FCC RADIO TEST REPORT

FCC ID	:	**APYHRO00331**
Equipment	:	**Smart phone**
Brand Name	:	**SHARP**
Model Name	:	**APYHRO00331**
Applicant	:	**SHARP CORPORATION** **1 Takumi-cho, Sakai-ku, Sakai City, Osaka 590-8522, Japan**
Manufacturer	:	**SHARP CORPORATION** **1 Takumi-cho, Sakai-ku, Sakai City, Osaka 590-8522, Japan**
Standard	:	**FCC 47 CFR Part 2, 22(H), 24(E), 27**

The product was received on Mar. 11, 2024 and testing was performed from Mar. 19, 2024 to Apr. 13, 2024. We, Sporton International Inc. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval from Sporton International Inc. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

Sporton International Inc. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)

Table of Contents

History of this test report

Report No.	Version	Description	Issue Date
FG3D2225B	01	Initial issue of report	May 09, 2024

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046	Conducted Output Power	Reporting only	-
	§22.913 (a)(5)	Effective Radiated Power (Band 5)	Pass	
	§27.50 (c)(10)	Effective Radiated Power (Band 12) (Band 17)		
	§24.232 (c) §27.50 (h)(2)	Equivalent Isotropic Radiated Power (Band 2) (Band 7) (Band 38)		
3.3	§24.232 (d)	Peak-to-Average Ratio	Pass	-
3.4	§2.1049	Occupied Bandwidth	Reporting only	-
3.5	§2.1051 §22.917 (a) §24.238 (a) §27.53 (g)	Conducted Band Edge Measurement (Band 2) (Band 5) (Band 12) (Band 17)	Pass	-
	§2.1051 §27.53 (m)(4)	Conducted Band Edge Measurement (Band 7) (Band 38)		
3.6	§2.1051 §22.917 (a) §24.238 (a) §27.53 (g)	Conducted Spurious Emission (Band 2) (Band 5) (Band 12) (Band 17)	Pass	-
	§2.1051 §27.53 (m)(4)	Conducted Spurious Emission (Band 7) (Band 38)		
3.7	§2.1055 §22.355 §24.235 §27.54	Frequency Stability Temperature & Voltage	Pass	-
4.2	§2.1053 §22.917 (a) §24.238 (a) §27.53 (g)	Radiated Spurious Emission (Band 2) (Band 5) (Band 12) (Band 17)	Pass	18.57 dB under the limit at 10404.00 MHz
	§2.1053 §27.53 (m)(4)	Radiated Spurious Emission (Band 7) (Band 38)		

Conformity Assessment Condition:

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

Disclaimer:

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

Reviewed by: Keven Cheng

Report Producer: Michelle Chen

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
General Specs	GSM/WCDMA/LTE, Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n/ac, Wi-Fi 5GHz 802.11a/n/ac, NFC, and GNSS**.**
Antenna Type	WWAN: <Ant. 0>: Monopole Antenna <Ant. 1>: PIFA Antenna <Ant. 2>: Monopole Antenna WLAN: Loop Antenna Bluetooth: Loop Antenna GPS / Glonass / BDS / Galileo: PIFA Antenna NFC: Loop Antenna

Remark: The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.

Item	Main		2nd Source			
	Main Sample		Sample 2		Sample 3	
	Vendor	Model Number	Vendor	Model Number	Vendor	Model Number
Memory	SAMSUNG	SA05P91D010	Hynix	SA0QG9G5010	Micron	SA0D81SF010
PA	QORVO	SA07048B020 (QM77048B)	QORVO	SA077048020 (QM77048)	QORVO	SA077048020 (QM77048)
FPC_USB	PBH	MESX314004A	SUNFLEX	MESX114012A	SUNFLEX	MESX114012A
FPC_AJ	PBH	MESX314003A	SUNFLEX	MESX114013A	SUNFLEX	MESX114013A
FPC_Main	PBH	MESX414001A	SUNFLEX	MESX414011A	SUNFLEX	MESX414011A
FPC_SPK	AKM	MESX414004A	SUNFLEX	MESX114015A	SUNFLEX	MESX114015A
FPC_Side_Key	PBH	MESX414002A	AKM	MESX414012A	AKM	MESX414012A
FPC_flashlight	PBH	MESX414003A	SUNFLEX	MESX414013A	SUNFLEX	MESX414013A
rear housing	DY	MESX461130A	COXON	MESX461131A	COXON	MESX461131A
Battery	SCUD	BPSX400001S (SX4)	EVE	BPSX400002S (X4)	EVE	BPSX400002S (X4)
Display	DJN	SLX1462BX00	CPT	SLX65WM2X00	CPT	SLX65WM2X00
Camera 50M	Shinetech	S0CNN72B000	Union Image	S0C50A350A0	Union Image	S0C50A350A0
Camera 8M	Shinetech	S0CF891B060	Union Image	S0C8F357060	Union Image	S0C8F357060
E-compass	MEMSIC	SA0C56030A0	QST	SA0C6308130	QST	SA0C6308130
DPDT	MAXSCEND	SA08546C020	CANAANTEK	SA01122N080	CANAANTEK	SA01122N080
Switch	MAXSCEND	SA08621E080	Richwave	SA086102080	Richwave	SA086102080
P-sensor	EMINENT	SA0MN789080	Sensortek	SA033562020	Sensortek	SA033562020
G- sensor	TDK	SA042670020	Bosch	SA0MI320020	Bosch	SA0MI320020

Support band and evaluated information	
Supported band	B2,B5, B7, B12, B17,B38, B38C
Evaluated and Tested band	B2,B5, B7, B12, B17,B38, B38C

FDD/TDD band Power Class		
	PC3	**PC2**
B2	V	-
B5	V	-
B7	V	-
B12	V	-
B17	V	-
B38 /B38C	V	-

Antenna information(dBi)			
Band	**Ant0**	**Ant1**	**Main Ant. #**
B2		**-0.68**	**1**
B5	**-4.62**		**0**
B7		**0.49**	**1**
B12	**-4.8**		**0**
B17	**-4.8**		**0**
B38		**0.81**	**1**

1.2 Modification of EUT

No modifications made to the EUT during the testing.

1.3 Testing Location

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	**Sporton Site No.**
	TH03-HY
Test Engineer	Ekko You
Temperature (℃)	22.3~23.7
Relative Humidity (%)	47.6~53.9

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	**Sporton Site No.**
	03CH11-HY (TAF Code: 3786)
Test Engineer	Yuan Lee, Sam Chou and Troye Hsieh
Temperature (℃)	20~21.2
Relative Humidity (%)	53.1~66.8
Remark	The Radiated Spurious Emission Test Items subcontracted to Sporton International Inc. Wensan Laboratory.

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC Designation No.: TW1190 and TW3786

1.4 Applicable Standards

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

- ANSI C63.26-2015
- ANSI / TIA-603-E
- FCC 47 CFR Part 2, 22(H), 24(E), 27
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01
- FCC KDB 414788 D01 Radiated Test Site v01r01.

Remark:

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.
3. The TAF code is not including all the FCC KDB listed without accreditation.

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.

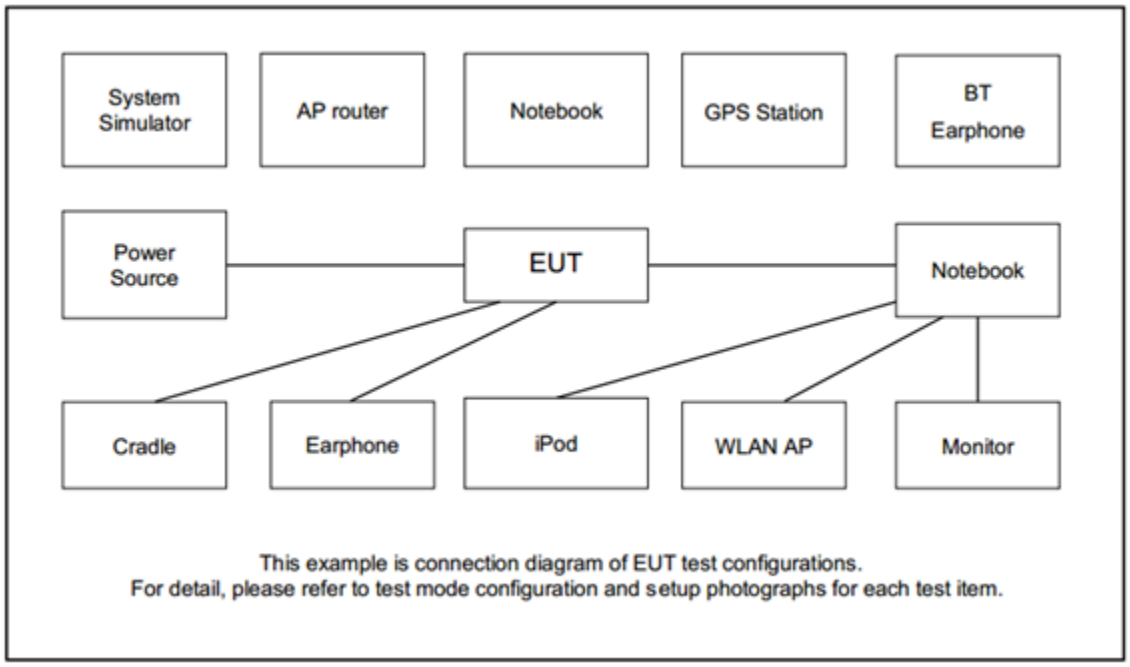
For radiated measurement, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.26 exploratory test procedures and only the worst case emissions were reported in this report.

Modulation Type	Modulation
A	QPSK
B	16QAM
C	64QAM
D	256QAM

Test Item	Modulation Type	Bandwidth	RB Size	Channel
Conducted Power	A, B, C	All	1, Half, Full	L, M, H
EIRP	A, B, C	All	1, Half, Full	L, M, H
PAR	A, B, C	Max	Full	M
Bandwidth	A, B, C	All	Full	M
CBE	A, B, C	All	1RB Full	L, H
CSE	A	All	1RB	L, M, H
Frequency Stability	A	10 MHz or less	Full	M
RSE	A	Max	1RB	L, M, H

Remark:
1. Evaluated all the transmitter signal and reporting worst-case configuration among all modulation types.
2. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst-case emissions are reported.
3. One representative bandwidth is selected to perform PAR and frequency stability.
4. All the radiated test cases were performed with Battery 1 and Main Sample.

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8821C	N/A	N/A	Unshielded, 1.8 m
2.	Earphone	NOKIA	WH-108	N/A	Unshielded, 1.5 m	N/A

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 4.2 dB and 10dB attenuator.

Example :

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

= 4.2 + 10 = 14.2 (dB)

2.5 Frequency List of Low/Middle/High Channels

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

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

LTE Band 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 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	2580.0	2595.0	2610.0
15	Channel	37825	38000	38175
	Frequency	2577.5	2595.0	2612.5
10	Channel	37800	38000	38200
	Frequency	2575.0	2595.0	2615.0
5	Channel	37775	38000	38225
	Frequency	2572.5	2595.0	2617.5

LTE Band 38C Channel and Frequency List_CA					
BW [MHz]	Channel/Frequency(MHz)		Lowest	Middle	Highest
20 + 20	PCC	Channel	37850	37901	37952
		Frequency	2580.0	2585.1	2590.2
	SCC	Channel	38048	38099	38150
		Frequency	2599.8	2604.9	2610.0
15+ 15	PCC	Channel	37825	37925	38025
		Frequency	2577.5	2587.5	2597.5
	SCC	Channel	37975	38075	38175
		Frequency	2592.5	2602.5	2612.5

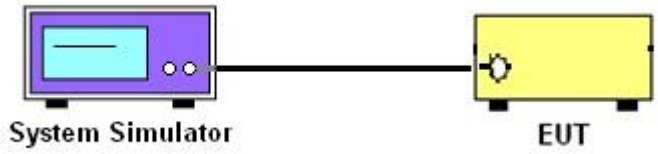
3 Conducted Test Items

3.1 Measuring Instruments

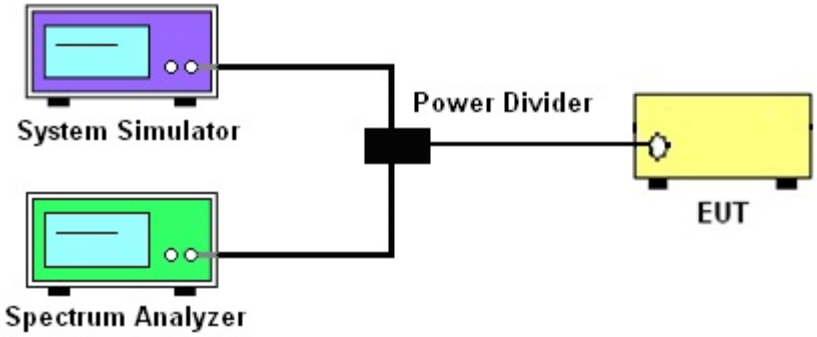
See list of measuring instruments of this test report.

3.1.1 Test Setup

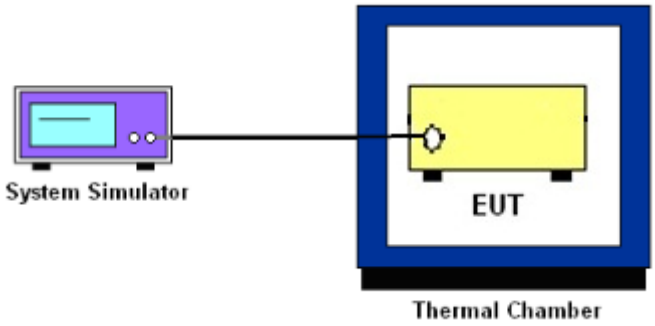
3.1.2 Conducted Output Power



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



3.1.4 Frequency Stability



3.1.5 Test Result of Conducted Test

Please refer to Appendix A.

3.2 Conducted Output Power and ERP/EIRP

3.2.1 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 17

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

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

3.2.2 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through the system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the system simulator.

3.3 Peak-to-Average Ratio

3.3.1 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.

3.3.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.2.6

1. The EUT was connected to spectrum and system simulator via a power divider.
2. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
3. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
4. Record the deviation as Peak to Average Ratio.

3.4 Occupied Bandwidth

3.4.1 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.

3.4.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.4.3 (26dB) and Section 5.4.4 (99OB)

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. 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.
3. 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.
4. Set the detection mode to peak, and the trace mode to max hold.
5. 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)
6. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
7. 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.
8. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

3.5 Conducted Band Edge

3.5.1 Description of Conducted Band Edge Measurement

22.917(a)

For operations in the 824 – 849 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 100kHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

24.238 (a)

For operations in the 1850-1910 and 1930-1990 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

27.53 (g)

For operations in the 600MHz band and 698-746 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 100 kHz bandwidth. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

27.53(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.

3.5.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The band edges of low and high channels for the highest RF powers were measured.
3. Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
4. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
5. Set spectrum analyzer with RMS detector.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
7. Checked that all the results comply with the emission limit line.

3.6 Conducted Spurious Emission

3.6.1 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 LTE Band 7, 38

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 55 + 10 log (P) dB.

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

3.6.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. 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.
3. The conducted spurious emission for the whole frequency range was taken.
4. Make the measurement with the spectrum analyzer's RBW = 100 kHz if the authorized frequency band/block is at or below 1 GHz and 1 MHz if the authorized frequency band/block is above 1 GH, VBW = 3 * RBW.
5. Set spectrum analyzer with RMS detector.
6. Taking the record of maximum spurious emission.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

   For LTE Band 7, 38

   The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)

3.7 Frequency Stability

3.7.1 Description of Frequency Stability Measurement

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

22.355
The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency.

3.7.2 Test Procedures for Temperature Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

1. The EUT was set up in the thermal chamber and connected with the system simulator.
2. 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.
3. 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.

3.7.3 Test Procedures for Voltage Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

1. The EUT was placed in a temperature chamber at 20±5° C and connected with the system simulator.
2. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

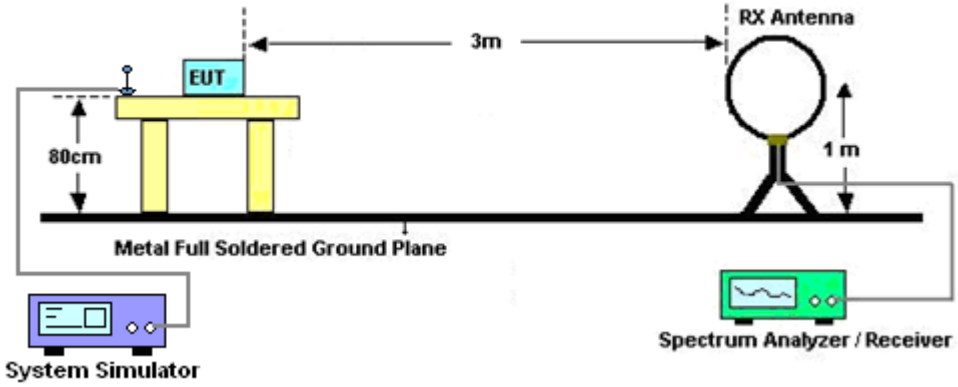
4 Radiated Test Items

4.1 Measuring Instruments

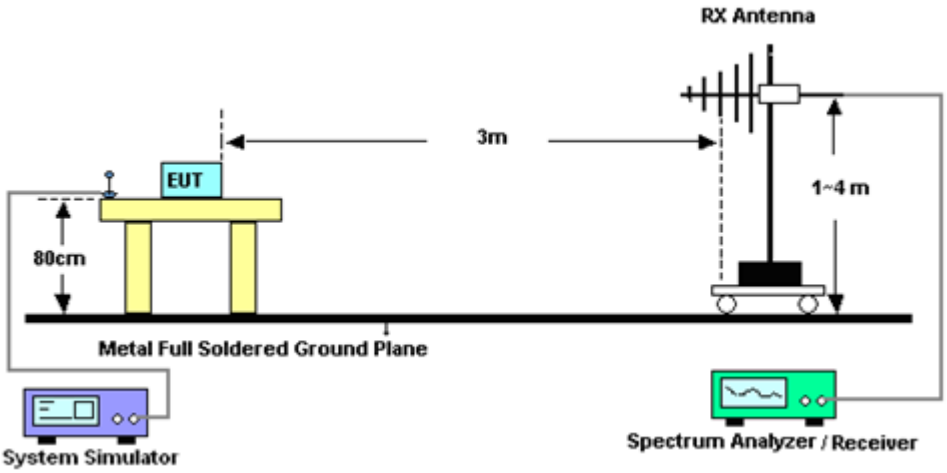
See list of measuring instruments of this test report.

