22.77	22.73	22.63	0.1521	0.1507	0.1472
10	16QAM	3	0	22.75	22.78	22.67	0.1514	0.1524	0.1486
10	16QAM	3	3	22.67	22.71	22.57	0.1486	0.1500	0.1452
10	16QAM	5	0	21.95	21.95	21.84	0.1259	0.1259	0.1227
Channel				20425	20525	20625	ERP(W)		
Frequency (MHz)				826.5	836.5	846.5	L	M	H
5	QPSK	1	0	22.79	22.86	22.76	0.1528	0.1552	0.1517
5	QPSK	1	5	22.80	22.82	22.69	0.1531	0.1538	0.1493
5	QPSK	3	0	21.98	22.04	21.92	0.1268	0.1285	0.1250
5	QPSK	3	3	21.93	21.91	21.86	0.1253	0.1247	0.1233
5	QPSK	6	0	22.10	22.11	22.01	0.1303	0.1306	0.1276
5	16QAM	1	0	22.80	22.81	22.70	0.1531	0.1535	0.1496
5	16QAM	1	5	22.81	22.83	22.69	0.1535	0.1542	0.1493
5	16QAM	3	0	21.97	21.93	21.89	0.1265	0.1253	0.1242
5	16QAM	3	3	21.97	21.99	21.86	0.1265	0.1271	0.1233
5	16QAM	5	0	20.98	21.01	20.85	0.1007	0.1014	0.0977
Channel				20415	20525	20635	ERP(W)		
Frequency (MHz)				825.5	836.5	847.5	L	M	H
3	QPSK	1	0	22.84	22.80	22.76	0.1545	0.1531	0.1517
3	QPSK	1	5	22.78	22.80	22.80	0.1524	0.1531	0.1531
3	QPSK	3	0	22.17	22.20	22.10	0.1324	0.1334	0.1303
3	QPSK	3	3	22.20	22.17	22.08	0.1334	0.1324	0.1297
3	QPSK	6	0	20.93	20.92	20.81	0.0995	0.0993	0.0968
3	16QAM	1	0	22.07	22.10	22.00	0.1294	0.1303	0.1274
3	16QAM	1	5	22.11	22.11	22.02	0.1306	0.1306	0.1279
3	16QAM	3	0	20.95	20.99	20.90	0.1000	0.1009	0.0989
3	16QAM	3	3	20.88	20.93	20.79	0.0984	0.0995	0.0964
3	16QAM	5	0	20.93	20.94	20.83	0.0995	0.0998	0.0973
Channel				20407	20525	20643	ERP(W)		
Frequency (MHz)				824.7	836.5	848.3	L	M	H
1.4	QPSK	1	0	22.85	22.85	22.74	0.1549	0.1549	0.1510
1.4	QPSK	1	5	22.72	22.79	22.68	0.1503	0.1528	0.1489
1.4	QPSK	3	0	22.12	22.11	22.04	0.1309	0.1306	0.1285
1.4	QPSK	3	3	22.18	22.20	22.07	0.1327	0.1334	0.1294



1.4	QPSK	6	0	20.92	20.93	20.81	0.0993	0.0995	0.0968
1.4	16QAM	1	0	22.09	22.05	21.96	0.1300	0.1288	0.1262
1.4	16QAM	1	5	22.18	22.18	22.07	0.1327	0.1327	0.1294
1.4	16QAM	3	0	20.96	20.97	20.86	0.1002	0.1005	0.0979
1.4	16QAM	3	3	20.90	20.88	20.79	0.0989	0.0984	0.0964
1.4	16QAM	5	0	20.91	20.91	20.77	0.0991	0.0991	0.0959

LTE Band 12:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel				23060	23095	23130			
Frequency (MHz)				704	707.5	711	L	M	H
10	QPSK	1	0	23.27	23.28	23.25	0.1452	0.1455	0.1445
10	QPSK	1	5	23.25	23.23	23.18	0.1445	0.1439	0.1422
10	QPSK	3	0	23.14	23.13	23.15	0.1409	0.1406	0.1413
10	QPSK	3	3	23.17	23.14	23.13	0.1419	0.1409	0.1406
10	QPSK	6	0	22.54	22.52	22.45	0.1227	0.1222	0.1202
10	16QAM	1	0	23.21	23.19	23.18	0.1432	0.1426	0.1422
10	16QAM	1	5	23.18	23.16	23.11	0.1422	0.1416	0.1400
10	16QAM	3	0	23.18	23.21	23.13	0.1422	0.1432	0.1406
10	16QAM	3	3	23.20	23.16	23.14	0.1429	0.1416	0.1409
10	16QAM	5	0	22.52	22.46	22.42	0.1222	0.1205	0.1194
Channel				23035	23095	23155	ERP(W)		
Frequency (MHz)				701.5	707.5	713.5	L	M	H
5	QPSK	1	0	23.26	23.23	23.24	0.1449	0.1439	0.1442
5	QPSK	1	5	23.22	23.20	23.21	0.1435	0.1429	0.1432
5	QPSK	3	0	22.41	22.39	22.35	0.1191	0.1186	0.1175
5	QPSK	3	3	22.52	22.46	22.47	0.1222	0.1205	0.1208
5	QPSK	6	0	22.51	22.53	22.48	0.1219	0.1225	0.1211
5	16QAM	1	0	23.21	23.17	23.14	0.1432	0.1419	0.1409
5	16QAM	1	5	23.17	23.14	23.14	0.1419	0.1409	0.1409
5	16QAM	3	0	22.41	22.37	22.38	0.1191	0.1180	0.1183
5	16QAM	3	3	22.54	22.51	22.49	0.1227	0.1219	0.1213
5	16QAM	5	0	21.49	21.46	21.44	0.0964	0.0957	0.0953
Channel				23025	23095	23165	ERP(W)		
Frequency (MHz)				700.5	707.5	714.5	L	M	H
3	QPSK	1	0	23.22	23.24	23.25	0.1435	0.1442	0.1445
3	QPSK	1	5	23.22	23.20	23.24	0.1435	0.1429	0.1442
3	QPSK	3	0	22.55	22.52	22.51	0.1230	0.1222	0.1219
3	QPSK	3	3	22.48	22.43	22.41	0.1211	0.1197	0.1191
3	QPSK	6	0	21.60	21.51	21.49	0.0989	0.0968	0.0964
3	16QAM	1	0	22.49	22.44	22.45	0.1213	0.1199	0.1202
3	16QAM	1	5	22.54	22.54	22.52	0.1227	0.1227	0.1222
3	16QAM	3	0	21.47	21.46	21.42	0.0959	0.0957	0.0948
3	16QAM	3	3	21.53	21.50	21.45	0.0973	0.0966	0.0955



3	16QAM	5	0	21.57	21.55	21.48	0.0982	0.0977	0.0962
Channel				23017	23095	23173	ERP(W)		
Frequency (MHz)				699.7	707.5	715.3	L	M	H
1.4	QPSK	1	0	23.22	23.21	23.20	0.1435	0.1432	0.1429
1.4	QPSK	1	5	23.21	23.24	23.19	0.1432	0.1442	0.1426
1.4	QPSK	3	0	22.58	22.51	22.52	0.1239	0.1219	0.1222
1.4	QPSK	3	3	22.55	22.55	22.55	0.1230	0.1230	0.1230
1.4	QPSK	6	0	21.53	21.50	21.47	0.0973	0.0966	0.0959
1.4	16QAM	1	0	22.48	22.46	22.47	0.1211	0.1205	0.1208
1.4	16QAM	1	5	22.44	22.44	22.41	0.1199	0.1199	0.1191
1.4	16QAM	3	0	21.48	21.44	21.40	0.0962	0.0953	0.0944
1.4	16QAM	3	3	21.49	21.46	21.41	0.0964	0.0957	0.0946
1.4	16QAM	5	0	21.55	21.49	21.48	0.0977	0.0964	0.0962

LTE Band 13:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel				23230					
Frequency (MHz)				782				M	
10	QPSK	1	0		23.11			0.1400	
10	QPSK	1	5		23.05			0.1380	
10	QPSK	3	0		23.08			0.1390	
10	QPSK	3	3		23.03			0.1374	
10	QPSK	6	0		22.32			0.1167	
10	16QAM	1	0		23.07			0.1387	
10	16QAM	1	5		23.00			0.1365	
10	16QAM	3	0		23.02			0.1371	
10	16QAM	3	3		23.02			0.1371	
10	16QAM	5	0		22.34			0.1172	
Channel				23205	23230	23255	ERP(W)		
Frequency (MHz)				779.5	782	784.5	L	M	H
5	QPSK	1	0	23.07	23.07	23.06	0.1387	0.1387	0.1384
5	QPSK	1	5	23.10	23.10	23.10	0.1396	0.1396	0.1396
5	QPSK	3	0	22.21	22.22	22.21	0.1138	0.1140	0.1138
5	QPSK	3	3	22.22	22.25	22.24	0.1140	0.1148	0.1146
5	QPSK	6	0	22.33	22.34	22.36	0.1169	0.1172	0.1178
5	16QAM	1	0	23.08	23.08	23.07	0.1390	0.1390	0.1387
5	16QAM	1	5	23.08	23.09	23.08	0.1390	0.1393	0.1390
5	16QAM	3	0	22.32	22.30	22.32	0.1167	0.1161	0.1167
5	16QAM	3	3	22.23	22.26	22.21	0.1143	0.1151	0.1138
5	16QAM	5	0	21.06	21.10	21.09	0.0873	0.0881	0.0879



NB-IOT:

Band 2:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP(W)		
Channel				18601	18900	19199			
Frequency (MHz)				1850.1	1880	1909.9	L	M	H
0.00375	BPSK	1	0	22.18	22.22	22.09	0.2559	0.2582	0.2506
0.00375	BPSK	1	47	22.20	22.14	22.06	0.2570	0.2535	0.2489
0.00375	QPSK	1	0	22.30	22.34	22.24	0.2630	0.2655	0.2594
0.00375	QPSK	1	47	22.26	22.13	22.07	0.2606	0.2529	0.2495
0.015	BPSK	1	0	22.20	22.20	22.22	0.2570	0.2570	0.2582
0.015	BPSK	1	11	22.10	22.20	22.23	0.2512	0.2570	0.2588
0.015	QPSK	1	0	22.23	22.30	22.20	0.2588	0.2630	0.2570
0.015	QPSK	1	11	22.20	22.22	22.21	0.2570	0.2582	0.2576
0.015	QPSK	12	0	20.90	20.70	20.80	0.1905	0.1820	0.1862

Band 4:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP(W)		
Channel				19951	20175	20399			
Frequency (MHz)				1710.1	1732.5	1754.9	L	M	H
0.00375	BPSK	1	0	22.00	22.18	22.17	0.2188	0.2280	0.2275
0.00375	BPSK	1	47	22.01	22.14	22.16	0.2193	0.2259	0.2270
0.00375	QPSK	1	0	22.21	22.30	22.26	0.2296	0.2344	0.2323
0.00375	QPSK	1	47	22.04	22.16	22.16	0.2208	0.2270	0.2270
0.015	BPSK	1	0	22.20	22.20	22.25	0.2291	0.2291	0.2317
0.015	BPSK	1	11	22.15	22.22	22.20	0.2265	0.2301	0.2291
0.015	QPSK	1	0	22.20	22.26	22.23	0.2291	0.2323	0.2307
0.015	QPSK	1	11	22.13	22.21	22.20	0.2254	0.2296	0.2291
0.015	QPSK	12	0	21.03	21.06	21.05	0.1750	0.1762	0.1758

**Band 5:**

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel				20401	20525	20649			
Frequency (MHz)				824.1	836.5	848.9	L	M	H
0.00375	BPSK	1	0	22.28	22.13	22.11	0.1358	0.1312	0.1306
0.00375	BPSK	1	47	22.25	22.14	22.07	0.1349	0.1315	0.1294
0.00375	QPSK	1	0	22.29	22.30	22.16	0.1361	0.1365	0.1321
0.00375	QPSK	1	47	22.24	22.19	22.15	0.1346	0.1330	0.1318
0.015	BPSK	1	0	22.28	22.02	22.11	0.1358	0.1279	0.1306
0.015	BPSK	1	11	22.22	22.07	22.13	0.1340	0.1294	0.1312
0.015	QPSK	1	0	22.17	22.10	22.12	0.1324	0.1303	0.1309
0.015	QPSK	1	11	22.22	22.08	22.10	0.1340	0.1297	0.1303
0.015	QPSK	12	0	21.01	21.08	21.02	0.1014	0.1030	0.1016

Band 12:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel				23011	23095	23179			
Frequency (MHz)				699.1	707.5	715.9	L	M	H
0.00375	BPSK	1	0	22.20	22.18	22.04	0.1135	0.1130	0.1094
0.00375	BPSK	1	47	22.12	22.15	22.02	0.1114	0.1122	0.1089
0.00375	QPSK	1	0	22.26	22.29	22.10	0.1151	0.1159	0.1109
0.00375	QPSK	1	47	22.23	22.14	22.03	0.1143	0.1119	0.1091
0.015	BPSK	1	0	22.18	22.21	22.04	0.1130	0.1138	0.1094
0.015	BPSK	1	11	22.15	22.19	22.08	0.1122	0.1132	0.1104
0.015	QPSK	1	0	22.18	22.15	22.04	0.1130	0.1122	0.1094
0.015	QPSK	1	11	22.20	22.24	22.02	0.1135	0.1146	0.1089
0.015	QPSK	12	0	21.51	21.57	21.55	0.0968	0.0982	0.0977

**Band 13:**

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP(W)		
Channel				23181	23230	23279			
Frequency (MHz)				777.1	782	786.9		M	
0.00375	BPSK	1	0	22.14	22.27	22.16	0.1119	0.1153	0.1125
0.00375	BPSK	1	47	22.16	22.30	22.16	0.1125	0.1161	0.1125
0.00375	QPSK	1	0	22.17	22.34	22.17	0.1127	0.1172	0.1127
0.00375	QPSK	1	47	22.15	22.31	22.14	0.1122	0.1164	0.1119
0.015	BPSK	1	0	22.10	22.18	22.13	0.1109	0.1130	0.1117
0.015	BPSK	1	11	22.05	22.14	22.11	0.1096	0.1119	0.1112
0.015	QPSK	1	0	22.08	22.23	22.15	0.1104	0.1143	0.1122
0.015	QPSK	1	11	22.06	22.22	22.12	0.1099	0.1140	0.1114
0.015	QPSK	12	0	21.22	21.27	21.23	0.0906	0.0916	0.0908

