



FCC RF Test Report

APPLICANT : CASTLES TECHNOLOGY CO., LTD.
EQUIPMENT : Smart Module
BRAND NAME : 
MODEL NAME : CWM100
FCC ID : WIYCWM100001
STANDARD : 47 CFR Part 27(M) , 27(H) , 27(F)
CLASSIFICATION : PCS Licensed Transmitter (PCB)
TEST DATE(S) : Nov. 30, 2024 ~ Dec. 16, 2024

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

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

Jason Jia

Approved by: Jason Jia



Sporton International Inc. (Kunshan)

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People's Republic of China



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG4N0518C	Rev. 01	Initial issue of report	Jan. 06, 2025

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	-	Report Only	-
	§27.50(b)(10) §27.50(c)(10)	Effective Radiated Power (Band 12) (Band 13) (Band 17)	ERP < 3 Watt	PASS	-
	§27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 7) (Band 38) (Band 41)	EIRP < 2Watt		-
3.5	N/A	Peak-to-Average Ratio	<13 dB	PASS	-
3.6	§2.1049	Occupied Bandwidth	-	Report Only	-
3.7	§2.1051 §27.53(c)(2)(4) §27.53(g)	Conducted Band Edge Measurement (Band 12) (Band 13) (Band 17)	< 43+10log ₁₀ (P[Watts])	PASS	-
	§27.53(m)(4)	Conducted Band Edge Measurement (Band 7) (Band 38) (Band 41)	§27.53(m)(4)		
3.8	§2.1051 §27.53(c)(2) §27.53(g)	Conducted Spurious Emission (Band 12) (Band 13) (Band 17)	< 43+10log ₁₀ (P[Watts])	PASS	-
	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (Band 7) (Band 38) (Band 41)	< 55+10log ₁₀ (P[Watts])		
3.9	§2.1055 §22.355	Frequency Stability Temperature & Voltage	< 2.5 ppm for Part 22H	PASS	-
	§2.1055 §27.54		Within Authorized Band		
4.4	§2.1053 §27.53(c)(2) §27.53(f) §27.53(g)	Radiated Spurious Emission (Band 12) (Band 13) (Band 17)	< 43+10log ₁₀ (P[Watts])	PASS	Under limit 7.96 dB at 9990.000 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 7) (Band 38) (Band 41)	< 55+10log ₁₀ (P[Watts])		

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/manufacturer 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

CASTLES TECHNOLOGY CO., LTD.

6F, NO. 207-5, SEC. 3, BEIXIN RD., XINDIAN DISTRICT, NEW TAIPEI CITY 231030, TAIWAN
(R.O.C.)

1.2 Manufacturer

CASTLES TECHNOLOGY CO., LTD.

6F, NO. 207-5, SEC. 3, BEIXIN RD., XINDIAN DISTRICT, NEW TAIPEI CITY 231030, TAIWAN
(R.O.C.)

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Smart Module
Brand Name	
Model Name	CWM100
FCC ID	WIYCWM100001
SN Code	Conducted: 219b107d Radiation: 209b11f9
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	LTE Band 7 : 2500 MHz ~ 2570 MHz LTE Band 12 : 699 MHz ~ 716 MHz LTE Band 13 : 777 MHz ~ 787 MHz LTE Band 17 : 704 MHz ~ 716 MHz LTE Band 38 : 2570 MHz ~ 2620 MHz LTE Band 41 : 2496 MHz ~ 2690 MHz
Rx Frequency	LTE Band 7 : 2620 MHz ~ 2690 MHz LTE Band 12 : 729 MHz ~ 746 MHz LTE Band 13 : 746 MHz ~ 756 MHz LTE Band 17 : 734 MHz ~ 746 MHz LTE Band 38 : 2570 MHz ~ 2620 MHz LTE Band 41 : 2496 MHz ~ 2690 MHz
Bandwidth	LTE Band 7 : 5MHz / 10MHz / 15MHz / 20MHz LTE Band 12 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 13 : 5MHz / 10MHz LTE Band 17 : 5MHz / 10MHz LTE Band 38 : 5MHz / 10MHz / 15MHz / 20MHz



	LTE Band 41 : 5MHz / 10MHz / 15MHz / 20MHz
Maximum Output Power to Antenna	LTE Band 7 : 22.98 dBm LTE Band 12 : 23.77 dBm LTE Band 13 : 24.23 dBm LTE Band 17 : 23.23 dBm LTE Band 38 : 20.97 dBm LTE Band 41 : 22.19 dBm
Antenna Gain	LTE Band 7 : 5.1 dBi LTE Band 12 : 1.5 dBi LTE Band 13 : 4.7 dBi LTE Band 17 : 1.5 dBi LTE Band 38 : 4.6 dBi LTE Band 41 : 4.6 dBi
Type of Modulation	QPSK / 16QAM / 64QAM

1.5 Modification of EUT

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

1.6 Maximum Conducted Power and Emission Designator

LTE Band 7		QPSK		16QAM/64QAM	
BW (MHz)	Frequency Range (MHz)	Maximum Conducted Power (W)	Emission Designator (99%OBW)	Maximum Conducted Power (W)	Emission Designator (99%OBW)
5	2502.5 ~ 2567.5	0.1849	4M49G7D	0.1449	4M48W7D
10	2505.0 ~ 2565.0	0.1986	9M05G7D	0.1476	8M95W7D
15	2507.5 ~ 2562.5	0.1824	13M4G7D	0.1560	13M5W7D
20	2510.0 ~ 2560.0	0.1928	17M9G7D	0.1422	17M8W7D
LTE Band 12		QPSK		16QAM/64QAM	
BW (MHz)	Frequency Range (MHz)	Maximum Conducted Power (W)	Emission Designator (99%OBW)	Maximum Conducted Power (W)	Emission Designator (99%OBW)
1.4	699.7 ~ 715.3	0.2371	1M09G7D	0.1722	1M10W7D
3	700.5 ~ 714.5	0.2382	2M72G7D	0.1730	2M70W7D
5	701.5 ~ 713.5	0.2371	4M52G7D	0.1807	4M50W7D
10	704.0 ~ 711.0	0.2377	9M05G7D	0.1795	9M01W7D
LTE Band 13		QPSK		16QAM/64QAM	
BW (MHz)	Frequency Range (MHz)	Maximum Conducted Power (W)	Emission Designator (99%OBW)	Maximum Conducted Power (W)	Emission Designator (99%OBW)
5	779.5 ~ 784.5	0.2649	4M48G7D	0.1770	4M48W7D
10	782.0	0.2600	8M99G7D	0.1734	9M03W7D



LTE Band 17		QPSK		16QAM/64QAM	
BW (MHz)	Frequency Range (MHz)	Maximum Conducted Power (W)	Emission Designator (99%OBW)	Maximum Conducted Power (W)	Emission Designator (99%OBW)
5	706.5 ~ 713.5	0.2099	4M52G7D	0.1652	4M50W7D
10	709.0 ~ 711.0	0.2104	9M05G7D	0.1671	9M01W7D
LTE Band 38		QPSK		16QAM/64QAM	
BW (MHz)	Frequency Range (MHz)	Maximum Conducted Power (W)	Emission Designator (99%OBW)	Maximum Conducted Power (W)	Emission Designator (99%OBW)
5	2572.5 ~ 2617.5	0.1247	4M50G7D	0.1000	4M46W7D
10	2575.0 ~ 2615.0	0.1245	9M03G7D	0.0975	9M03W7D
15	2577.5 ~ 2612.5	0.1230	13M5G7D	0.0946	13M4W7D
20	2580.0 ~ 2610.0	0.1250	17M9G7D	0.0989	17M9W7D
LTE Band 41		QPSK		16QAM/64QAM	
BW (MHz)	Frequency Range (MHz)	Maximum Conducted Power (W)	Emission Designator (99%OBW)	Maximum Conducted Power (W)	Emission Designator (99%OBW)
5	2498.5 ~ 2687.5	0.1652	4M50G7D	0.1140	4M46W7D
10	2501.0 ~ 2685.0	0.1578	9M03G7D	0.1227	9M03W7D
15	2503.5 ~ 2682.5	0.1656	13M5G7D	0.1274	13M4W7D
20	2506.0 ~ 2680.0	0.1578	17M9G7D	0.1247	17M9W7D

Note:

1. LTE Band 12 overlaps the entire frequency range of LTE Band 17. Therefore, the test results provided in this report covers Band 12 as well as Band 17.
2. LTE Band 41 overlaps the entire frequency range of LTE Band 38. Therefore, the test results provided in this report covers Band 41 as well as Band 38.
3. All modulations have been tested, and only the worst test results of PSK & QAM are shown in the report.

1.7 Testing Location

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

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

1.8 Test Software

Item	Site	Manufacturer	Name	Version
1.	TH01-KS	SPORTON	Part2224_Ver5.0 200330	5.0
2.	03CH04-KS	AUDIX	E3	210616

1.9 Applicable Standards

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

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

Remark:

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



2 Test Configuration of Equipment Under Test

2.1 Test Mode

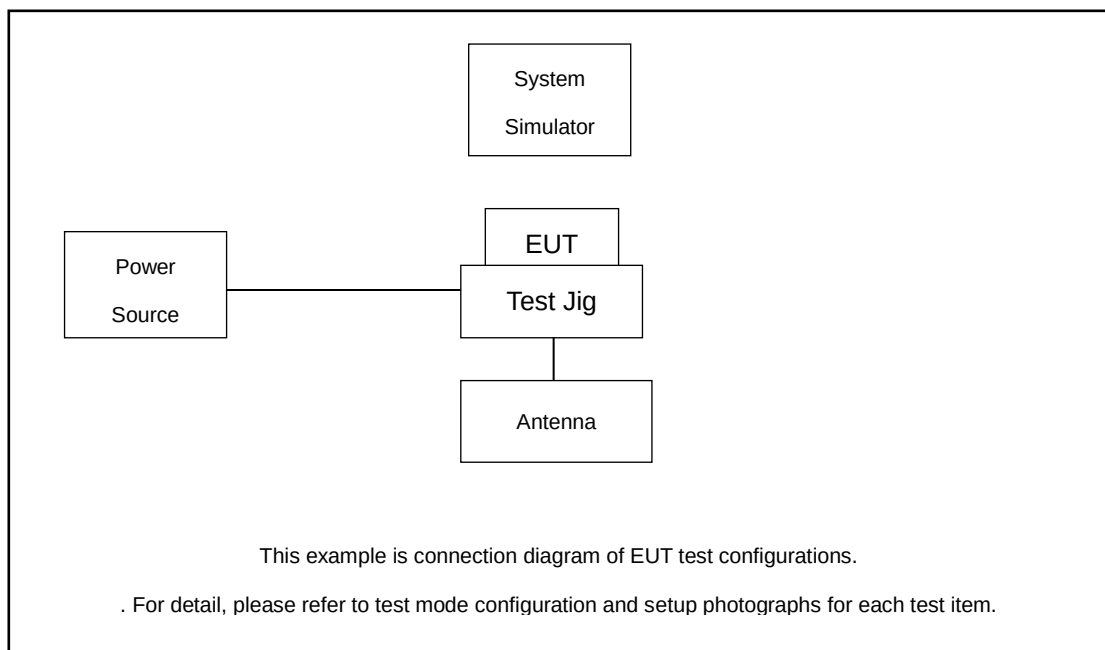
Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas License Digital Systems v03r01 with maximum output power.

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

Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Max. Output Power	7	-	-	V	V	V	V	V	V	V	V	V	V	V	V	V
	12	V	V	V	V	-	-	V	V	V	V	V	V	V	V	V
	13	-	-	V	V	-	-	V	V	V	V	V	V	V	V	V
	17	-	-	V	V	-	-	V	V	V	V	V	V	V	V	V
	38	-	-	V	V	V	V	V	V	V	V	V	V	V	V	V
	41	-	-	V	V	V	V	V	V	V	V	V	V	V	V	V
Peak-to-Average Ratio	7	-	-				V	V	V	V	V		V		V	
	12				V	-	-	V	V	V	V		V		V	
	13	-	-		V	-	-	V	V	V	V		V		V	
	41	-	-				V	V	V	V	V		V		V	
26dB and 99% Bandwidth	7	-	-	V	V	V	V	V	V				V		V	
	12	V	V	V	V	-	-	V	V				V		V	
	13	-	-	V	V	-	-	V	V				V		V	
	41	-	-	V	V	V	V	V	V				V		V	
Conducted Band Edge	7	-	-	V	V	V	V	V	V	V	V		V	V		V
	12	V	V	V	V	-	-	V	V	V	V		V	V		V
	13	-	-	V	V	-	-	V	V	V	V		V	V		V
	41	-	-	V	V	V	V	V	V	V	V		V	V		V
Conducted Spurious Emission	7	-	-	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
	41	-	-	V	V	V	V	V			V			V	V	V
Frequency Stability	7	-	-		V			V					V		V	
	12				V	-	-	V					V		V	
	13	-	-		V	-	-	V					V		V	
	41	-	-		V			V					V		V	

E.R.P / E.I.R.P	7	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v
	12	v	v	v	v	-	-	v	v	v	v	v	v	v	v	v
	13	-	-	v	v	-	-	v	v	v	v	v	v	v	v	v
	17	-	-	v	v	-	-	v	v	v	v	v	v	v	v	v
	38	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v
	41	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v
Radiated Spurious Emission	7	Worst Case												v	v	v
	12	Worst Case												v	v	v
	13	Worst Case												v	v	v
	41	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	MT8820C	N/A	N/A	Unshielded, 1.8 m
3.	Test Jig	N/A	N/A	N/A	N/A	N/A
4.	Antenna	N/A	N/A	N/A	N/A	N/A
5.	Adapter	N/A	N/A	N/A	N/A	N/A
6.	USB Cable	N/A	N/A	N/A	N/A	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 between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss.

Offset = RF cable loss.

Following shows an offset computation example with cable loss 6.3 dB.

Example :

$$\begin{aligned}
 \text{Offset(dB)} &= \text{RF cable loss(dB)}. \\
 &= 6.3 \text{ (dB)}
 \end{aligned}$$

2.5 Frequency List of Low/Middle/High Channels

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

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

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



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

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

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

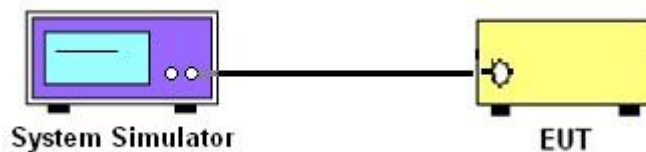
3 Conducted Test Items

3.1 Measuring Instruments

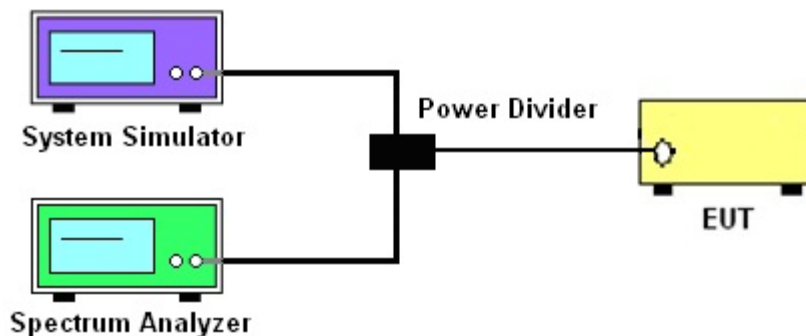
See list of measuring instruments of this test report.

3.2 Test Setup

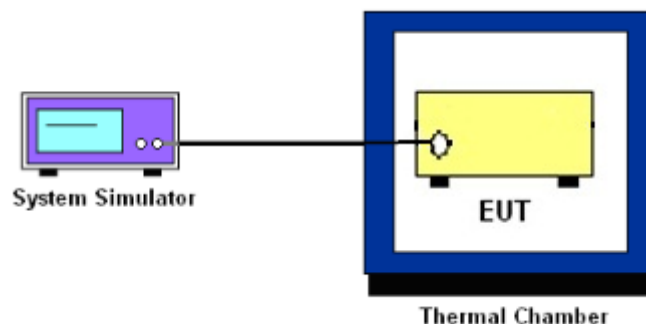
3.2.1 Conducted Output Power



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 3 Watts for LTE Band 12, Band 13 and Band 17.

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

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

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(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 than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

3.7.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured.
4. Set RBW $\geq 1\%/2\%$ EBW in the 1MHz band immediately outside and adjacent to the band edge.
5. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
6. Set spectrum analyzer with RMS detector.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. Offset has included the duty factor for LTE Band 38/41. Duty factor $= 10 \log (1/x)$, where x is the measured duty cycle.
9. 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)

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

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

10. For LTE Band 7, 38, 41, the other 40 dB, and 55 dB have additionally applied same calculation above.
11. When using the integration method, the starting frequency of the integration shall be centered at one-half of the RBW away from the band edge.

3.8 Conducted Spurious Emission

3.8.1 Description of Conducted Spurious Emission Measurement

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

For Band 7,38,41:

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

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

3.8.2 Test Procedures

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

3.9 Frequency Stability

3.9.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block.