4.1.1 Test Setup

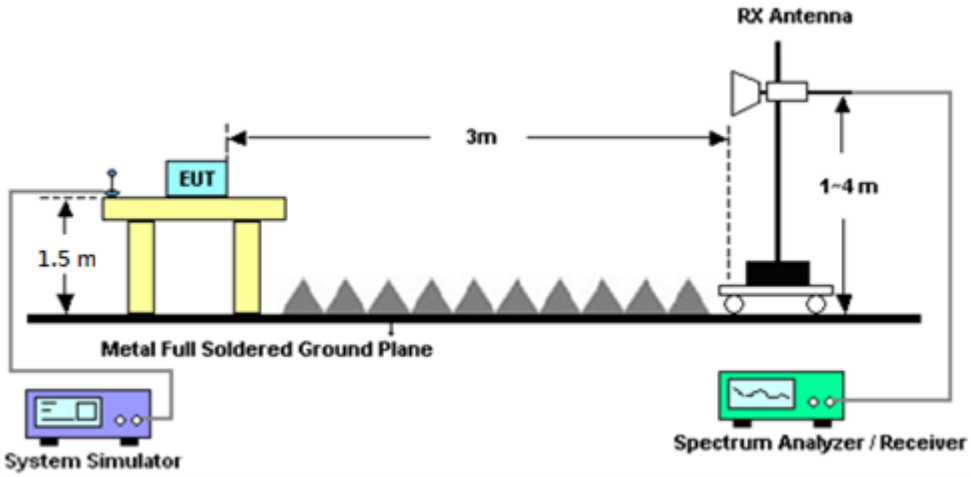
For radiated test below 30MHz



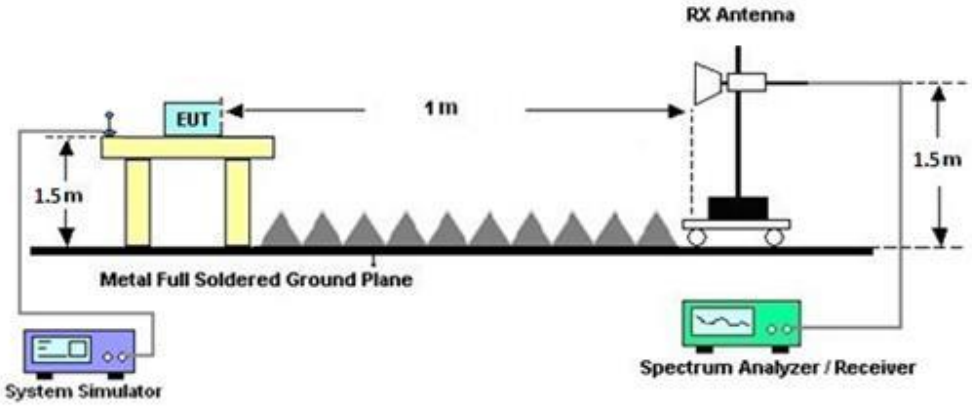
For radiated test from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



4.1.2 Test Result of Radiated Test

Please refer to Appendix B.

Note:

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.

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

4.2 Radiated Spurious Emission Measurement

4.2.1 Description of Radiated Spurious Emission Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA-603-E.

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 7, 38

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 55 + 10 log (P) dB.

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

4.2.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 7 and ANSI / TIA-603-E section 5.5.4 Radiated measurement using the field strength method.

1. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. To convert spectrum reading E(dBuV/m) to EIRP(dBm)
7. EIRP(dBm) = Level (dBuV/m) + 20log(d) -104.77, where d is the distance at which filed strength limit is specified in the rules
8. Field Strength Level (dBm) = Spectrum Reading (dBm) + Antenna Factor + Cable Loss + Read Level - Preamp Factor.
9. ERP (dBm) = EIRP (dBm) - 2.15
10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

5 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Bilog Antenna	TESEQ	CBL 6111D & N-6-06	35414 & AT-N0602	30MHz~1GHz	Oct. 07, 2023	Apr. 09, 2024~ Apr. 13, 2024	Oct. 06, 2024	Radiation (03CH11-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Sep. 12, 2023	Apr. 09, 2024~ Apr. 13, 2024	Sep. 11, 2024	Radiation (03CH11-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-01620	1GHz~18GHz	Aug. 17, 2023	Apr. 09, 2024~ Apr. 13, 2024	Aug. 16, 2024	Radiation (03CH11-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	1223	18GHz~40GHz	Jul. 10, 2023	Apr. 09, 2024~ Apr. 13, 2024	Jul. 09, 2024	Radiation (03CH11-HY)
Amplifier	SONOMA	310N	187312	9kHz~1GHz	Dec. 08, 2023	Apr. 09, 2024~ Apr. 13, 2024	Dec. 07, 2024	Radiation (03CH11-HY)
Preamplifier	Keysight	83017A	MY53270080	1GHz~26.5GHz	Mar. 25, 2024	Apr. 09, 2024~ Apr. 13, 2024	Mar. 24, 2025	Radiation (03CH11-HY)
Preamplifier	Jet-Power	JPA0118-55-303	1710001800055007	1GHz~18GHz	Jun. 14, 2023	Apr. 09, 2024~ Apr. 13, 2024	Jun. 13, 2024	Radiation (03CH11-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	Jun. 27, 2023	Apr. 09, 2024~ Apr. 13, 2024	Jun. 26, 2024	Radiation (03CH11-HY)
Spectrum Analyzer	Keysight	N9010A	MY54200486	10Hz~44GHz	Oct. 05, 2023	Apr. 09, 2024~ Apr. 13, 2024	Oct. 04, 2024	Radiation (03CH11-HY)
Controller	EMEC	EM 1000	N/A	Control Turn table & Ant Mast	N/A	Apr. 09, 2024~ Apr. 13, 2024	N/A	Radiation (03CH11-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1~4m	N/A	Apr. 09, 2024~ Apr. 13, 2024	N/A	Radiation (03CH11-HY)
Turn Table	EMEC	TT 2000	N/A	0~360 Degree	N/A	Apr. 09, 2024~ Apr. 13, 2024	N/A	Radiation (03CH11-HY)
Software	Audix	E3 6.2009-8-24	RK-001053	N/A	N/A	Apr. 09, 2024~ Apr. 13, 2024	N/A	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY1595/2	30MHz~40GHz	Mar. 06, 2024	Apr. 09, 2024~ Apr. 13, 2024	Mar. 05, 2025	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2859/2	30MHz~40GHz	Mar. 06, 2024	Apr. 09, 2024~ Apr. 13, 2024	Mar. 05, 2025	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803951/2	9K~30M	Mar. 06, 2024	Apr. 09, 2024~ Apr. 13, 2024	Mar. 05, 2025	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803951/2	30M~40G	Mar. 06, 2024	Apr. 09, 2024~ Apr. 13, 2024	Mar. 05, 2025	Radiation (03CH11-HY)
Filter	Wainwright	WHKX12-900-1000-15000-60SS	SN12	1GHz High Pass Filter	Sep. 11, 2023	Apr. 09, 2024~ Apr. 13, 2024	Sep. 10, 2024	Radiation (03CH11-HY)
Filter	Wainwright	WHKX12-2700-3000-18000-60SS	SN3	3GHz High Pass Filter	Sep. 11, 2023	Apr. 09, 2024~ Apr. 13, 2024	Sep. 10, 2024	Radiation (03CH11-HY)
Radio Communication Analyzer	Anritsu	MT8821C	6272278356	LTE FDD/TDD DLCA/ULCA	Aug. 24, 2023	Mar. 19, 2024~ Mar. 28, 2024	Aug. 23, 2024	Conducted (TH03-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101907	10Hz~40GHz	Aug. 15, 2023	Mar. 19, 2024~ Mar. 28, 2024	Aug. 14, 2024	Conducted (TH03-HY)
Thermal Chamber	ESPEC	SU-241	92003713	-30℃ ~95℃	May 17, 2023	Mar. 19, 2024~ Mar. 28, 2024	May 16, 2024	Conducted (TH03-HY)
DC Power Supply	GW Instek	GPP-2323	GES906037	0V~64V ; 0A~6A	Nov. 28, 2023	Mar. 19, 2024~ Mar. 28, 2024	Nov. 27, 2024	Conducted (TH03-HY)
Coupler	Warison	20dB 25W SMA Directional Coupler	#B	1-18GHz	Jan. 08, 2024	Mar. 19, 2024~ Mar. 28, 2024	Jan. 07, 2025	Conducted (TH03-HY)

6 Measurement Uncertainty

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.22 dB**

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

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

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.61 dB**

Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power & ERP/EIRP)

LTE Band 2 Maximum Average Power [dBm] (GT - LC = -0.68 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
20	1	0	QPSK	22.88	23.01	22.87	22.33	0.1710
20	1	49		22.87	22.59	22.69		
20	1	99		22.52	22.56	22.76		
20	50	0		21.75	22.14	22.06		
20	50	24		21.73	21.99	21.80		
20	50	50		21.62	21.85	22.02		
20	100	0		21.55	22.08	22.02		
20	1	0	16-QAM	21.57	21.88	22.13	21.70	0.1479
20	1	49		21.98	22.38	22.27		
20	1	99		21.64	21.94	21.89		
20	50	0		20.75	21.17	21.14		
20	50	24		20.89	20.93	20.96		
20	50	50		20.80	20.90	21.18		
20	100	0		20.76	21.01	21.12		
20	1	0	64-QAM	21.10	21.10	21.06	20.59	0.1146
20	1	49		20.98	20.73	21.27		
20	1	99		21.03	20.68	21.19		
20	50	0		19.67	20.11	20.11		
20	50	24		19.88	19.96	19.93		
20	50	50		19.77	19.83	20.18		
20	100	0		19.73	19.87	20.10		
Limit	EIRP < 2W			Result			Pass	

LTE Band 2 Maximum Average Power [dBm] (GT - LC = -0.68 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
15	1	0	QPSK	22.79	22.93	22.75	22.25	0.1679
15	1	37		22.77	22.69	22.60		
15	1	74		22.67	22.63	22.63		
15	36	0		21.63	22.05	21.93		
15	36	20		21.64	21.91	21.72		
15	36	39		21.77	21.72	21.91		
15	75	0		21.61	22.00	21.87		
15	1	0	16-QAM	21.62	21.78	22.01	21.61	0.1449
15	1	37		21.88	22.29	22.12		
15	1	74		21.51	21.84	21.79		
15	36	0		20.67	21.03	21.06		
15	36	20		20.80	20.79	20.87		
15	36	39		20.71	20.80	21.03		
15	75	0		20.64	20.93	21.01		
15	1	0	64-QAM	20.99	20.98	20.97	20.45	0.1109
15	1	37		20.85	20.58	21.13		
15	1	74		20.94	20.60	21.05		
15	36	0		19.59	20.02	19.99		
15	36	20		19.74	19.82	19.83		
15	36	39		19.66	19.75	20.09		
15	75	0		19.61	19.79	19.97		
Limit	EIRP < 2W			Result			Pass	

LTE Band 2 Maximum Average Power [dBm] (GT - LC = -0.68 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
10	1	0	QPSK	22.73	22.88	22.74	22.20	0.1660
10	1	25		22.73	22.65	22.60		
10	1	49		22.64	22.68	22.63		
10	25	0		21.60	22.05	21.95		
10	25	12		21.60	21.87	21.71		
10	25	25		21.51	21.72	21.92		
10	50	0		21.63	21.98	21.93		
10	1	0	16-QAM	21.66	21.75	22.04	21.55	0.1429
10	1	25		21.87	22.23	22.18		
10	1	49		21.56	21.84	21.76		
10	25	0		20.60	21.06	21.04		
10	25	12		20.80	20.83	20.88		
10	25	25		20.66	20.76	21.03		
10	50	0		20.65	20.89	21.02		
10	1	0	64-QAM	20.98	20.99	20.92	20.48	0.1117
10	1	25		20.86	20.60	21.16		
10	1	49		20.93	20.55	21.08		
10	25	0		19.58	20.02	19.99		
10	25	12		19.78	19.83	19.78		
10	25	25		19.68	19.69	20.08		
10	50	0		19.65	19.77	19.98		
Limit	EIRP < 2W			Result			Pass	

LTE Band 2 Maximum Average Power [dBm] (GT - LC = -0.68 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
5	1	0	QPSK	22.75	22.92	22.73	22.24	0.1675
5	1	12		22.73	22.69	22.59		
5	1	24		22.57	22.62	22.62		
5	12	0		21.61	22.03	21.95		
5	12	7		21.64	21.88	21.65		
5	12	13		21.50	21.72	21.87		
5	25	0		21.62	21.93	21.88		
5	1	0	16-QAM	21.64	21.80	22.03	21.56	0.1432
5	1	12		21.86	22.24	22.17		
5	1	24		21.51	21.79	21.79		
5	12	0		20.62	21.05	21.05		
5	12	7		20.77	20.84	20.87		
5	12	13		20.69	20.75	21.07		
5	25	0		20.61	20.86	21.04		
5	1	0	64-QAM	20.99	21.02	20.95	20.48	0.1117
5	1	12		20.90	20.58	21.16		
5	1	24		20.89	20.55	21.07		
5	12	0		19.57	19.96	20.03		
5	12	7		19.74	19.83	19.83		
5	12	13		19.65	19.69	20.10		
5	25	0		19.64	19.75	19.97		
Limit	EIRP < 2W			Result			Pass	

LTE Band 2 Maximum Average Power [dBm] (GT - LC = -0.68 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
3	1	0	QPSK	22.79	22.86	22.78	22.18	0.1652
3	1	8		22.79	22.55	22.55		
3	1	14		22.52	22.51	22.65		
3	8	0		21.62	22.03	21.94		
3	8	4		21.58	21.89	21.71		
3	8	7		21.51	21.74	21.89		
3	15	0		21.96	22.00	21.88		
3	1	0	16-QAM	21.64	21.73	22.04	21.57	0.1435
3	1	8		21.86	22.25	22.15		
3	1	14		21.52	21.83	21.74		
3	8	0		20.67	21.09	21.01		
3	8	4		20.78	20.80	20.83		
3	8	7		20.69	20.79	21.03		
3	15	0		20.64	20.91	20.99		
3	1	0	64-QAM	20.99	21.01	20.97	20.45	0.1109
3	1	8		20.90	20.63	21.13		
3	1	14		20.89	20.55	21.08		
3	8	0		19.52	19.98	19.97		
3	8	4		19.80	19.82	19.81		
3	8	7		19.66	19.69	20.10		
3	15	0		19.61	19.72	19.96		
Limit	EIRP < 2W			Result			Pass	

LTE Band 2 Maximum Average Power [dBm] (GT - LC = -0.68 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
1.4	1	0	QPSK	22.75	22.99	22.85	22.31	0.1702
1.4	1	3		22.70	22.98	22.79		
1.4	1	5		22.87	22.98	22.82		
1.4	3	0		22.70	22.85	22.74		
1.4	3	1		22.75	22.84	22.64		
1.4	3	3		22.64	22.84	22.67		
1.4	6	0		21.79	21.90	21.91		
1.4	1	0	16-QAM	21.83	21.94	21.71	21.58	0.1439
1.4	1	3		21.68	22.25	21.87		
1.4	1	5		21.75	22.26	21.90		
1.4	3	0		21.78	21.89	21.91		
1.4	3	1		21.88	21.95	21.83		
1.4	3	3		21.64	21.88	21.84		
1.4	6	0		20.94	21.04	20.85		
1.4	1	0	64-QAM	20.94	21.28	20.83	20.66	0.1164
1.4	1	3		21.16	20.80	21.06		
1.4	1	5		21.14	21.04	20.87		
1.4	3	0		21.16	20.81	21.10		
1.4	3	1		21.07	21.24	21.05		
1.4	3	3		21.03	21.34	21.11		
1.4	6	0		19.83	19.97	19.82		
Limit	EIRP < 2W			Result			Pass	

LTE Band 5 Maximum Average Power [dBm] (GT - LC = -4.62 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
10	1	0	QPSK	23.22	23.34	23.28	16.57	0.0454
10	1	25		23.24	23.21	23.26		
10	1	49		23.21	23.28	23.06		
10	25	0		22.18	22.29	22.18		
10	25	12		22.20	22.20	22.14		
10	25	25		22.16	22.27	22.00		
10	50	0		22.24	22.25	22.15		
10	1	0	16-QAM	22.23	22.79	22.67	16.02	0.0400
10	1	25		22.26	22.55	22.76		
10	1	49		22.59	22.39	22.37		
10	25	0		21.23	21.11	21.06		
10	25	12		21.23	21.13	21.10		
10	25	25		21.18	21.25	21.05		
10	50	0		21.16	21.21	21.00		
10	1	0	64-QAM	21.47	21.44	21.30	14.80	0.0302
10	1	25		21.53	21.57	21.44		
10	1	49		21.30	21.11	21.06		
10	25	0		20.09	20.18	20.08		
10	25	12		20.18	20.17	20.21		
10	25	25		20.09	20.21	20.05		
10	50	0		20.16	20.14	20.09		
Limit	ERP < 7W			Result			Pass	

LTE Band 5 Maximum Average Power [dBm] (GT - LC = -4.62 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
5	1	0	QPSK	23.14	23.24	23.21	16.47	0.0444
5	1	12		23.19	23.14	23.16		
5	1	24		23.11	23.22	22.98		
5	12	0		22.11	22.21	22.12		
5	12	7		22.12	22.13	22.06		
5	12	13		22.11	22.17	21.90		
5	25	0		22.17	22.15	22.08		
5	1	0	16-QAM	22.14	22.70	22.62	15.93	0.0392
5	1	12		22.20	22.48	22.69		
5	1	24		22.54	22.33	22.32		
5	12	0		21.14	21.01	21.00		
5	12	7		21.13	21.05	21.01		
5	12	13		21.08	21.17	20.96		
5	25	0		21.07	21.14	20.92		
5	1	0	64-QAM	21.42	21.39	21.20	14.74	0.0298
5	1	12		21.44	21.51	21.39		
5	1	24		21.25	21.06	21.00		
5	12	0		20.03	20.13	20.00		
5	12	7		20.08	20.10	20.13		
5	12	13		19.99	20.16	19.98		
5	25	0		20.08	20.07	20.02		
Limit	ERP < 7W			Result			Pass	

LTE Band 5 Maximum Average Power [dBm] (GT - LC = -4.62 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
3	1	0	QPSK	23.16	23.28	23.18	16.51	0.0448
3	1	8		23.16	23.14	23.16		
3	1	14		23.15	23.21	22.96		
3	8	0		22.12	22.21	22.13		
3	8	4		22.12	22.14	22.07		
3	8	7		22.09	22.22	21.92		
3	15	0		22.14	22.18	22.06		
3	1	0	16-QAM	22.14	22.73	22.61	15.96	0.0394
3	1	8		22.21	22.45	22.68		
3	1	14		22.53	22.31	22.31		
3	8	0		21.14	21.05	21.00		
3	8	4		21.15	21.08	21.02		
3	8	7		21.09	21.15	20.97		
3	15	0		21.09	21.14	20.92		
3	1	0	64-QAM	21.38	21.35	21.20	14.71	0.0296
3	1	8		21.48	21.47	21.35		
3	1	14		21.25	21.04	21.01		
3	8	0		20.02	20.08	20.01		
3	8	4		20.13	20.07	20.15		
3	8	7		19.99	20.14	19.95		
3	15	0		20.11	20.09	19.99		
Limit	ERP < 7W			Result			Pass	