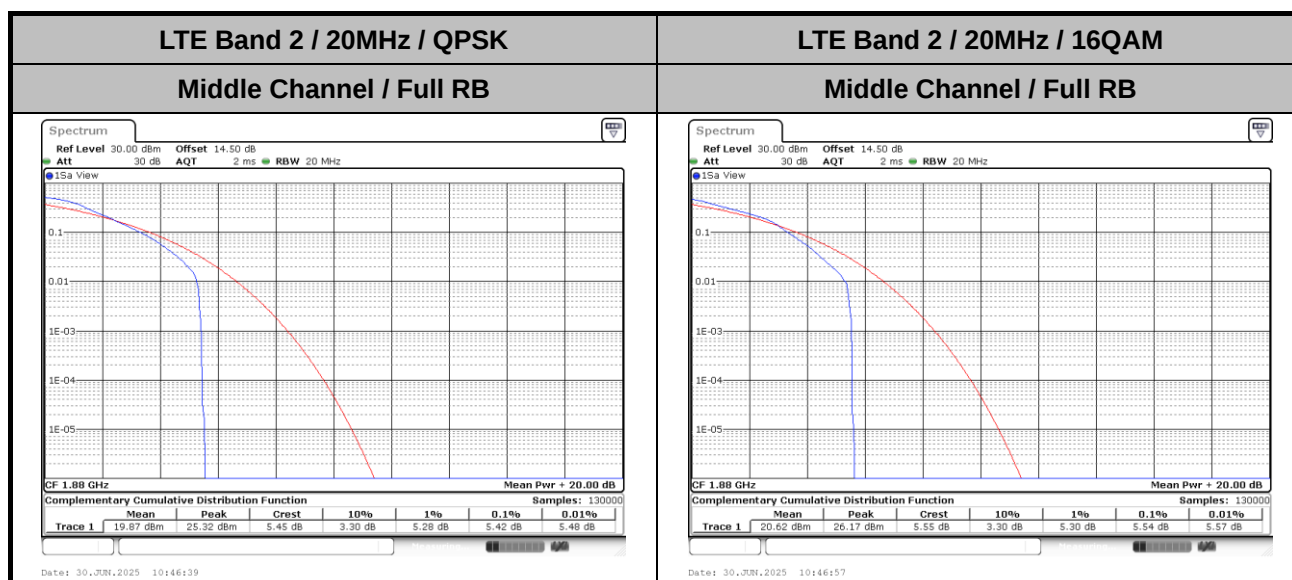


LTE Category M1:

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	5.42	5.54		PASS





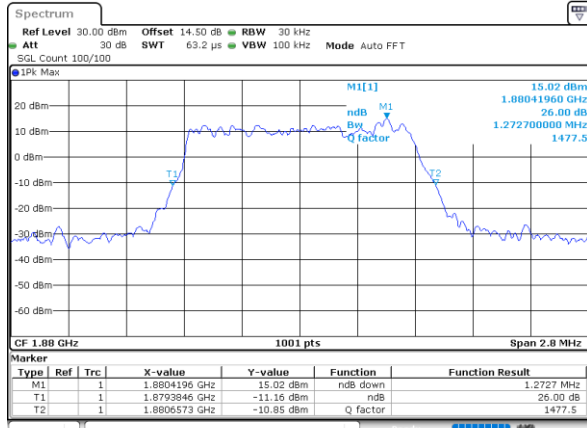
26dB Bandwidth

Mode	LTE Band 2 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	1.27	1.09	1.41	1.19	1.42	1.27	1.84	2.04	1.74	2.34	2.44	1.72

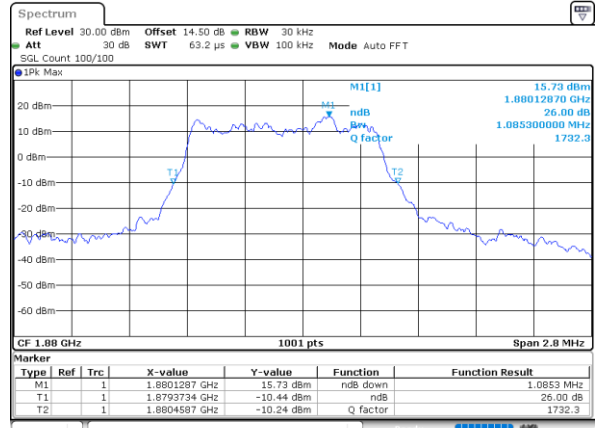


LTE Band 2

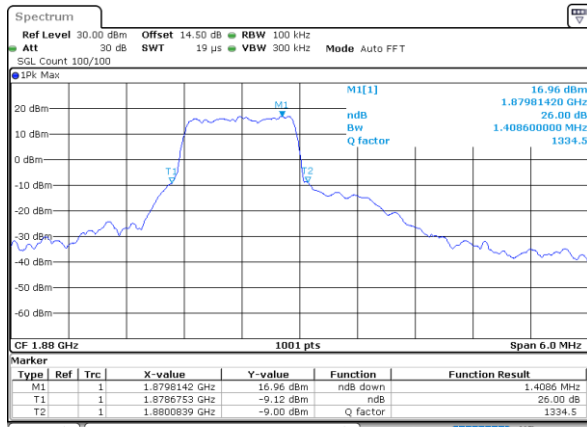
Middle Channel / 1.4MHz / QPSK



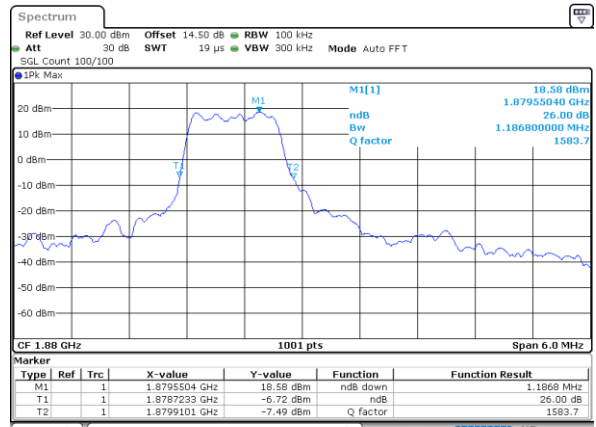
Middle Channel / 1.4MHz / 16QAM



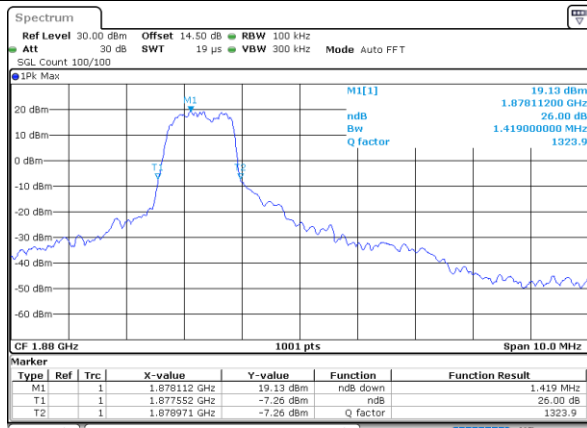
Middle Channel / 3MHz / QPSK



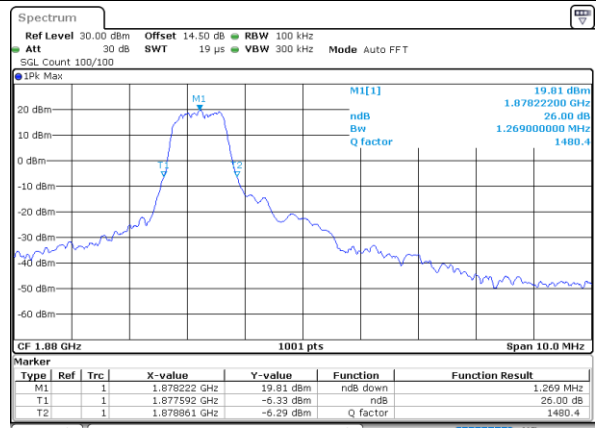
Middle Channel / 3MHz / 16QAM



Middle Channel / 5MHz / QPSK



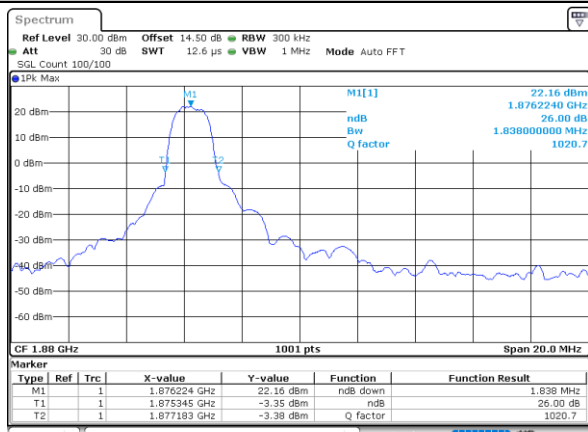
Middle Channel / 5MHz / 16QAM





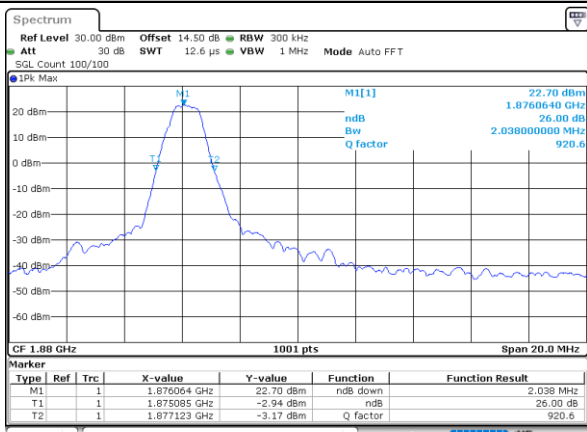
LTE Band 2

Middle Channel / 10MHz / QPSK



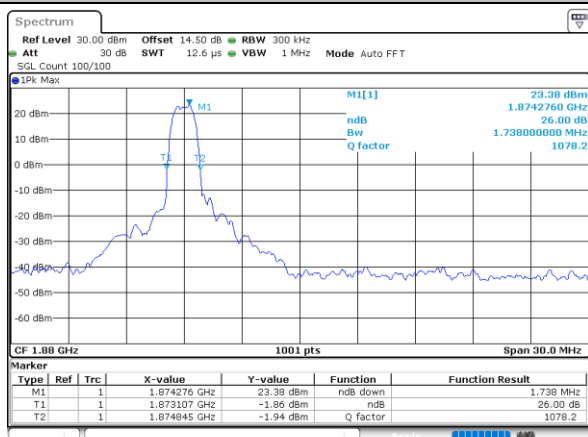
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Middle Channel / 10MHz / 16QAM



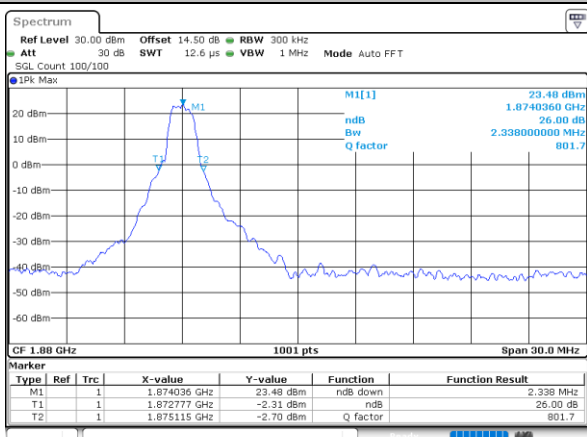
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Middle Channel / 15MHz / QPSK



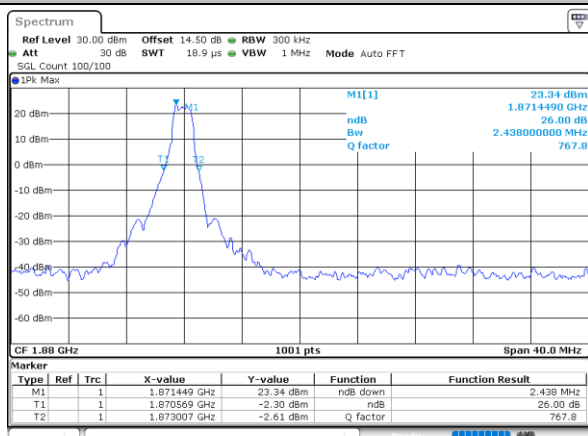
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Middle Channel / 15MHz / 16QAM



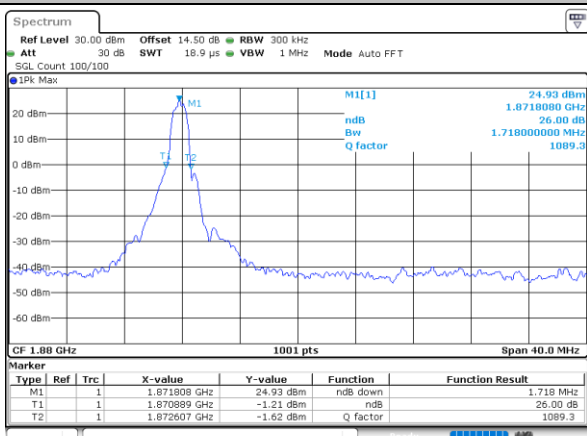
Date: 30 JUN 2025 10:24:20

Middle Channel / 20MHz / QPSK



Date: 30 JUN 2025 10:38:06

Middle Channel / 20MHz / 16QAM



Date: 30 JUN 2025 10:37:01



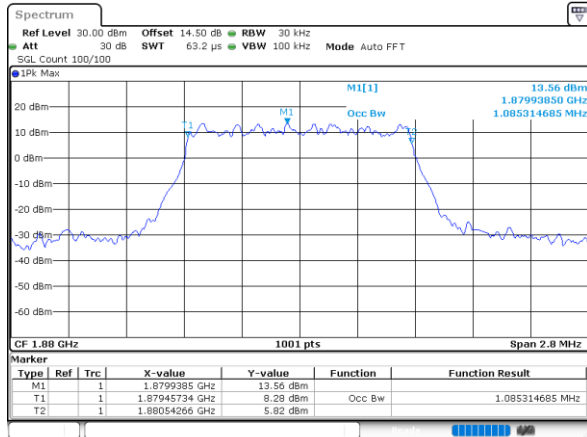
Occupied Bandwidth

Mode	LTE Band 2 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	1.09	0.91	1.19	1.05	1.22	1.05	1.40	1.46	1.83	1.53	1.48	1.52