3.9.2 Test Procedures for Temperature Variation

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

3.9.3 Test Procedures for Voltage Variation

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

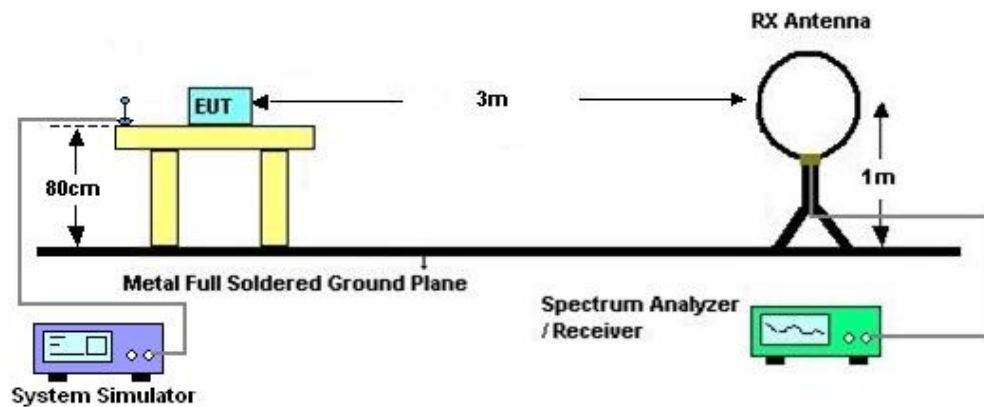
4 Radiated Test Items

4.1 Measuring Instruments

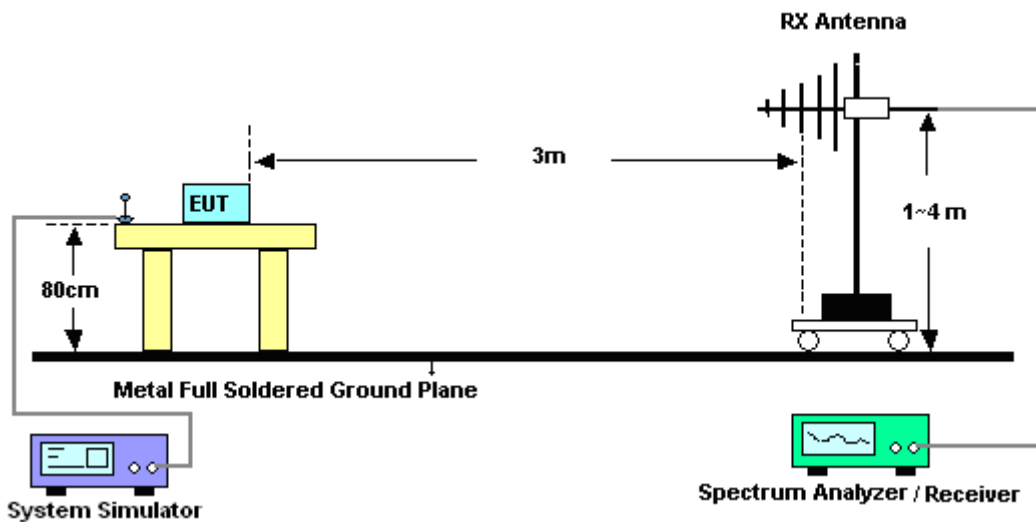
See list of measuring instruments of this test report.

4.2 Test Setup

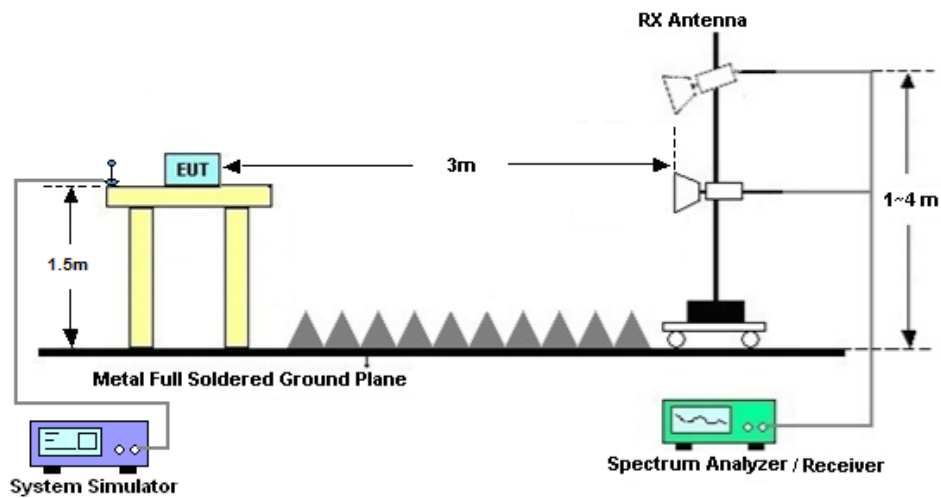
4.2.1 For radiated test below 30MHz



4.2.2 For radiated test from 30MHz to 1GHz



4.2.3 For radiated test above 1GHz



4.3 Test Result of Radiated Test

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

Please refer to Appendix B.



4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission

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

For Band 7, 38, 41

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

For LTE Band 13

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

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

4.4.2 Test Procedures

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

13. For Band 7, 38, 41:

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



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 11, 2024	Nov. 30, 2024~ Dec. 01, 2024	Oct. 10, 2025	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	NCR	Nov. 30, 2024~ Dec. 01, 2024	NCR	Conducted (TH01-KS)
Temperature & humidity	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 04, 2024	Nov. 30, 2024~ Dec. 01, 2024	Jul. 03, 2025	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55370528	10Hz~44G,MAX 30dB	Oct. 11, 2024	Dec. 16, 2024	Oct. 10, 2025	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2E	101125	9kHz~30MHz	Sep. 08, 2024	Dec. 16, 2024	Sep. 07, 2025	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	44483	30MHz-1GHz	Dec. 06, 2024	Dec. 16, 2024	Dec. 05, 2025	Radiation (03CH04-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00227860	1GHz~18GHz	Aug. 16, 2024	Dec. 16, 2024	Aug. 15, 2025	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 27, 2024	Dec. 16, 2024	Jan. 26, 2025	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	413740	9KHz-1GHz	Jan. 03, 2024	Dec. 16, 2024	Jan. 02, 2025	Radiation (03CH04-KS)
Amplifier	EM	EM18G40GA	060728	18~40GHz	Jan. 02, 2024	Dec. 16, 2024	Jan. 01, 2025	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18GA	060840	1Ghz-18Ghz	Oct. 10, 2024	Dec. 16, 2024	Oct. 09, 2025	Radiation (03CH04-KS)
Amplifier	EM	EM01G18GA	060892	1Ghz-18Ghz	Oct. 10, 2024	Dec. 16, 2024	Oct. 09, 2025	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Dec. 16, 2024	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Dec. 16, 2024	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Dec. 16, 2024	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

6 Measurement Uncertainty

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

Uncertainty of Conducted Measurement

Test Item	Uncertainty
Conducted Spurious Emission & Bandedge	± 2.22 dB
Occupied Channel Bandwidth	$\pm 0.1\%$
Conducted Power	± 0.50 dB
Peak to Average Ratio	± 0.50 dB
Frequency Stability	± 0.4 Hz

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.83 dB
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.83 dB
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Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.82 dB
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----- THE END -----



Appendix A. Test Results of Conducted Test

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

Conducted Output Power(Average power) and ERP/EIRP

LTE_B7

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP (W)		
Channel				20850	21100	21350	L	M	H
Frequency (MHz)				2510	2535	2560			
20	QPSK	1	0	21.89	22.02	22.58	0.5000	0.5152	0.5861
20	QPSK	1	49	22.64	22.85	22.71	0.5943	0.6237	0.6039
20	QPSK	1	99	22.52	22.74	22.70	0.5781	0.6081	0.6026
20	QPSK	50	0	21.87	21.82	21.76	0.4977	0.4920	0.4853
20	QPSK	50	24	21.65	21.68	21.62	0.4732	0.4764	0.4699
20	QPSK	50	50	21.53	21.49	21.44	0.4603	0.4560	0.4508
20	QPSK	100	0	21.62	21.65	20.91	0.4699	0.4732	0.3990
20	16QAM	1	0	21.50	21.43	21.16	0.4571	0.4498	0.4227
20	16QAM	1	49	21.49	21.53	21.38	0.4560	0.4603	0.4446
20	16QAM	1	99	21.05	21.08	21.02	0.4121	0.4150	0.4093
20	16QAM	50	0	20.58	20.70	20.61	0.3698	0.3802	0.3724
20	16QAM	50	24	20.36	20.43	20.45	0.3516	0.3573	0.3589
20	16QAM	50	50	20.41	20.37	20.46	0.3556	0.3524	0.3597
20	16QAM	100	0	20.39	20.46	20.39	0.3540	0.3597	0.3540
20	64QAM	1	0	20.43	20.47	19.78	0.3573	0.3606	0.3076
20	64QAM	1	49	20.35	20.43	20.91	0.3508	0.3573	0.3990
20	64QAM	1	99	20.39	20.46	20.95	0.3540	0.3597	0.4027
20	64QAM	50	0	19.51	19.47	19.99	0.2891	0.2864	0.3228
20	64QAM	50	24	19.62	19.59	19.63	0.2965	0.2944	0.2972
20	64QAM	50	50	19.48	19.41	19.58	0.2871	0.2825	0.2938
20	64QAM	100	0	19.52	19.49	19.66	0.2897	0.2877	0.2992
Channel				20825	21100	21375	L	M	H
Frequency (MHz)				2507.5	2535	2562.5			
15	QPSK	1	0	22.53	22.61	22.41	0.5794	0.5902	0.5636
15	QPSK	1	37	22.49	22.54	22.58	0.5741	0.5808	0.5861
15	QPSK	1	74	21.92	21.96	21.86	0.5035	0.5082	0.4966
15	QPSK	36	0	21.43	21.51	21.52	0.4498	0.4581	0.4592
15	QPSK	36	20	21.40	21.43	21.47	0.4467	0.4498	0.4539
15	QPSK	36	39	21.43	21.37	21.42	0.4498	0.4436	0.4487
15	QPSK	75	0	21.48	21.42	21.39	0.4550	0.4487	0.4457
15	16QAM	1	0	21.89	21.51	21.18	0.5000	0.4581	0.4246
15	16QAM	1	37	21.89	21.93	21.79	0.5000	0.5047	0.4887
15	16QAM	1	74	20.76	20.82	21.76	0.3855	0.3908	0.4853
15	16QAM	36	0	20.33	20.43	20.29	0.3491	0.3573	0.3459
15	16QAM	36	20	20.61	20.56	20.49	0.3724	0.3681	0.3622
15	16QAM	36	39	20.14	20.15	20.11	0.3342	0.3350	0.3319
15	16QAM	75	0	20.39	20.35	20.31	0.3540	0.3508	0.3475
15	64QAM	1	0	20.62	20.59	20.48	0.3733	0.3707	0.3614
15	64QAM	1	37	20.84	20.82	20.76	0.3926	0.3908	0.3855
15	64QAM	1	74	20.09	20.12	20.09	0.3304	0.3327	0.3304
15	64QAM	36	0	19.35	19.40	19.33	0.2786	0.2818	0.2773
15	64QAM	36	20	19.44	19.51	19.42	0.2844	0.2891	0.2831
15	64QAM	36	39	19.31	19.29	19.28	0.2761	0.2748	0.2742
15	64QAM	75	0	19.49	19.55	19.42	0.2877	0.2917	0.2831



Channel				20800	21100	21400	L	M	H
Frequency (MHz)				2505	2535	2565			
10	QPSK	1	0	22.54	22.61	22.41	0.5808	0.5902	0.5636
10	QPSK	1	25	22.86	22.98	22.91	0.6252	0.6427	0.6324
10	QPSK	1	49	22.27	22.35	22.39	0.5458	0.5559	0.5610
10	QPSK	25	0	21.39	21.45	21.44	0.4457	0.4519	0.4508
10	QPSK	25	12	21.45	21.51	21.47	0.4519	0.4581	0.4539
10	QPSK	25	25	21.35	21.40	21.31	0.4416	0.4467	0.4375
10	QPSK	50	0	21.41	21.50	21.39	0.4477	0.4571	0.4457
10	16QAM	1	0	21.20	21.34	21.42	0.4266	0.4406	0.4487
10	16QAM	1	25	21.48	21.59	21.69	0.4550	0.4667	0.4775
10	16QAM	1	49	21.19	21.28	21.33	0.4256	0.4345	0.4395
10	16QAM	25	0	20.33	20.47	20.52	0.3491	0.3606	0.3648
10	16QAM	25	12	20.66	20.69	20.63	0.3767	0.3793	0.3741
10	16QAM	25	25	20.12	20.24	20.33	0.3327	0.3420	0.3491
10	16QAM	50	0	20.48	20.61	20.59	0.3614	0.3724	0.3707
10	64QAM	1	0	20.19	20.26	20.46	0.3381	0.3436	0.3597
10	64QAM	1	25	20.75	20.79	20.92	0.3846	0.3882	0.3999
10	64QAM	1	49	20.33	20.35	20.51	0.3491	0.3508	0.3639
10	64QAM	25	0	19.36	19.41	19.56	0.2793	0.2825	0.2924
10	64QAM	25	12	19.42	19.54	19.61	0.2831	0.2911	0.2958
10	64QAM	25	25	19.31	19.43	19.63	0.2761	0.2838	0.2972
10	64QAM	50	0	19.33	19.38	19.59	0.2773	0.2805	0.2944
Channel				20775	21100	21425	L	M	H
Frequency (MHz)				2502.5	2535	2567.5			
5	QPSK	1	0	22.20	22.37	22.19	0.5370	0.5585	0.5358
5	QPSK	1	12	22.45	22.67	22.52	0.5689	0.5984	0.5781
5	QPSK	1	24	22.29	22.37	22.29	0.5483	0.5585	0.5483
5	QPSK	12	0	21.23	21.36	21.33	0.4295	0.4426	0.4395
5	QPSK	12	7	21.48	21.52	21.44	0.4550	0.4592	0.4508
5	QPSK	12	13	21.33	21.37	21.29	0.4395	0.4436	0.4355
5	QPSK	25	0	21.39	21.44	21.28	0.4457	0.4508	0.4345
5	16QAM	1	0	21.25	21.23	20.55	0.4315	0.4295	0.3673
5	16QAM	1	12	21.36	21.31	21.61	0.4426	0.4375	0.4688
5	16QAM	1	24	21.33	21.27	21.58	0.4395	0.4335	0.4656
5	16QAM	12	0	20.30	20.29	20.34	0.3467	0.3459	0.3499
5	16QAM	12	7	20.41	20.48	20.51	0.3556	0.3614	0.3639
5	16QAM	12	13	20.19	20.25	20.37	0.3381	0.3428	0.3524
5	16QAM	25	0	20.14	20.26	20.42	0.3342	0.3436	0.3565
5	64QAM	1	0	20.29	20.42	20.35	0.3459	0.3565	0.3508
5	64QAM	1	12	20.62	20.92	20.81	0.3733	0.3999	0.3899
5	64QAM	1	24	20.06	20.20	20.45	0.3281	0.3388	0.3589
5	64QAM	12	0	19.26	19.35	19.41	0.2729	0.2786	0.2825
5	64QAM	12	7	19.45	19.62	19.54	0.2851	0.2965	0.2911
5	64QAM	12	13	19.37	19.55	19.49	0.2799	0.2917	0.2877
5	64QAM	25	0	19.33	19.52	19.47	0.2773	0.2897	0.2864



LTE_B12

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	L	M	H
Frequency (MHz)				704	707.5	711			
10	QPSK	1	0	23.12	23.24	23.41	0.1766	0.1816	0.1888
10	QPSK	1	25	23.44	23.55	23.61	0.1901	0.1950	0.1977
10	QPSK	1	49	23.59	23.71	23.76	0.1968	0.2023	0.2046
10	QPSK	25	0	22.15	22.29	22.34	0.1413	0.1459	0.1476
10	QPSK	25	12	22.29	22.37	22.25	0.1459	0.1486	0.1445
10	QPSK	25	25	22.25	22.33	22.27	0.1445	0.1472	0.1452
10	QPSK	50	0	22.74	22.83	22.85	0.1618	0.1652	0.1660
10	16QAM	1	0	22.32	22.38	22.54	0.1469	0.1489	0.1545
10	16QAM	1	25	22.21	22.27	22.33	0.1432	0.1452	0.1472
10	16QAM	1	49	22.09	22.18	22.14	0.1393	0.1422	0.1409
10	16QAM	25	0	21.12	21.39	21.50	0.1114	0.1186	0.1216
10	16QAM	25	12	21.58	21.64	21.56	0.1239	0.1256	0.1233
10	16QAM	25	25	21.19	21.25	21.19	0.1132	0.1148	0.1132
10	16QAM	50	0	21.31	21.28	21.36	0.1164	0.1156	0.1178
10	64QAM	1	0	21.10	21.04	21.11	0.1109	0.1094	0.1112
10	64QAM	1	25	21.78	21.95	21.83	0.1297	0.1349	0.1312
10	64QAM	1	49	21.17	21.22	21.21	0.1127	0.1140	0.1138
10	64QAM	25	0	20.83	20.91	21.03	0.1042	0.1062	0.1091
10	64QAM	25	12	20.52	20.55	20.43	0.0971	0.0977	0.0951
10	64QAM	25	25	20.14	20.17	20.19	0.0889	0.0895	0.0899
10	64QAM	50	0	20.38	20.40	20.50	0.0940	0.0944	0.0966
Channel				23035	23095	23155	L	M	H
Frequency (MHz)				701.5	707.5	713.5			
5	QPSK	1	0	23.11	23.44	23.19	0.1762	0.1901	0.1795
5	QPSK	1	12	23.43	23.67	23.51	0.1897	0.2004	0.1932
5	QPSK	1	24	23.70	23.75	23.66	0.2018	0.2042	0.2000
5	QPSK	12	0	22.14	22.58	22.20	0.1409	0.1560	0.1429
5	QPSK	12	7	22.34	22.17	22.28	0.1476	0.1419	0.1455
5	QPSK	12	13	22.24	22.30	22.32	0.1442	0.1462	0.1469
5	QPSK	25	0	22.73	22.88	22.81	0.1614	0.1671	0.1644
5	16QAM	1	0	22.31	22.57	22.39	0.1466	0.1556	0.1493
5	16QAM	1	12	22.20	22.36	22.28	0.1429	0.1483	0.1455
5	16QAM	1	24	22.10	22.17	22.16	0.1396	0.1419	0.1416
5	16QAM	12	0	21.37	21.32	21.02	0.1180	0.1167	0.1089
5	16QAM	12	7	21.58	21.64	21.65	0.1239	0.1256	0.1259
5	16QAM	12	13	21.20	21.22	21.26	0.1135	0.1140	0.1151
5	16QAM	25	0	21.32	21.39	21.38	0.1167	0.1186	0.1183
5	64QAM	1	0	21.10	21.14	21.13	0.1109	0.1119	0.1117
5	64QAM	1	12	21.77	21.01	21.85	0.1294	0.1086	0.1318
5	64QAM	1	24	21.16	21.24	21.24	0.1125	0.1146	0.1146
5	64QAM	12	0	20.82	21.06	20.90	0.1040	0.1099	0.1059
5	64QAM	12	7	20.51	20.46	20.59	0.0968	0.0957	0.0986
5	64QAM	12	13	20.13	20.22	20.21	0.0887	0.0906	0.0904
5	64QAM	25	0	20.37	20.53	20.45	0.0938	0.0973	0.0955
Channel				23025	23095	23165	L	M	H
Frequency (MHz)				700.5	707.5	714.5			
3	QPSK	1	0	23.18	23.18	23.02	0.1791	0.1791	0.1726
3	QPSK	1	8	23.50	23.50	23.34	0.1928	0.1928	0.1858
3	QPSK	1	14	23.77	23.65	23.61	0.2051	0.1995	0.1977
3	QPSK	8	0	22.21	22.19	22.05	0.1432	0.1426	0.1380
3	QPSK	8	4	22.41	22.27	22.25	0.1500	0.1452	0.1445
3	QPSK	8	7	22.31	22.31	22.15	0.1466	0.1466	0.1413
3	QPSK	15	0	22.80	22.80	22.64	0.1641	0.1641	0.1581
3	16QAM	1	0	22.38	22.38	22.22	0.1489	0.1489	0.1435
3	16QAM	1	8	22.27	22.27	22.11	0.1452	0.1452	0.1400