LTE Band 5 Maximum Average Power [dBm] (GT - LC = -4.62 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
1.4	1	0	QPSK	23.32	23.30	23.21	16.55	0.0452
1.4	1	3		23.30	23.30	23.25		
1.4	1	5		23.28	23.30	22.96		
1.4	3	0		23.25	23.28	23.18		
1.4	3	1		23.20	23.24	23.20		
1.4	3	3		23.25	23.25	23.19		
1.4	6	0		22.26	22.16	22.04		
1.4	1	0	16-QAM	22.33	22.78	22.36	16.18	0.0415
1.4	1	3		22.68	22.48	22.40		
1.4	1	5		22.95	22.68	22.49		
1.4	3	0		22.35	22.15	22.11		
1.4	3	1		22.23	22.17	22.22		
1.4	3	3		22.13	22.27	22.12		
1.4	6	0		21.23	21.25	21.12		
1.4	1	0	64-QAM	21.52	21.07	21.34	14.79	0.0301
1.4	1	3		21.17	21.23	21.40		
1.4	1	5		21.49	21.56	21.16		
1.4	3	0		21.32	21.34	20.91		
1.4	3	1		21.08	21.42	21.32		
1.4	3	3		21.40	21.43	21.10		
1.4	6	0		20.15	20.17	20.17		
Limit	ERP < 7W			Result			Pass	

LTE Band 7 Maximum Average Power [dBm] (GT - LC = 0.49 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
20	1	0	QPSK	22.83	23.01	22.91	23.50	0.2239
20	1	49		22.66	22.99	22.88		
20	1	99		22.77	22.93	22.89		
20	50	0		21.93	22.13	22.09		
20	50	24		21.83	22.04	21.97		
20	50	50		21.87	22.08	22.08		
20	100	0		21.75	22.09	22.07		
20	1	0	16-QAM	21.78	22.06	22.26	23.08	0.2032
20	1	49		22.13	21.96	22.59		
20	1	99		22.21	22.40	22.19		
20	50	0		20.65	21.18	20.97		
20	50	24		20.82	21.02	20.96		
20	50	50		20.85	20.97	21.07		
20	100	0		20.69	21.08	21.02		
20	1	0	64-QAM	20.61	20.98	20.72	21.78	0.1507
20	1	49		20.85	21.29	21.16		
20	1	99		20.94	21.12	20.98		
20	50	0		19.59	19.79	20.03		
20	50	24		19.74	20.00	19.95		
20	50	50		19.84	20.06	20.07		
20	100	0		19.71	20.03	19.99		
Limit	EIRP < 2W			Result			Pass	

LTE Band 7 Maximum Average Power [dBm] (GT - LC = 0.49 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
15	1	0	QPSK	22.73	22.95	22.85	23.44	0.2208
15	1	37		22.61	22.91	22.82		
15	1	74		22.69	22.88	22.83		
15	36	0		21.87	22.04	22.04		
15	36	20		21.74	21.95	21.89		
15	36	39		21.77	22.00	22.00		
15	75	0		21.67	22.01	22.00		
15	1	0	16-QAM	21.69	21.96	22.17	23.00	0.1995
15	1	37		22.06	21.90	22.51		
15	1	74		22.14	22.32	22.11		
15	36	0		20.59	21.09	20.87		
15	36	20		20.77	20.96	20.89		
15	36	39		20.76	20.92	21.01		
15	75	0		20.61	20.98	20.97		
15	1	0	64-QAM	20.54	20.89	20.67	21.73	0.1489
15	1	37		20.75	21.24	21.11		
15	1	74		20.89	21.07	20.93		
15	36	0		19.53	19.72	19.96		
15	36	20		19.64	19.90	19.89		
15	36	39		19.77	20.00	19.97		
15	75	0		19.65	19.93	19.92		
Limit	EIRP < 2W			Result			Pass	

LTE Band 7 Maximum Average Power [dBm] (GT - LC = 0.49 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
10	1	0	QPSK	22.77	22.96	22.84	23.45	0.2213
10	1	25		22.60	22.93	22.78		
10	1	49		22.69	22.85	22.83		
10	25	0		21.84	22.08	22.01		
10	25	12		21.77	21.96	21.87		
10	25	25		21.80	21.99	21.98		
10	50	0		21.69	22.03	22.00		
10	1	0	16-QAM	21.72	21.99	22.19	23.02	0.2004
10	1	25		22.03	21.91	22.53		
10	1	49		22.15	22.35	22.11		
10	25	0		20.59	21.12	20.90		
10	25	12		20.72	20.92	20.91		
10	25	25		20.75	20.89	20.97		
10	50	0		20.63	21.01	20.93		
10	1	0	64-QAM	20.54	20.92	20.66	21.70	0.1479
10	1	25		20.78	21.21	21.06		
10	1	49		20.84	21.03	20.91		
10	25	0		19.50	19.73	19.94		
10	25	12		19.64	19.93	19.89		
10	25	25		19.78	19.96	20.00		
10	50	0		19.64	19.93	19.91		
Limit	EIRP < 2W			Result			Pass	

LTE Band 7 Maximum Average Power [dBm] (GT - LC = 0.49 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
5	1	0	QPSK	22.74	22.95	22.84	23.44	0.2208
5	1	12		22.60	22.90	22.78		
5	1	24		22.72	22.83	22.79		
5	12	0		21.88	22.04	22.02		
5	12	7		21.77	21.96	21.92		
5	12	13		21.80	21.98	22.00		
5	25	0		21.67	22.03	21.99		
5	1	0	16-QAM	21.73	21.99	22.19	22.98	0.1986
5	1	12		22.08	21.86	22.49		
5	1	24		22.13	22.33	22.10		
5	12	0		20.55	21.10	20.91		
5	12	7		20.77	20.97	20.90		
5	12	13		20.77	20.89	20.97		
5	25	0		20.64	21.03	20.95		
5	1	0	64-QAM	20.53	20.89	20.62	21.71	0.1483
5	1	12		20.75	21.22	21.08		
5	1	24		20.85	21.06	20.93		
5	12	0		19.58	19.72	19.97		
5	12	7		19.68	19.94	19.86		
5	12	13		19.74	19.96	19.97		
5	25	0		19.64	19.94	19.92		
Limit	EIRP < 2W			Result			Pass	

LTE Band 12 Maximum Average Power [dBm] (GT - LC = -4.8 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
10	1	0	QPSK	22.99	23.01	22.95	16.06	0.0404
10	1	25		22.89	22.88	22.86		
10	1	49		22.87	22.87	22.86		
10	25	0		21.97	22.09	21.99		
10	25	12		21.93	21.90	21.85		
10	25	25		21.79	22.01	21.93		
10	50	0		21.85	22.08	22.00		
10	1	0	16-QAM	21.84	22.28	21.74	15.57	0.0361
10	1	25		22.11	22.06	21.91		
10	1	49		22.52	21.95	22.09		
10	25	0		20.79	21.04	20.90		
10	25	12		20.87	20.94	20.91		
10	25	25		20.85	21.00	20.88		
10	50	0		20.75	21.11	20.92		
10	1	0	64-QAM	21.98	21.14	21.11	15.17	0.0329
10	1	25		22.09	21.19	21.13		
10	1	49		22.12	21.17	21.10		
10	25	0		20.83	20.03	19.78		
10	25	12		20.91	19.93	19.91		
10	25	25		20.72	19.98	19.98		
10	50	0		20.77	19.98	19.89		
Limit	ERP < 3W			Result			Pass	

LTE Band 12 Maximum Average Power [dBm] (GT - LC = -4.8 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
5	1	0	QPSK	22.89	22.90	22.89	15.95	0.0394
5	1	12		22.82	22.78	22.77		
5	1	24		22.83	22.76	22.79		
5	12	0		21.91	21.99	21.88		
5	12	7		21.81	21.78	21.80		
5	12	13		21.72	21.90	21.88		
5	25	0		21.75	22.01	21.89		
5	1	0	16-QAM	21.80	22.17	21.63	15.45	0.0351
5	1	12		22.02	22.01	21.87		
5	1	24		22.40	21.86	22.00		
5	12	0		20.74	21.00	20.78		
5	12	7		20.80	20.86	20.83		
5	12	13		20.80	20.93	20.79		
5	25	0		20.65	20.99	20.81		
5	1	0	64-QAM	21.91	21.10	21.07	15.06	0.0321
5	1	12		21.98	21.07	21.08		
5	1	24		22.01	21.07	21.06		
5	12	0		20.76	19.97	19.70		
5	12	7		20.80	19.84	19.80		
5	12	13		20.61	19.91	19.88		
5	25	0		20.73	19.90	19.80		
Limit	ERP < 3W			Result			Pass	

LTE Band 12 Maximum Average Power [dBm] (GT - LC = -4.8 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
3	1	0	QPSK	22.94	22.95	22.86	16.00	0.0398
3	1	8		22.77	22.78	22.82		
3	1	14		22.75	22.78	22.74		
3	8	0		21.91	21.97	21.90		
3	8	4		21.84	21.85	21.81		
3	8	7		21.68	21.89	21.89		
3	15	0		21.80	22.04	21.92		
3	1	0	16-QAM	21.77	22.18	21.69	15.46	0.0352
3	1	8		21.99	21.98	21.86		
3	1	14		22.41	21.90	22.00		
3	8	0		20.74	20.92	20.85		
3	8	4		20.82	20.87	20.85		
3	8	7		20.77	20.95	20.79		
3	15	0		20.65	20.99	20.88		
3	1	0	64-QAM	21.87	21.05	21.01	15.08	0.0322
3	1	8		22.02	21.13	21.07		
3	1	14		22.03	21.05	21.05		
3	8	0		20.79	19.94	19.69		
3	8	4		20.81	19.84	19.85		
3	8	7		20.62	19.91	19.91		
3	15	0		20.70	19.90	19.83		
Limit	ERP < 3W			Result			Pass	

LTE Band 12 Maximum Average Power [dBm] (GT - LC = -4.8 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
1.4	1	0	QPSK	22.84	22.73	22.81	15.94	0.0393
1.4	1	3		22.88	22.75	22.82		
1.4	1	5		22.87	22.77	22.88		
1.4	3	0		22.80	22.82	22.85		
1.4	3	1		22.82	22.86	22.88		
1.4	3	3		22.81	22.82	22.89		
1.4	6	0		21.82	21.81	21.77		
1.4	1	0	16-QAM	22.44	22.47	22.50	15.55	0.0359
1.4	1	3		22.46	22.49	22.11		
1.4	1	5		22.34	22.00	22.14		
1.4	3	0		21.84	21.87	21.81		
1.4	3	1		21.81	21.85	21.84		
1.4	3	3		21.88	21.78	21.89		
1.4	6	0		20.70	20.86	20.92		
1.4	1	0	64-QAM	20.71	20.95	21.15	14.20	0.0263
1.4	1	3		21.06	21.03	20.87		
1.4	1	5		21.03	20.77	21.03		
1.4	3	0		20.87	20.96	21.00		
1.4	3	1		20.58	20.88	20.99		
1.4	3	3		20.66	21.03	21.03		
1.4	6	0		19.71	19.74	19.80		
Limit	ERP < 3W			Result			Pass	

LTE Band 17 Maximum Average Power [dBm] (GT - LC = -4.8 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
10	1	0	QPSK	22.96	22.99	22.94	16.04	0.0402
10	1	25		22.84	22.96	22.92		
10	1	49		22.86	22.83	22.92		
10	25	0		22.02	22.09	21.97		
10	25	12		21.90	21.90	21.88		
10	25	25		22.08	22.08	21.94		
10	50	0		22.07	22.04	21.92		
10	1	0	16-QAM	22.44	21.98	22.11	15.71	0.0372
10	1	25		22.66	21.95	22.46		
10	1	49		22.50	22.10	22.08		
10	25	0		20.95	20.91	20.90		
10	25	12		20.95	20.90	20.88		
10	25	25		21.06	21.08	20.96		
10	50	0		21.07	21.05	20.98		
10	1	0	64-QAM	20.76	21.29	20.99	14.34	0.0272
10	1	25		21.28	21.20	21.21		
10	1	49		20.68	20.94	21.17		
10	25	0		19.94	19.95	19.77		
10	25	12		19.92	19.93	19.91		
10	25	25		19.98	20.05	20.00		
10	50	0		20.02	19.99	19.91		
Limit	ERP < 3W			Result			Pass	

LTE Band 17 Maximum Average Power [dBm] (GT - LC = -4.8 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP (W)
5	1	0	QPSK	22.88	22.91	22.89	15.97	0.0395
5	1	12		22.80	22.92	22.88		
5	1	24		22.78	22.76	22.84		
5	12	0		21.95	22.01	21.89		
5	12	7		21.83	21.86	21.81		
5	12	13		22.01	22.03	21.89		
5	25	0		22.03	21.97	21.84		
5	1	0	16-QAM	22.37	21.92	22.04	15.66	0.0368
5	1	12		22.61	21.88	22.39		
5	1	24		22.42	22.06	22.00		
5	12	0		20.88	20.85	20.83		
5	12	7		20.88	20.84	20.82		
5	12	13		21.01	21.00	20.88		
5	25	0		21.00	20.98	20.90		
5	1	0	64-QAM	20.70	21.22	20.93	14.29	0.0269
5	1	12		21.24	21.12	21.14		
5	1	24		20.61	20.87	21.11		
5	12	0		19.90	19.88	19.73		
5	12	7		19.85	19.85	19.86		
5	12	13		19.92	19.98	19.92		
5	25	0		19.94	19.93	19.86		
Limit	ERP < 3W			Result			Pass	

LTE Band 38 Maximum Average Power [dBm] (GT - LC = 0.81 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
20	1	0	QPSK	22.88	22.96	22.80	23.77	0.2382
20	1	49		22.84	22.84	22.79		
20	1	99		22.80	22.71	22.67		
20	50	0		21.99	22.01	21.94		
20	50	24		21.90	21.94	21.83		
20	50	50		21.97	21.83	21.74		
20	100	0		22.02	22.04	21.82		
20	1	0	16-QAM	22.01	22.07	21.98	22.97	0.1982
20	1	49		22.16	22.11	22.03		
20	1	99		22.00	21.93	21.94		
20	50	0		20.96	20.84	20.95		
20	50	24		21.07	20.88	20.87		
20	50	50		21.03	20.82	20.81		
20	100	0		20.97	20.80	20.84		
20	1	0	64-QAM	20.82	20.85	20.80	21.83	0.1524
20	1	49		21.02	20.88	20.90		
20	1	99		20.87	20.74	20.71		
20	50	0		19.94	19.87	19.90		
20	50	24		20.04	19.92	19.80		
20	50	50		19.96	19.80	19.76		
20	100	0		19.96	19.85	19.76		
Limit	EIRP < 2W			Result			Pass	

LTE Band 38 Maximum Average Power [dBm] (GT - LC = 0.81 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
15	1	0	QPSK	22.81	22.87	22.71	23.68	0.2333
15	1	37		22.76	22.79	22.75		
15	1	74		22.76	22.67	22.59		
15	36	0		21.95	21.92	21.85		
15	36	20		21.85	21.88	21.76		
15	36	39		21.91	21.77	21.68		
15	75	0		21.94	21.99	21.77		
15	1	0	16-QAM	21.93	21.98	21.93	22.91	0.1954
15	1	37		22.10	22.03	21.99		
15	1	74		21.94	21.84	21.85		
15	36	0		20.89	20.79	20.90		
15	36	20		21.02	20.79	20.81		
15	36	39		20.97	20.75	20.72		
15	75	0		20.88	20.76	20.79		
15	1	0	64-QAM	20.77	20.80	20.72	21.79	0.1510
15	1	37		20.98	20.82	20.81		
15	1	74		20.78	20.67	20.66		
15	36	0		19.85	19.83	19.84		
15	36	20		19.96	19.83	19.75		
15	36	39		19.89	19.74	19.69		
15	75	0		19.88	19.78	19.67		
Limit	EIRP < 2W			Result			Pass	

LTE Band 38 Maximum Average Power [dBm] (GT - LC = 0.81 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
10	1	0	QPSK	22.79	22.90	22.72	23.71	0.2350
10	1	25		22.80	22.78	22.72		
10	1	49		22.75	22.66	22.61		
10	25	0		21.90	21.92	21.88		
10	25	12		21.86	21.90	21.75		
10	25	25		21.93	21.78	21.67		
10	50	0		21.93	21.96	21.74		
10	1	0	16-QAM	21.94	22.02	21.92	22.92	0.1959
10	1	25		22.11	22.06	21.96		
10	1	49		21.91	21.87	21.89		
10	25	0		20.88	20.76	20.88		
10	25	12		20.99	20.80	20.78		
10	25	25		20.99	20.77	20.76		
10	50	0		20.90	20.74	20.80		
10	1	0	64-QAM	20.76	20.80	20.75	21.79	0.1510
10	1	25		20.98	20.80	20.84		
10	1	49		20.78	20.65	20.64		
10	25	0		19.90	19.83	19.86		
10	25	12		19.99	19.87	19.71		
10	25	25		19.88	19.76	19.68		
10	50	0		19.88	19.80	19.68		
Limit	EIRP < 2W			Result			Pass	

LTE Band 38 Maximum Average Power [dBm] (GT - LC = 0.81 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
5	1	0	QPSK	22.83	22.90	22.71	23.71	0.2350
5	1	12		22.75	22.80	22.72		
5	1	24		22.73	22.62	22.60		
5	12	0		21.90	21.97	21.88		
5	12	7		21.84	21.87	21.75		
5	12	13		21.93	21.76	21.69		
5	25	0		21.96	21.96	21.75		
5	1	0	16-QAM	21.93	21.98	21.89	22.88	0.1941
5	1	12		22.07	22.03	21.94		
5	1	24		21.96	21.86	21.88		
5	12	0		20.91	20.77	20.90		
5	12	7		21.00	20.79	20.83		
5	12	13		20.96	20.73	20.74		
5	25	0		20.90	20.72	20.80		
5	1	0	64-QAM	20.73	20.81	20.71	21.76	0.1500
5	1	12		20.95	20.82	20.83		
5	1	24		20.80	20.69	20.65		
5	12	0		19.89	19.79	19.81		
5	12	7		19.96	19.86	19.74		
5	12	13		19.91	19.72	19.72		
5	25	0		19.88	19.80	19.67		
Limit	EIRP < 2W			Result			Pass	

LTE Band 38C_CA Maximum Average Power [dBm] (GT - LC = 0.81 dB)										
BW [MHz]	PCC		SCC		Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
	RB Size	RB Offset	RB Size	RB Offset						
20+20	100	0	100	0	QPSK	20.90	20.92	20.93	23.57	0.2275
20+20	1	0	1	99		13.84	13.82	13.83		
20+20	1	99	1	0		22.76	22.74	22.74		
20+20	100	0	100	0	16-QAM	19.97	19.94	19.96	22.76	0.1888
20+20	1	0	1	99		13.95	13.92	13.94		
20+20	1	99	1	0		21.95	21.92	21.90		
20+20	100	0	100	0	64-QAM	19.94	19.91	19.95	20.76	0.1191
20+20	1	0	1	99		13.55	13.60	13.55		
20+20	1	99	1	0		19.57	19.53	19.53		
15+15	75	0	75	0	QPSK	21.07	21.06	21.05	23.83	0.2415
15+15	1	0	1	74		14.28	14.33	14.27		
15+15	1	74	1	0		23.02	22.96	22.91		
15+15	75	0	75	0	16-QAM	20.11	20.11	20.09	22.98	0.1986
15+15	1	0	1	74		14.37	14.38	14.36		
15+15	1	74	1	0		22.17	22.12	22.10		
15+15	75	0	75	0	64-QAM	20.11	20.12	20.09	20.93	0.1239
15+15	1	0	1	74		13.99	14.00	14.00		
15+15	1	74	1	0		19.78	19.74	19.69		
Limit	EIRP < 2W					Result			Pass	