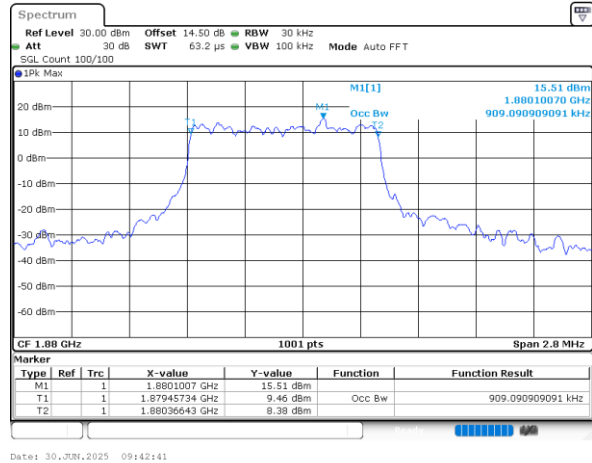


LTE Band 2

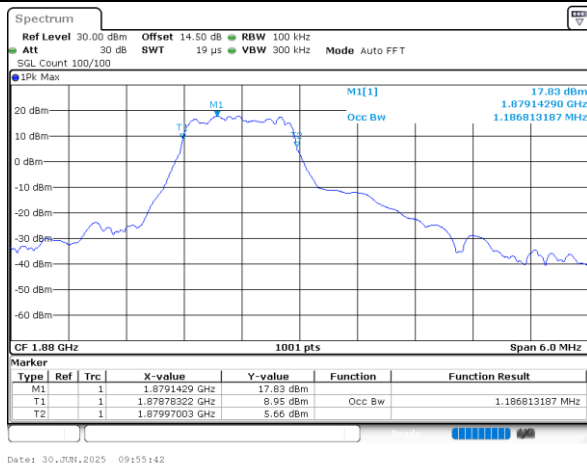
Middle Channel / 1.4MHz / QPSK



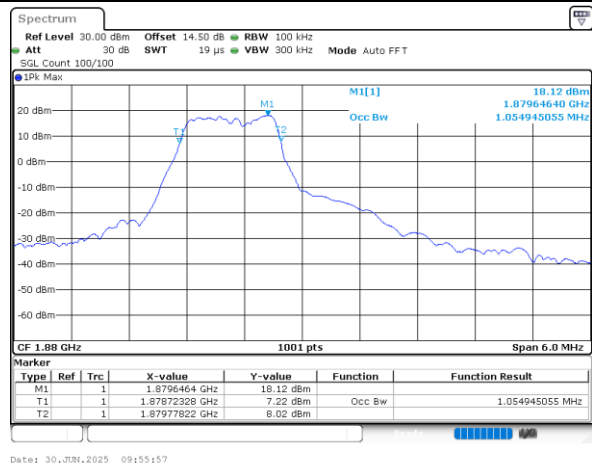
Middle Channel / 1.4MHz / 16QAM



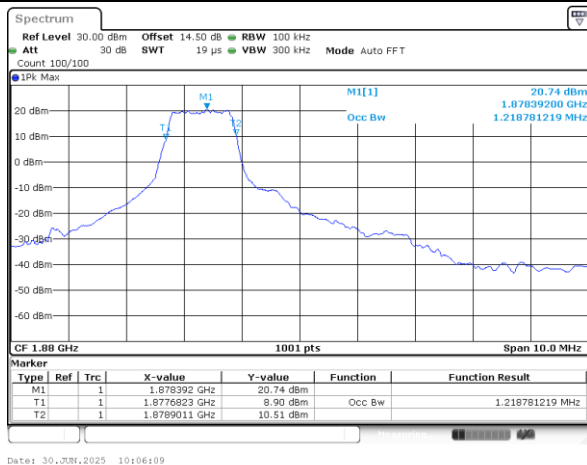
Middle Channel / 3MHz / QPSK



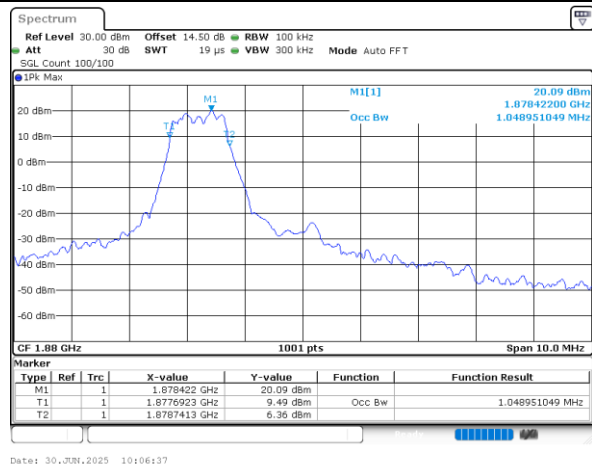
Middle Channel / 3MHz / 16QAM



Middle Channel / 5MHz / QPSK



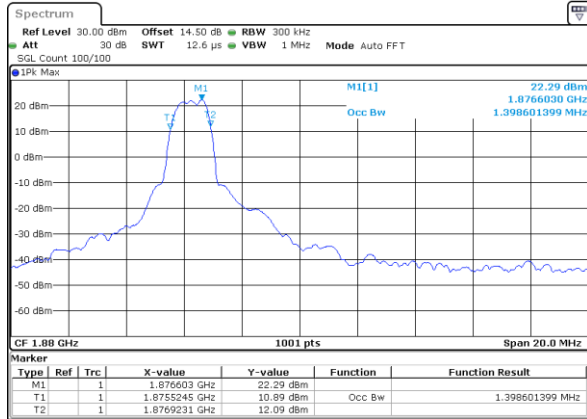
Middle Channel / 5MHz / 16QAM



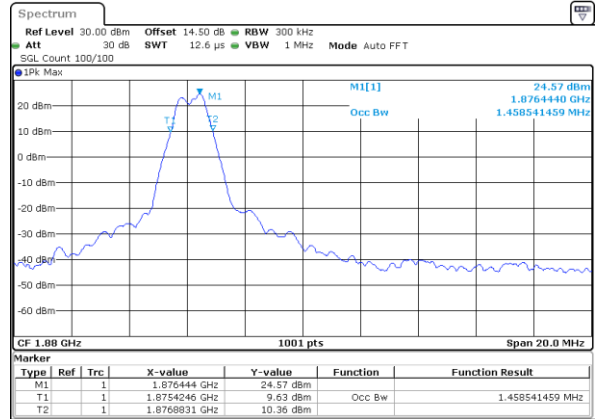


LTE Band 2

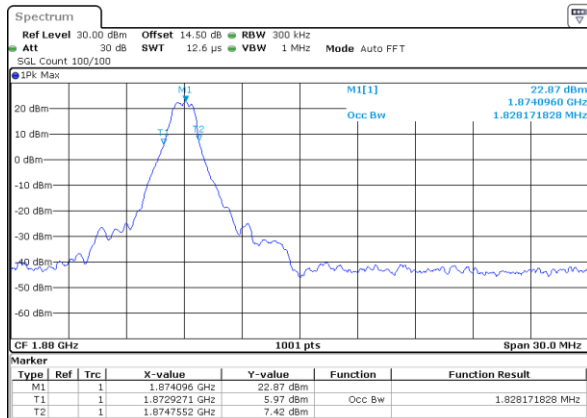
Middle Channel / 10MHz / QPSK



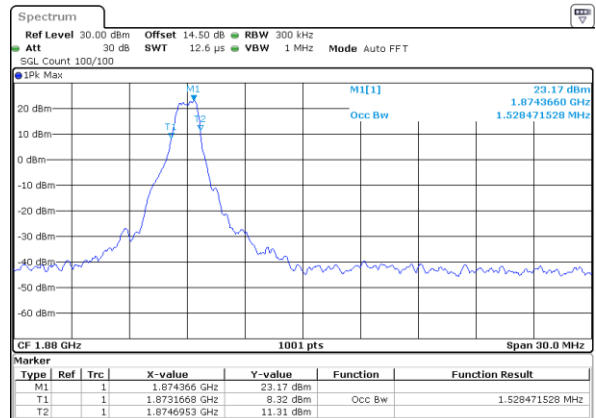
Middle Channel / 10MHz / 16QAM



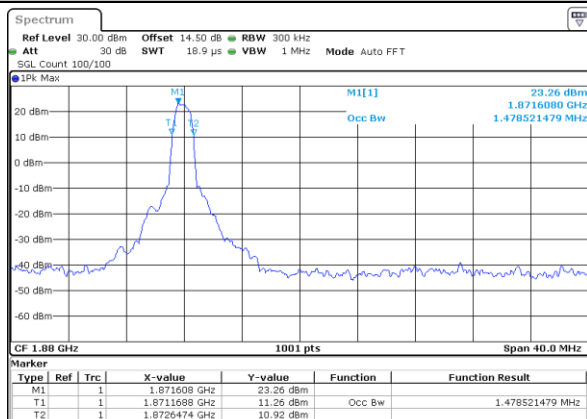
Middle Channel / 15MHz / QPSK



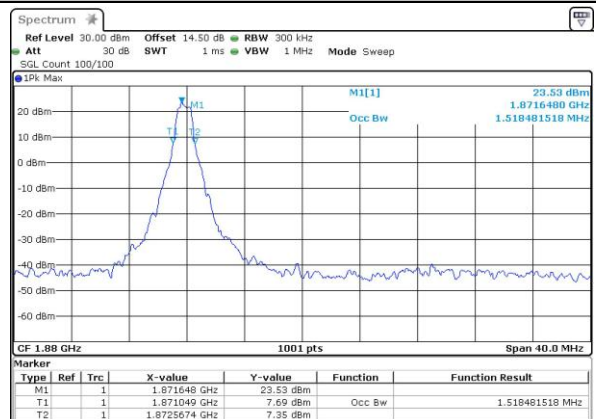
Middle Channel / 15MHz / 16QAM



Middle Channel / 20MHz / QPSK



Middle Channel / 20MHz / 16QAM

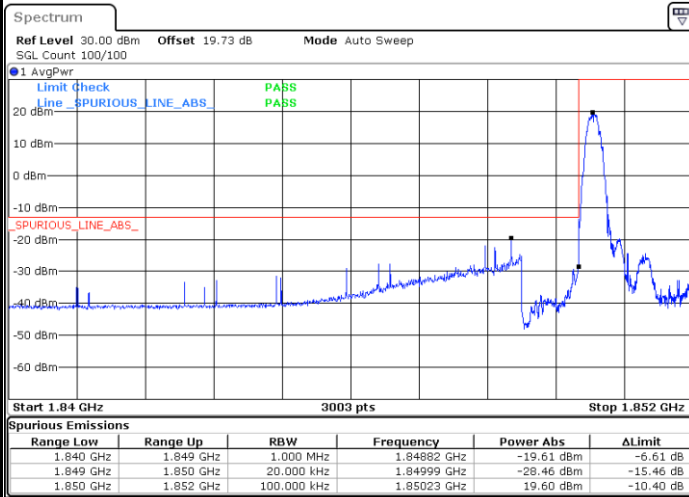




Conducted Band Edge

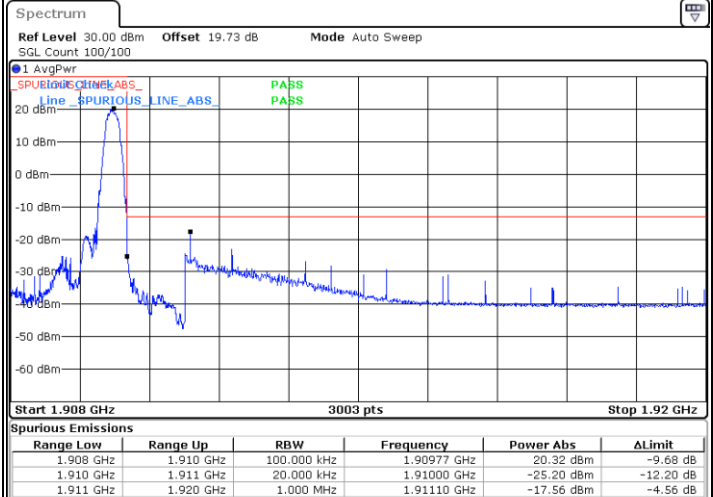
LTE Band 2 / 1.4MHz / QPSK

Lowest Band Edge / 1RB



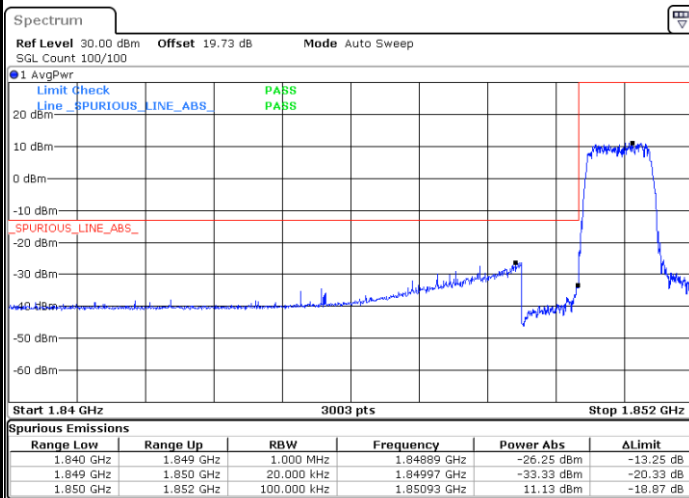