3	16QAM	1	14	22.17	22.15	22.01	0.1419	0.1413	0.1368
3	16QAM	8	0	21.03	21.01	21.09	0.1091	0.1086	0.1107
3	16QAM	8	4	21.65	21.64	21.49	0.1259	0.1256	0.1213
3	16QAM	8	7	21.27	21.25	21.11	0.1153	0.1148	0.1112
3	16QAM	15	0	21.39	21.37	21.23	0.1186	0.1180	0.1143
3	64QAM	1	0	21.00	21.46	21.35	0.1084	0.1205	0.1175
3	64QAM	1	8	21.84	21.84	21.68	0.1315	0.1315	0.1268
3	64QAM	1	14	21.23	21.23	21.07	0.1143	0.1143	0.1102
3	64QAM	8	0	20.89	20.89	20.73	0.1057	0.1057	0.1019
3	64QAM	8	4	20.58	20.58	20.42	0.0984	0.0984	0.0948
3	64QAM	8	7	20.20	20.20	20.04	0.0902	0.0902	0.0869
3	64QAM	15	0	20.44	20.44	20.28	0.0953	0.0953	0.0918
Channel				23017	23095	23173	L	M	H
Frequency (MHz)				699.7	707.5	715.3			
1.4	QPSK	1	0	23.15	23.16	23.06	0.1778	0.1782	0.1742
1.4	QPSK	1	3	23.46	23.47	23.32	0.1910	0.1914	0.1849
1.4	QPSK	1	5	23.75	23.62	23.59	0.2042	0.1982	0.1968
1.4	QPSK	3	0	22.20	22.14	22.00	0.1429	0.1409	0.1365
1.4	QPSK	3	1	22.40	22.25	22.23	0.1496	0.1445	0.1439
1.4	QPSK	3	3	22.28	22.28	22.14	0.1455	0.1455	0.1409
1.4	QPSK	6	0	22.79	22.77	22.59	0.1637	0.1629	0.1563
1.4	16QAM	1	0	22.36	22.33	22.18	0.1483	0.1472	0.1422
1.4	16QAM	1	3	22.25	22.25	22.06	0.1445	0.1445	0.1384
1.4	16QAM	1	5	22.13	22.12	21.97	0.1406	0.1403	0.1355
1.4	16QAM	3	0	21.00	20.97	21.06	0.1084	0.1076	0.1099
1.4	16QAM	3	1	21.60	21.62	21.46	0.1245	0.1250	0.1205
1.4	16QAM	3	3	21.23	21.23	21.08	0.1143	0.1143	0.1104
1.4	16QAM	6	0	21.38	21.34	21.20	0.1183	0.1172	0.1135
1.4	64QAM	1	0	20.99	21.41	21.32	0.1081	0.1191	0.1167
1.4	64QAM	1	3	21.80	21.82	21.65	0.1303	0.1309	0.1259
1.4	64QAM	1	5	21.18	21.21	21.06	0.1130	0.1138	0.1099
1.4	64QAM	3	0	20.87	20.84	20.70	0.1052	0.1045	0.1012
1.4	64QAM	3	1	20.57	20.57	20.37	0.0982	0.0982	0.0938
1.4	64QAM	3	3	20.17	20.18	20.02	0.0895	0.0897	0.0865
1.4	64QAM	6	0	20.40	20.43	20.26	0.0944	0.0951	0.0914



LTE_B13

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP (W)		
Channel				23230			L	M	H
Frequency (MHz)				782					
10	QPSK	1	0		23.25			0.3802	
10	QPSK	1	25		24.15			0.4677	
10	QPSK	1	49		23.58			0.4102	
10	QPSK	25	0		22.38			0.3112	
10	QPSK	25	12		22.34			0.3083	
10	QPSK	25	25		22.27			0.3034	
10	QPSK	50	0		22.37			0.3105	
10	16QAM	1	0		22.38			0.3112	
10	16QAM	1	25		22.39			0.3119	
10	16QAM	1	49		22.17			0.2965	
10	16QAM	25	0		21.44			0.2506	
10	16QAM	25	12		21.60			0.2600	
10	16QAM	25	25		21.39			0.2477	
10	16QAM	50	0		21.38			0.2472	
10	64QAM	1	0		21.56			0.2576	
10	64QAM	1	25		21.47			0.2523	
10	64QAM	1	49		21.32			0.2438	
10	64QAM	25	0		20.66			0.2094	
10	64QAM	25	12		20.69			0.2109	
10	64QAM	25	25		20.26			0.1910	
10	64QAM	50	0		20.50			0.2018	
Channel				23205	23230	23255	L	M	H
Frequency (MHz)				779.5	782	784.5			
5	QPSK	1	0	23.54	23.57	23.64	0.4064	0.4093	0.4159
5	QPSK	1	12	24.19	24.23	24.23	0.4721	0.4764	0.4764
5	QPSK	1	24	23.67	23.60	23.64	0.4188	0.4121	0.4159
5	QPSK	12	0	22.24	22.30	22.24	0.3013	0.3055	0.3013
5	QPSK	12	7	22.28	22.29	22.25	0.3041	0.3048	0.3020
5	QPSK	12	13	22.33	22.34	22.33	0.3076	0.3083	0.3076
5	QPSK	25	0	22.27	22.33	22.39	0.3034	0.3076	0.3119
5	16QAM	1	0	22.46	22.42	22.38	0.3170	0.3141	0.3112
5	16QAM	1	12	22.48	22.46	22.40	0.3184	0.3170	0.3126
5	16QAM	1	24	22.08	22.10	22.09	0.2904	0.2917	0.2911
5	16QAM	12	0	21.31	21.38	21.39	0.2432	0.2472	0.2477
5	16QAM	12	7	21.57	21.64	21.65	0.2582	0.2624	0.2630
5	16QAM	12	13	21.42	21.38	21.42	0.2495	0.2472	0.2495
5	16QAM	25	0	21.41	21.42	21.50	0.2489	0.2495	0.2541
5	64QAM	1	0	21.58	21.51	21.59	0.2588	0.2547	0.2594
5	64QAM	1	12	21.48	21.43	21.43	0.2529	0.2500	0.2500
5	64QAM	1	24	21.33	21.28	21.26	0.2443	0.2415	0.2404
5	64QAM	12	0	20.58	20.62	20.60	0.2056	0.2075	0.2065
5	64QAM	12	7	20.73	20.65	20.67	0.2128	0.2089	0.2099
5	64QAM	12	13	20.12	20.21	20.12	0.1849	0.1888	0.1849
5	64QAM	25	0	20.45	20.47	20.41	0.1995	0.2004	0.1977



LTE_B17

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	ERP (W)		
Channel				23780	23790	23800	L	M	H
Frequency (MHz)				709	710	711			
10	QPSK	1	0	23.23	23.01	23.13	0.1811	0.1722	0.1770
10	QPSK	1	25	23.08	23.14	23.11	0.1750	0.1774	0.1762
10	QPSK	1	49	23.21	23.10	23.19	0.1803	0.1758	0.1795
10	QPSK	25	0	21.85	21.94	21.96	0.1318	0.1346	0.1352
10	QPSK	25	12	21.79	21.85	21.94	0.1300	0.1318	0.1346
10	QPSK	25	25	21.79	21.72	21.65	0.1300	0.1279	0.1259
10	QPSK	50	0	22.17	21.94	22.06	0.1419	0.1346	0.1384
10	16QAM	1	0	21.96	21.82	21.61	0.1352	0.1309	0.1247
10	16QAM	1	25	22.14	22.18	22.23	0.1409	0.1422	0.1439
10	16QAM	1	49	21.75	21.81	21.95	0.1288	0.1306	0.1349
10	16QAM	25	0	20.85	20.93	20.96	0.1047	0.1067	0.1074
10	16QAM	25	12	20.91	20.95	20.88	0.1062	0.1072	0.1054
10	16QAM	25	25	21.12	21.19	21.36	0.1114	0.1132	0.1178
10	16QAM	50	0	19.95	21.01	21.05	0.0851	0.1086	0.1096
10	64QAM	1	0	21.02	21.07	21.12	0.1089	0.1102	0.1114
10	64QAM	1	25	19.95	21.01	20.89	0.0851	0.1086	0.1057
10	64QAM	1	49	19.99	21.04	20.93	0.0859	0.1094	0.1067
10	64QAM	25	0	20.08	20.16	20.12	0.0877	0.0893	0.0885
10	64QAM	25	12	20.13	20.19	20.07	0.0887	0.0899	0.0875
10	64QAM	25	25	19.86	19.95	19.91	0.0834	0.0851	0.0843
10	64QAM	50	0	19.83	19.87	19.76	0.0828	0.0836	0.0815
Channel				23755	23790	23825	L	M	H
Frequency (MHz)				706.5	710	713.5			
5	QPSK	1	0	23.22	23.09	23.07	0.1807	0.1754	0.1746
5	QPSK	1	12	23.00	23.17	23.17	0.1718	0.1786	0.1786
5	QPSK	1	24	23.13	23.03	23.14	0.1770	0.1730	0.1774
5	QPSK	12	0	21.94	21.94	21.96	0.1346	0.1346	0.1352
5	QPSK	12	7	21.79	21.88	21.91	0.1300	0.1327	0.1337
5	QPSK	12	13	21.78	21.67	21.71	0.1297	0.1265	0.1276
5	QPSK	25	0	22.23	21.96	21.99	0.1439	0.1352	0.1361
5	16QAM	1	0	21.95	21.76	21.60	0.1349	0.1291	0.1245
5	16QAM	1	12	22.06	22.18	22.14	0.1384	0.1422	0.1409
5	16QAM	1	24	21.66	21.81	21.92	0.1262	0.1306	0.1340
5	16QAM	12	0	20.77	20.95	20.87	0.1028	0.1072	0.1052
5	16QAM	12	7	20.88	20.97	20.86	0.1054	0.1076	0.1050
5	16QAM	12	13	21.14	21.28	21.45	0.1119	0.1156	0.1202
5	16QAM	25	0	20.03	21.07	20.96	0.0867	0.1102	0.1074
5	64QAM	1	0	21.04	21.15	21.14	0.1094	0.1122	0.1119
5	64QAM	1	12	19.88	21.09	20.85	0.0838	0.1107	0.1047
5	64QAM	1	24	19.99	21.05	21.02	0.0859	0.1096	0.1089
5	64QAM	12	0	20.11	20.24	20.14	0.0883	0.0910	0.0889
5	64QAM	12	7	20.12	20.23	20.01	0.0885	0.0908	0.0863
5	64QAM	12	13	19.84	19.88	19.94	0.0830	0.0838	0.0849
5	64QAM	25	0	19.85	19.89	19.83	0.0832	0.0839	0.0828



LTE_B38

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP (W)		
Channel				37850	38000	38150	L	M	H
Frequency (MHz)				2580	2595	2610			
20	QPSK	1	0	20.91	20.70	20.96	0.3556	0.3388	0.3597
20	QPSK	1	49	20.82	20.80	20.97	0.3483	0.3467	0.3606
20	QPSK	1	99	20.52	20.43	20.51	0.3251	0.3184	0.3243
20	QPSK	50	0	19.89	19.81	19.95	0.2812	0.2761	0.2851
20	QPSK	50	24	19.92	19.96	20.04	0.2831	0.2858	0.2911
20	QPSK	50	50	19.80	19.83	19.96	0.2754	0.2773	0.2858
20	QPSK	100	0	19.88	19.82	19.95	0.2805	0.2767	0.2851
20	16QAM	1	0	19.82	19.79	19.95	0.2767	0.2748	0.2851
20	16QAM	1	49	19.21	19.34	19.51	0.2404	0.2477	0.2576
20	16QAM	1	99	18.68	18.96	19.02	0.2128	0.2270	0.2301
20	16QAM	50	0	18.73	18.62	18.71	0.2153	0.2099	0.2143
20	16QAM	50	24	18.83	18.68	18.85	0.2203	0.2128	0.2213
20	16QAM	50	50	18.32	18.53	18.64	0.1959	0.2056	0.2109
20	16QAM	100	0	18.54	18.63	18.73	0.2061	0.2104	0.2153
20	64QAM	1	0	18.55	18.63	18.82	0.2065	0.2104	0.2198
20	64QAM	1	49	18.88	18.96	19.09	0.2228	0.2270	0.2339
20	64QAM	1	99	17.92	17.80	17.90	0.1786	0.1738	0.1778
20	64QAM	50	0	17.90	17.81	17.98	0.1778	0.1742	0.1811
20	64QAM	50	24	17.88	17.86	18.03	0.1770	0.1762	0.1832
20	64QAM	50	50	17.79	17.70	17.83	0.1734	0.1698	0.1750
20	64QAM	100	0	17.81	17.70	17.85	0.1742	0.1698	0.1758
Channel				37825	38000	38175	L	M	H
Frequency (MHz)				2577.5	2595	2612.5			
15	QPSK	1	0	20.75	20.52	20.90	0.3428	0.3251	0.3548
15	QPSK	1	37	20.74	20.69	20.86	0.3420	0.3381	0.3516
15	QPSK	1	74	20.34	20.33	20.48	0.3119	0.3112	0.3221
15	QPSK	36	0	19.75	19.77	19.76	0.2723	0.2735	0.2729
15	QPSK	36	20	19.76	19.94	20.01	0.2729	0.2844	0.2891
15	QPSK	36	39	19.76	19.65	19.78	0.2729	0.2661	0.2742
15	QPSK	75	0	19.85	19.70	19.84	0.2786	0.2692	0.2780
15	16QAM	1	0	19.72	19.69	19.76	0.2704	0.2685	0.2729
15	16QAM	1	37	19.12	19.30	19.47	0.2355	0.2455	0.2553
15	16QAM	1	74	18.56	18.77	18.93	0.2070	0.2173	0.2254
15	16QAM	36	0	18.70	18.59	18.69	0.2138	0.2084	0.2133
15	16QAM	36	20	18.76	18.54	18.79	0.2168	0.2061	0.2183
15	16QAM	36	39	18.28	18.51	18.49	0.1941	0.2046	0.2037
15	16QAM	75	0	18.45	18.45	18.53	0.2018	0.2018	0.2056
15	64QAM	1	0	18.36	18.57	18.63	0.1977	0.2075	0.2104
15	64QAM	1	37	18.73	18.93	18.92	0.2153	0.2254	0.2249
15	64QAM	1	74	17.74	17.65	17.73	0.1714	0.1679	0.1710
15	64QAM	36	0	17.86	17.67	17.81	0.1762	0.1687	0.1742
15	64QAM	36	20	17.77	17.71	18.00	0.1726	0.1702	0.1820
15	64QAM	36	39	17.64	17.63	17.66	0.1675	0.1671	0.1683
15	64QAM	75	0	17.74	17.57	17.70	0.1714	0.1648	0.1698
Channel				37800	38000	38200	L	M	H
Frequency (MHz)				2575	2595	2615			
10	QPSK	1	0	20.83	20.67	20.93	0.3491	0.3365	0.3573
10	QPSK	1	25	20.82	20.77	20.95	0.3483	0.3443	0.3589
10	QPSK	1	49	20.46	20.41	20.45	0.3206	0.3170	0.3199
10	QPSK	25	0	19.90	19.78	20.03	0.2818	0.2742	0.2904
10	QPSK	25	12	19.93	19.91	20.05	0.2838	0.2825	0.2917
10	QPSK	25	25	19.77	19.75	19.94	0.2735	0.2723	0.2844
10	QPSK	50	0	19.86	19.78	19.90	0.2793	0.2742	0.2818
10	16QAM	1	0	19.89	19.71	19.85	0.2812	0.2698	0.2786
10	16QAM	1	25	19.27	19.38	19.50	0.2438	0.2500	0.2570