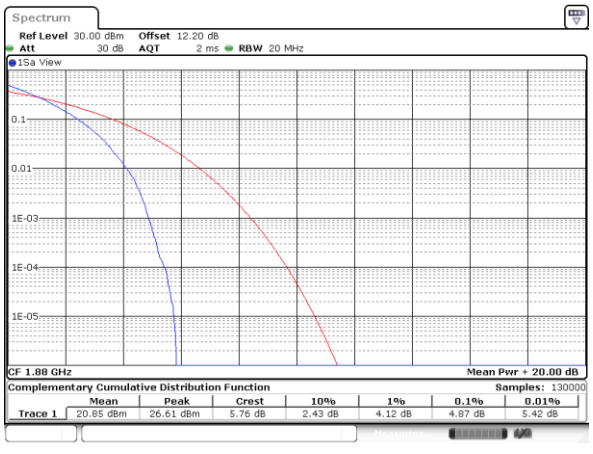
<Ant. 1>

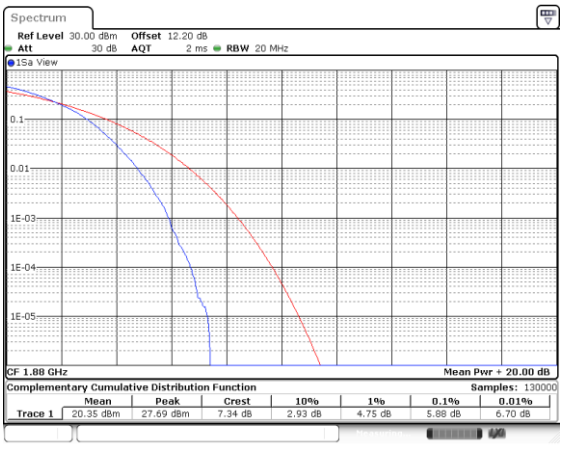
LTE Band 2

Peak-to-Average Ratio

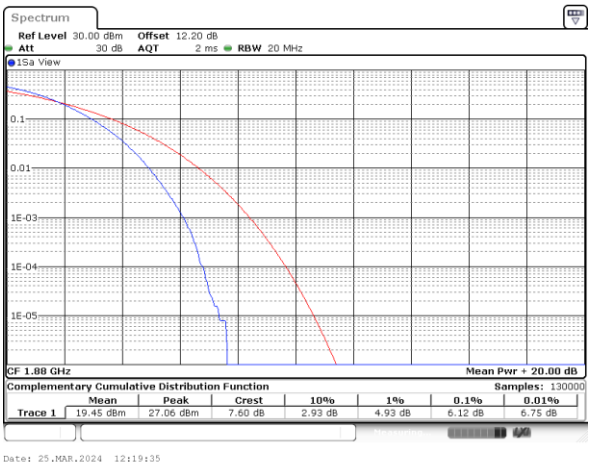
Mode	LTE Band 2 / 20MHz				
Mod.	QPSK	16QAM	64QAM	256QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	4.87	5.88	6.12	-	PASS

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





LTE Band 2 / 20MHz / 64QAM
Middle Channel / Full RB

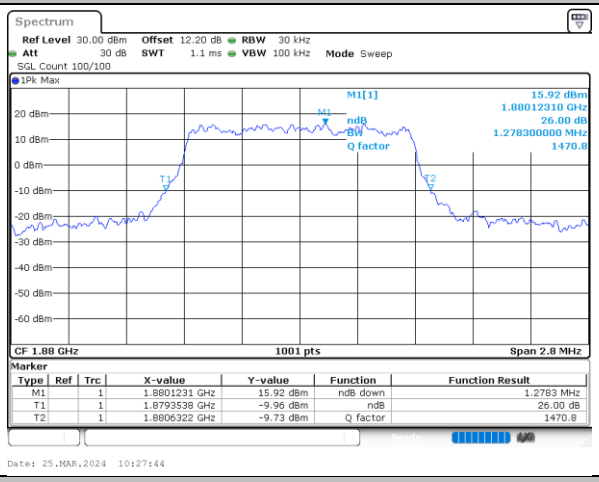


26dB Bandwidth

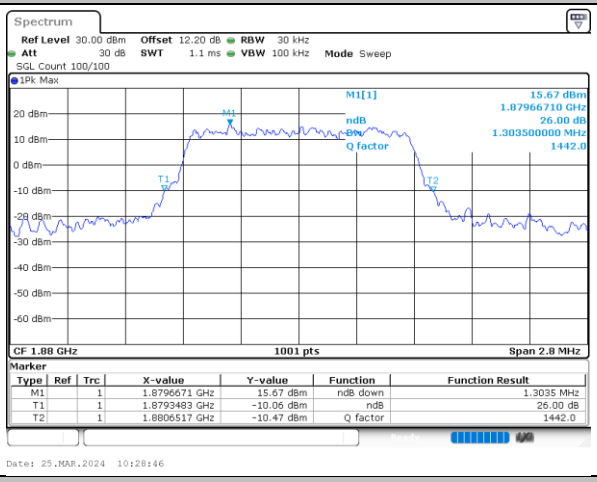
Mode	LTE Band 2 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	1.27	1.30	2.96	2.94	4.82	4.86	9.73	9.76	14.26	14.41	19.02	18.86
Mode	LTE Band 2 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	1.26	-	2.97	-	4.82	-	9.65	-	14.53	-	18.90	-