Date: 24.JUN.2025 15:02:49

Highest Band Edge / 1RB



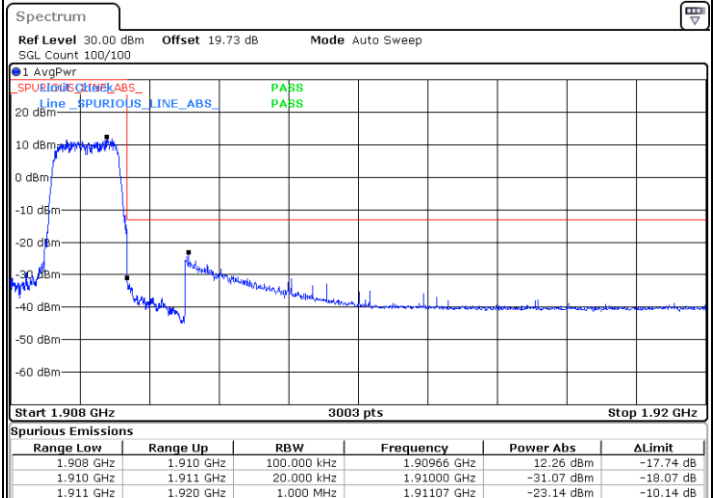
Date: 30.JUN.2025 09:44:52

Lowest Band Edge / Full RB



Date: 30.JUN.2025 09:40:25

Highest Band Edge / Full RB

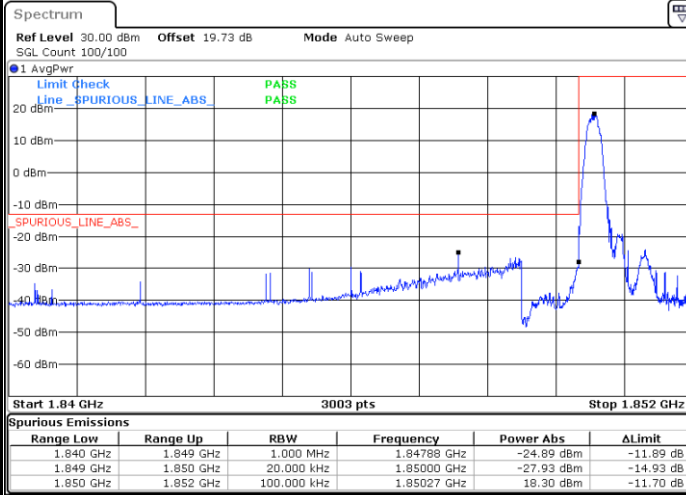


Date: 30.JUN.2025 09:45:11

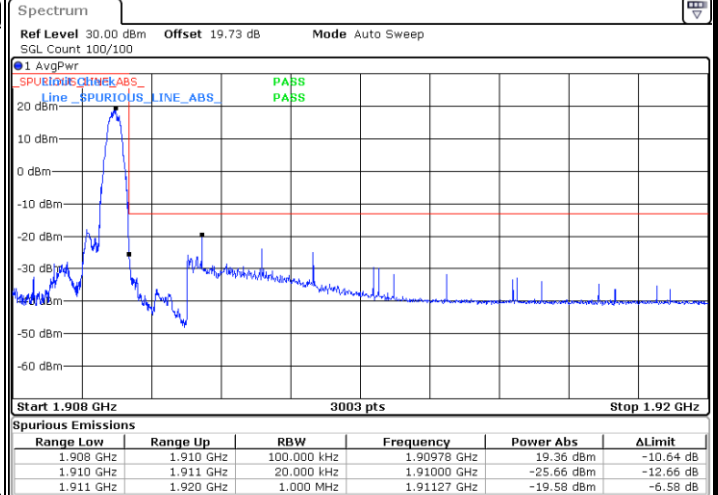


LTE Band 2 / 1.4MHz / 16QAM

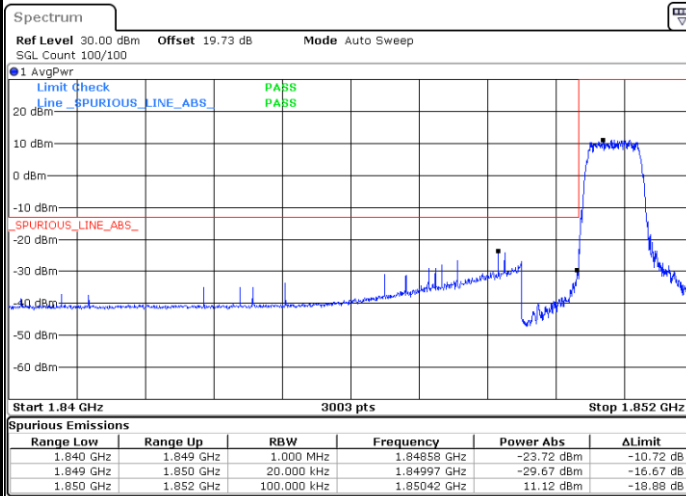
Lowest Band Edge / 1 RB



Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



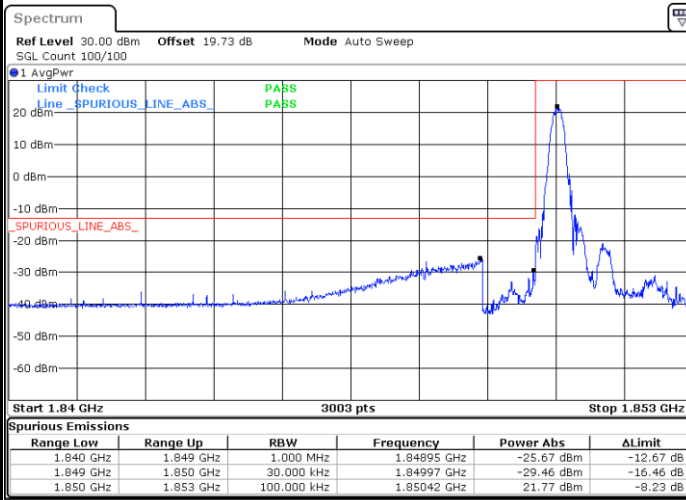
Highest Band Edge / Full RB





LTE Band 2 / 3MHz / QPSK

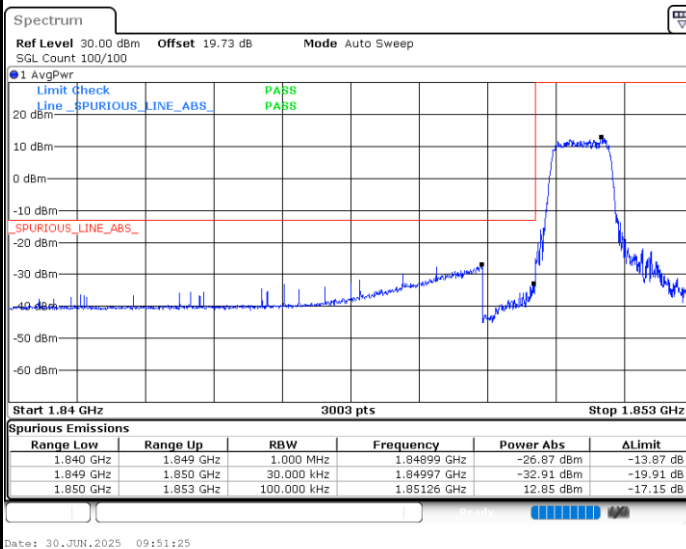
Lowest Band Edge / 1RB



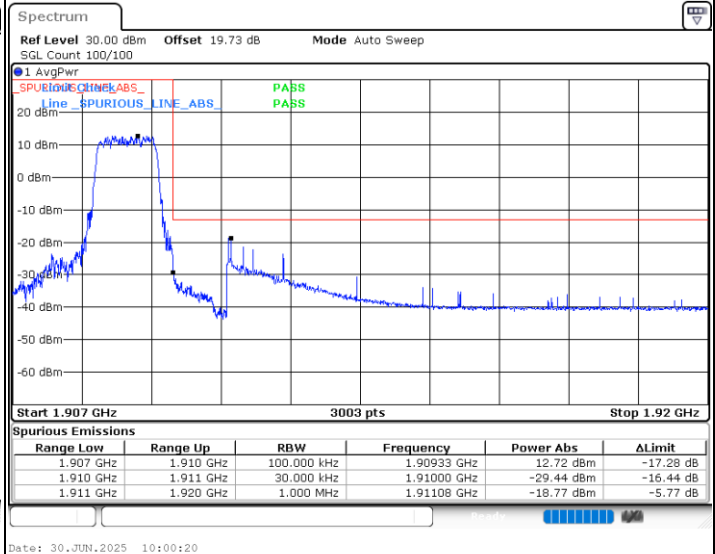
Highest Band Edge / 1RB



Lowest Band Edge / Full RB



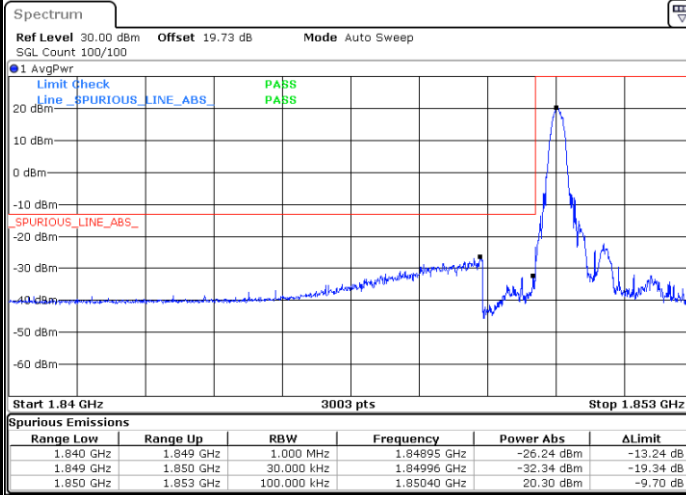
Highest Band Edge / Full RB



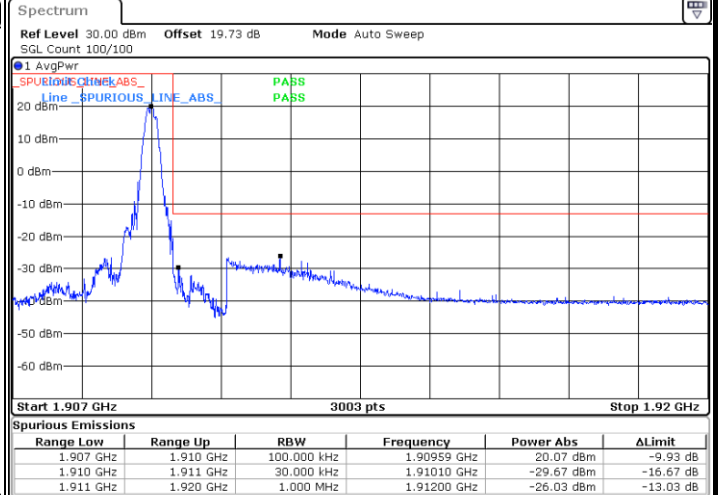


LTE Band 2 / 3MHz / 16QAM

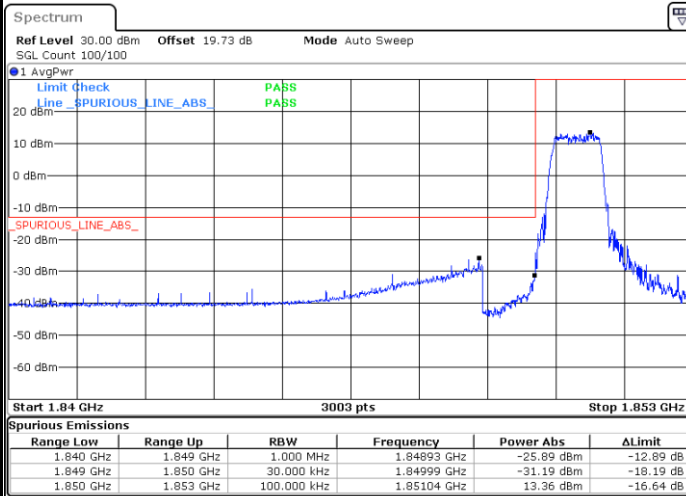
Lowest Band Edge / 1 RB



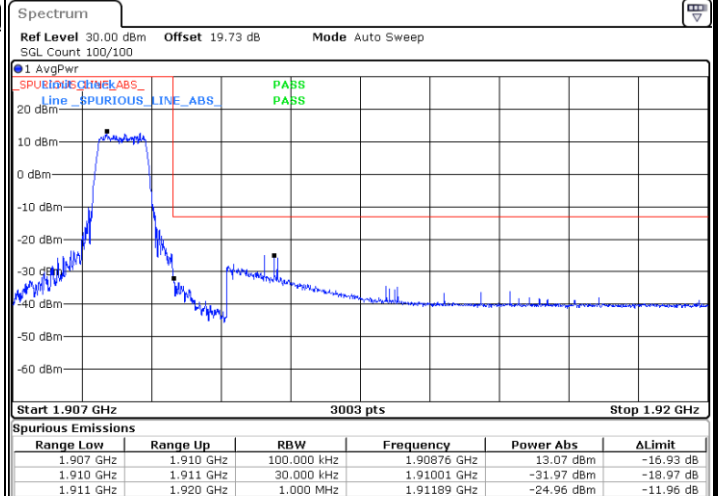
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