10	16QAM	1	49	18.66	18.97	19.04	0.2118	0.2275	0.2312
10	16QAM	25	0	18.74	18.55	18.74	0.2158	0.2065	0.2158
10	16QAM	25	12	18.87	18.67	18.79	0.2223	0.2123	0.2183
10	16QAM	25	25	18.25	18.49	18.61	0.1928	0.2037	0.2094
10	16QAM	50	0	18.52	18.65	18.78	0.2051	0.2113	0.2178
10	64QAM	1	0	18.56	18.61	18.89	0.2070	0.2094	0.2234
10	64QAM	1	25	18.81	19.02	19.08	0.2193	0.2301	0.2333
10	64QAM	1	49	17.92	17.76	17.92	0.1786	0.1722	0.1786
10	64QAM	25	0	17.94	17.83	18.02	0.1795	0.1750	0.1828
10	64QAM	25	12	17.95	17.82	18.08	0.1799	0.1746	0.1854
10	64QAM	25	25	17.87	17.64	17.73	0.1766	0.1675	0.1710
10	64QAM	50	0	17.80	17.75	17.88	0.1738	0.1718	0.1770
Channel				37775	38000	38225	L	M	H
Frequency (MHz)				2572.5	2595	2617.5			
5	QPSK	1	0	20.91	20.66	20.96	0.3556	0.3357	0.3597
5	QPSK	1	12	20.86	20.73	20.89	0.3516	0.3412	0.3540
5	QPSK	1	24	20.53	20.42	20.47	0.3258	0.3177	0.3214
5	QPSK	12	0	19.92	19.73	19.86	0.2831	0.2710	0.2793
5	QPSK	12	7	19.96	19.95	20.08	0.2858	0.2851	0.2938
5	QPSK	12	13	19.80	19.84	19.99	0.2754	0.2780	0.2877
5	QPSK	25	0	19.85	19.88	19.95	0.2786	0.2805	0.2851
5	16QAM	1	0	19.88	19.80	20.00	0.2805	0.2754	0.2884
5	16QAM	1	12	19.12	19.31	19.44	0.2355	0.2460	0.2535
5	16QAM	1	24	18.63	18.93	18.95	0.2104	0.2254	0.2265
5	16QAM	12	0	18.71	18.54	18.76	0.2143	0.2061	0.2168
5	16QAM	12	7	18.82	18.75	18.88	0.2198	0.2163	0.2228
5	16QAM	12	13	18.27	18.53	18.69	0.1936	0.2056	0.2133
5	16QAM	25	0	18.58	18.58	18.64	0.2080	0.2080	0.2109
5	64QAM	1	0	18.54	18.54	18.85	0.2061	0.2061	0.2213
5	64QAM	1	12	18.92	18.86	19.17	0.2249	0.2218	0.2382
5	64QAM	1	24	17.98	17.79	17.83	0.1811	0.1734	0.1750
5	64QAM	12	0	17.94	17.79	17.98	0.1795	0.1734	0.1811
5	64QAM	12	7	17.90	17.93	18.05	0.1778	0.1791	0.1841
5	64QAM	12	13	17.69	17.63	17.79	0.1694	0.1671	0.1734
5	64QAM	25	0	17.74	17.61	17.77	0.1714	0.1663	0.1726



LTE_B41

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP (W)		
Channel				39750	40620	41490	L	M	H
Frequency (MHz)				2506	2593	2680			
20	QPSK	1	0	21.98	21.64	21.52	0.4550	0.4207	0.4093
20	QPSK	1	49	21.79	21.78	21.64	0.4355	0.4345	0.4207
20	QPSK	1	99	21.64	21.50	21.67	0.4207	0.4074	0.4236
20	QPSK	50	0	21.03	20.63	20.53	0.3656	0.3334	0.3258
20	QPSK	50	24	20.94	20.51	20.94	0.3581	0.3243	0.3581
20	QPSK	50	50	21.02	20.59	20.85	0.3648	0.3304	0.3508
20	QPSK	100	0	21.14	20.65	20.32	0.3750	0.3350	0.3105
20	16QAM	1	0	20.96	20.07	20.31	0.3597	0.2931	0.3097
20	16QAM	1	49	20.72	20.28	20.40	0.3404	0.3076	0.3162
20	16QAM	1	99	20.69	20.27	20.40	0.3381	0.3069	0.3162
20	16QAM	50	0	19.96	19.58	19.37	0.2858	0.2618	0.2495
20	16QAM	50	24	20.01	19.56	19.50	0.2891	0.2606	0.2570
20	16QAM	50	50	20.06	19.44	19.46	0.2924	0.2535	0.2547
20	16QAM	100	0	20.05	19.51	19.67	0.2917	0.2576	0.2673
20	64QAM	1	0	19.25	19.12	18.72	0.2427	0.2355	0.2148
20	64QAM	1	49	19.46	19.08	18.97	0.2547	0.2333	0.2275
20	64QAM	1	99	18.83	18.60	18.70	0.2203	0.2089	0.2138
20	64QAM	50	0	19.05	18.75	18.54	0.2317	0.2163	0.2061
20	64QAM	50	24	19.00	18.69	18.75	0.2291	0.2133	0.2163
20	64QAM	50	50	19.02	18.71	18.51	0.2301	0.2143	0.2046
20	64QAM	100	0	18.96	18.89	18.81	0.2270	0.2234	0.2193
Channel				39725	40620	41515	L	M	H
Frequency (MHz)				2503.5	2593	2682.5			
15	QPSK	1	0	22.00	22.06	21.54	0.4571	0.4634	0.4111
15	QPSK	1	37	21.81	22.19	21.60	0.4375	0.4775	0.4169
15	QPSK	1	74	21.68	21.44	21.65	0.4246	0.4018	0.4217
15	QPSK	36	0	20.95	20.58	20.57	0.3589	0.3296	0.3289
15	QPSK	36	20	20.93	20.50	20.86	0.3573	0.3236	0.3516
15	QPSK	36	39	21.04	20.52	20.88	0.3664	0.3251	0.3532
15	QPSK	75	0	21.16	20.52	20.29	0.3767	0.3251	0.3083
15	16QAM	1	0	21.05	20.26	20.37	0.3673	0.3062	0.3141
15	16QAM	1	37	20.70	20.15	20.41	0.3388	0.2985	0.3170
15	16QAM	1	74	20.59	20.06	20.47	0.3304	0.2924	0.3214
15	16QAM	36	0	19.96	19.56	19.41	0.2858	0.2606	0.2518
15	16QAM	36	20	20.07	19.57	19.55	0.2931	0.2612	0.2600
15	16QAM	36	39	19.97	19.52	19.42	0.2864	0.2582	0.2523
15	16QAM	75	0	20.10	19.66	19.72	0.2951	0.2667	0.2704
15	64QAM	1	0	19.34	19.04	18.70	0.2477	0.2312	0.2138
15	64QAM	1	37	19.38	19.15	18.91	0.2500	0.2371	0.2244
15	64QAM	1	74	18.84	18.74	18.75	0.2208	0.2158	0.2163
15	64QAM	36	0	19.04	18.43	18.51	0.2312	0.2009	0.2046
15	64QAM	36	20	19.02	18.40	18.66	0.2301	0.1995	0.2118
15	64QAM	36	39	18.98	18.41	18.42	0.2280	0.2000	0.2004
15	64QAM	75	0	18.96	18.57	18.87	0.2270	0.2075	0.2223
Channel				39700	40620	41540	L	M	H
Frequency (MHz)				2501	2593	2685			
10	QPSK	1	0	21.65	21.96	21.50	0.4217	0.4529	0.4074
10	QPSK	1	25	21.98	21.72	21.54	0.4550	0.4285	0.4111
10	QPSK	1	49	21.85	21.75	21.47	0.4416	0.4315	0.4046
10	QPSK	25	0	20.73	20.55	20.41	0.3412	0.3273	0.3170
10	QPSK	25	12	20.87	20.56	20.68	0.3524	0.3281	0.3373
10	QPSK	25	25	21.04	20.50	20.81	0.3664	0.3236	0.3475
10	QPSK	50	0	20.99	20.58	20.22	0.3622	0.3296	0.3034
10	16QAM	1	0	20.87	20.14	20.21	0.3524	0.2979	0.3027
10	16QAM	1	25	20.89	20.17	20.32	0.3540	0.2999	0.3105
10	16QAM	1	49	20.40	20.05	20.30	0.3162	0.2917	0.3090



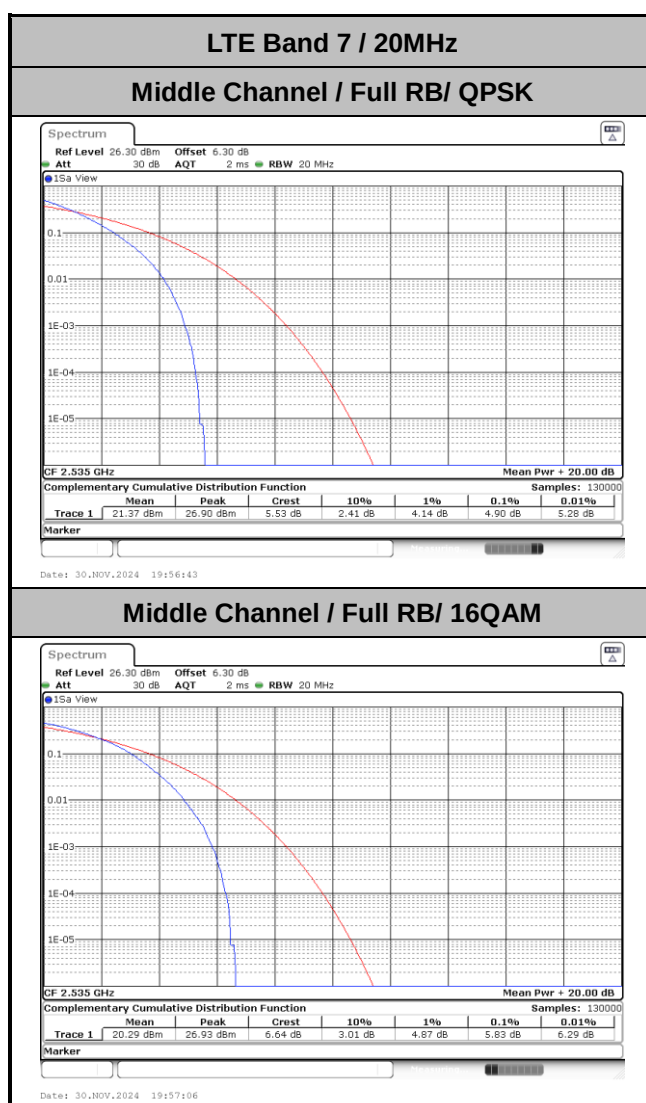
10	16QAM	25	0	19.90	19.67	19.23	0.2818	0.2673	0.2415
10	16QAM	25	12	19.89	19.68	19.40	0.2812	0.2679	0.2512
10	16QAM	25	25	20.12	19.60	19.30	0.2965	0.2630	0.2455
10	16QAM	50	0	19.96	19.64	19.64	0.2858	0.2655	0.2655
10	64QAM	1	0	19.19	19.00	18.67	0.2393	0.2291	0.2123
10	64QAM	1	25	19.48	19.03	18.74	0.2559	0.2307	0.2158
10	64QAM	1	49	19.83	18.87	18.60	0.2773	0.2223	0.2089
10	64QAM	25	0	18.90	18.91	18.39	0.2239	0.2244	0.1991
10	64QAM	25	12	19.14	18.96	18.63	0.2366	0.2270	0.2104
10	64QAM	25	25	19.00	18.94	18.39	0.2291	0.2259	0.1991
10	64QAM	50	0	18.99	18.71	18.68	0.2286	0.2143	0.2128
Channel				39675	40620	41565	L	M	H
Frequency (MHz)				2498.5	2593	2687.5			
5	QPSK	1	0	21.31	21.64	21.49	0.3899	0.4207	0.4064
5	QPSK	1	12	21.65	21.87	22.18	0.4217	0.4436	0.4764
5	QPSK	1	24	21.58	21.36	21.71	0.4150	0.3945	0.4276
5	QPSK	12	0	20.51	20.68	20.53	0.3243	0.3373	0.3258
5	QPSK	12	7	20.59	20.63	20.45	0.3304	0.3334	0.3199
5	QPSK	12	13	20.85	20.59	20.40	0.3508	0.3304	0.3162
5	QPSK	25	0	20.68	20.60	20.61	0.3373	0.3311	0.3319
5	16QAM	1	0	20.52	20.47	20.37	0.3251	0.3214	0.3141
5	16QAM	1	12	20.57	20.51	20.51	0.3289	0.3243	0.3243
5	16QAM	1	24	20.04	20.40	20.43	0.2911	0.3162	0.3184
5	16QAM	12	0	19.57	19.56	19.66	0.2612	0.2606	0.2667
5	16QAM	12	7	19.59	19.54	19.55	0.2624	0.2594	0.2600
5	16QAM	12	13	19.79	19.57	19.57	0.2748	0.2612	0.2612
5	16QAM	25	0	19.65	19.52	19.77	0.2661	0.2582	0.2735
5	64QAM	1	0	18.90	18.94	19.31	0.2239	0.2259	0.2460
5	64QAM	1	12	19.08	19.13	18.95	0.2333	0.2360	0.2265
5	64QAM	1	24	19.43	18.75	18.71	0.2529	0.2163	0.2143
5	64QAM	12	0	18.53	18.53	18.46	0.2056	0.2056	0.2023
5	64QAM	12	7	18.71	18.63	18.45	0.2143	0.2104	0.2018
5	64QAM	12	13	18.58	18.67	18.50	0.2080	0.2123	0.2042
5	64QAM	25	0	18.76	18.37	18.84	0.2168	0.1982	0.2208

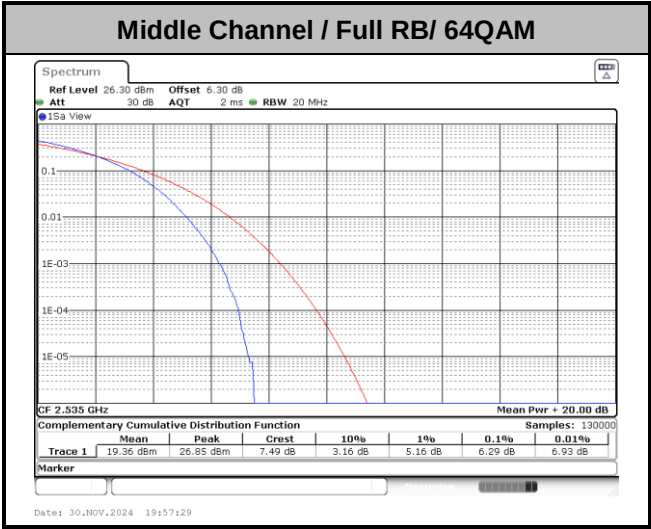


LTE Band 7

Peak-to-Average Ratio

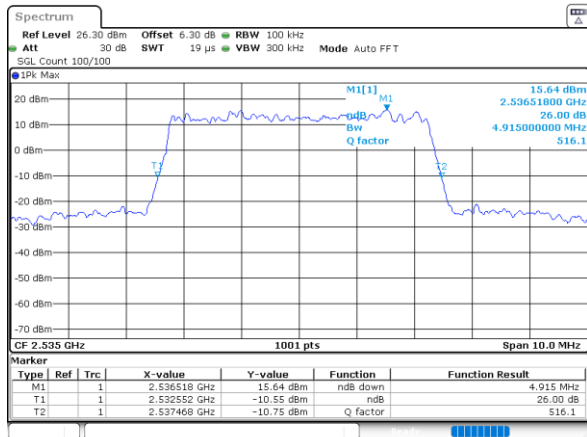
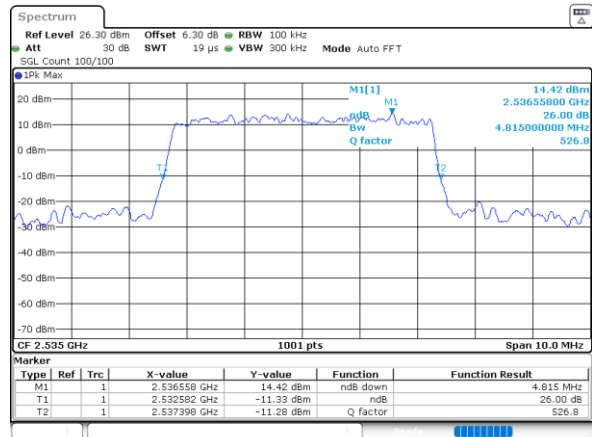
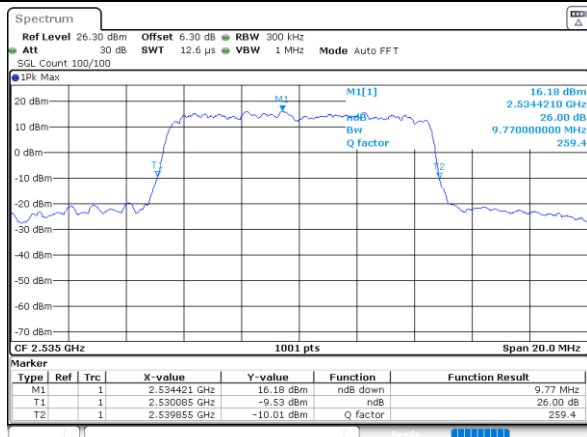
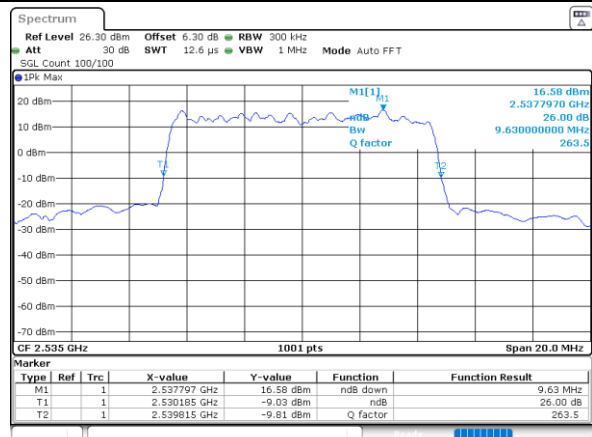
Mode	LTE Band 7 / 20MHz			
Mod.	QPSK	16QAM	64QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Result
Middle CH	4.90	5.83	6.29	PASS





**26dB Bandwidth**

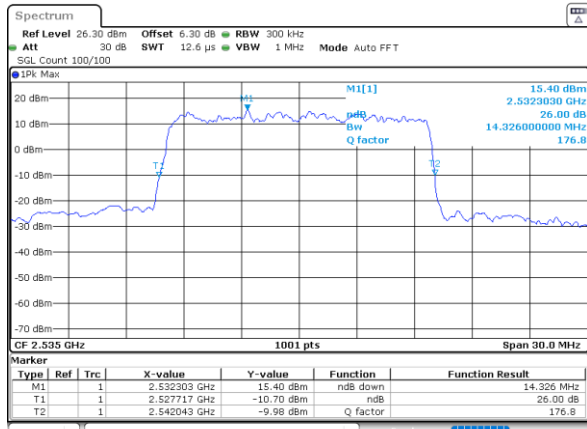
Mode	LTE Band 7 : 26dB BW(MHz)							
BW	5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	4.92	4.82	9.77	9.63	14.33	14.18	18.86	19.14