LTE Band 2

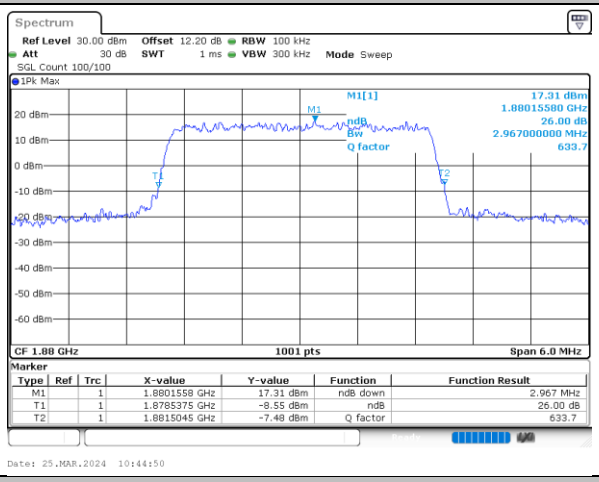
Middle Channel / 1.4MHz / QPSK



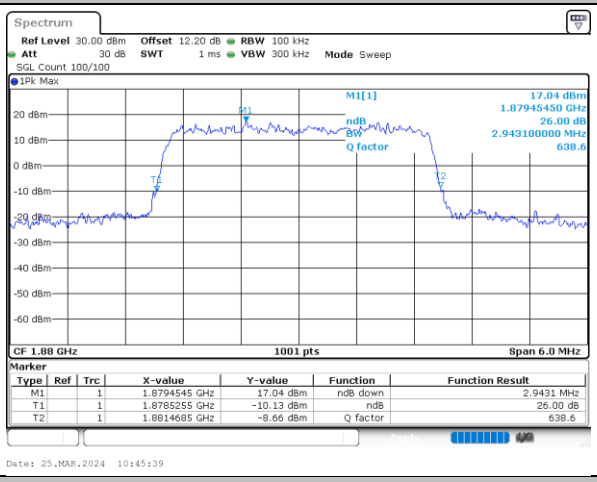
Middle Channel / 1.4MHz / 16QAM



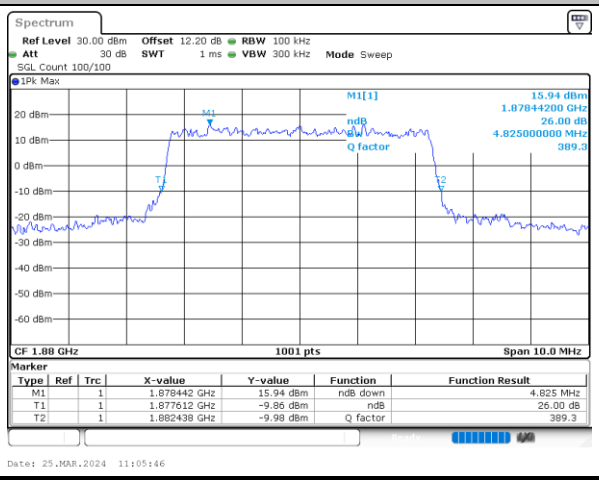
Middle Channel / 3MHz / QPSK



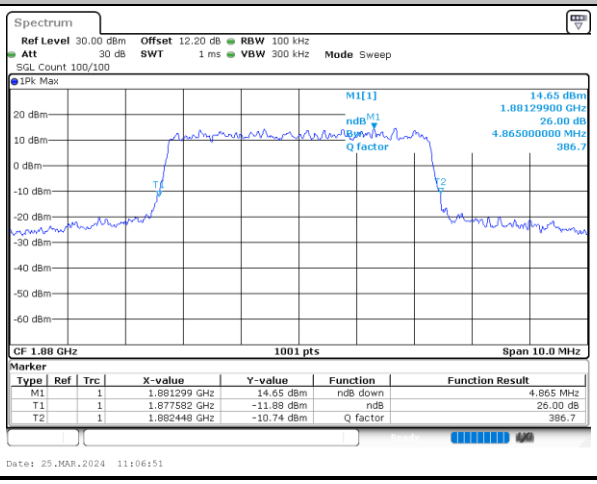
Middle Channel / 3MHz / 16QAM



Middle Channel / 5MHz / QPSK

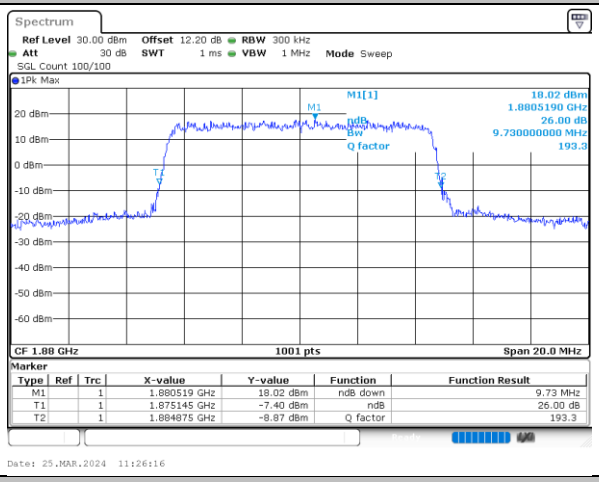


Middle Channel / 5MHz / 16QAM

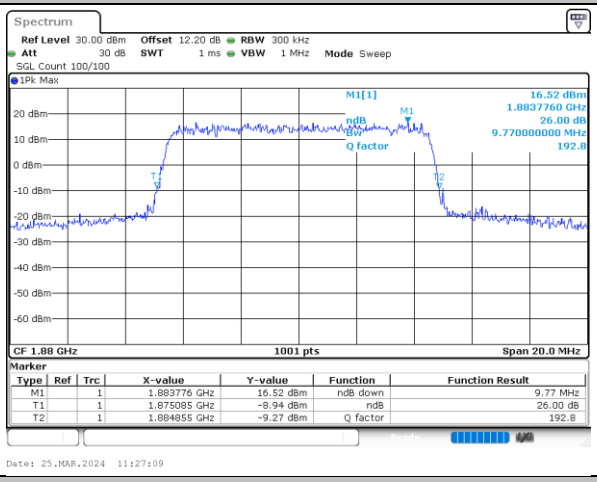


LTE Band 2

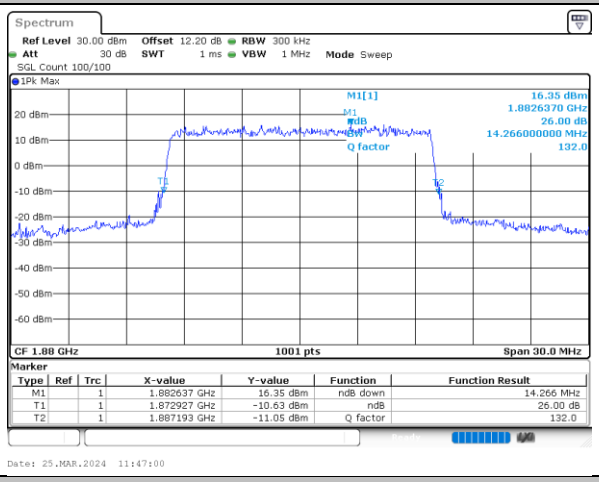
Middle Channel / 10MHz / QPSK



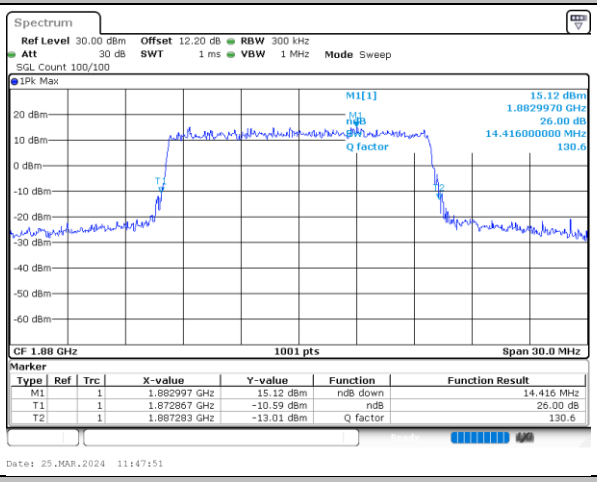
Middle Channel / 10MHz / 16QAM



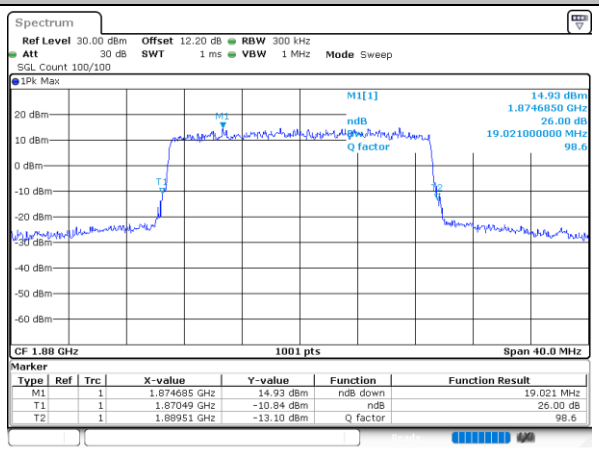
Middle Channel / 15MHz / QPSK



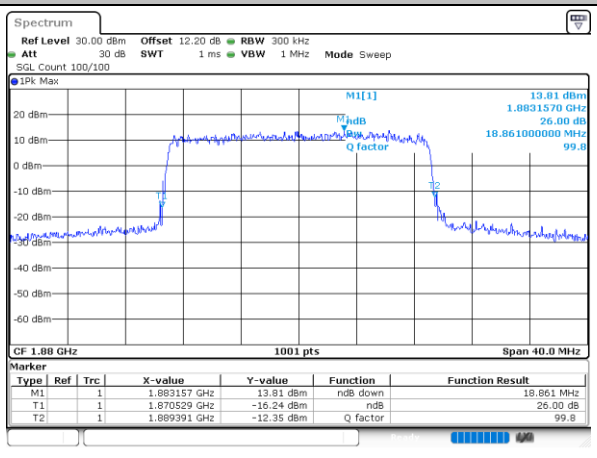
Middle Channel / 15MHz / 16QAM



Middle Channel / 20MHz / QPSK

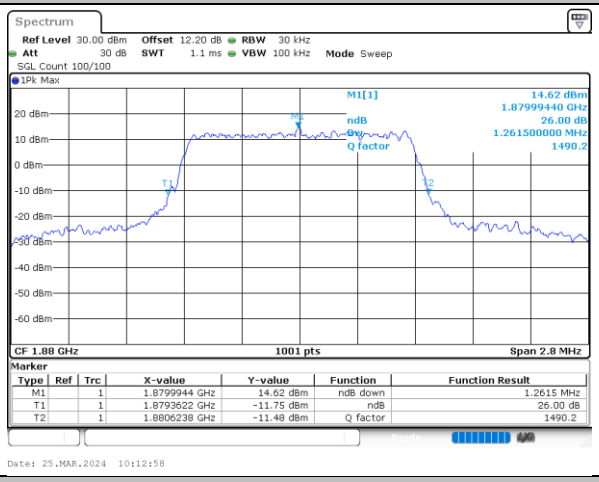


Middle Channel / 20MHz / 16QAM

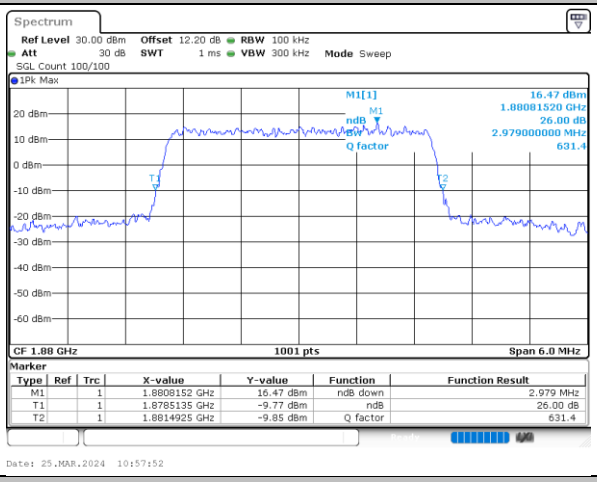


LTE Band 2

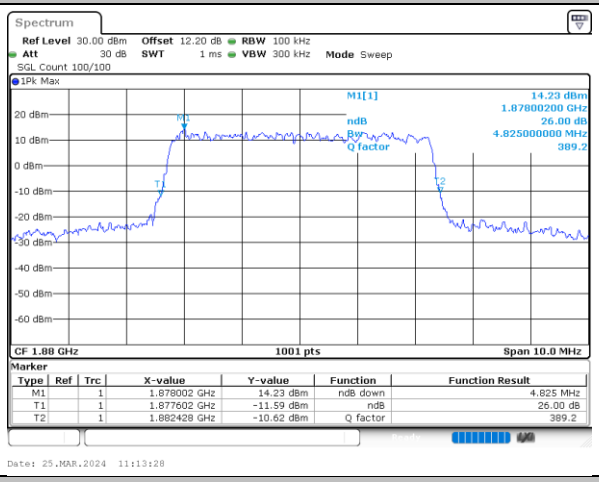
Middle Channel / 1.4MHz / 64QAM



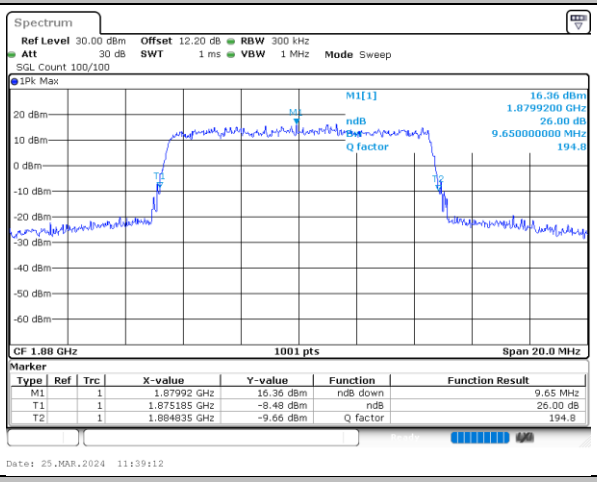
Middle Channel / 3MHz / 64QAM



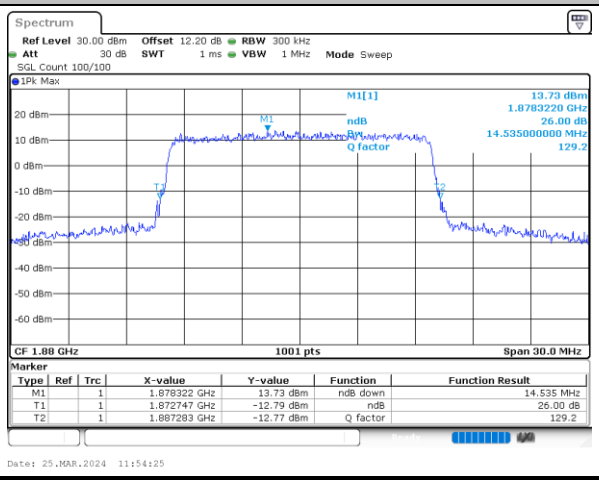
Middle Channel / 5MHz / 64QAM



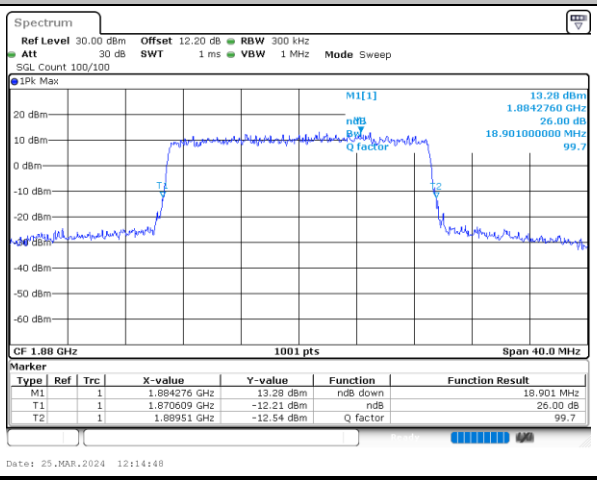
Middle Channel / 10MHz / 64QAM



Middle Channel / 15MHz / 64QAM



Middle Channel / 20MHz / 64QAM

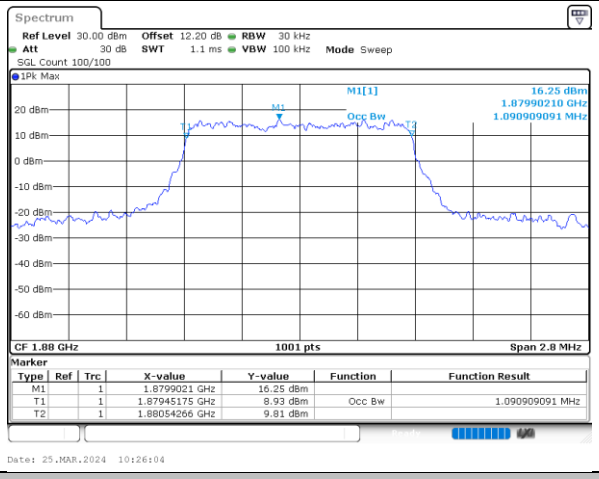


Occupied Bandwidth

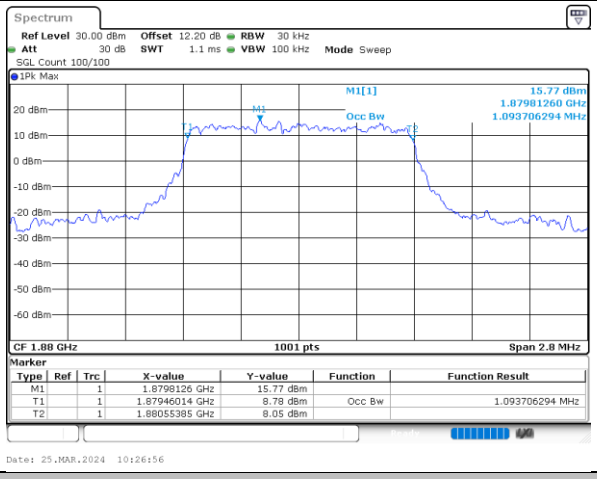
Mode	LTE Band 2 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	1.09	1.09	2.70	2.71	4.49	4.47	9.01	8.97	13.42	13.39	17.82	17.86
Mode	LTE Band 2 : 99%OBW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	1.10	-	2.72	-	4.49	-	9.03	-	13.42	-	17.82	-