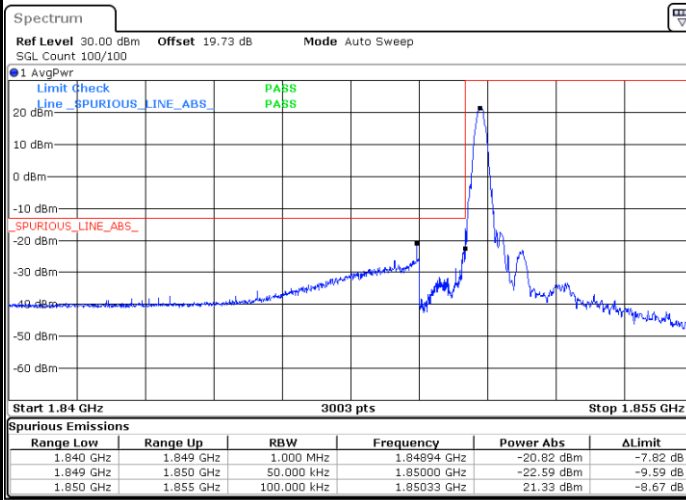
Highest Band Edge / Full RB





LTE Band 2 / 5MHz / QPSK

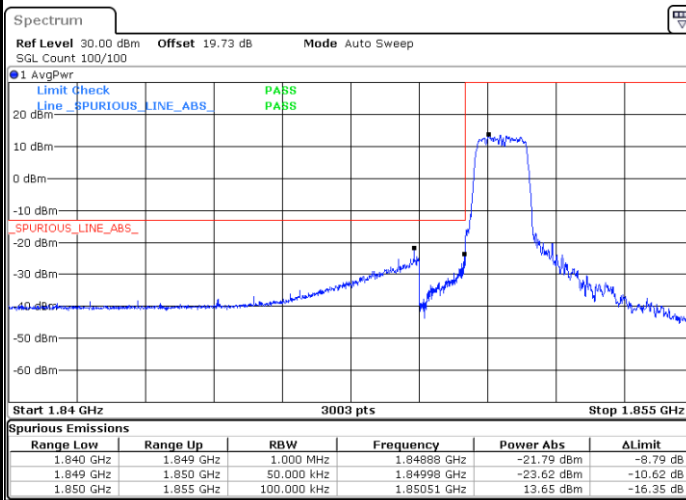
Lowest Band Edge / 1RB



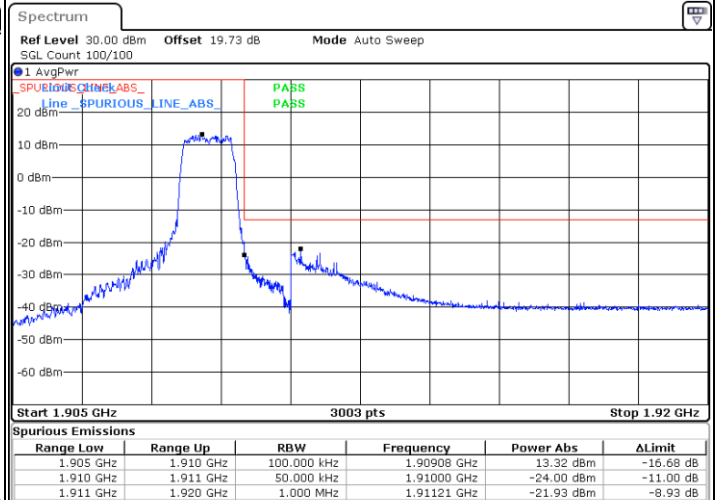
Highest Band Edge / 1RB



Lowest Band Edge / Full RB



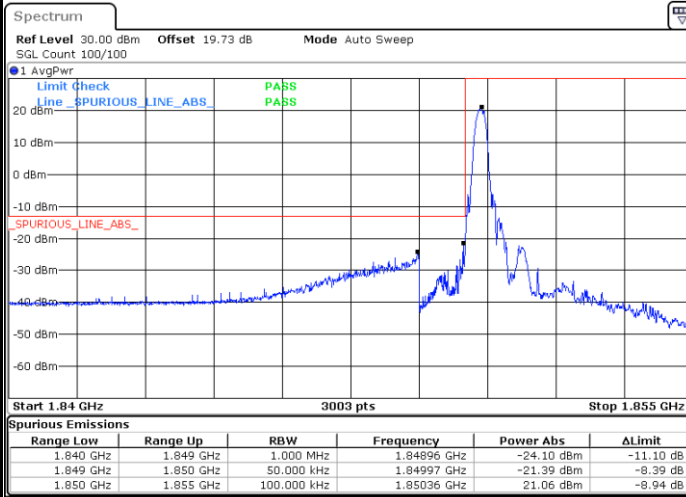
Highest Band Edge / Full RB



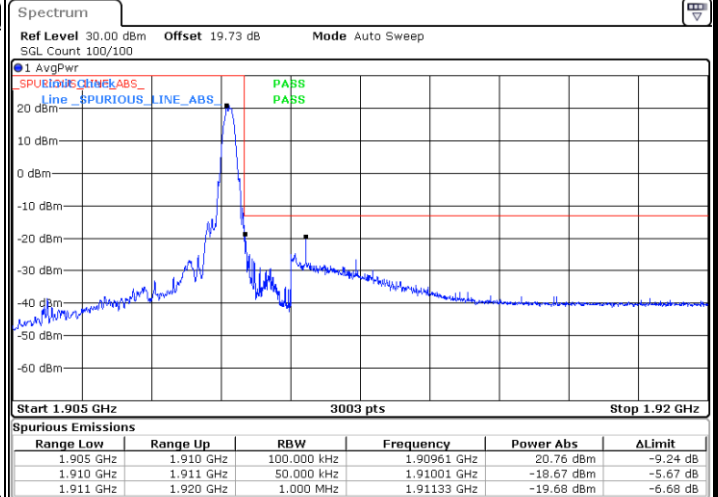


LTE Band 2 / 5MHz / 16QAM

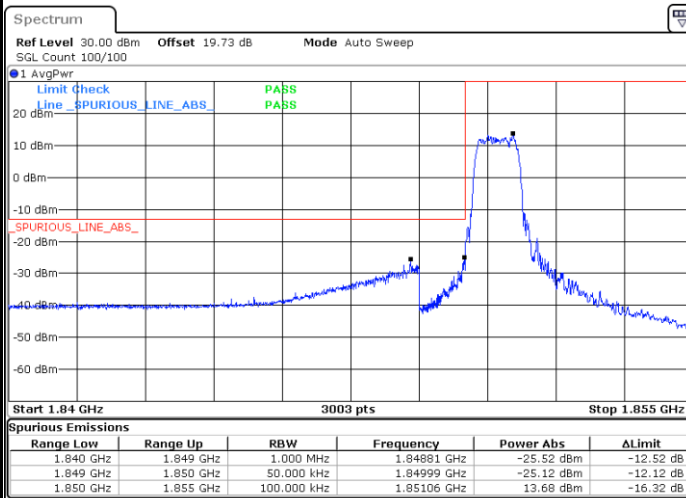
Lowest Band Edge / 1 RB



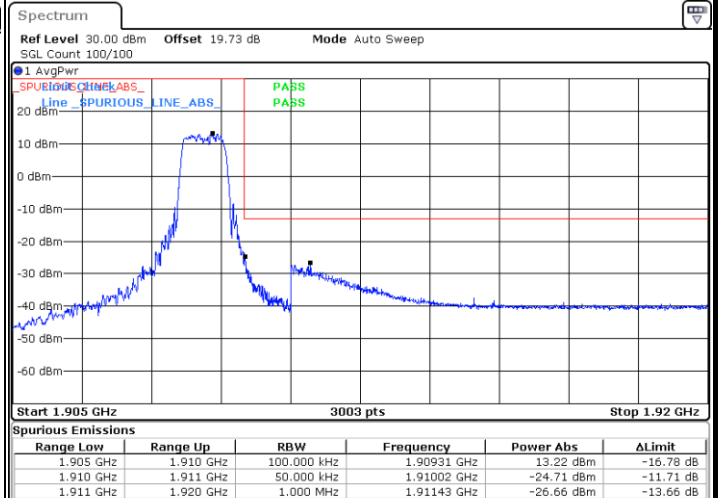
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



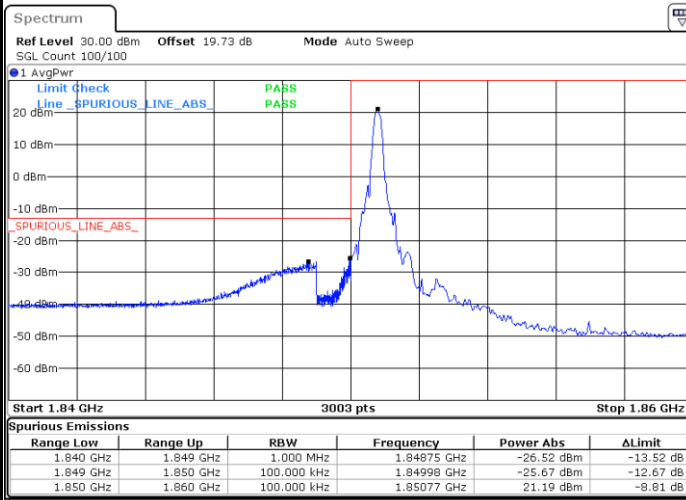
Highest Band Edge / Full RB



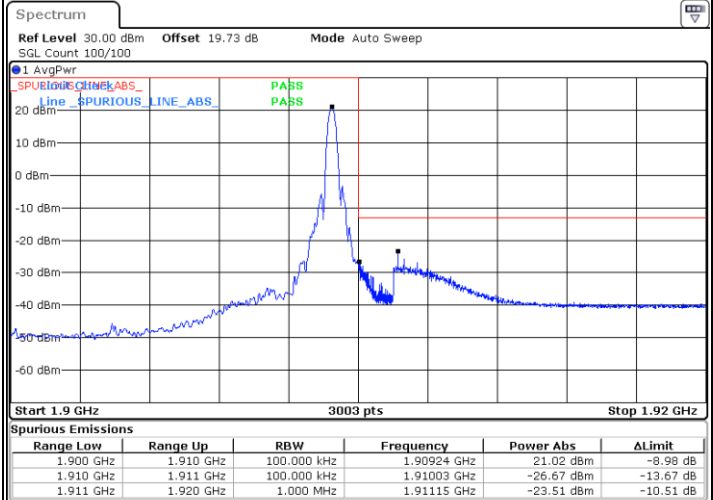


LTE Band 2 / 10MHz / QPSK

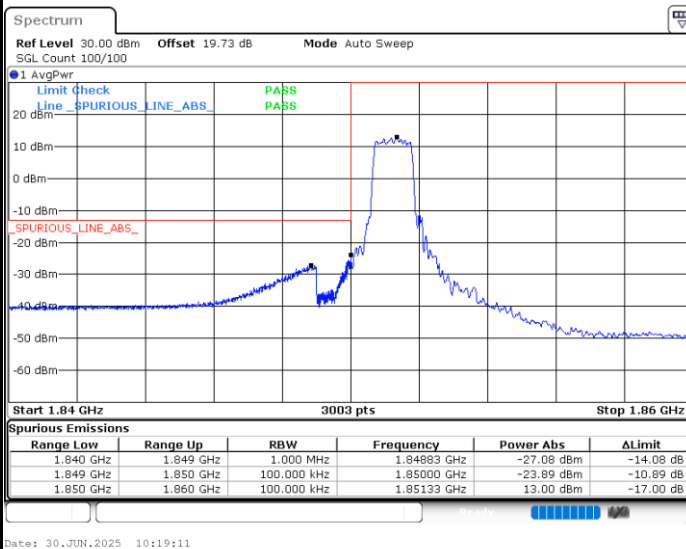
Lowest Band Edge / 1RB



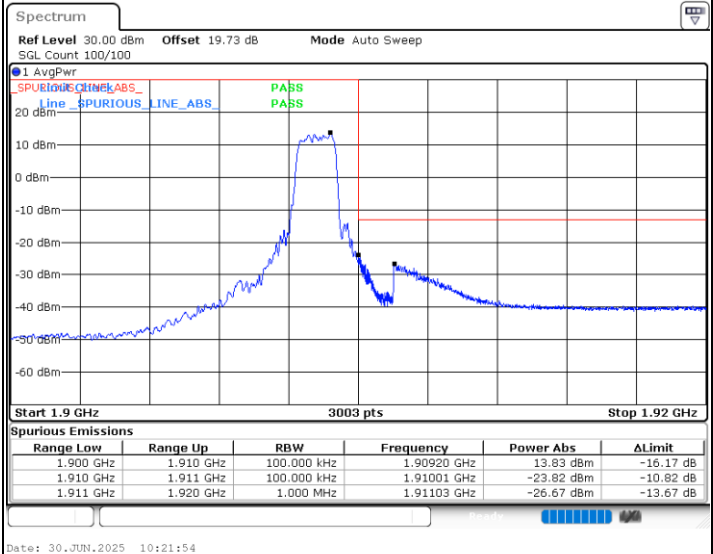
Highest Band Edge / 1RB



Lowest Band Edge / Full RB



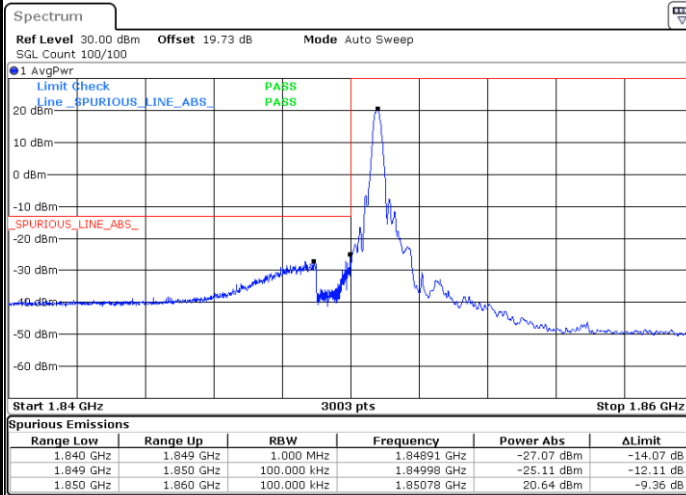
Highest Band Edge / Full RB



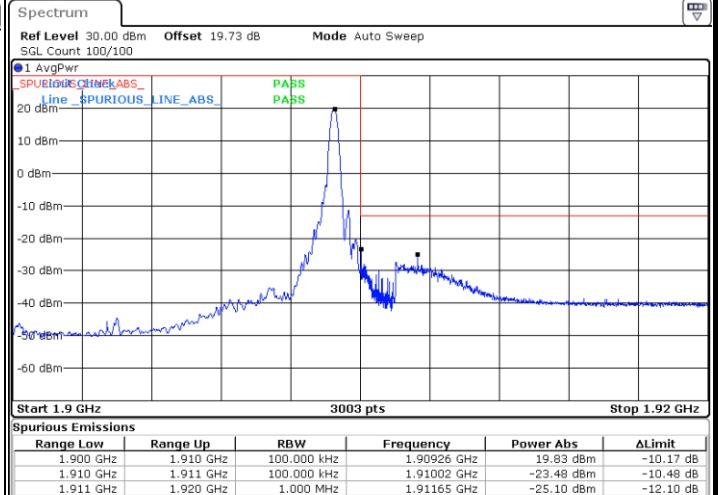


LTE Band 2 / 10MHz / 16QAM

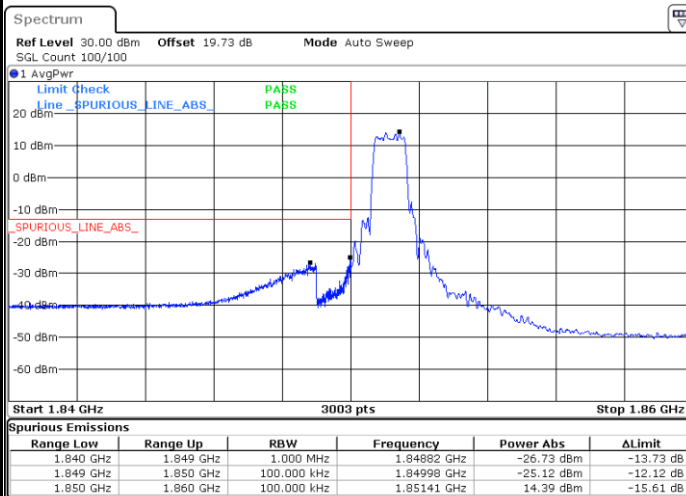
Lowest Band Edge / 1 RB



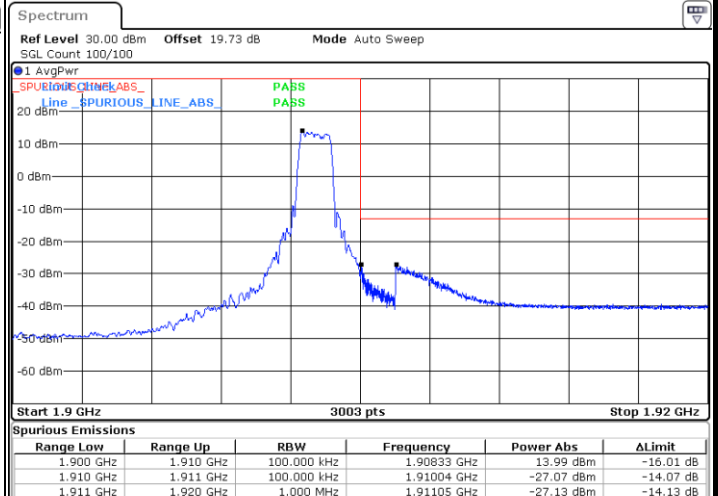
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