LTE Band 7**Middle Channel / 5MHz / QPSK****Middle Channel / 5MHz / 16QAM****LTE Band 7****Middle Channel / 10MHz / QPSK****Middle Channel / 10MHz / 16QAM**



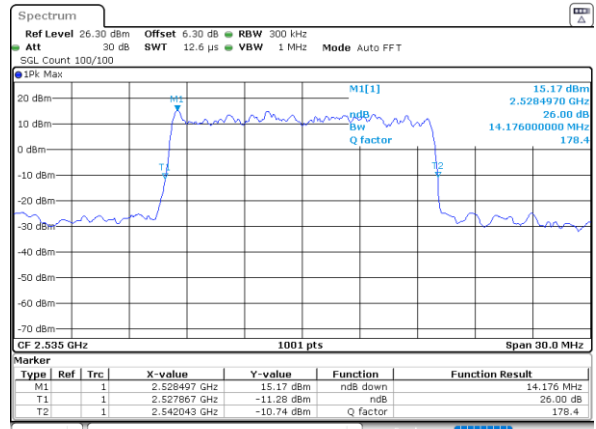
LTE Band 7

Middle Channel / 15MHz / QPSK



Date: 30,NOV,2024 20:01:04

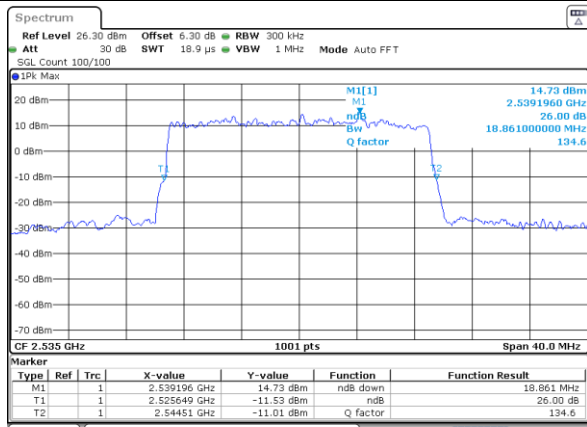
Middle Channel / 15MHz / 16QAM



Date: 30,NOV,2024 20:01:25

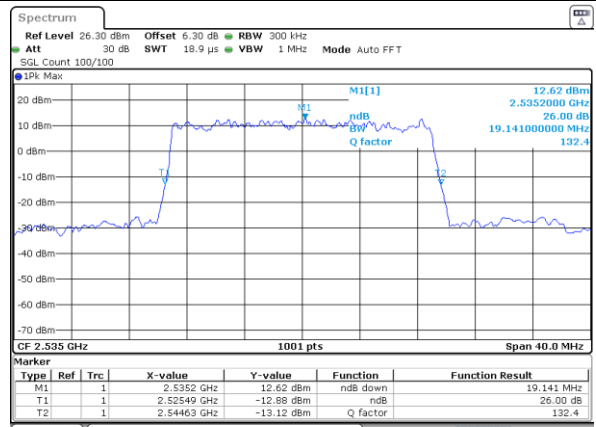
LTE Band 7

Middle Channel / 20MHz / QPSK



Date: 30,NOV,2024 19:55:17

Middle Channel / 20MHz / 16QAM



Date: 30,NOV,2024 19:56:21

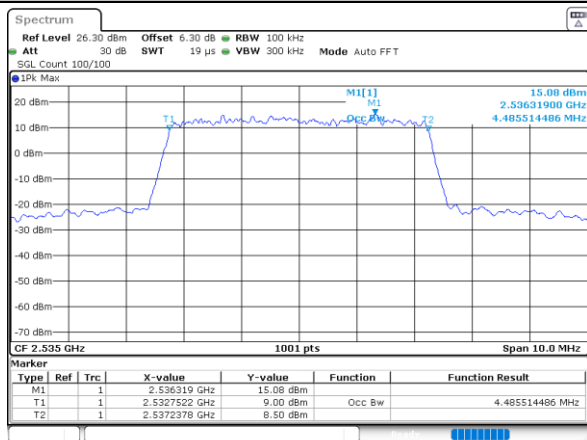


Occupied Bandwidth

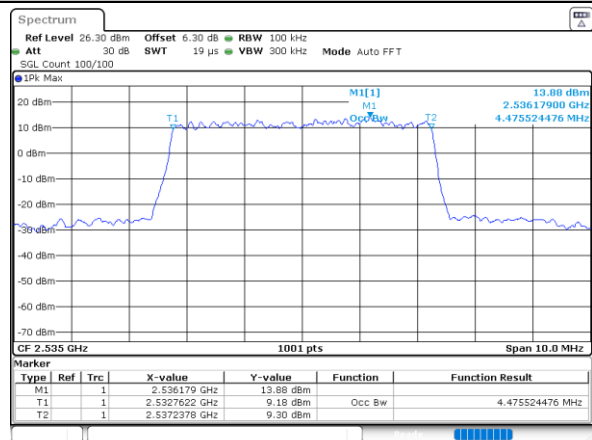
Mode	LTE Band 7 : 99%OBW(MHz)							
BW	5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	4.49	4.48	9.05	8.95	13.40	13.46	17.90	17.78

LTE Band 7

Middle Channel / 5MHz / QPSK

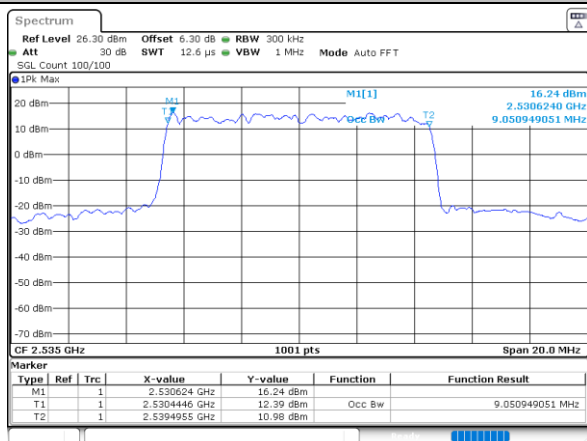


Middle Channel / 5MHz / 16QAM

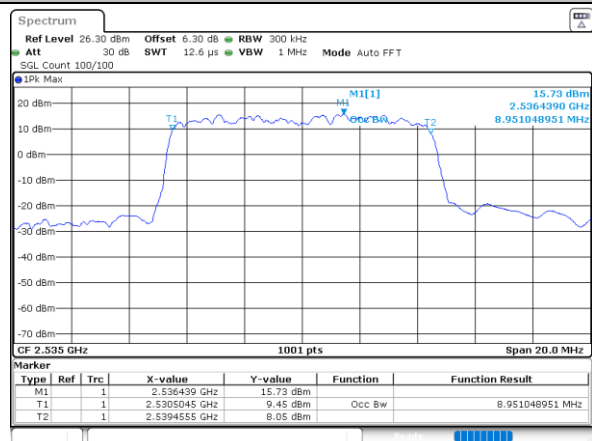


LTE Band 7

Middle Channel / 10MHz / QPSK



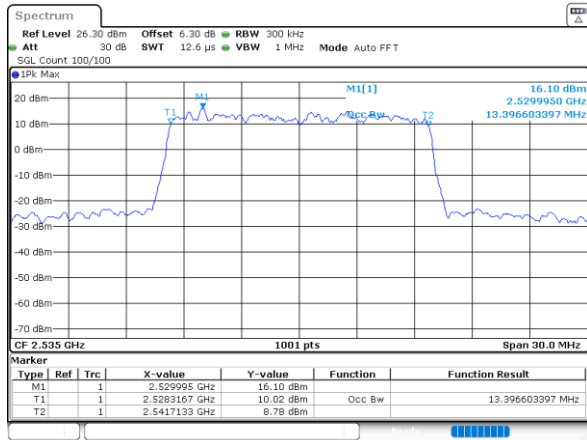
Middle Channel / 10MHz / 16QAM



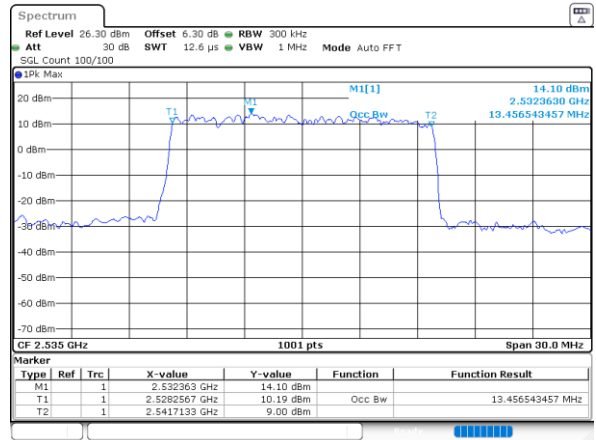


LTE Band 7

Middle Channel / 15MHz / QPSK

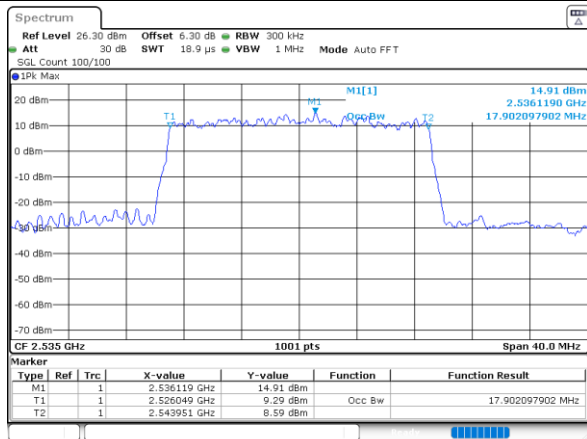


Middle Channel / 15MHz / 16QAM

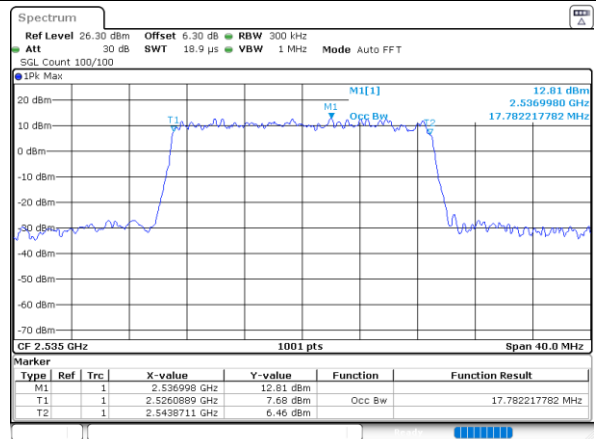


LTE Band 7

Middle Channel / 20MHz / QPSK



Middle Channel / 20MHz / 16QAM

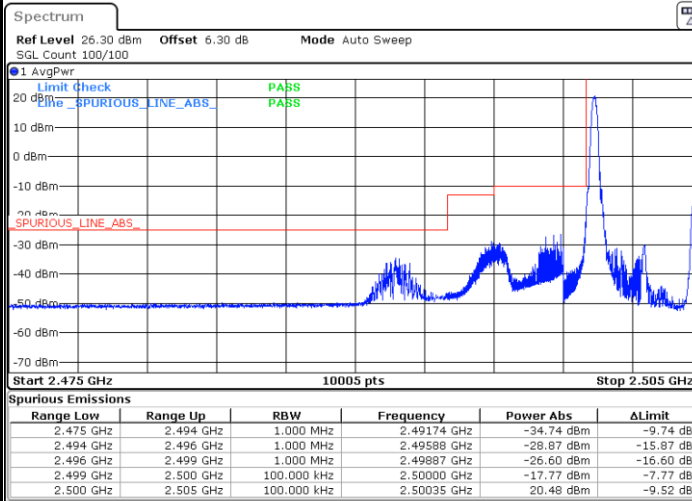




Conducted Band Edge

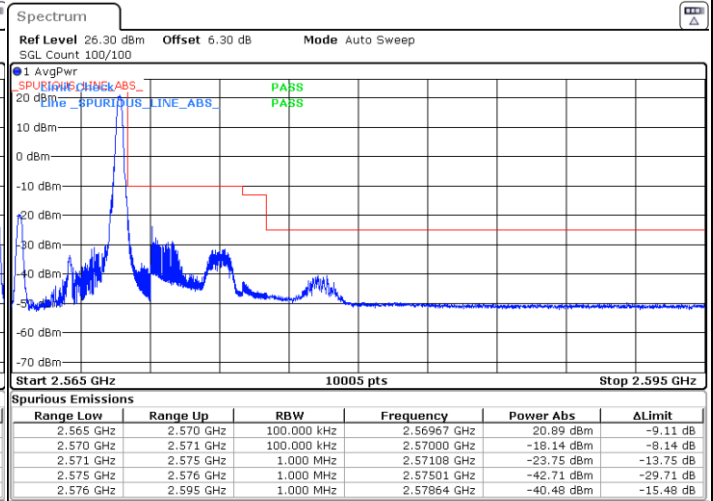
LTE Band 7 / 5MHz / QPSK

Lowest Band Edge / 1 RB



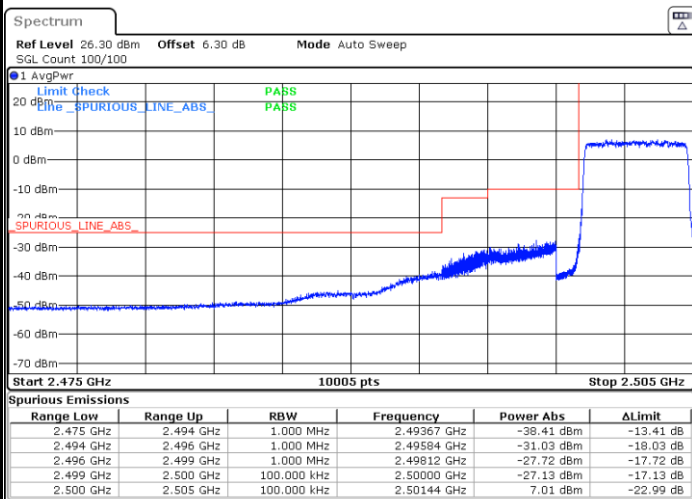
Date: 30.NOV.2024 18:52:19

Highest Band Edge / 1 RB



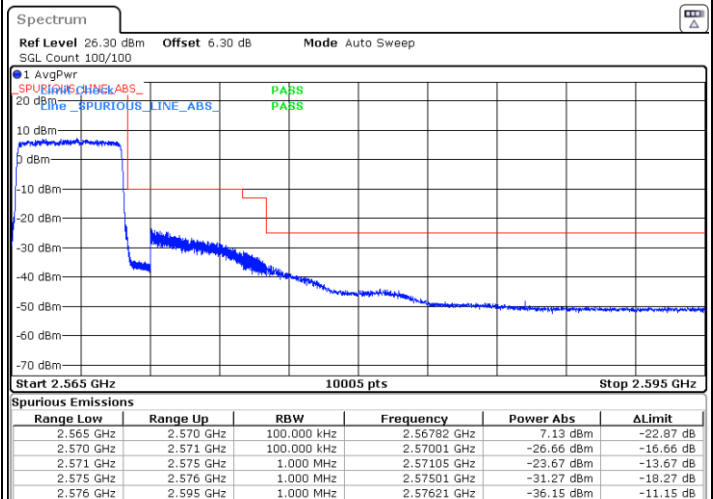
Date: 30.NOV.2024 19:00:09

Lowest Band Edge / Full RB



Date: 30.NOV.2024 18:56:50

Highest Band Edge / Full RB

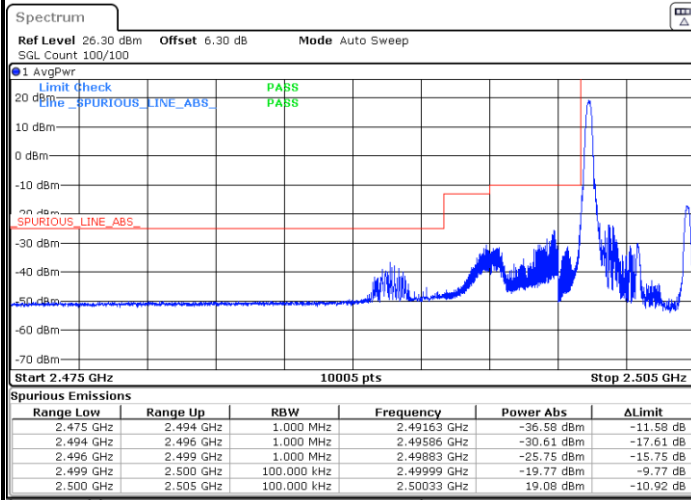


Date: 30.NOV.2024 19:03:32

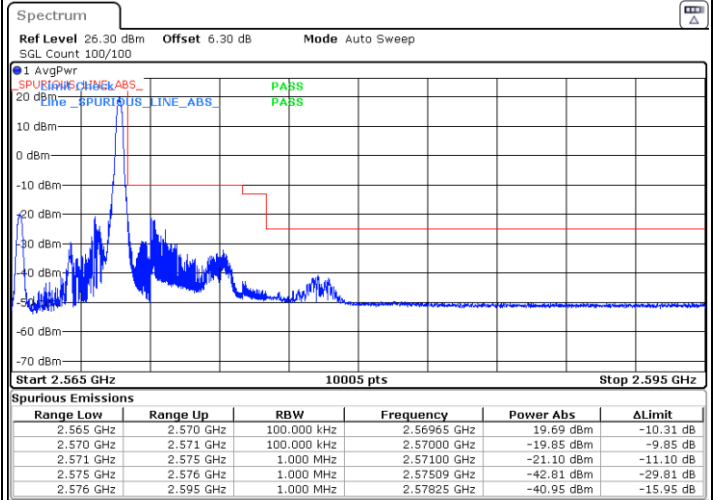


LTE Band 7 / 5MHz / 16QAM

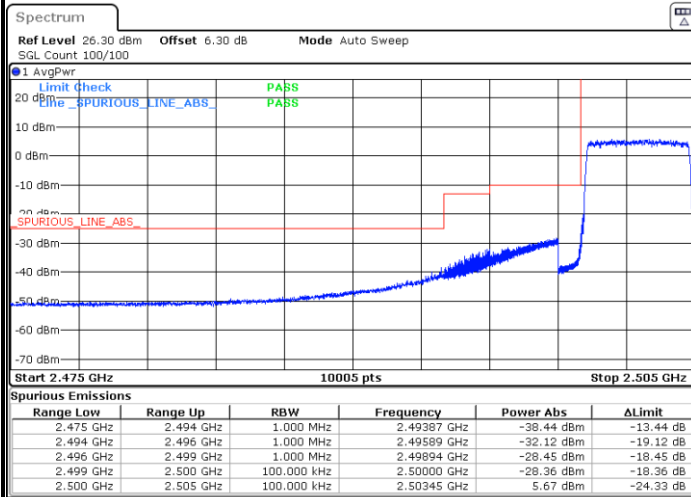
Lowest Band Edge / 1RB



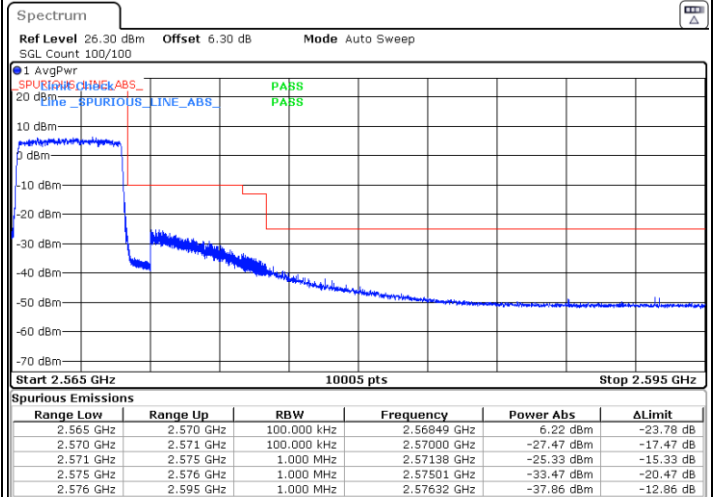
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