LTE Band 2

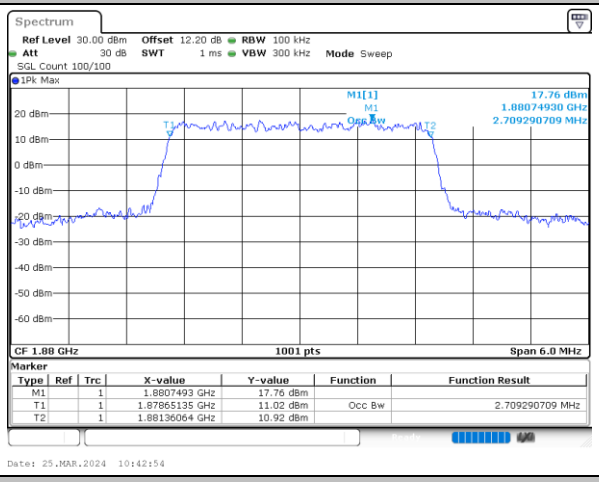
Middle Channel / 1.4MHz / QPSK



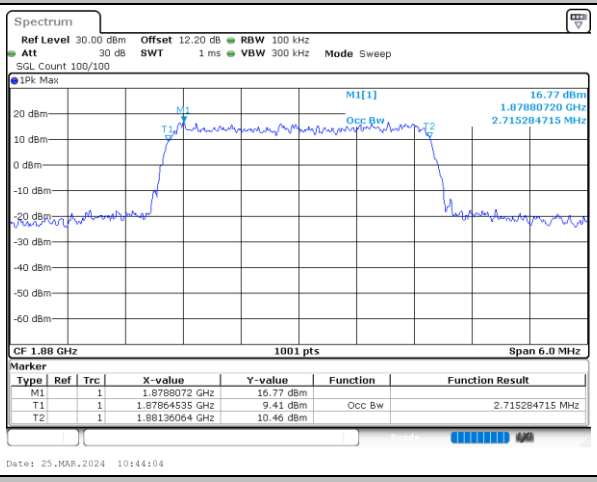
Middle Channel / 1.4MHz / 16QAM



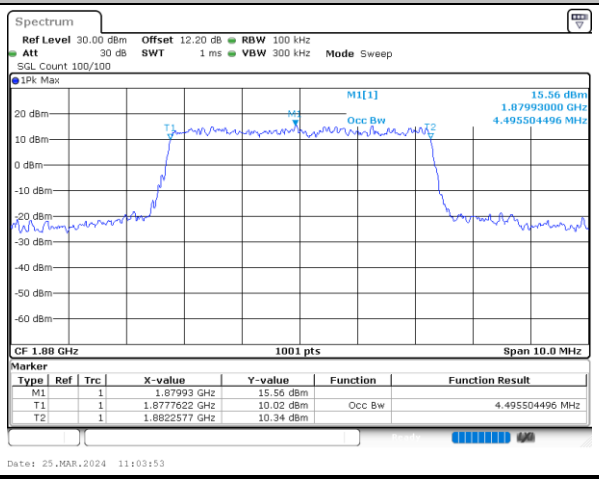
Middle Channel / 3MHz / QPSK



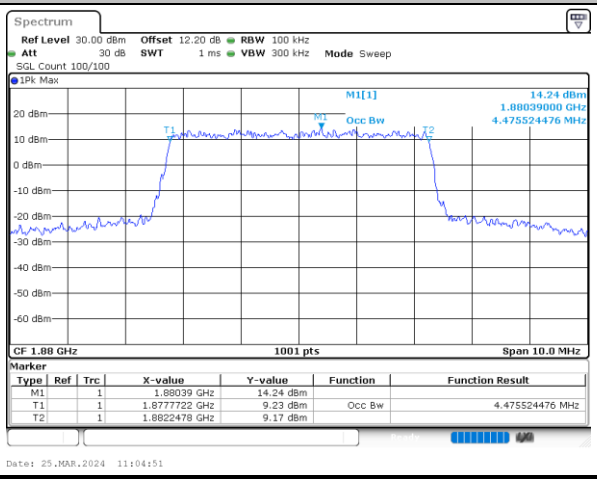
Middle Channel / 3MHz / 16QAM



Middle Channel / 5MHz / QPSK

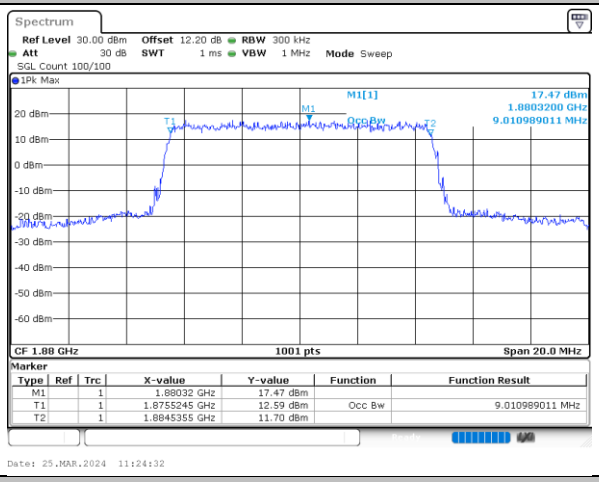


Middle Channel / 5MHz / 16QAM

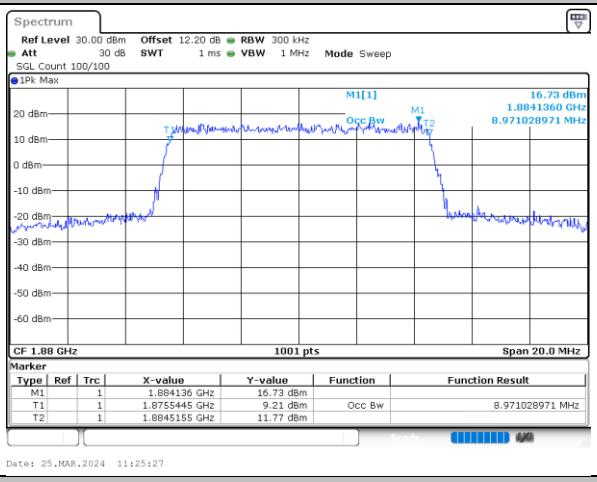


LTE Band 2

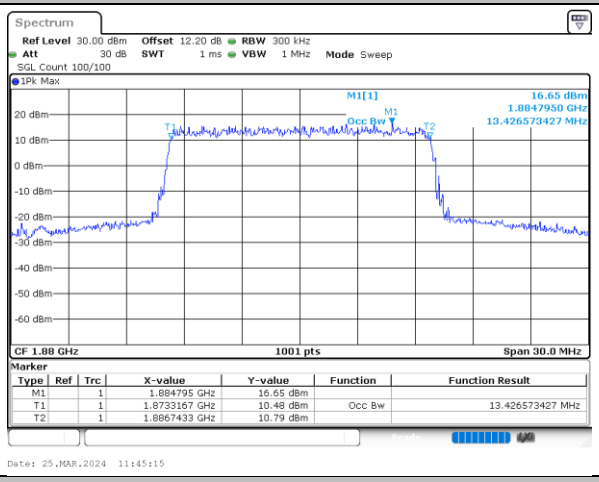
Middle Channel / 10MHz / QPSK



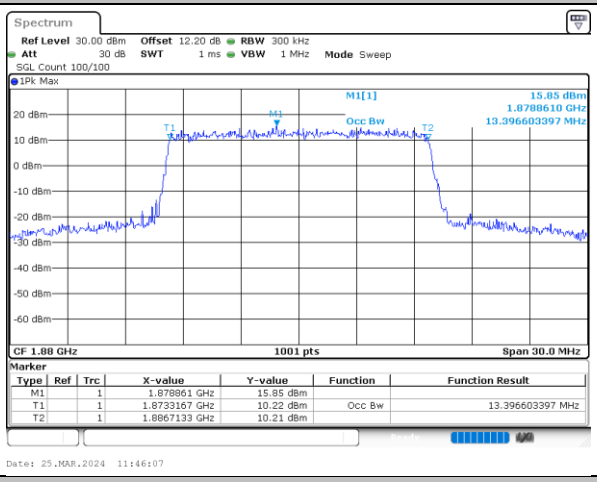
Middle Channel / 10MHz / 16QAM



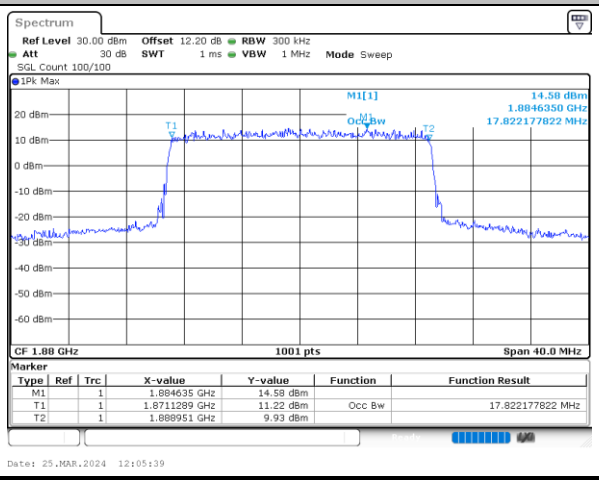
Middle Channel / 15MHz / QPSK



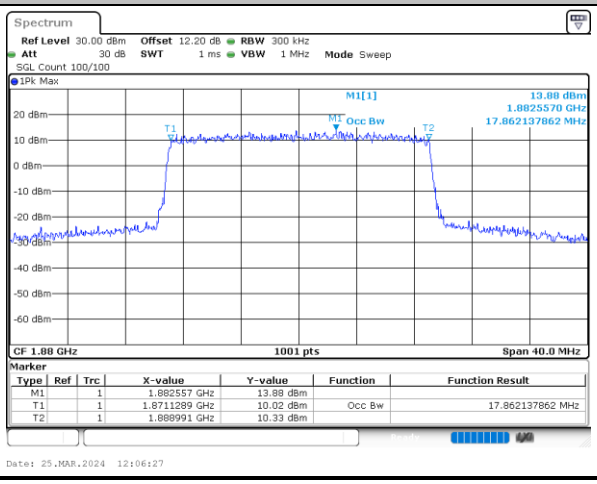
Middle Channel / 15MHz / 16QAM



Middle Channel / 20MHz / QPSK

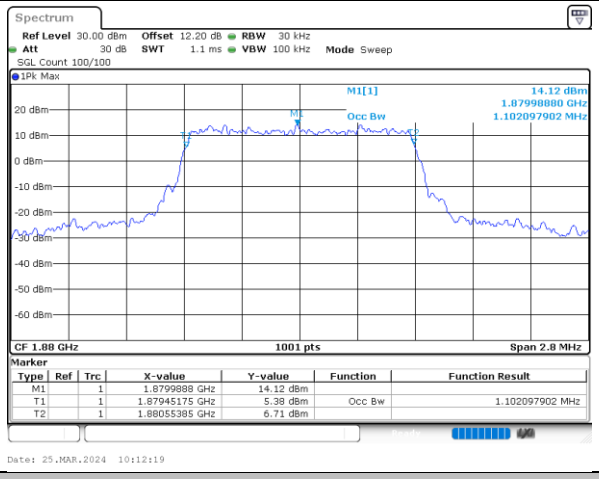


Middle Channel / 20MHz / 16QAM

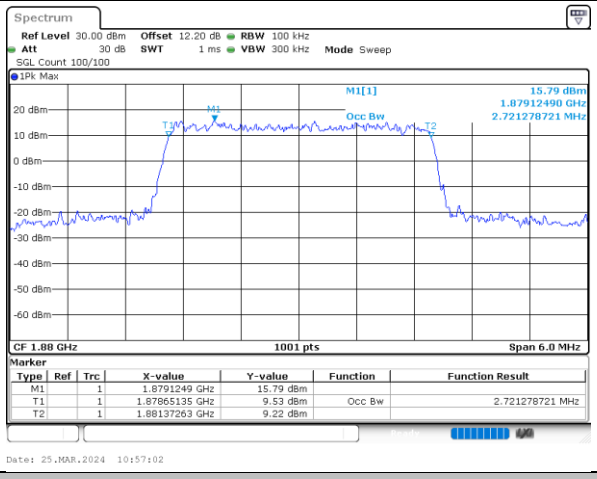


LTE Band 2

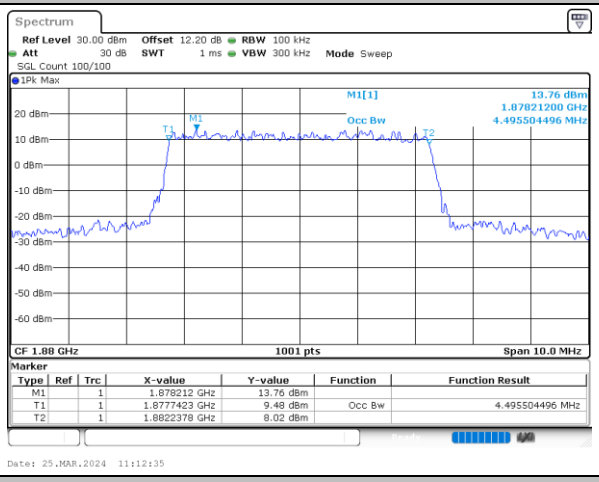
Middle Channel / 1.4MHz / 64QAM



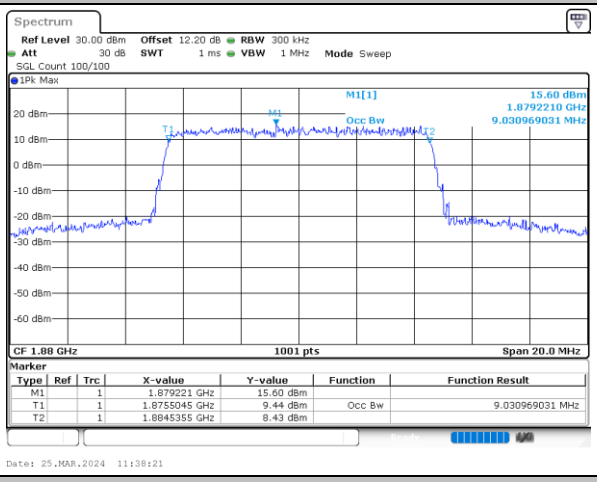
Middle Channel / 3MHz / 64QAM



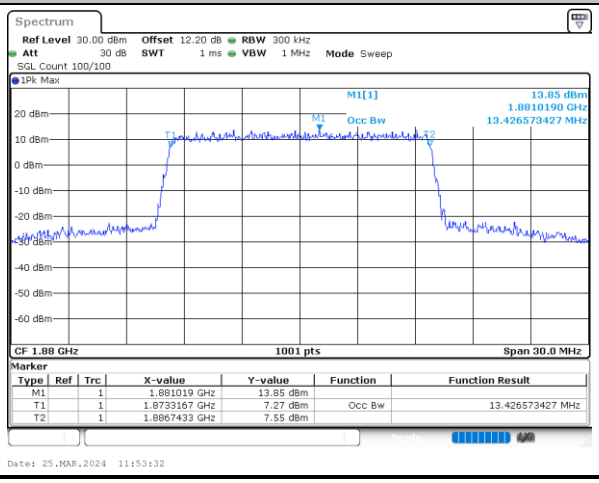
Middle Channel / 5MHz / 64QAM



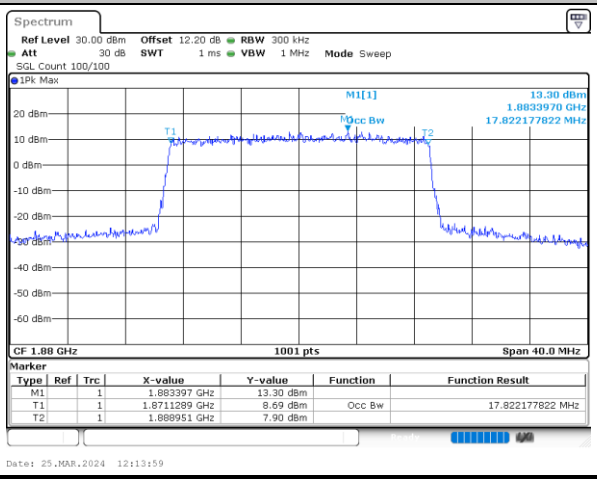
Middle Channel / 10MHz / 64QAM



Middle Channel / 15MHz / 64QAM



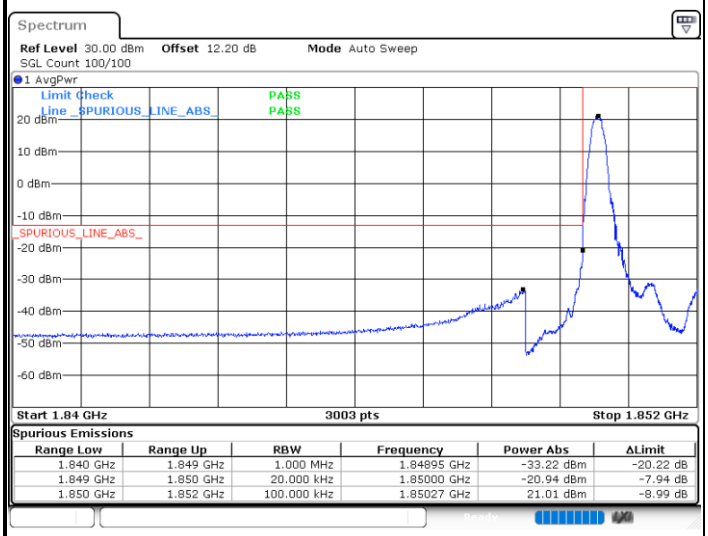
Middle Channel / 20MHz / 64QAM



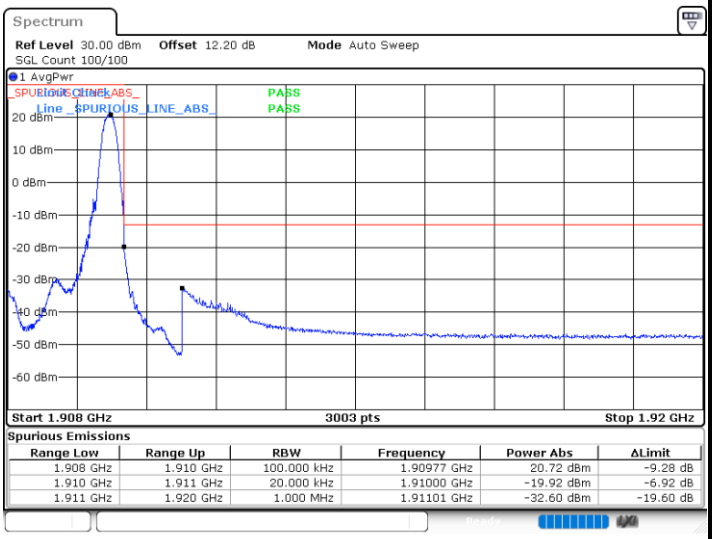
Conducted Band Edge

LTE Band 2 / 1.4MHz / QPSK

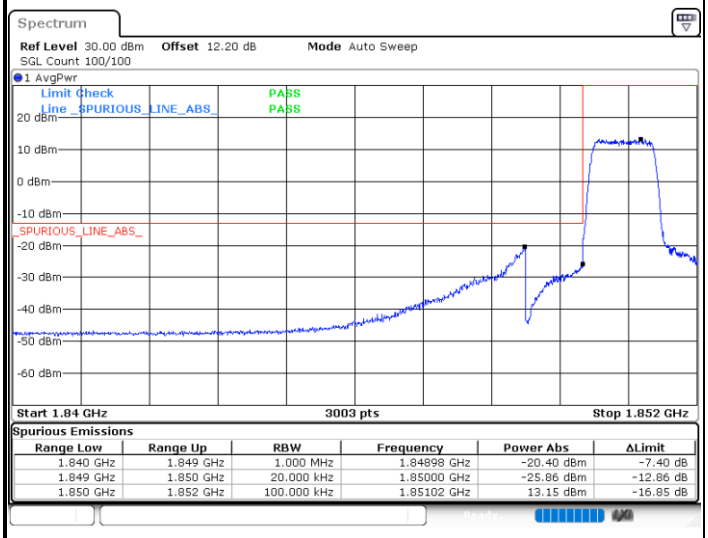
Lowest Band Edge / 1RB



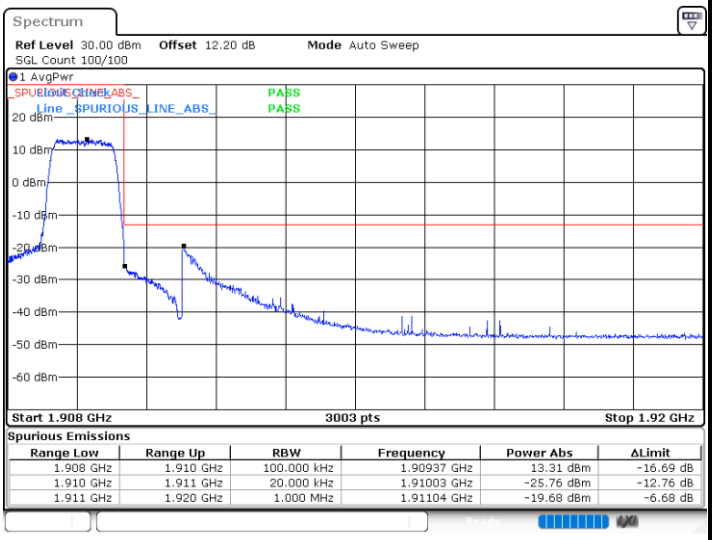
Highest Band Edge / 1RB



Lowest Band Edge / Full RB

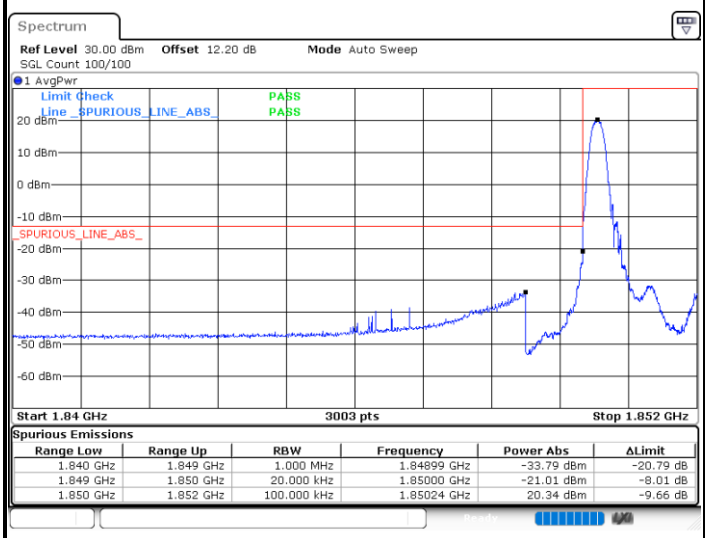


Highest Band Edge / Full RB

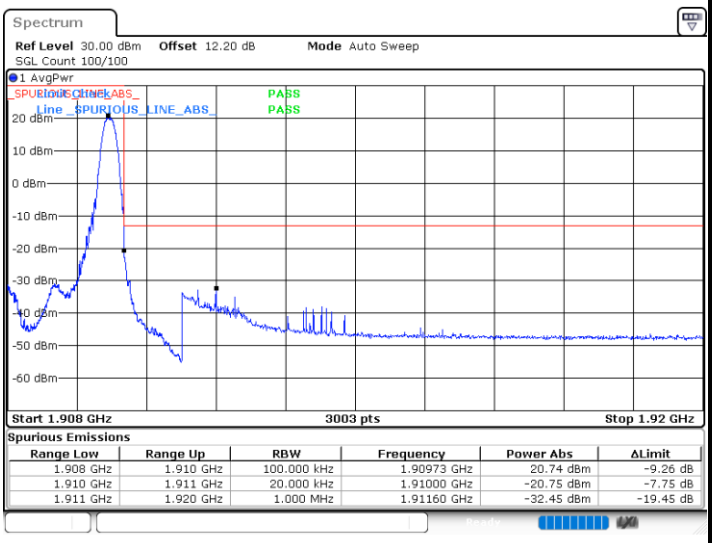


LTE Band 2 / 1.4MHz / 16QAM

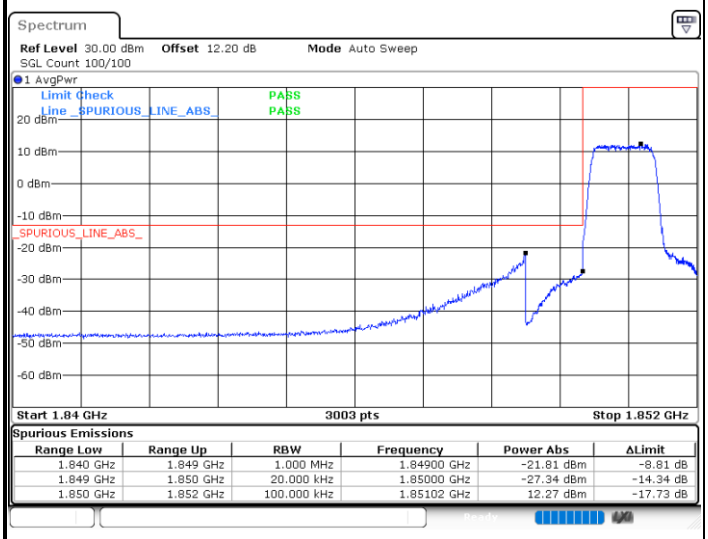
Lowest Band Edge / 1 RB



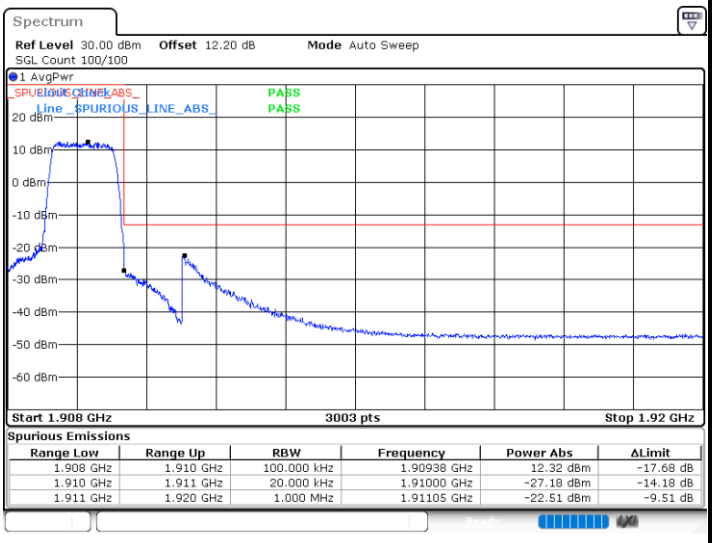
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB

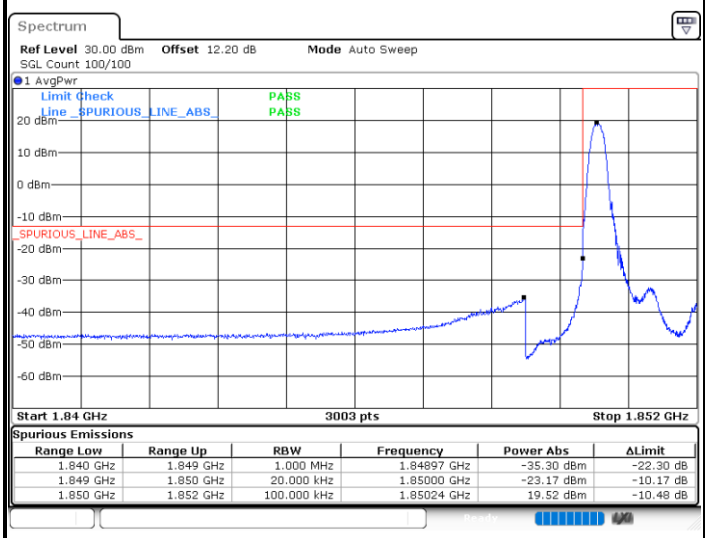


Highest Band Edge / Full RB

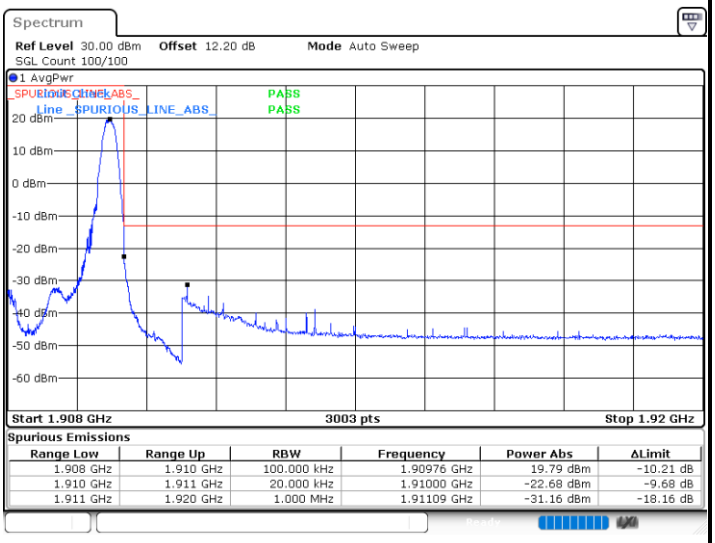


LTE Band 2 / 1.4MHz / 64QAM

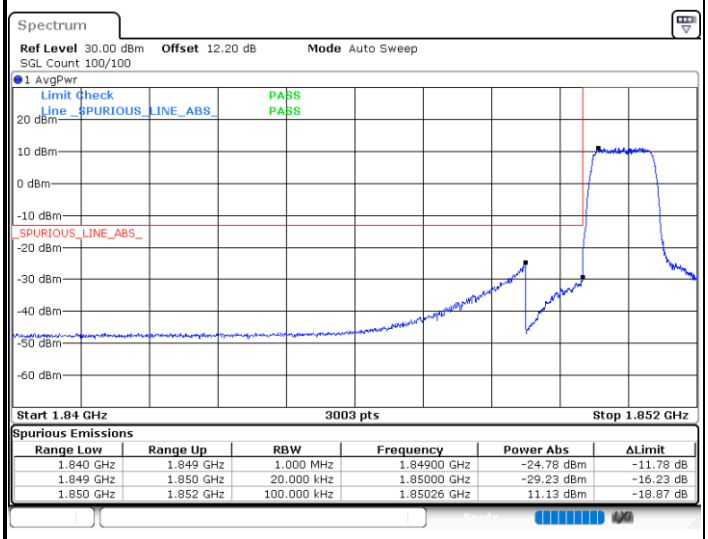
Lowest Band Edge / 1 RB



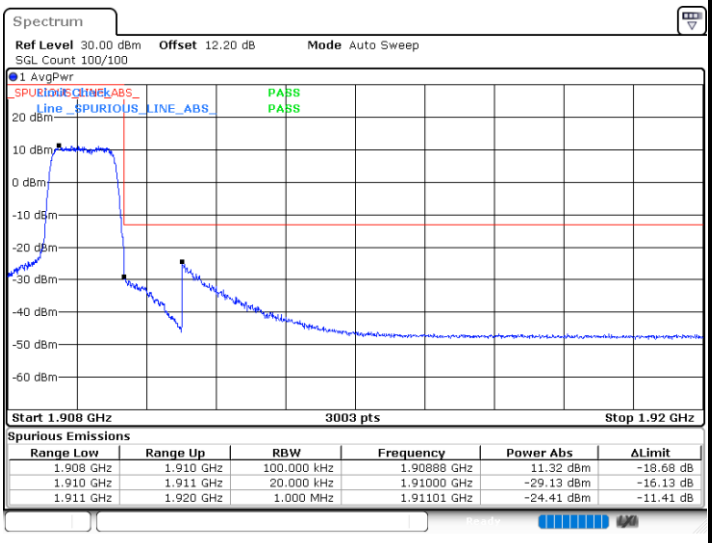
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB

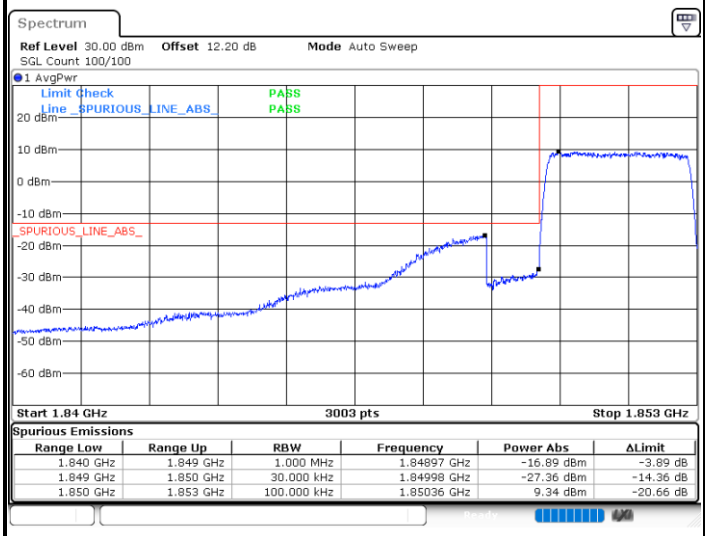


Highest Band Edge / Full RB



LTE Band 2 / 3MHz / QPSK

Lowest Band Edge / Full RB

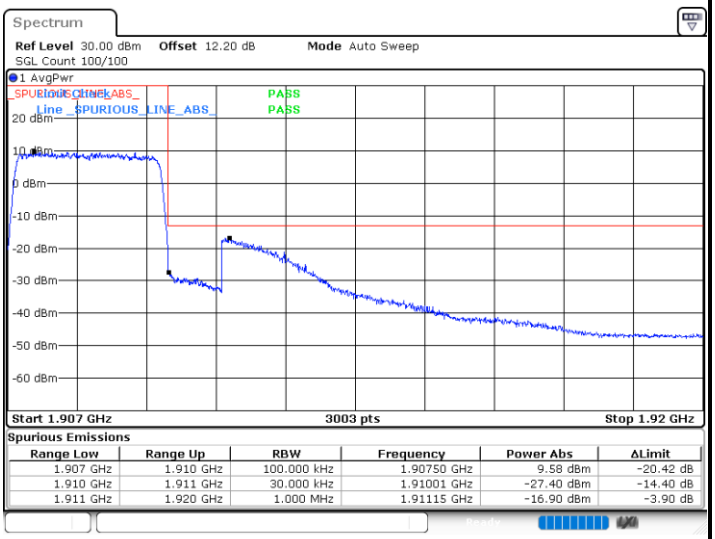


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84897 GHz	-16.89 dBm	-3.89 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.84998 GHz	-27.36 dBm	-14.36 dB
1.850 GHz	1.853 GHz	100.000 kHz	1.85036 GHz	9.34 dBm	-20.66 dB