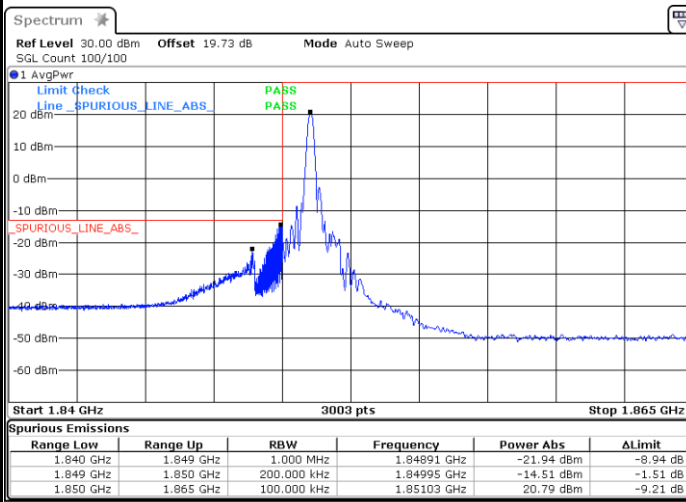
Highest Band Edge / Full RB



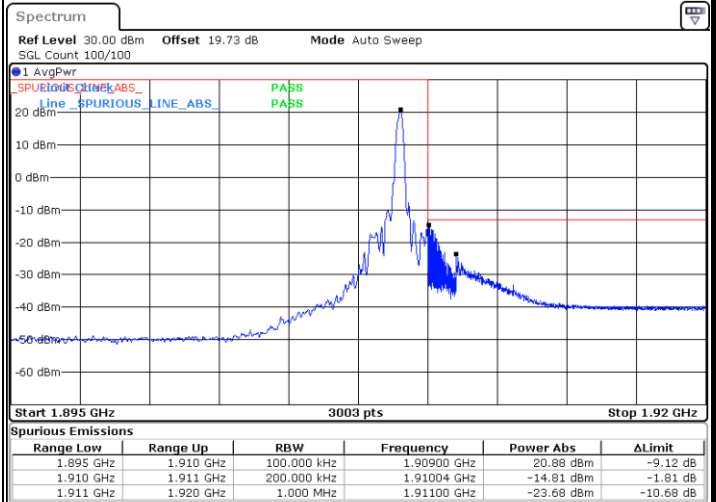


LTE Band 2 / 15MHz / QPSK

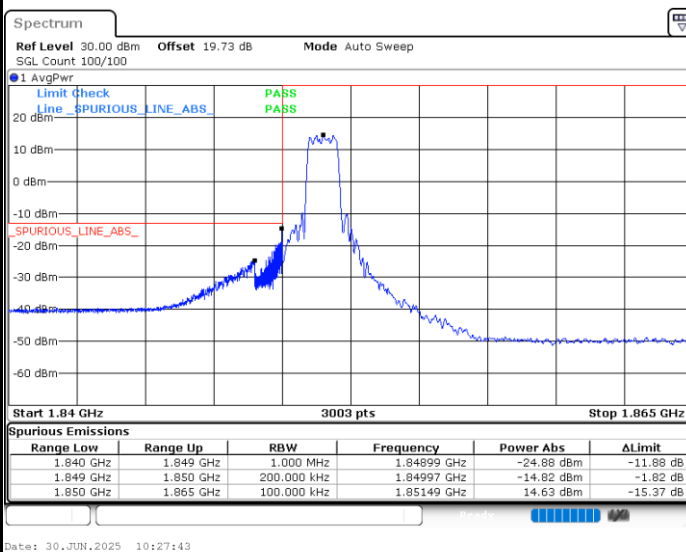
Lowest Band Edge / 1RB



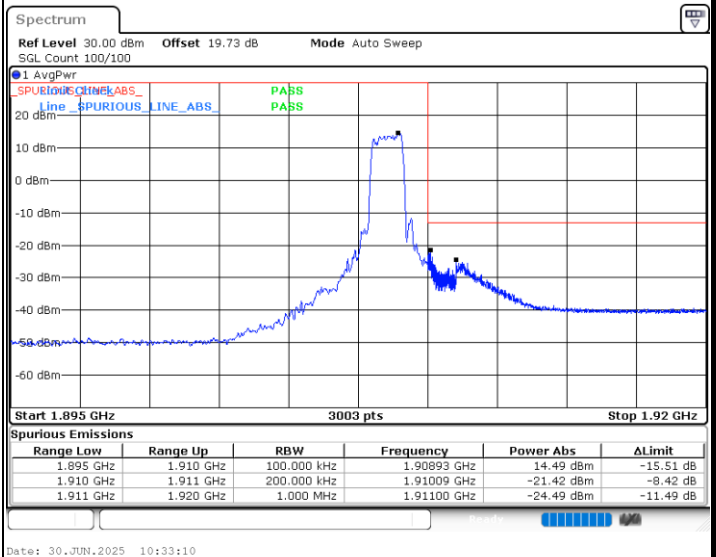
Highest Band Edge / 1RB



Lowest Band Edge / Full RB



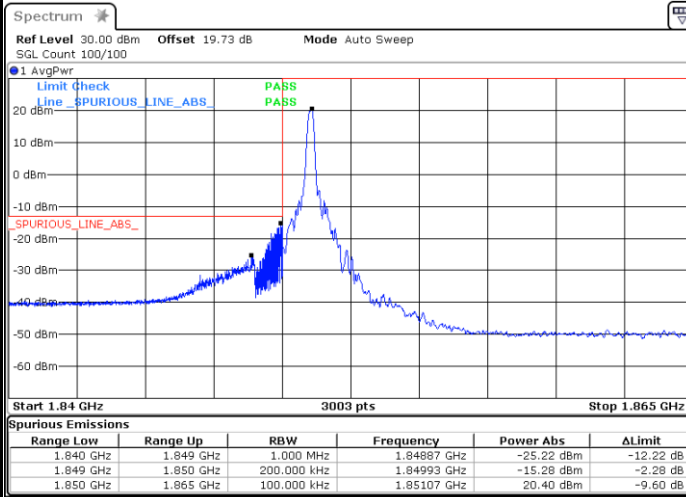
Highest Band Edge / Full RB



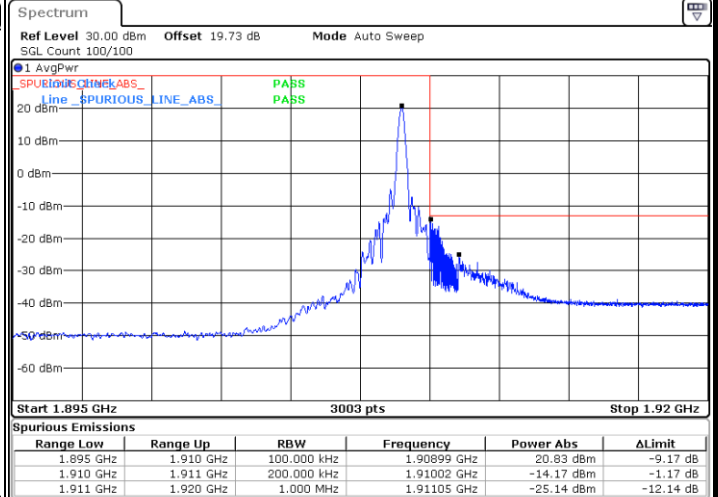


LTE Band 2 / 15MHz / 16QAM

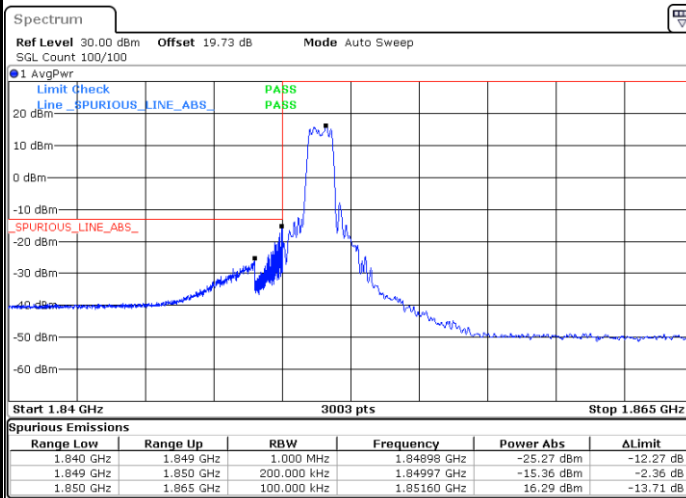
Lowest Band Edge / 1 RB



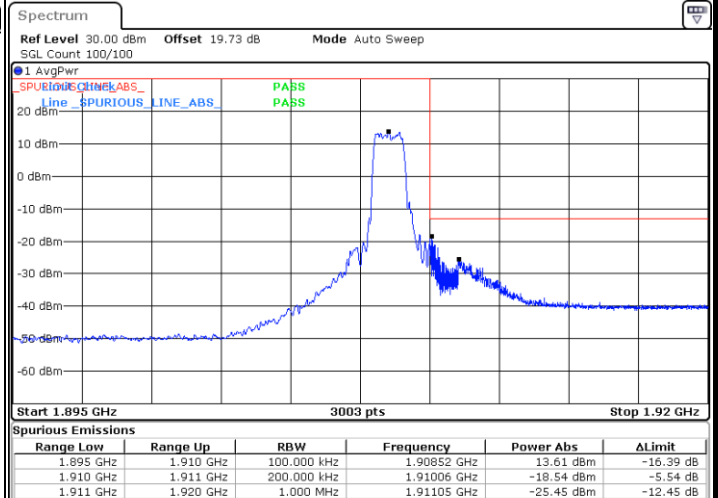
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