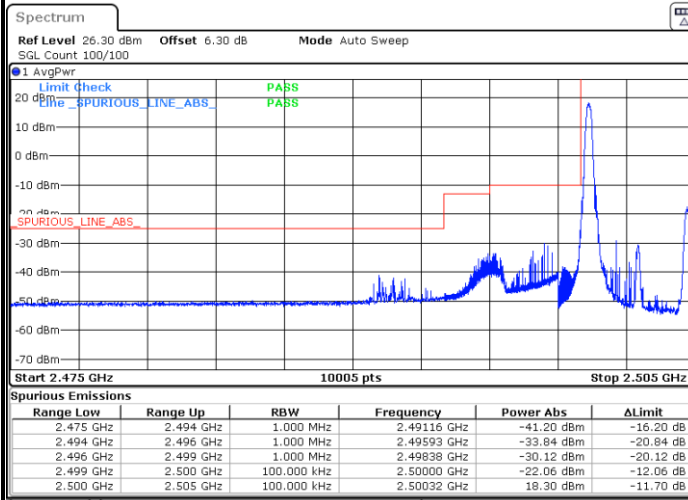
Highest Band Edge / Full RB



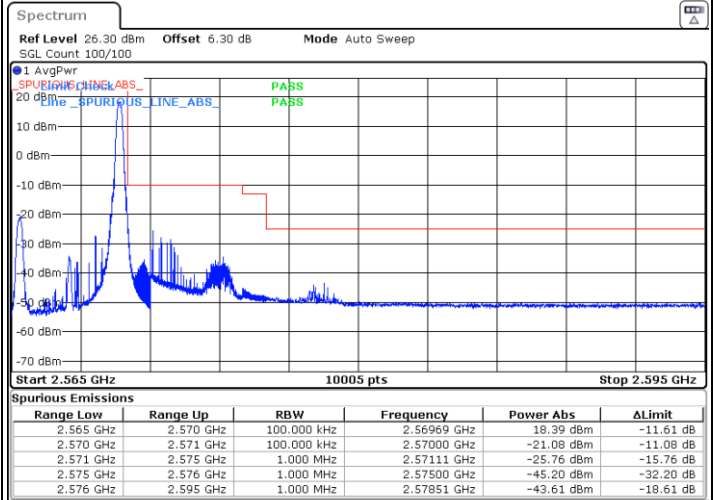


LTE Band 7 / 5MHz / 64QAM

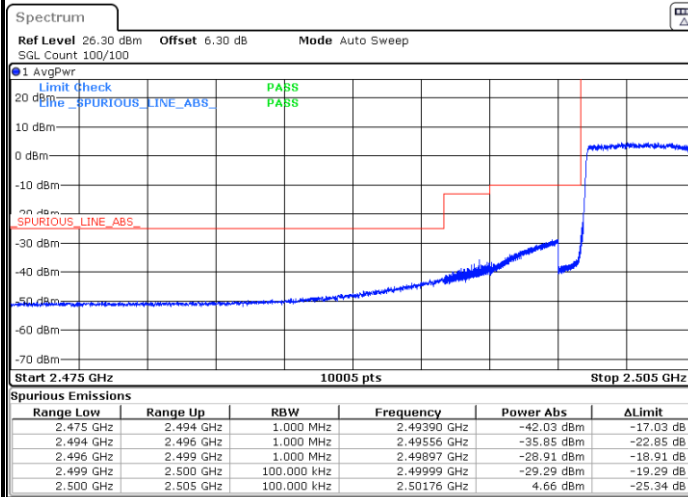
Lowest Band Edge / 1RB



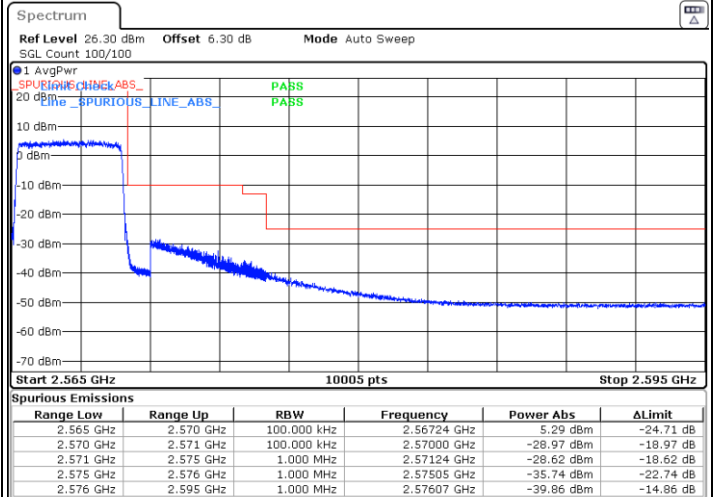
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



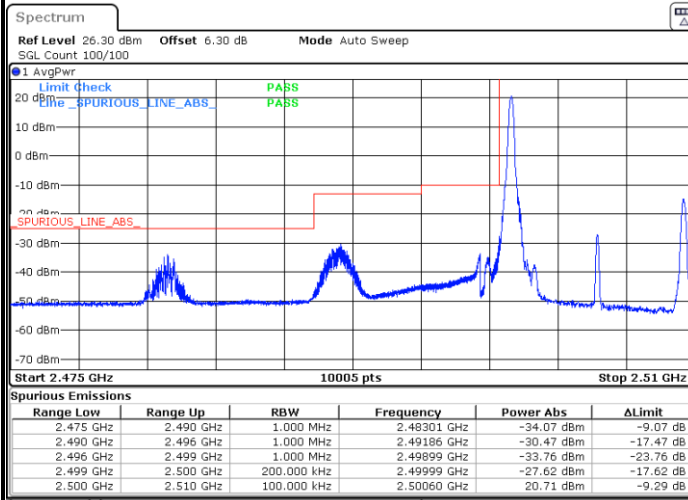
Highest Band Edge / Full RB



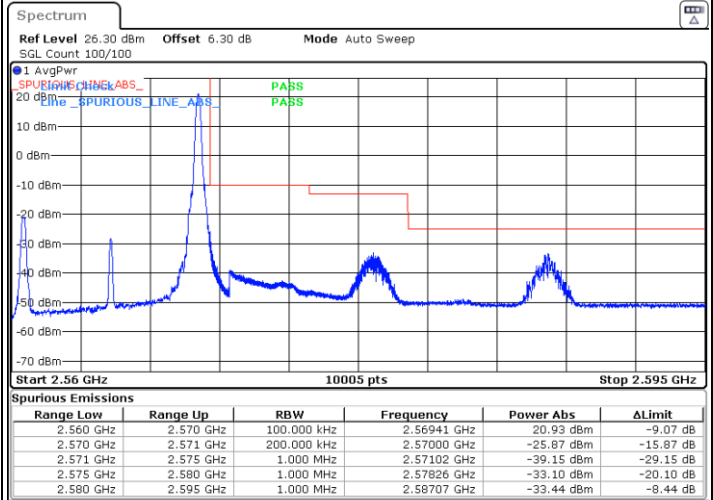


LTE Band 7 / 10MHz / QPSK

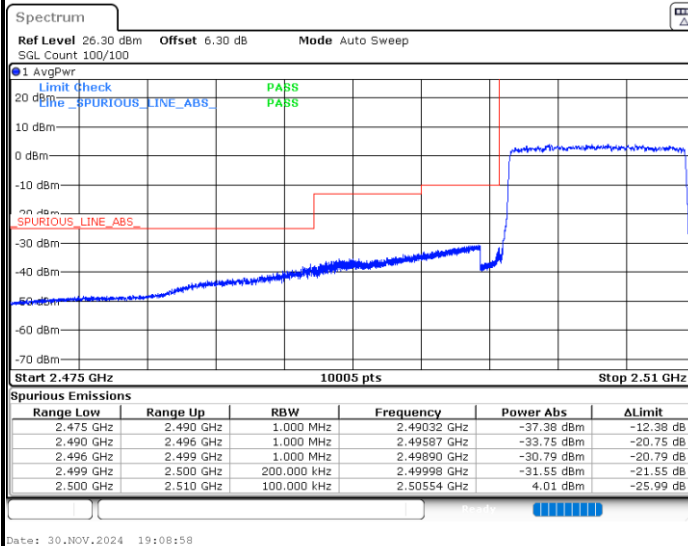
Lowest Band Edge / 1 RB



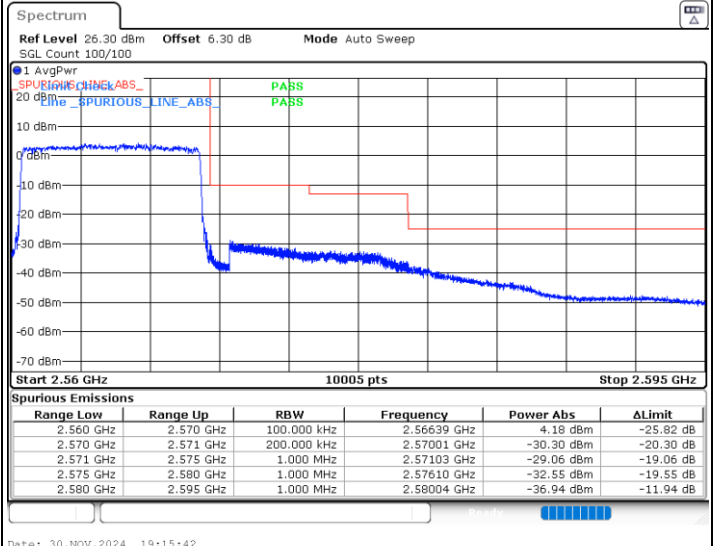
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



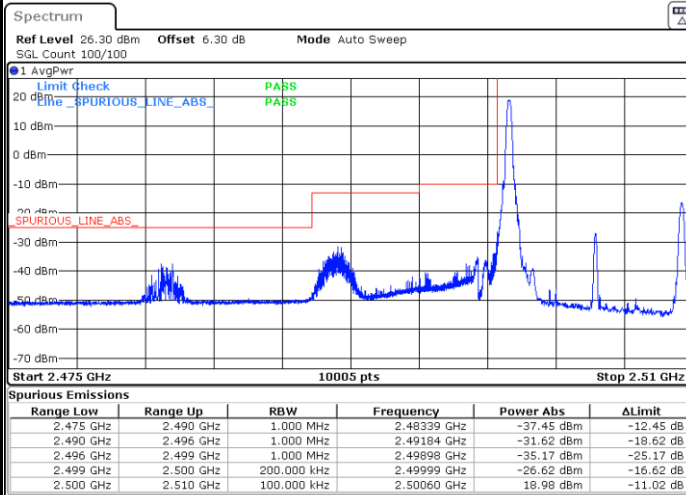
Highest Band Edge / Full RB



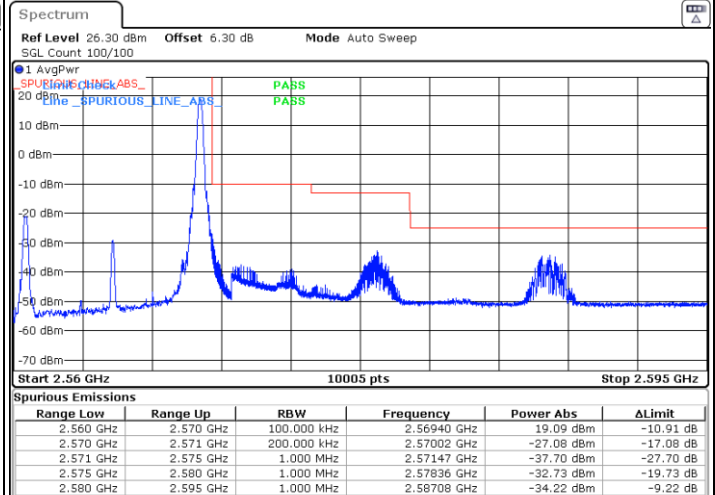


LTE Band 7 / 10MHz / 16QAM

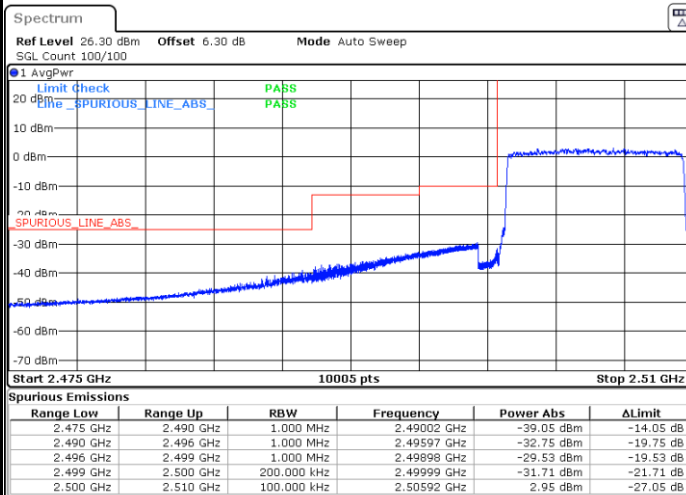
Lowest Band Edge / 1 RB



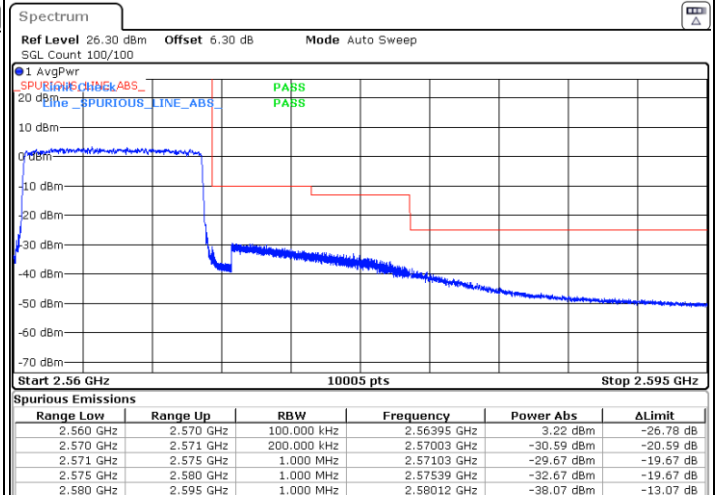
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