Date: 25.MAR.2024 10:40:24

Highest Band Edge / Full RB



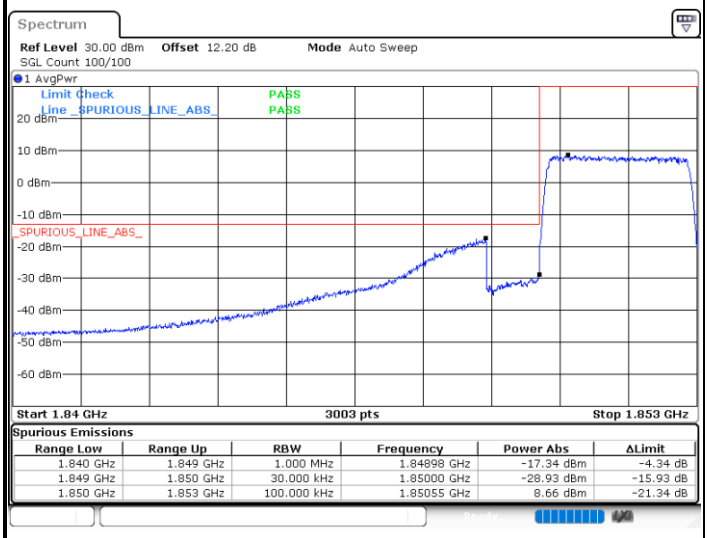
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.907 GHz	1.910 GHz	100.000 kHz	1.90750 GHz	9.58 dBm	-20.42 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91001 GHz	-27.40 dBm	-14.40 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91115 GHz	-16.90 dBm	-3.90 dB

Date: 25.MAR.2024 10:52:40

LTE Band 2 / 3MHz / 16QAM

Lowest Band Edge / Full RB

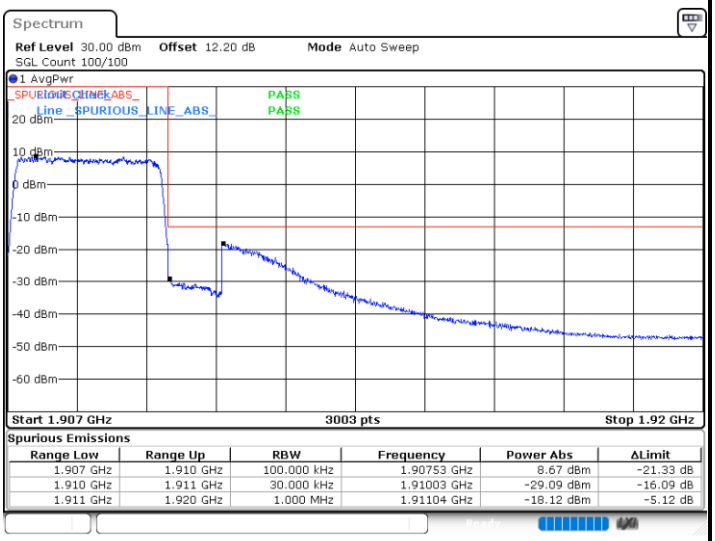


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84898 GHz	-17.34 dBm	-4.34 dB
1.849 GHz	1.850 GHz	30.000 kHz	1.85000 GHz	-28.93 dBm	-15.93 dB
1.850 GHz	1.853 GHz	100.000 kHz	1.85055 GHz	8.66 dBm	-21.34 dB

Date: 25.MAR.2024 10:42:03

Highest Band Edge / Full RB

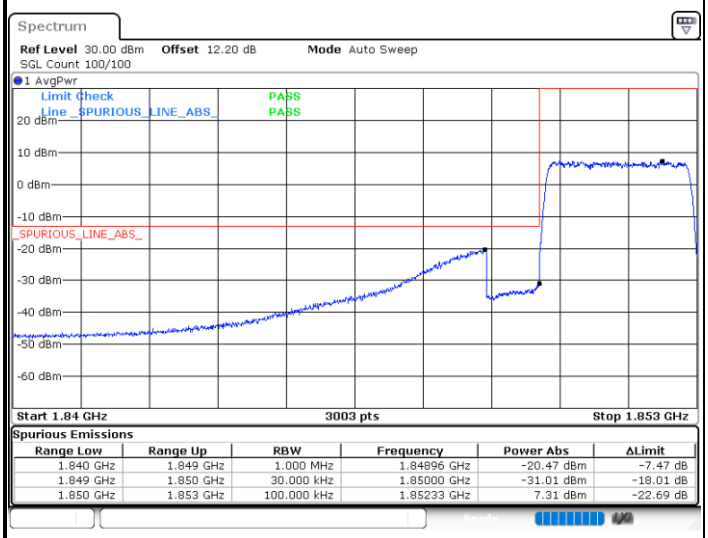


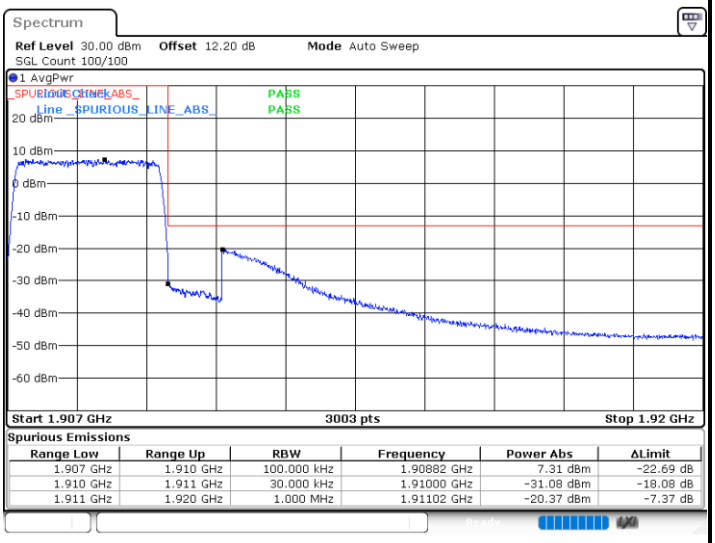
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.907 GHz	1.910 GHz	100.000 kHz	1.90753 GHz	8.67 dBm	-21.33 dB
1.910 GHz	1.911 GHz	30.000 kHz	1.91003 GHz	-29.09 dBm	-16.09 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91104 GHz	-18.12 dBm	-5.12 dB

Date: 25.MAR.2024 10:54:20

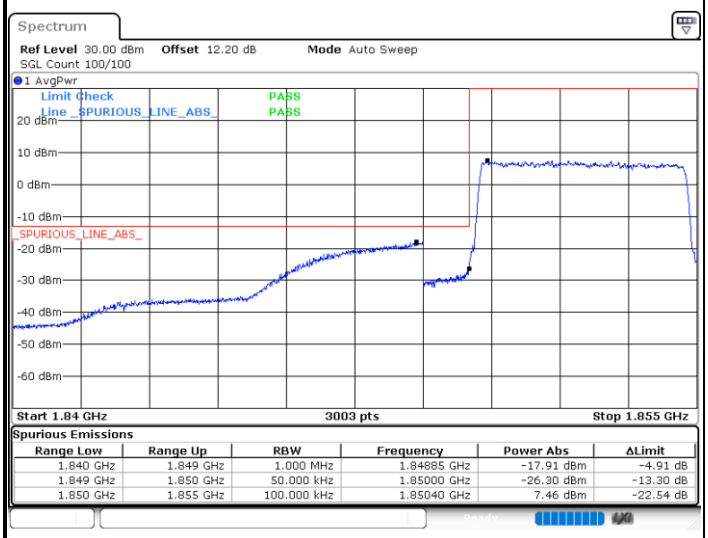
LTE Band 2 / 3MHz / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**





LTE Band 2 / 5MHz / QPSK

Lowest Band Edge / Full RB

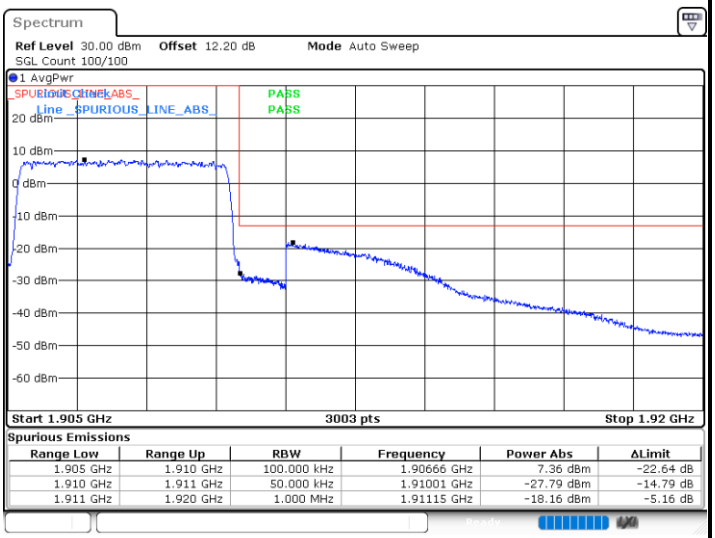


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84885 GHz	-17.91 dBm	-4.91 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.85000 GHz	-26.30 dBm	-13.30 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85040 GHz	7.46 dBm	-22.54 dB

Date: 25.MAR.2024 11:01:09

Highest Band Edge / Full RB



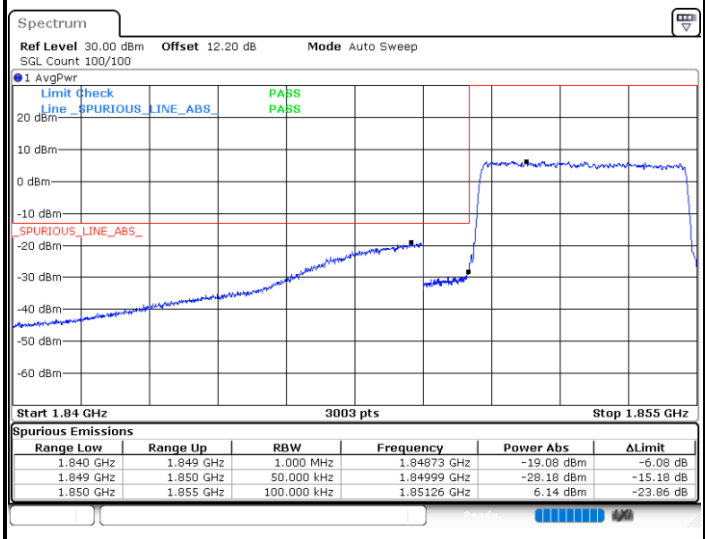
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90666 GHz	7.36 dBm	-22.64 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91001 GHz	-27.79 dBm	-14.79 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91115 GHz	-18.16 dBm	-5.16 dB

Date: 25.MAR.2024 11:08:24

LTE Band 2 / 5MHz / 16QAM

Lowest Band Edge / Full RB

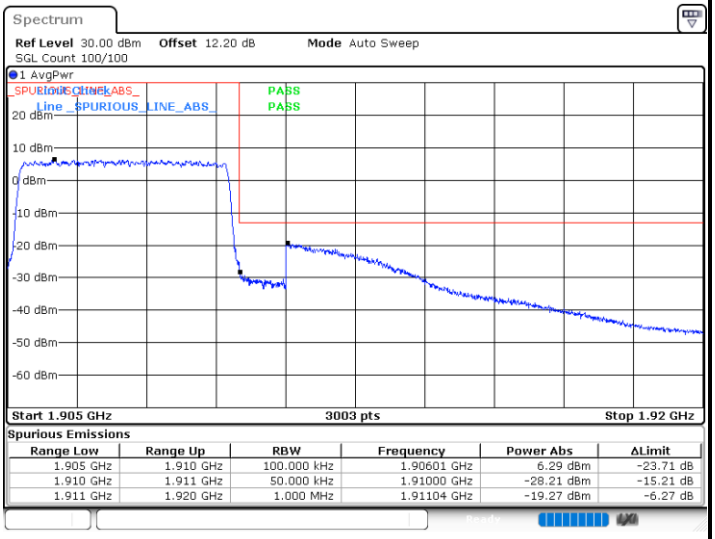


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84873 GHz	-19.08 dBm	-6.08 dB
1.849 GHz	1.850 GHz	50.000 kHz	1.84999 GHz	-28.18 dBm	-15.18 dB
1.850 GHz	1.855 GHz	100.000 kHz	1.85126 GHz	6.14 dBm	-23.86 dB

Date: 25.MAR.2024 11:02:53

Highest Band Edge / Full RB

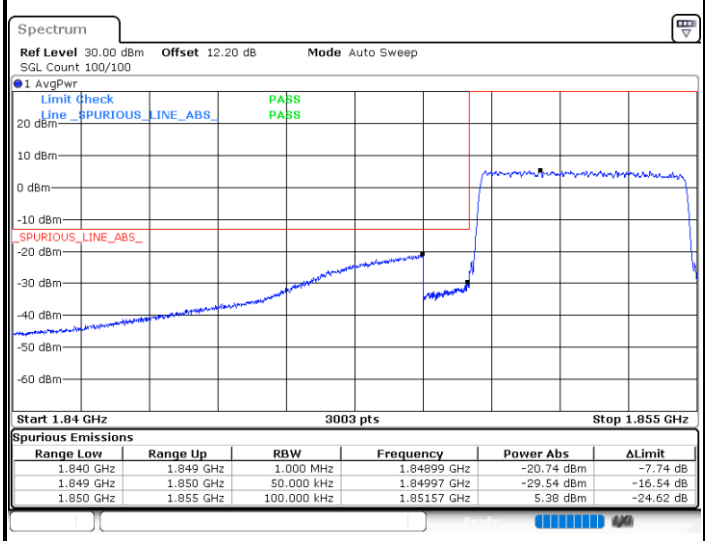


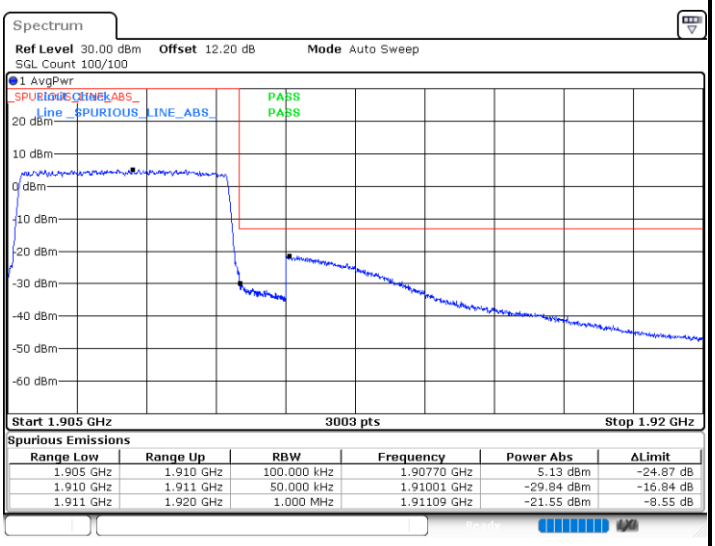
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.905 GHz	1.910 GHz	100.000 kHz	1.90601 GHz	6.29 dBm	-23.71 dB
1.910 GHz	1.911 GHz	50.000 kHz	1.91000 GHz	-28.21 dBm	-15.21 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91104 GHz	-19.27 dBm	-6.27 dB

Date: 25.MAR.2024 11:09:57

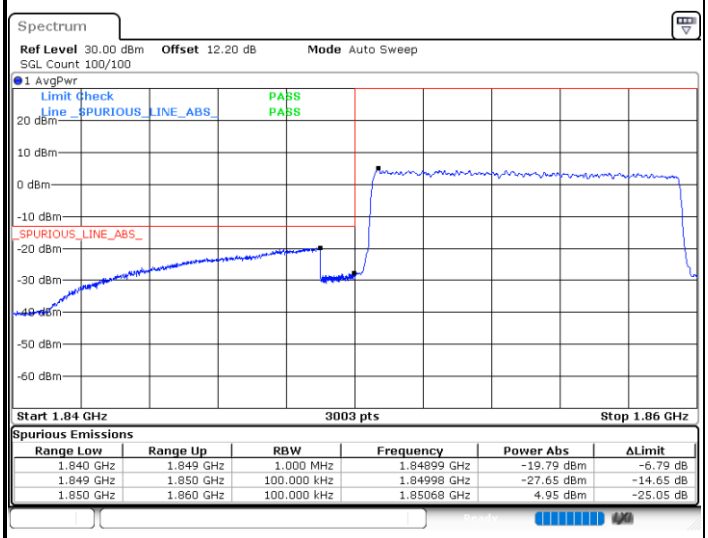
LTE Band 2 / 5MHz / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**





LTE Band 2 / 10MHz / QPSK

Lowest Band Edge / Full RB

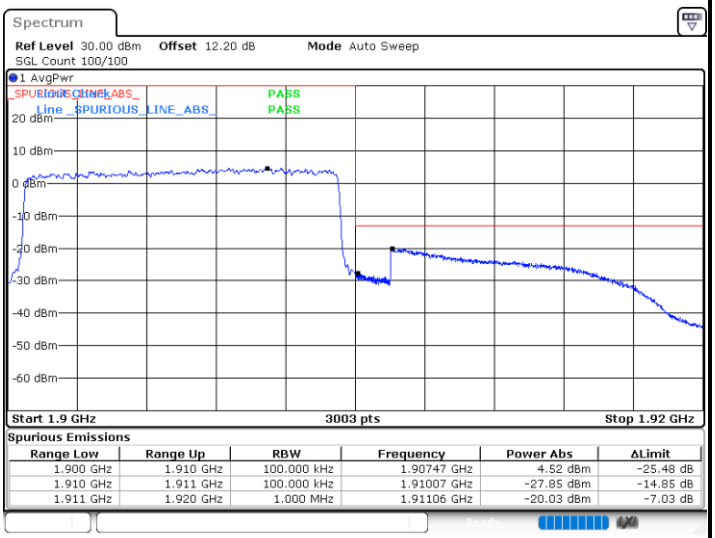


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84899 GHz	-19.79 dBm	-6.79 dB
1.849 GHz	1.850 GHz	100.000 kHz	1.84998 GHz	-27.65 dBm	-14.65 dB
1.850 GHz	1.860 GHz	100.000 kHz	1.85068 GHz	4.95 dBm	-25.05 dB