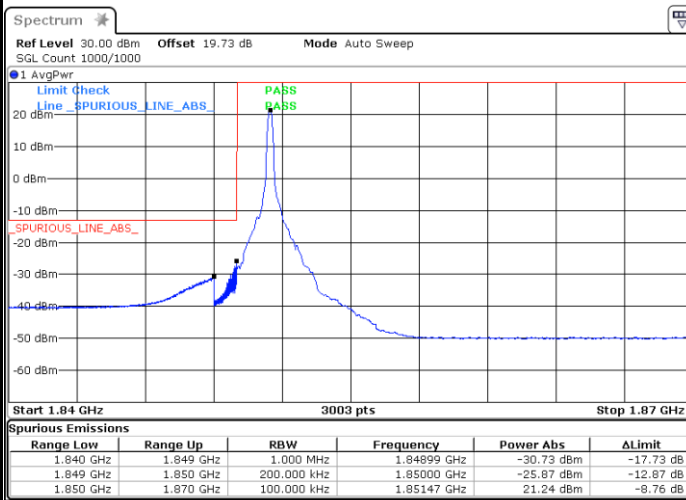
Highest Band Edge / Full RB



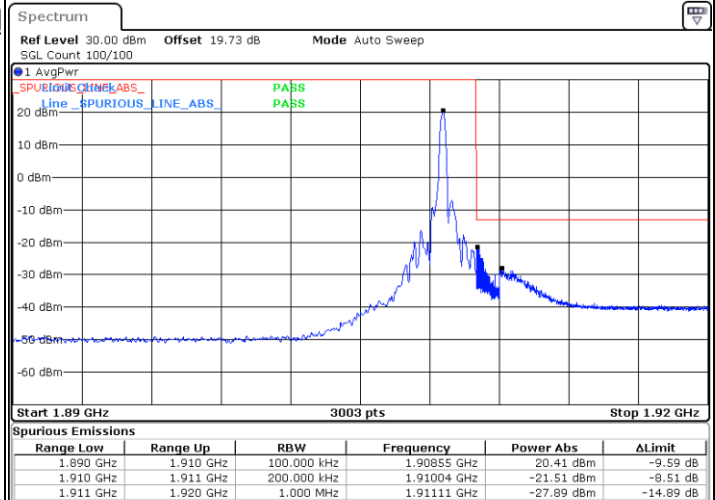


LTE Band 2 / 20MHz / QPSK

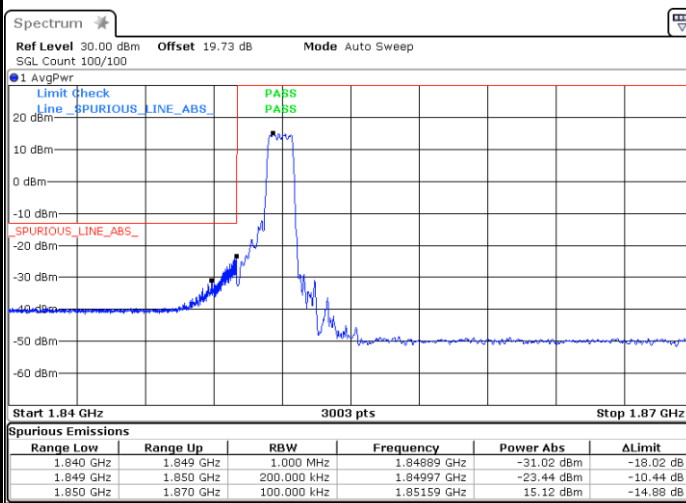
Lowest Band Edge / 1RB



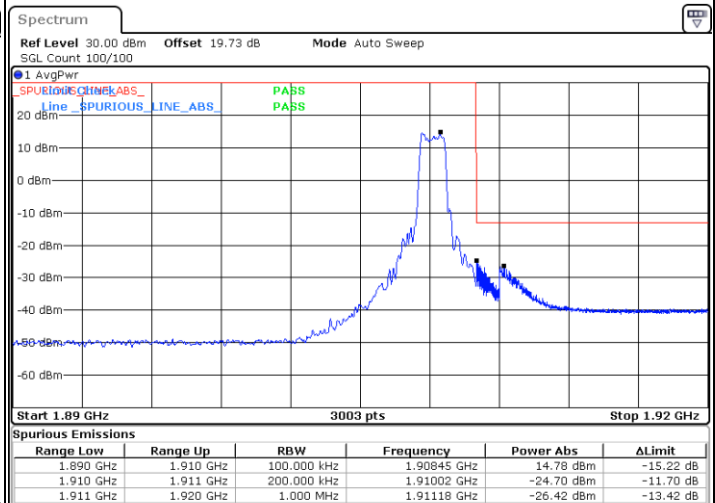
Highest Band Edge / 1RB



Lowest Band Edge / Full RB



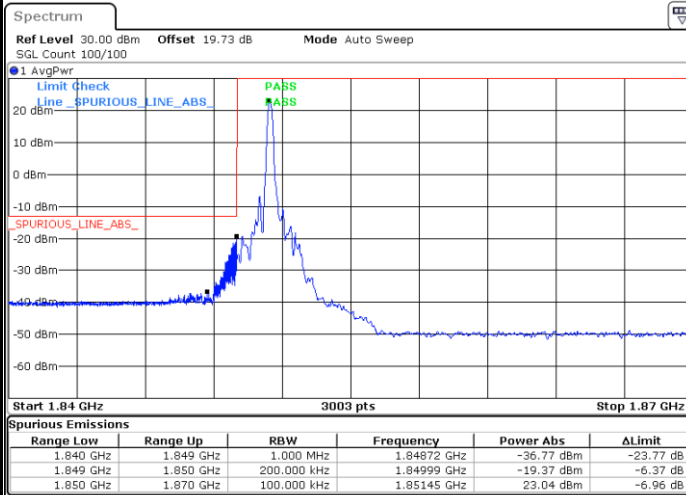
Highest Band Edge / Full RB



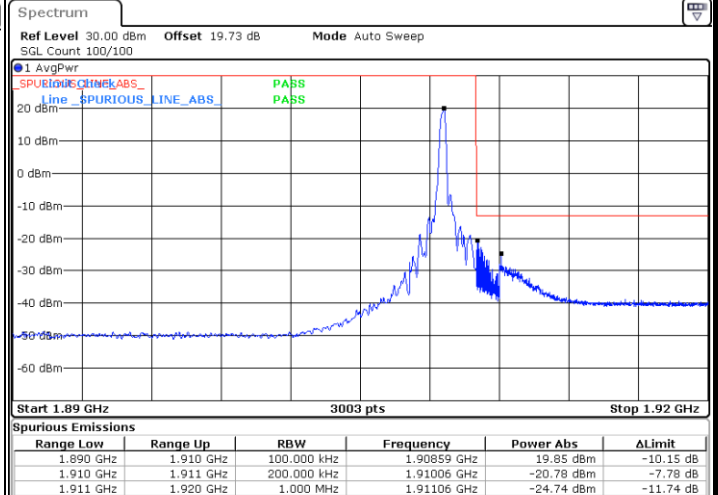


LTE Band 2 / 20MHz / 16QAM

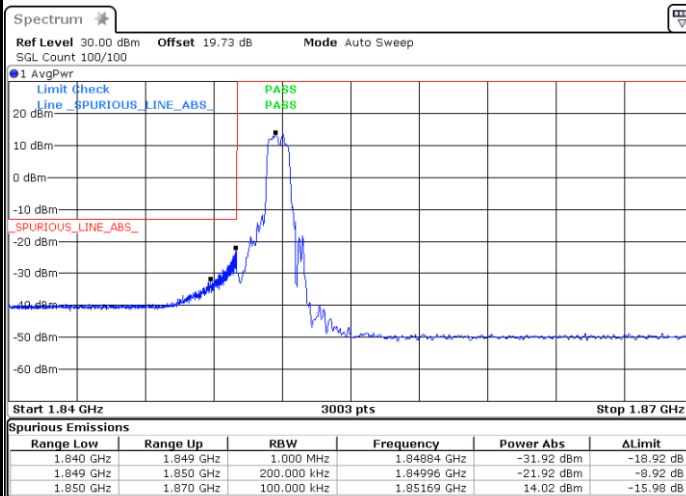
Lowest Band Edge / 1 RB



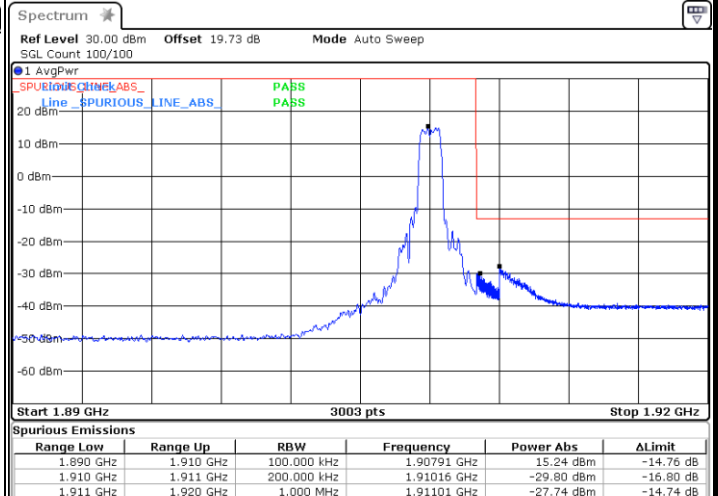
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