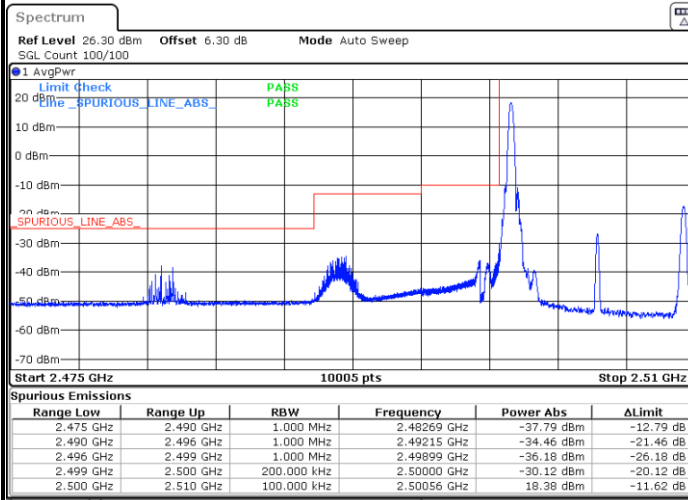
Highest Band Edge / Full RB



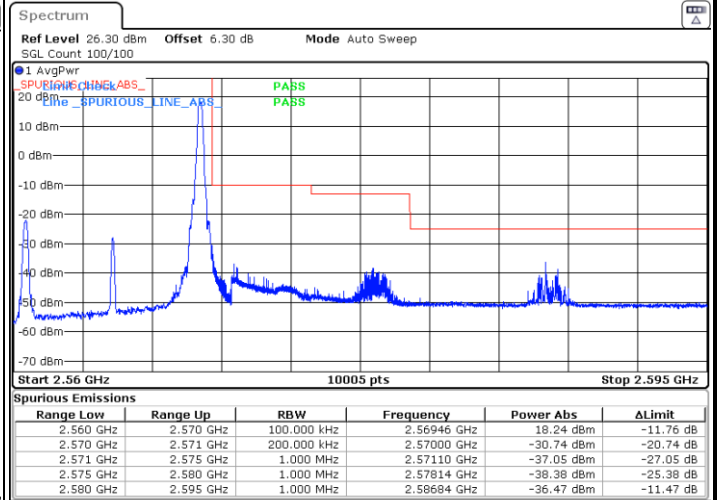


LTE Band 7 / 10MHz / 64QAM

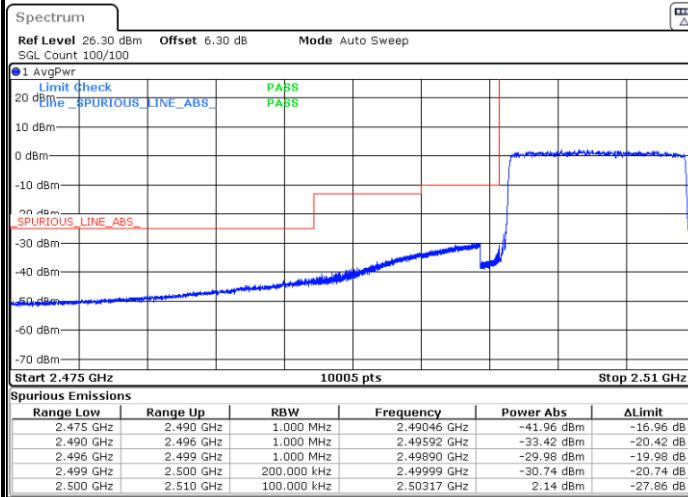
Lowest Band Edge / 1 RB



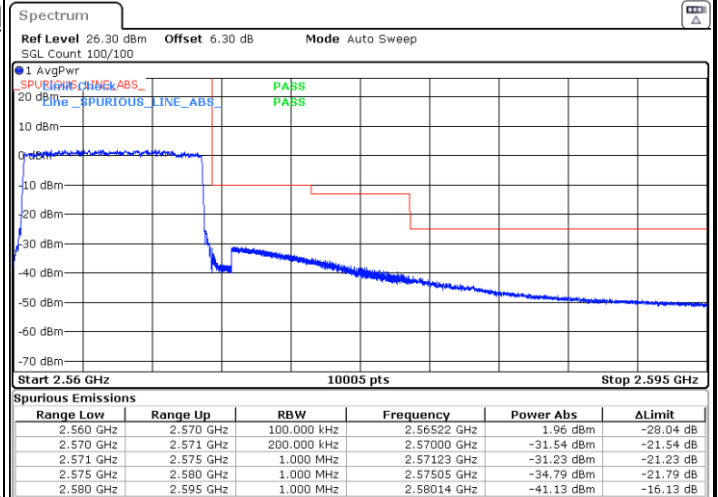
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



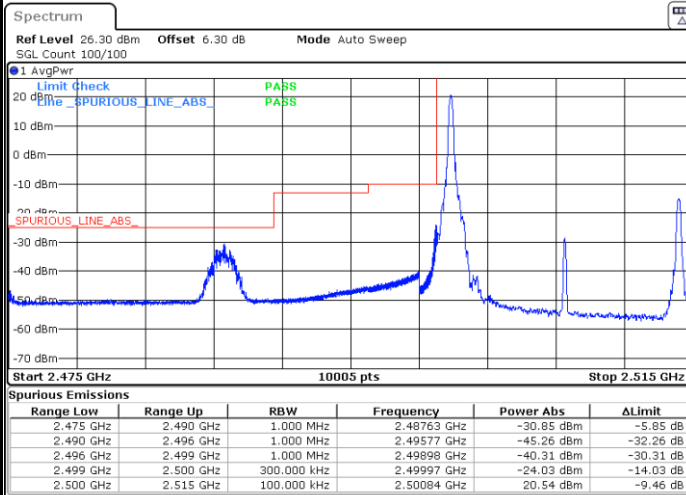
Highest Band Edge / Full RB



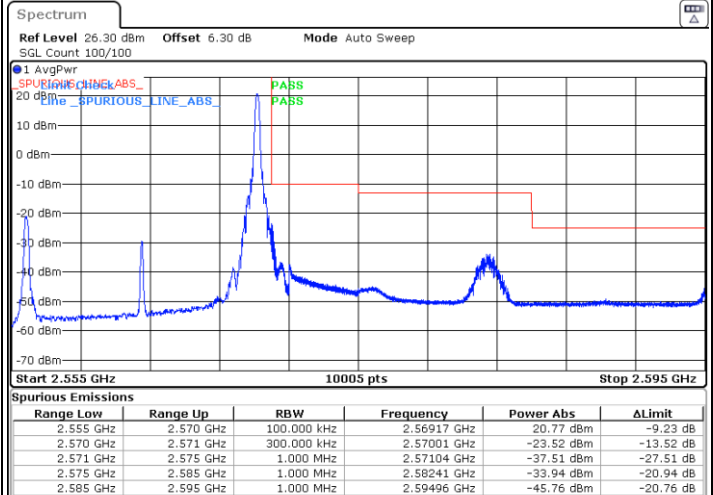


LTE Band 7 / 15MHz / QPSK

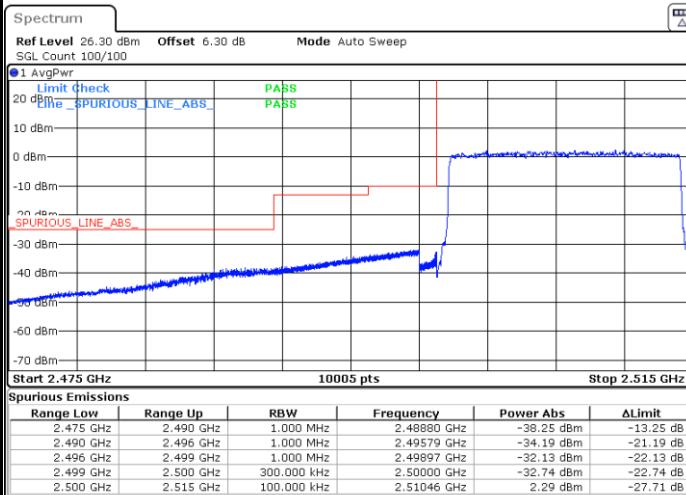
Lowest Band Edge / 1 RB



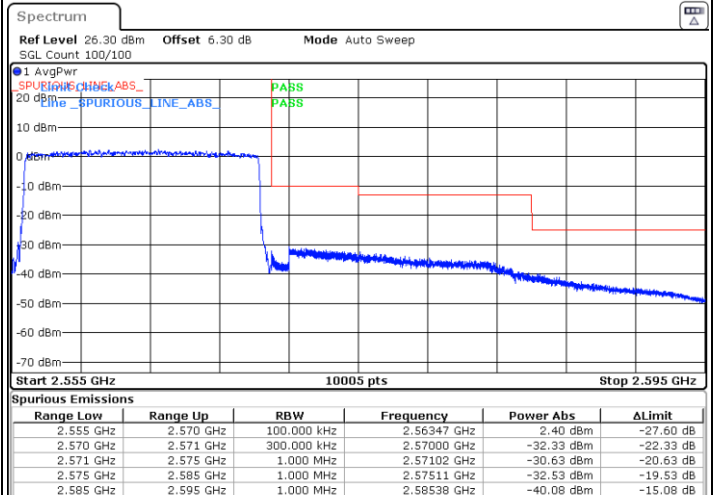
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



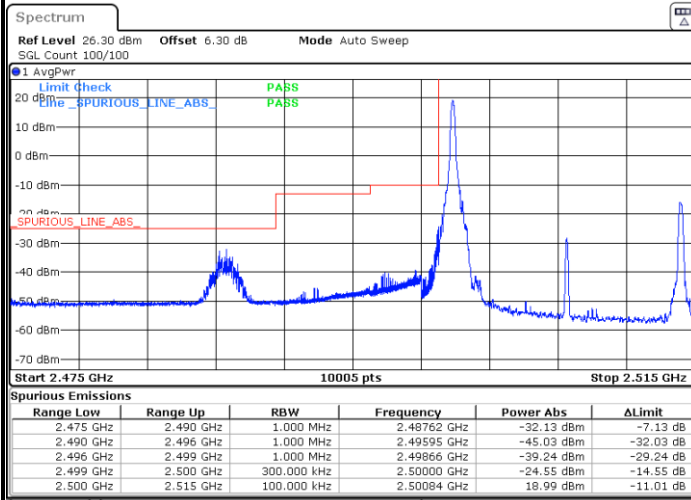
Highest Band Edge / Full RB



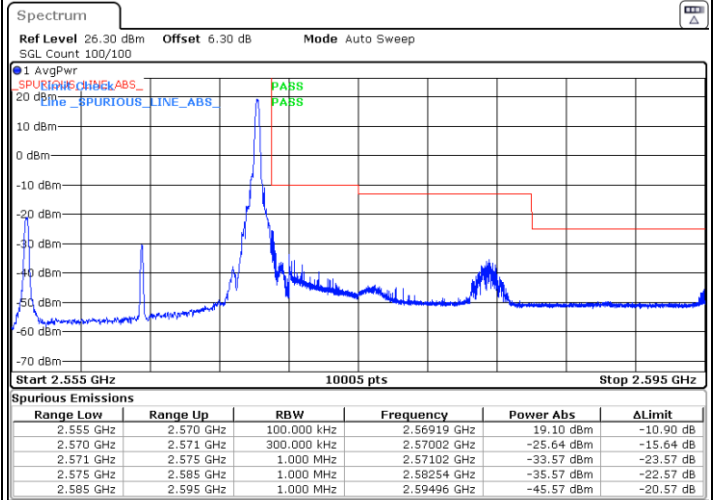


LTE Band 7 / 15MHz / 16QAM

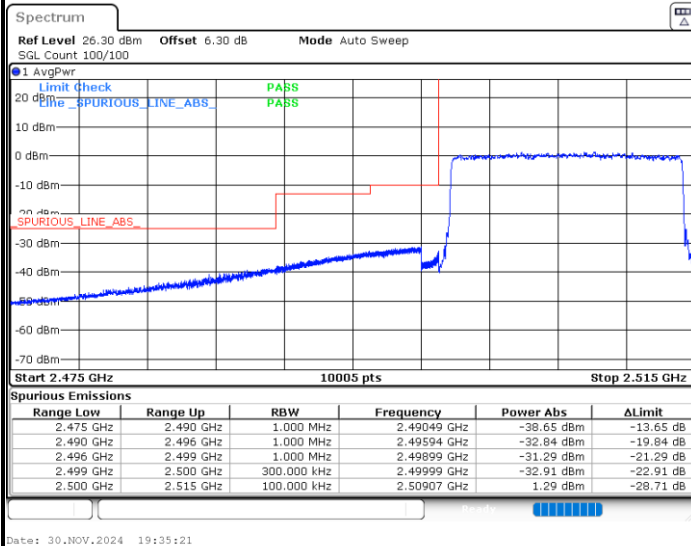
Lowest Band Edge / 1 RB



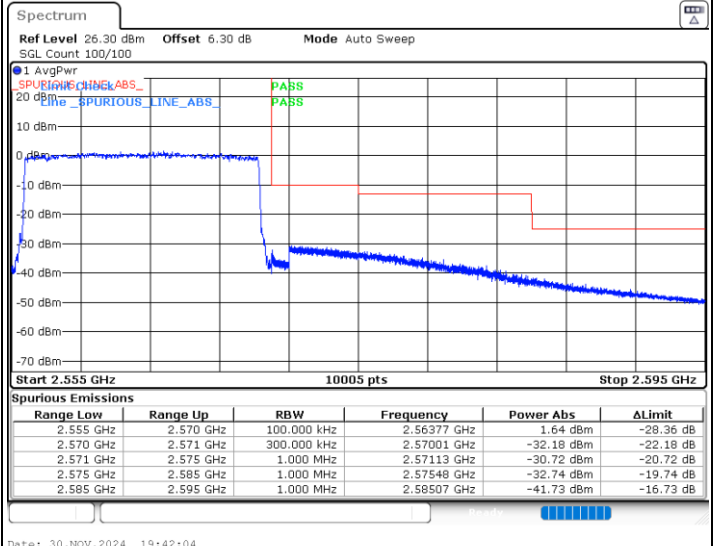
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



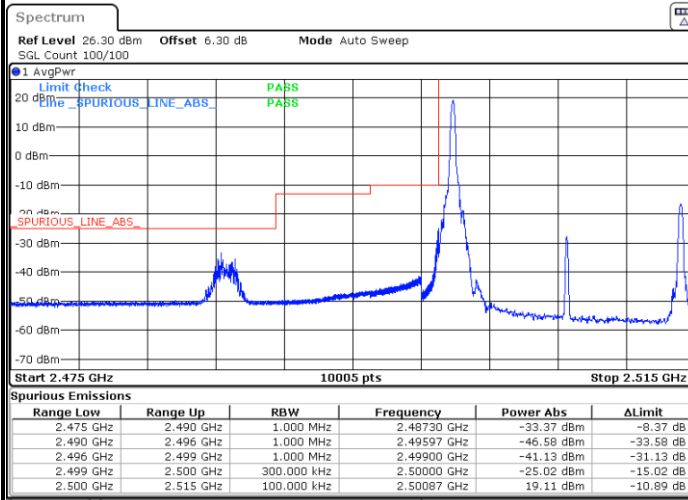
Highest Band Edge / Full RB



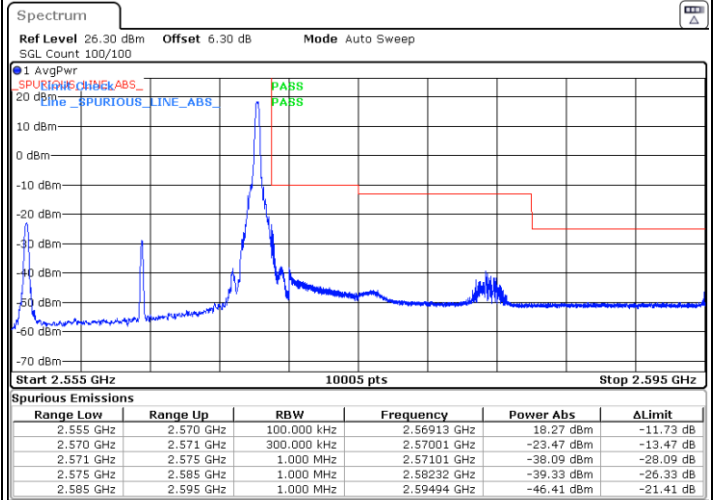


LTE Band 7 / 15MHz / 64QAM

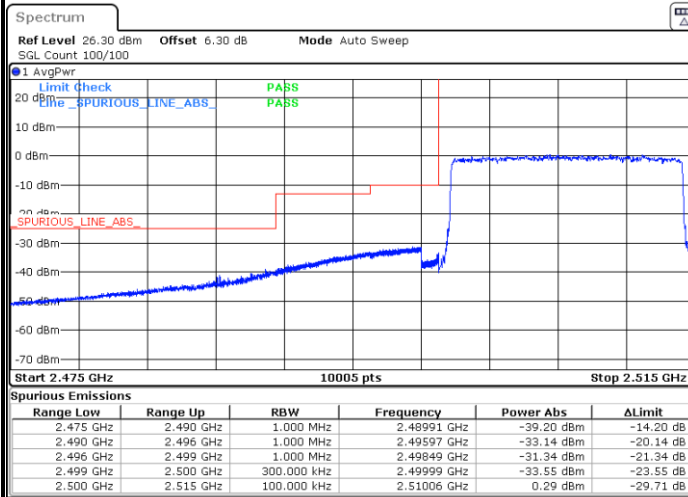
Lowest Band Edge / 1 RB



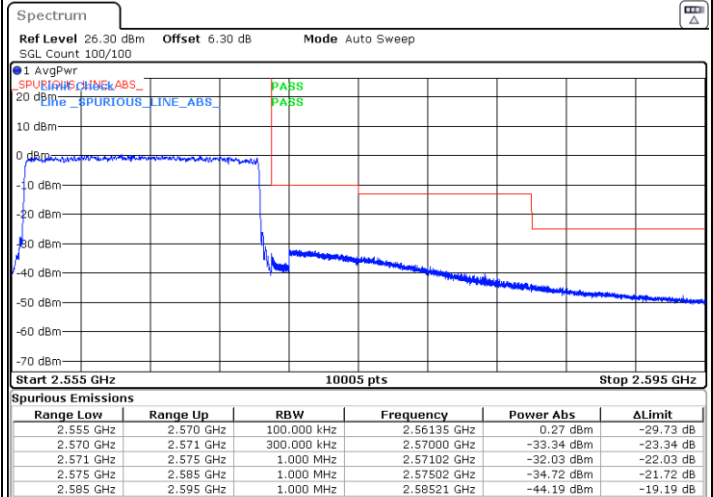
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