Date: 25.MAR.2024 11:21:56

Highest Band Edge / Full RB



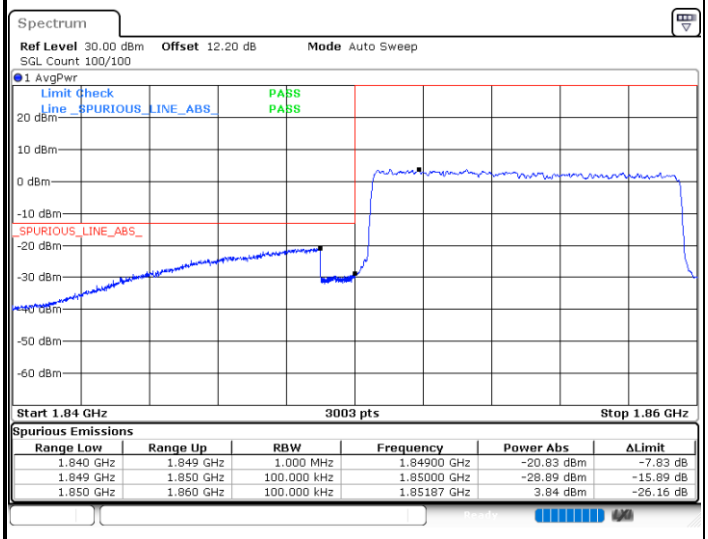
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.900 GHz	1.910 GHz	100.000 kHz	1.90747 GHz	4.52 dBm	-25.48 dB
1.910 GHz	1.911 GHz	100.000 kHz	1.91007 GHz	-27.85 dBm	-14.85 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91106 GHz	-20.03 dBm	-7.03 dB

Date: 25.MAR.2024 11:34:10

LTE Band 2 / 10MHz / 16QAM

Lowest Band Edge / Full RB

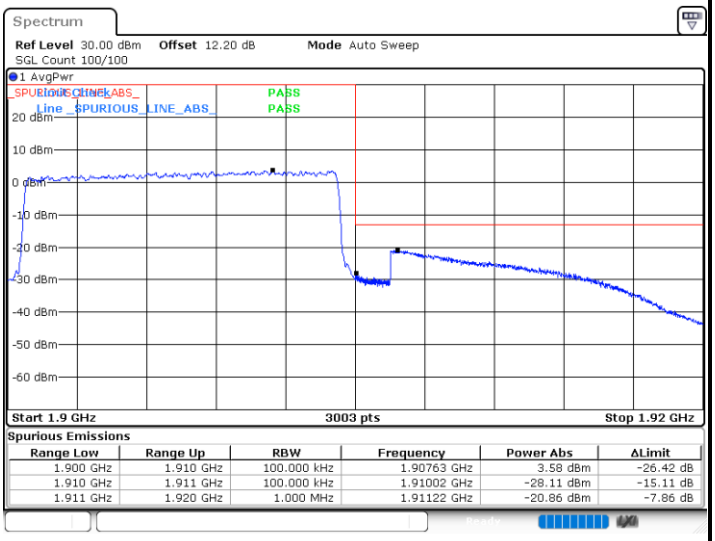


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.840 GHz	1.849 GHz	1.000 MHz	1.84900 GHz	-20.83 dBm	-7.83 dB
1.849 GHz	1.850 GHz	100.000 kHz	1.85000 GHz	-28.89 dBm	-15.89 dB
1.850 GHz	1.860 GHz	100.000 kHz	1.85187 GHz	3.84 dBm	-26.16 dB

Date: 25.MAR.2024 11:23:35

Highest Band Edge / Full RB

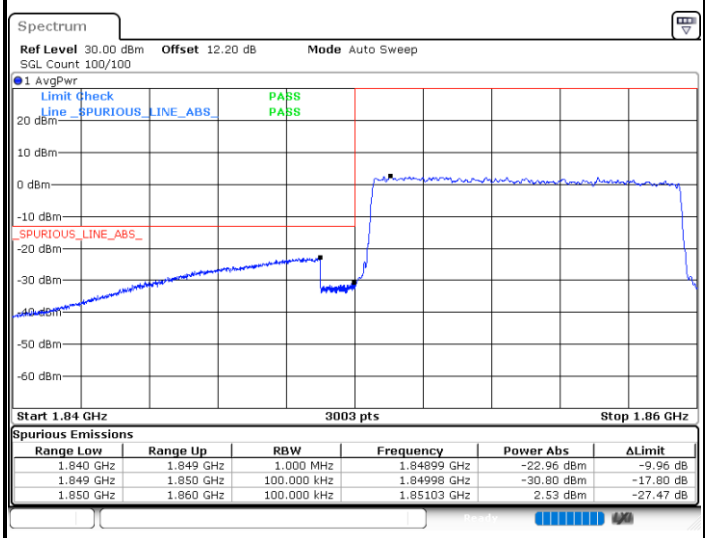


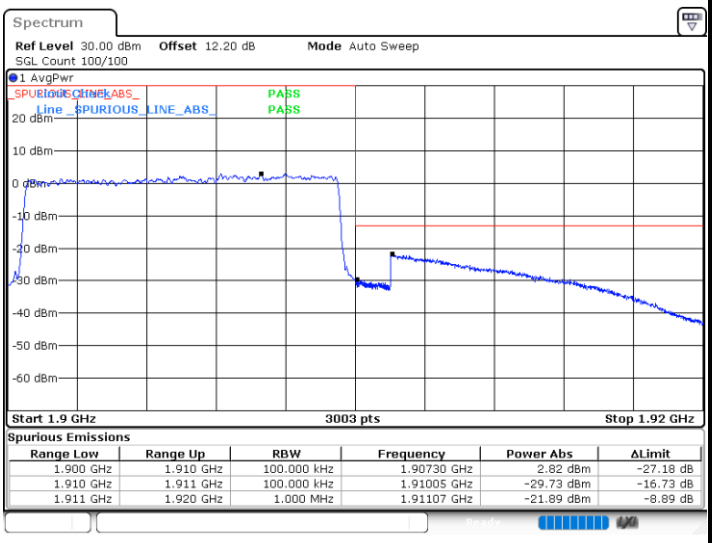
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.900 GHz	1.910 GHz	100.000 kHz	1.90763 GHz	3.58 dBm	-26.42 dB
1.910 GHz	1.911 GHz	100.000 kHz	1.91002 GHz	-28.11 dBm	-15.11 dB
1.911 GHz	1.920 GHz	1.000 MHz	1.91122 GHz	-20.86 dBm	-7.86 dB

Date: 25.MAR.2024 11:35:53

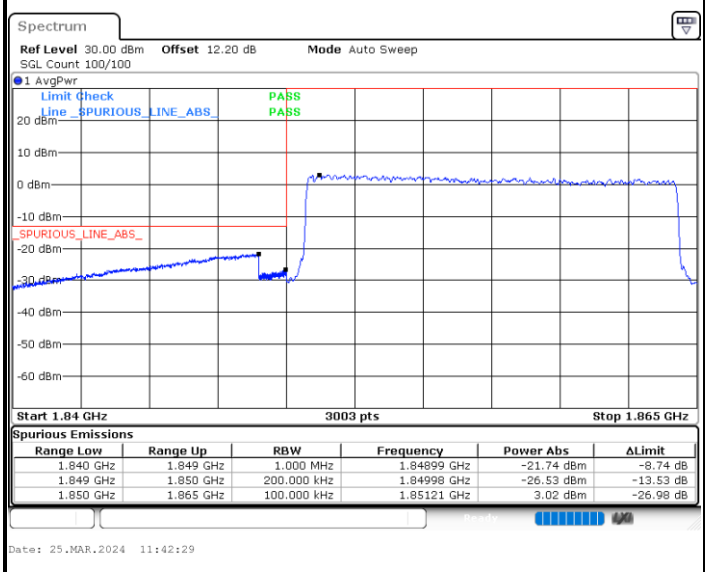
LTE Band 2 / 10MHz / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**



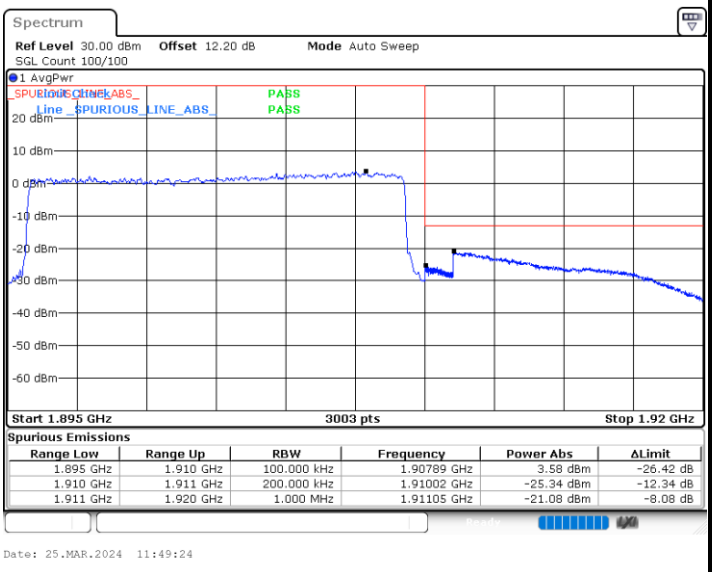


LTE Band 2 / 15MHz / QPSK

Lowest Band Edge / Full RB

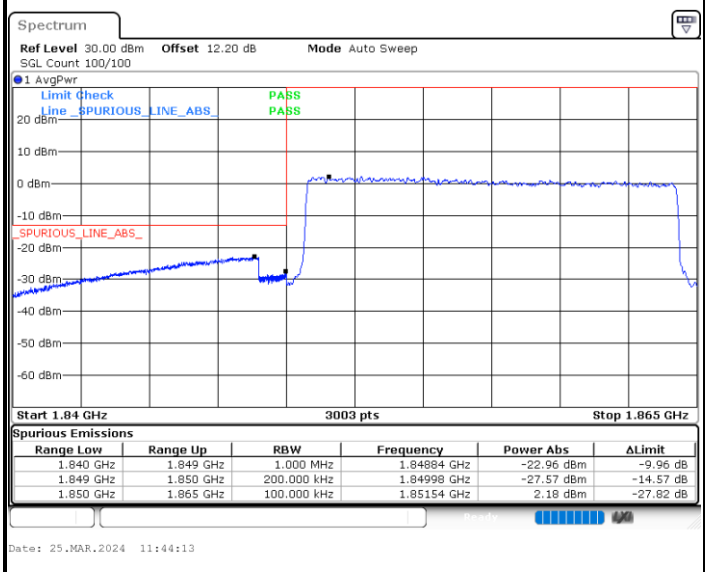


Highest Band Edge / Full RB

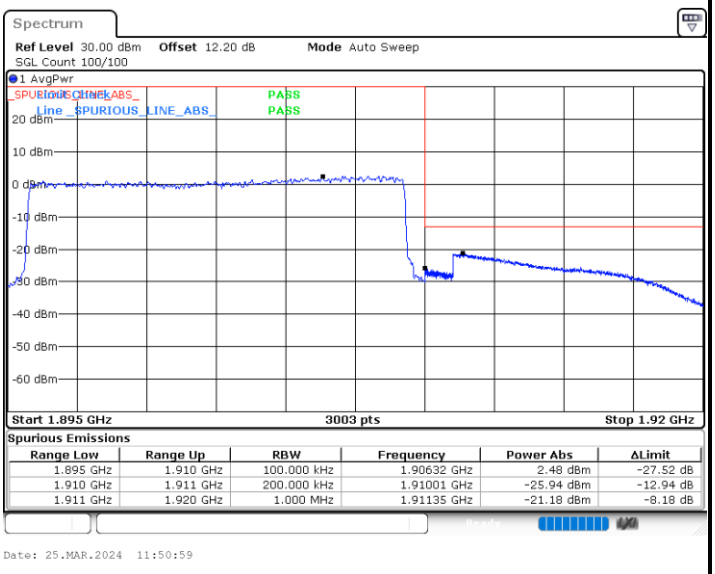


LTE Band 2 / 15MHz / 16QAM

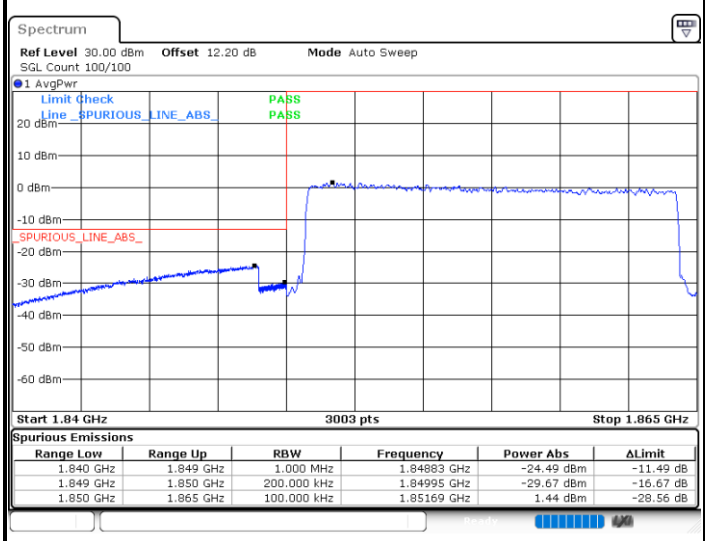
Lowest Band Edge / Full RB

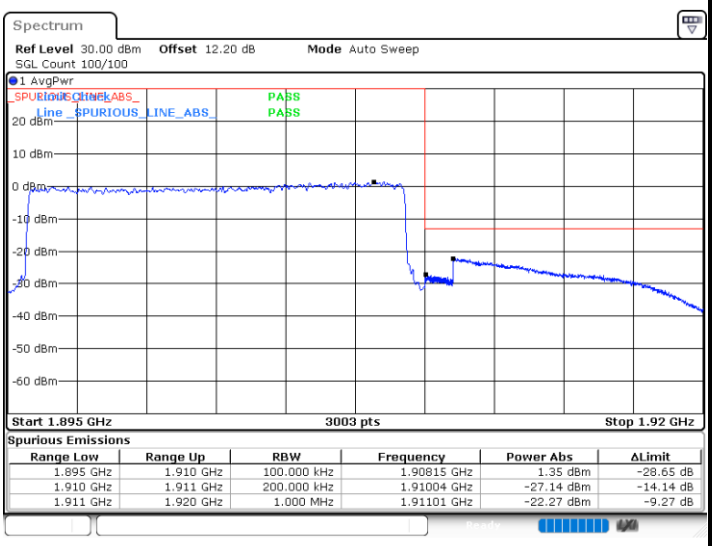


Highest Band Edge / Full RB



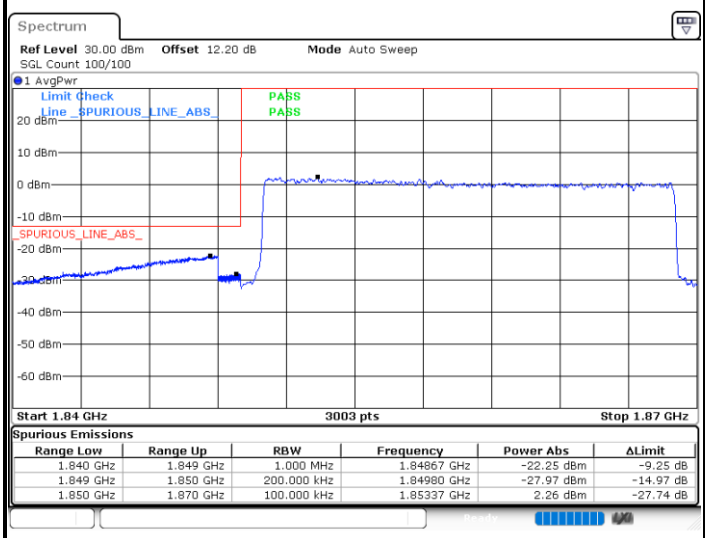
LTE Band 2 / 15MHz / 64QAM	
Lowest Band Edge / Full RB	**Highest Band Edge / Full RB**



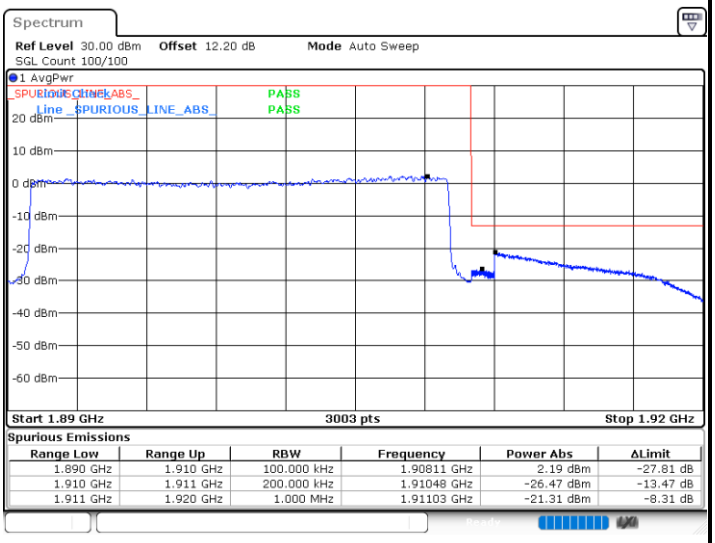


LTE Band 2 / 20MHz / QPSK

Lowest Band Edge / Full RB

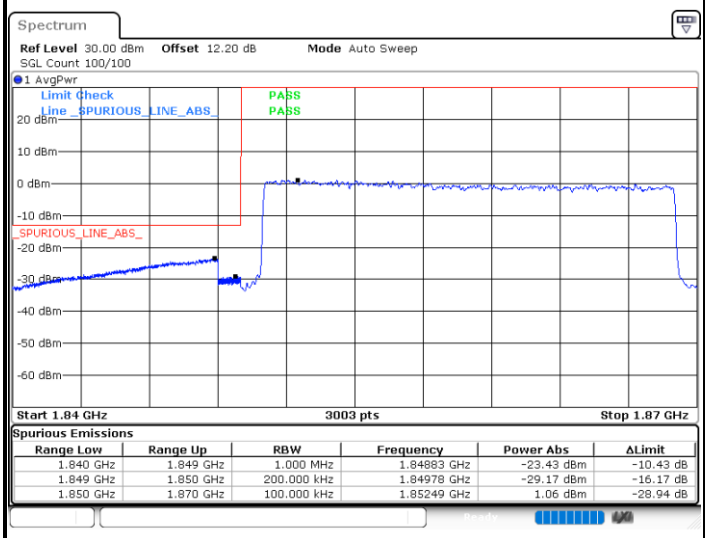


Highest Band Edge / Full RB



LTE Band 2 / 20MHz / 16QAM

Lowest Band Edge / Full RB



Highest Band Edge / Full RB