Highest Band Edge / Full RB

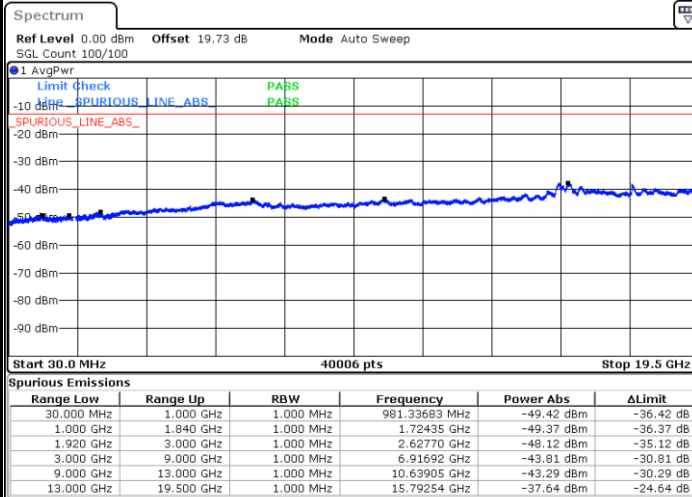




Conducted Spurious Emission

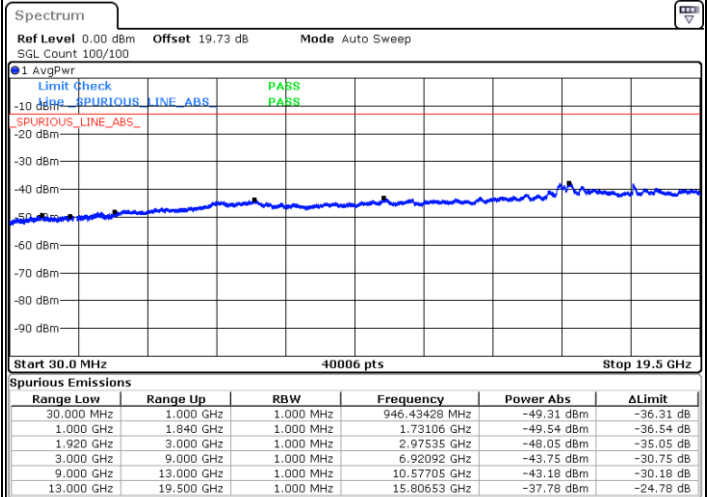
LTE Band 2 / 1.4MHz

Lowest Channel / QPSK



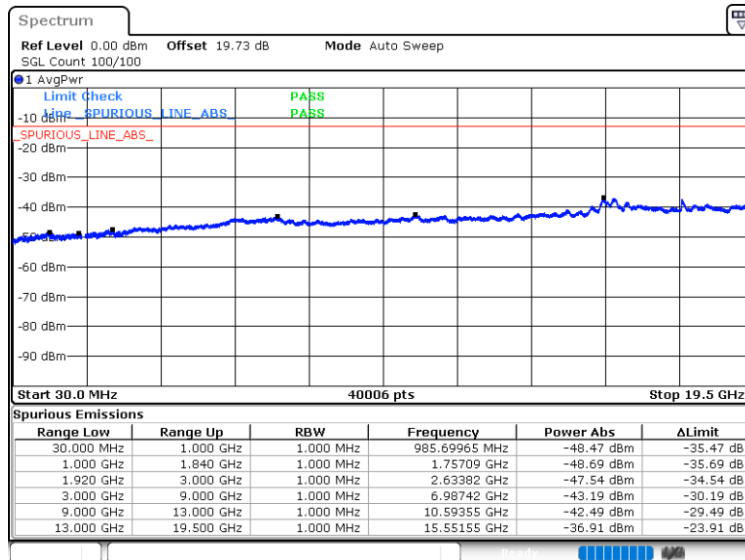
Date: 24.JUN.2025 15:01:34

Middle Channel / QPSK



Date: 24.JUN.2025 15:04:54

Highest Channel / QPSK

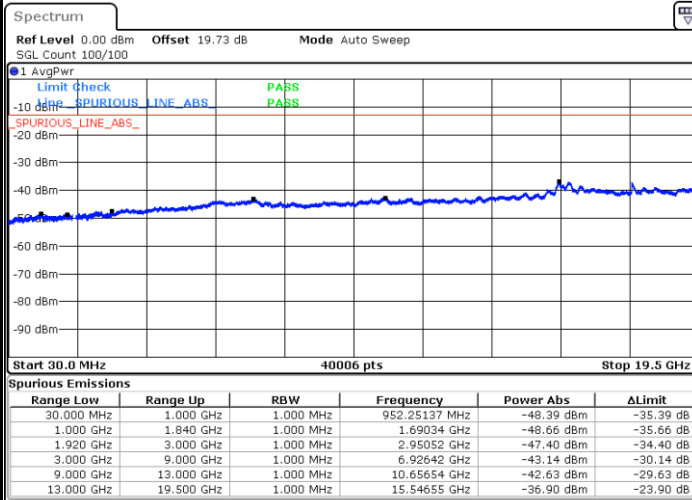


Date: 30.JUN.2025 09:45:54



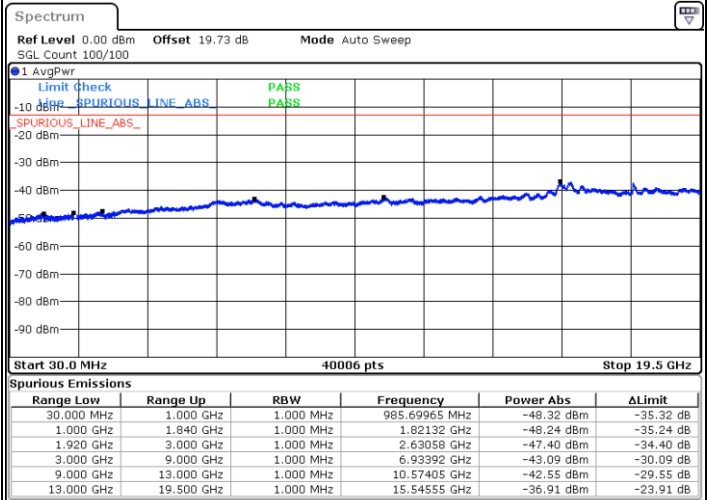
LTE Band 2 / 3MHz

Lowest Channel / QPSK



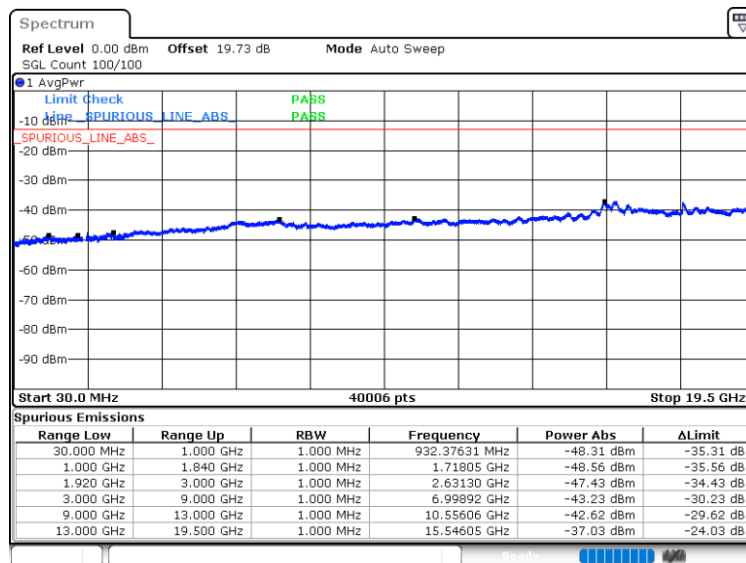
Date: 30 JUN.2025 09:52:51

Middle Channel / QPSK



Date: 30 JUN.2025 09:55:14

Highest Channel / QPSK

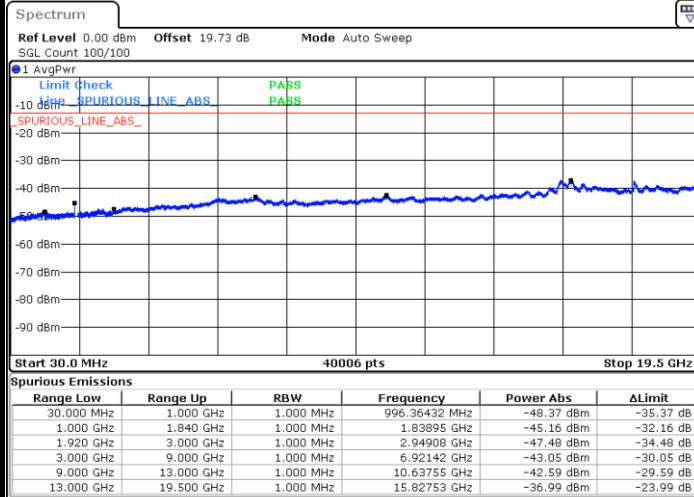


Date: 30 JUN.2025 10:01:41



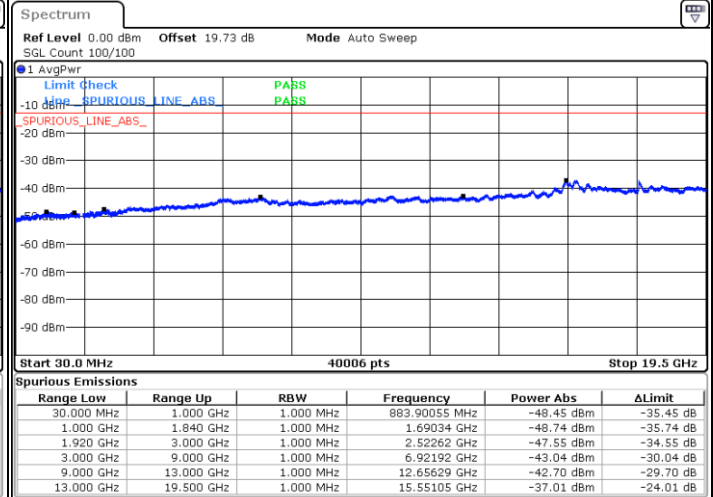
LTE Band 2 / 5MHz

Lowest Channel / QPSK



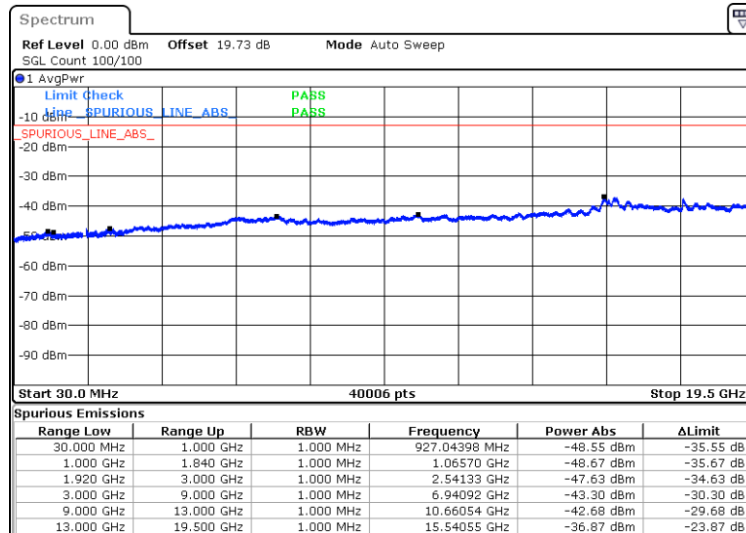
Date: 30.JUN.2025 10:09:13

Middle Channel / QPSK



Date: 30.JUN.2025 10:07:46

Highest Channel / QPSK

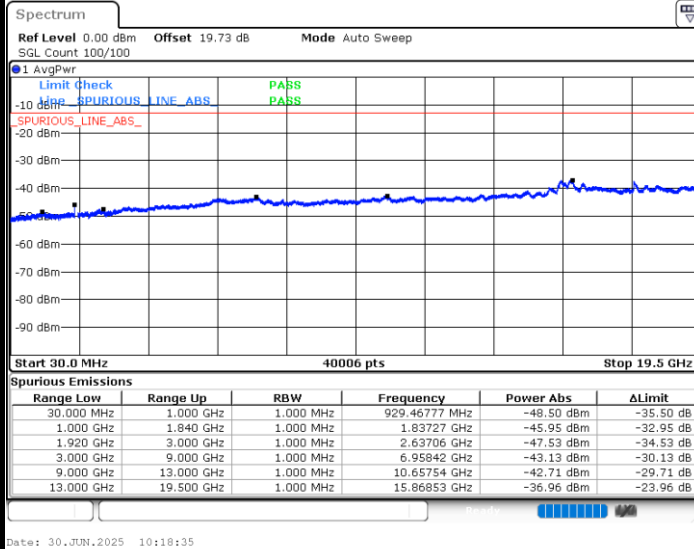


Date: 30.JUN.2025 10:11:21

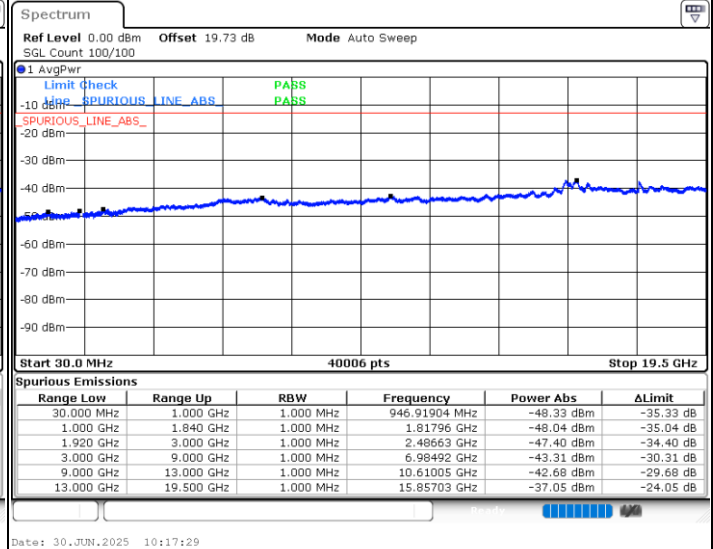


LTE Band 2 / 10MHz

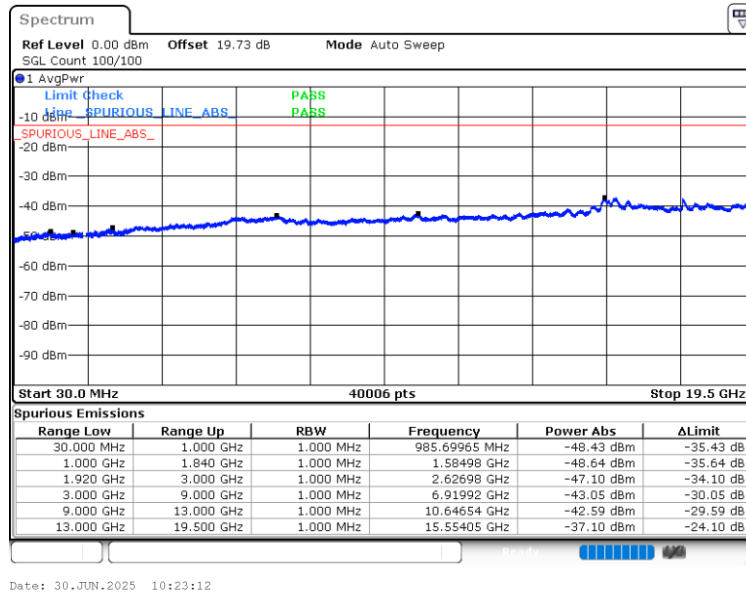
Lowest Channel / QPSK



Middle Channel / QPSK



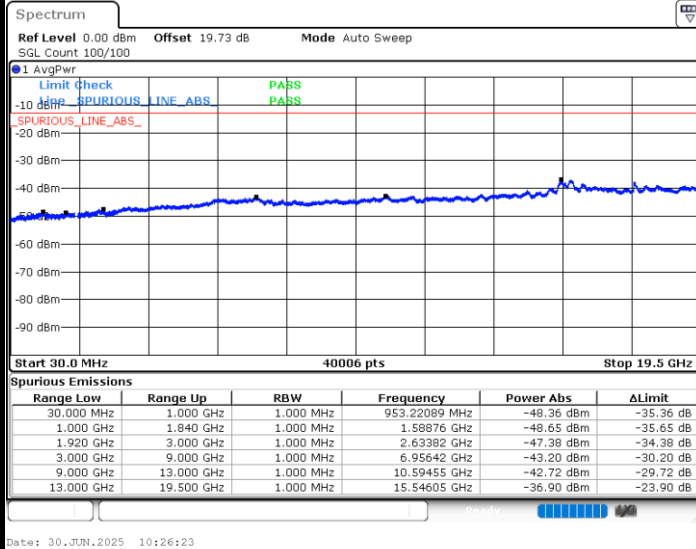
Highest Channel / QPSK



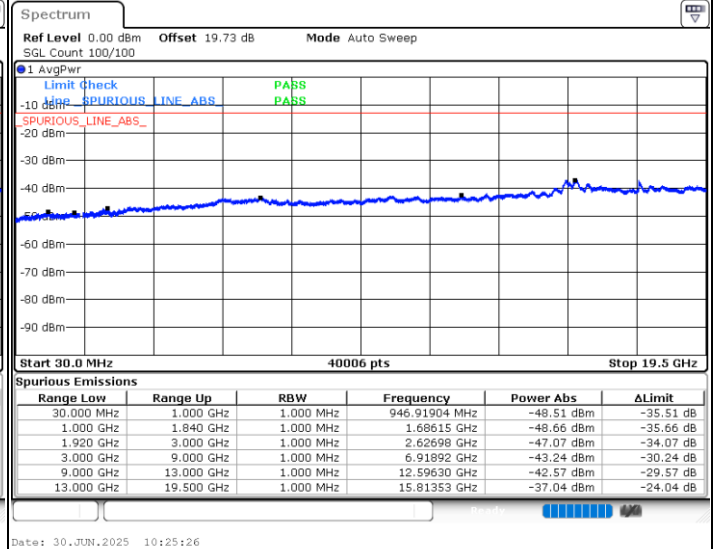


LTE Band 2 / 15MHz

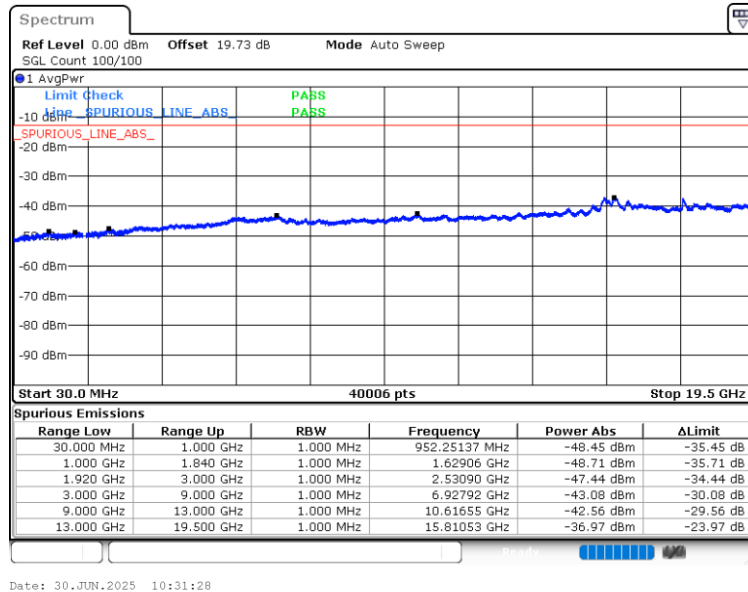
Lowest Channel / QPSK



Middle Channel / QPSK



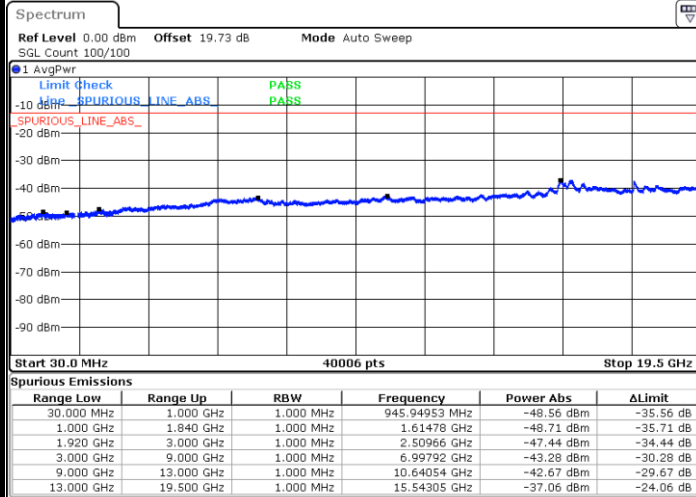
Highest Channel / QPSK





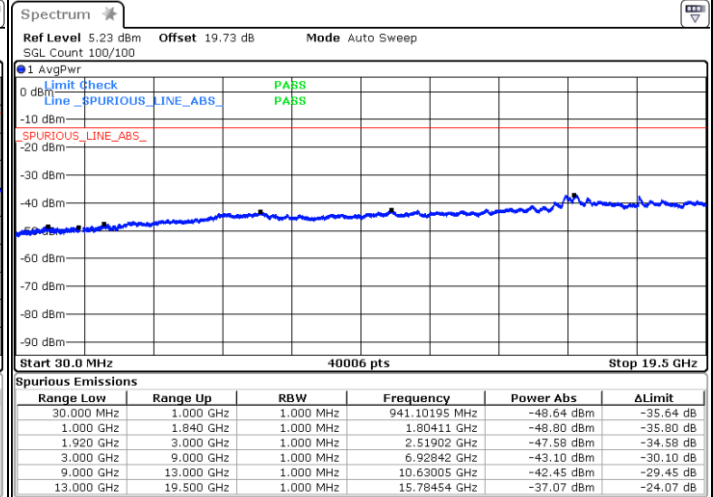
LTE Band 2 / 20MHz

Lowest Channel / QPSK



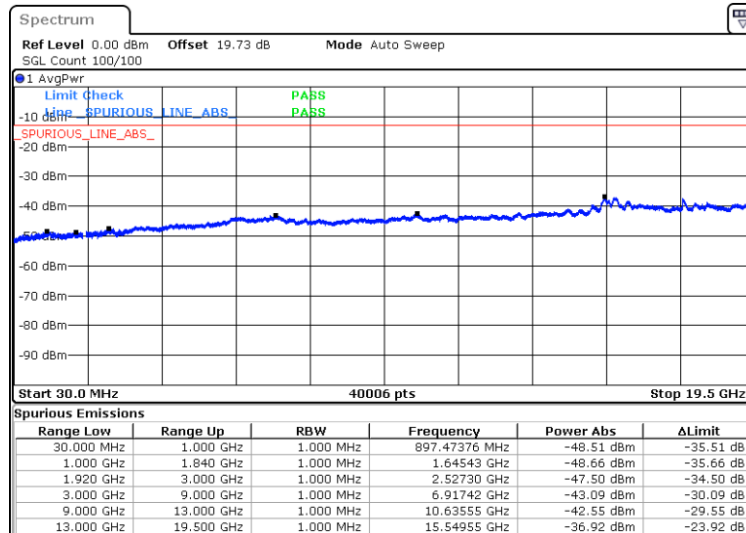
Date: 30.JUN.2025 10:42:57

Middle Channel / QPSK



Date: 30.JUN.2025 10:36:24

Highest Channel / QPSK



Date: 30.JUN.2025 10:45:53

Frequency Stability

Test Conditions		LTE Band 2 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 1.4MHz	Note 2.
		Frequency Offset (Δf) (Hz)	Result
50	Normal Voltage	2.1	PASS
40	Normal Voltage	1.6	
30	Normal Voltage	1.8	
20(Ref.)	Normal Voltage	2.5	
10	Normal Voltage	2.6	
0	Normal Voltage	-1.7	
-10	Normal Voltage	1.4	
-20	Normal Voltage	2.4	
-30	Normal Voltage	2.9	
20	Maximum Voltage	2.1	
20	Normal Voltage	2.5	
20	Minimum Voltage	3.1	

Note:

1. Normal Voltage = 5 V. ; Minimum Voltage= 4.8 V. ; Maximum Voltage = 5 V.
2. The frequency fundamental emissions stay within the authorized frequency block.

$$|\text{MAX}(\Delta f)| = 3.1\text{Hz}$$

Frequency Stability	Frequency (MHz)	Limit Line	Result
$f_L - \text{MAX}(\Delta f) $	1850.154547	$\cong 1850 \text{ MHz}$	PASS
$f_H + \text{MAX}(\Delta f) $	1909.851053	$\cong 1910\text{MHz}$	