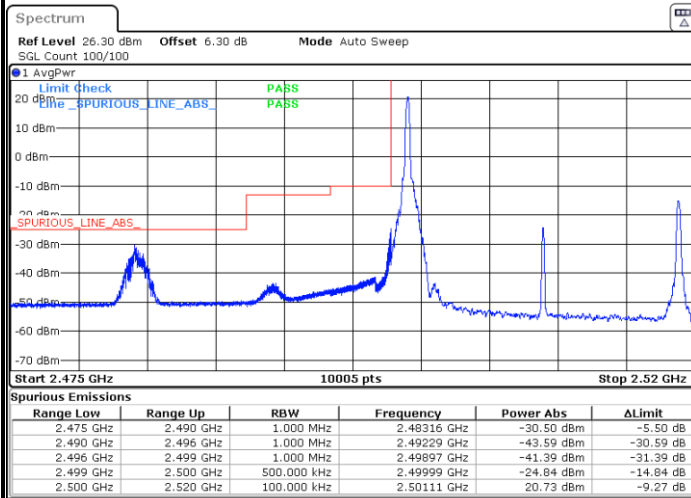
Highest Band Edge / Full RB



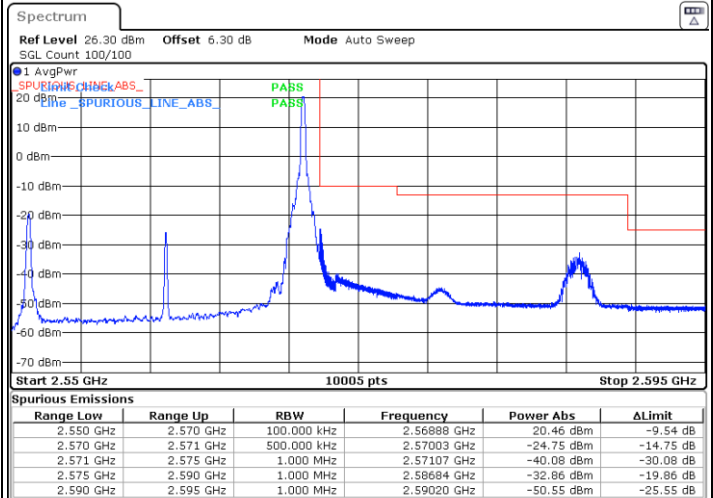


LTE Band 7 / 20MHz / QPSK

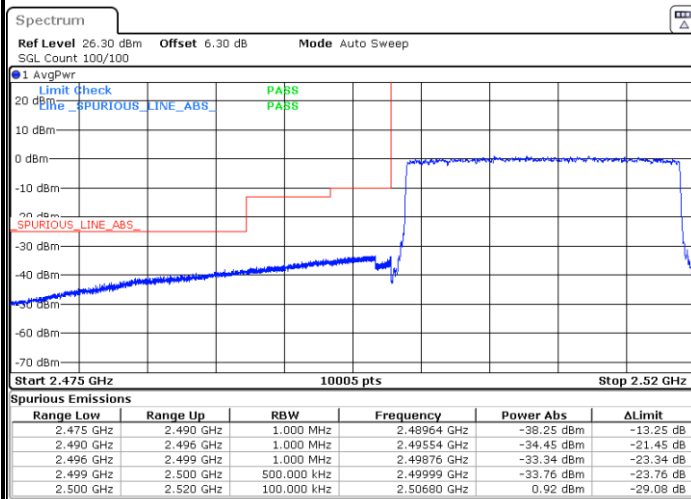
Lowest Band Edge / 1 RB



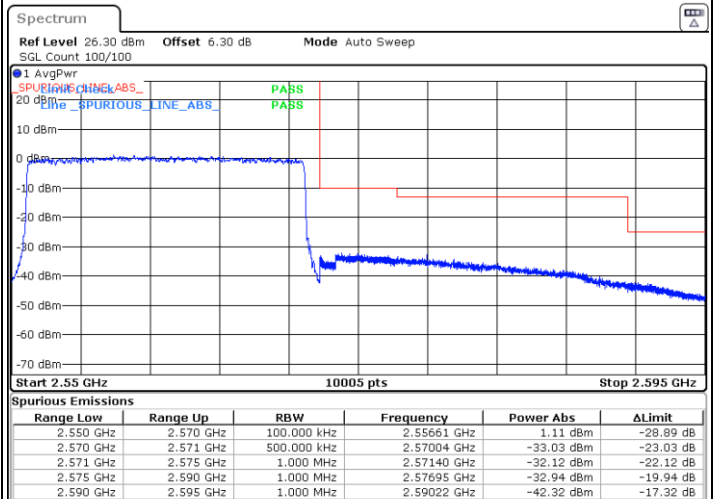
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



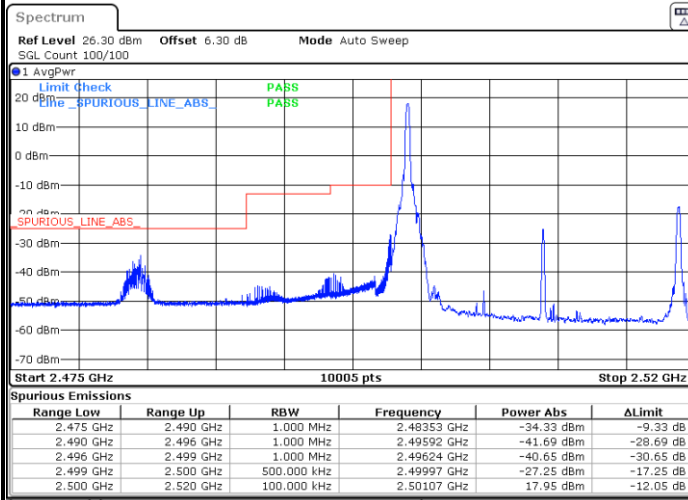
Highest Band Edge / Full RB



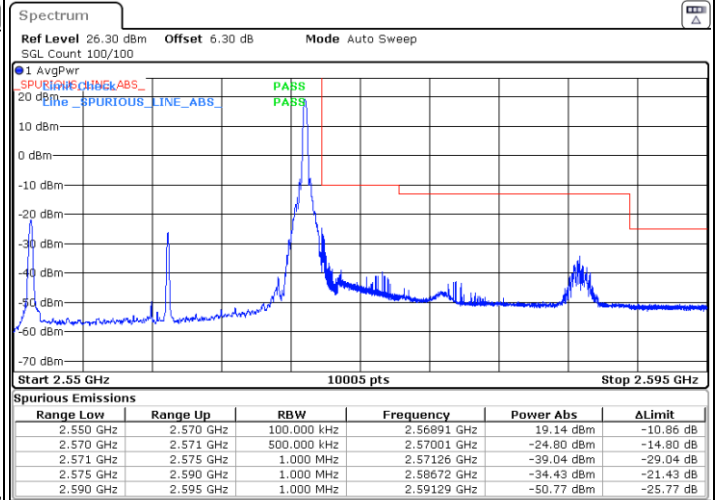


LTE Band 7 / 20MHz / 16QAM

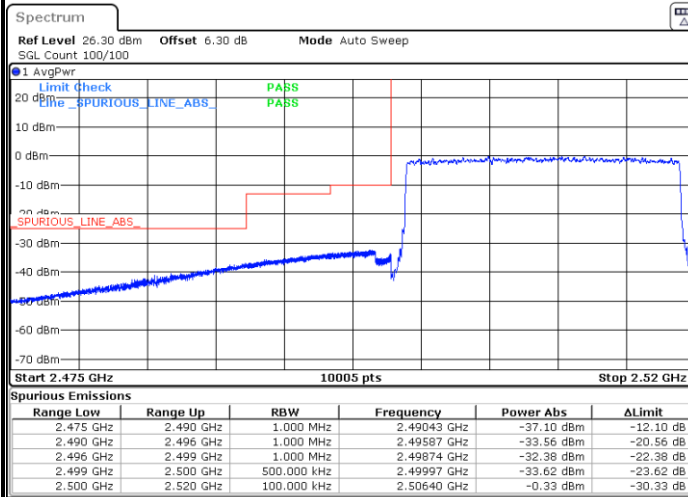
Lowest Band Edge / 1 RB



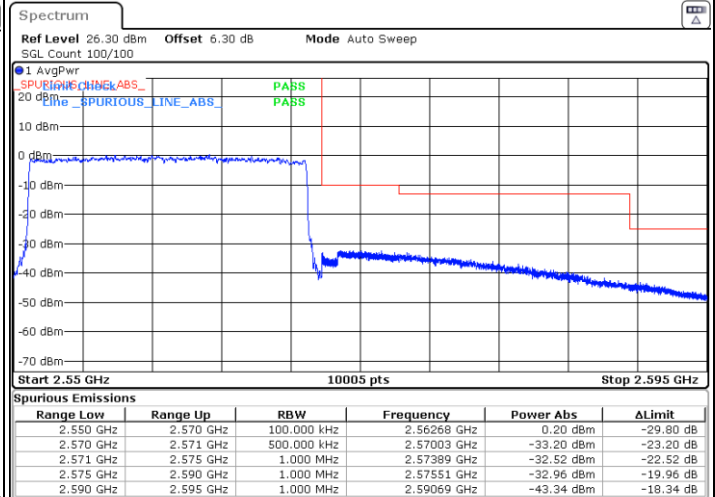
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



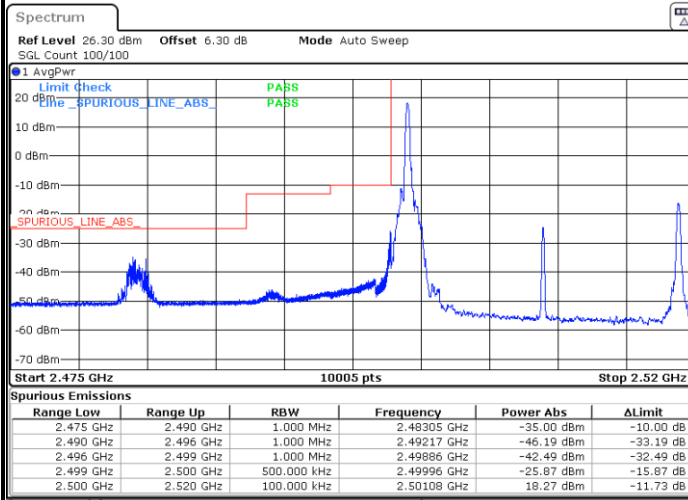
Highest Band Edge / Full RB



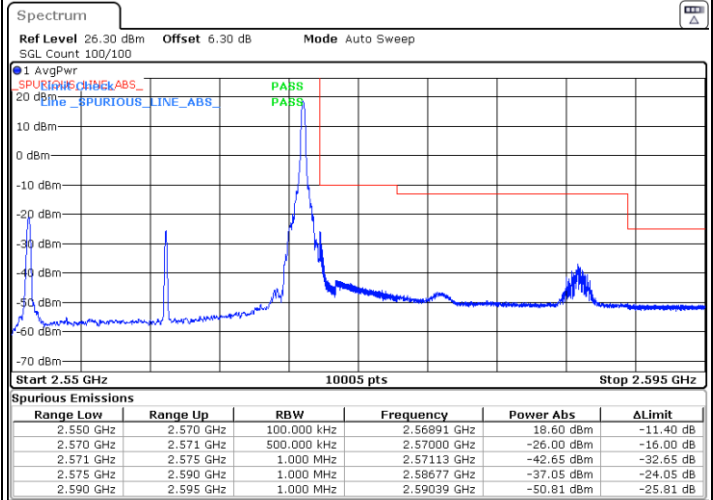


LTE Band 7 / 20MHz / 64QAM

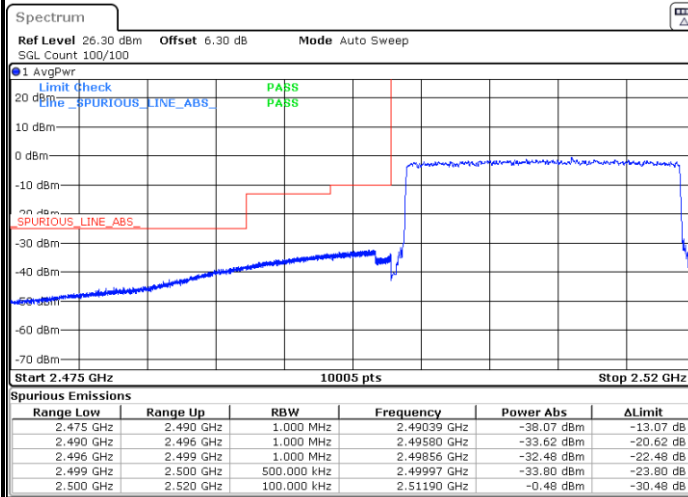
Lowest Band Edge / 1 RB



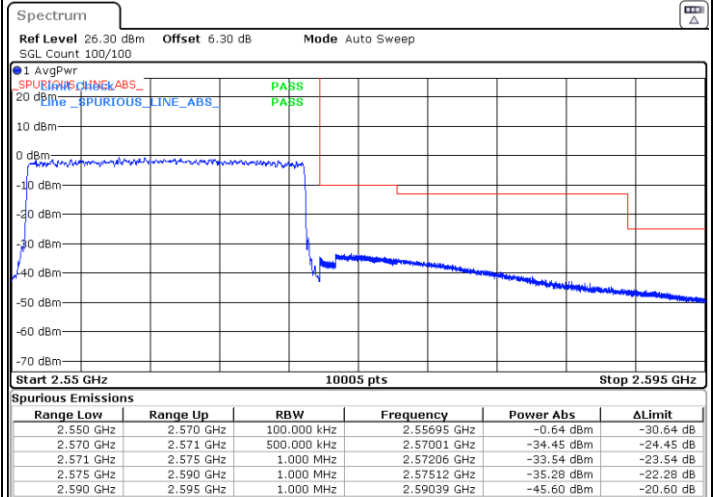
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



Highest Band Edge / Full RB

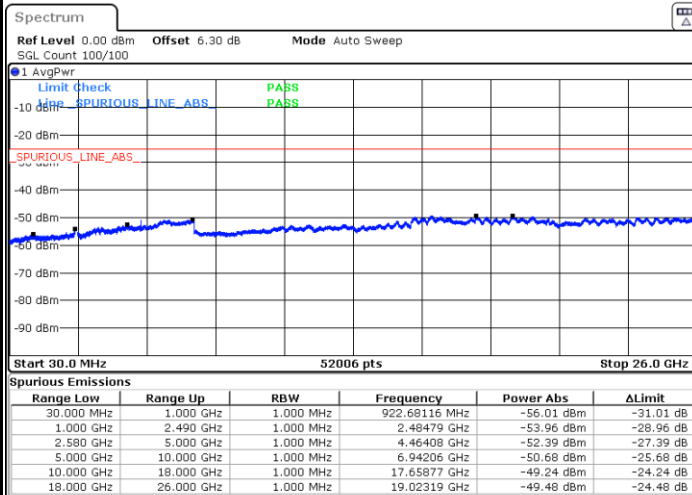




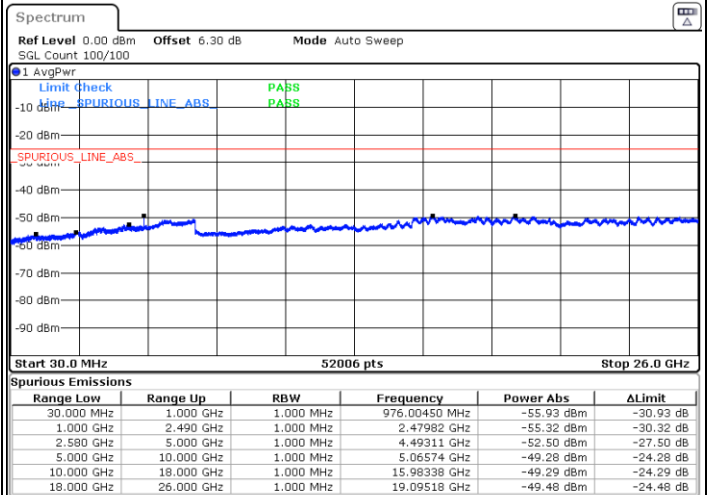
Conducted Spurious Emission

LTE Band 7 / 5MHz

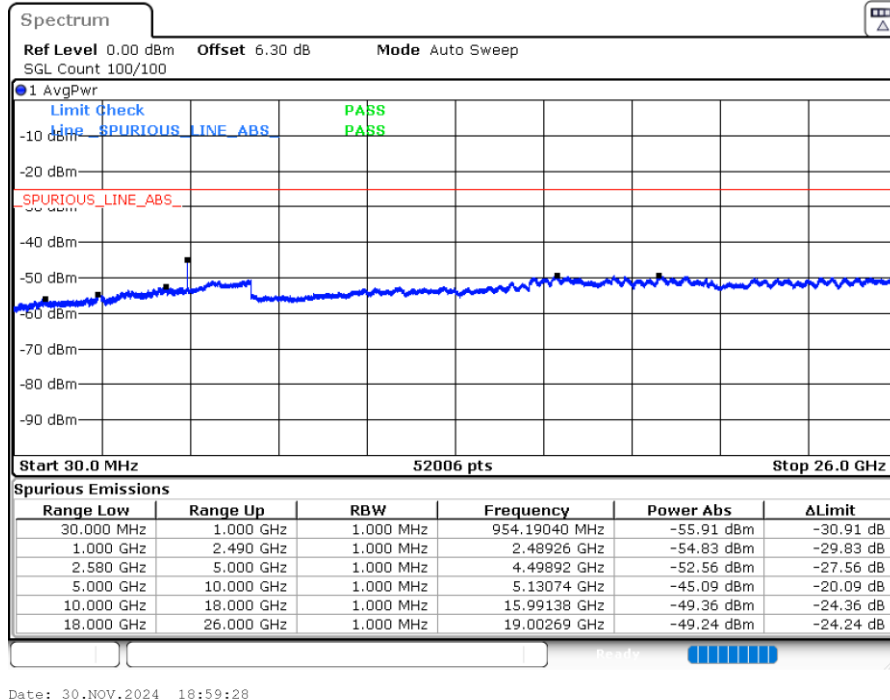
Lowest Channel / QPSK



Middle Channel / QPSK



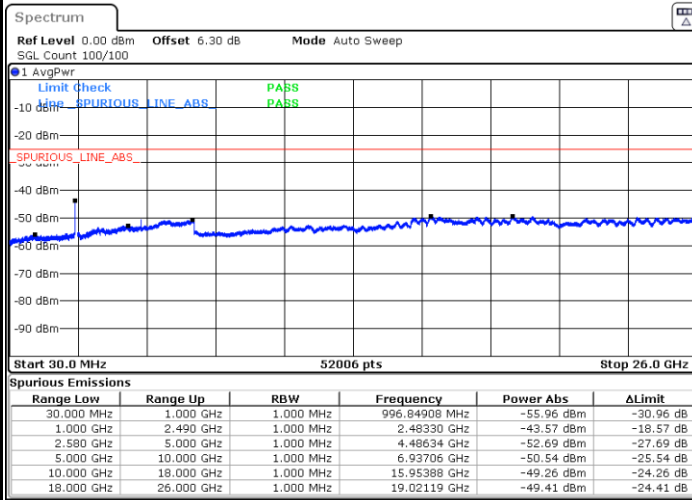
Highest Channel / QPSK





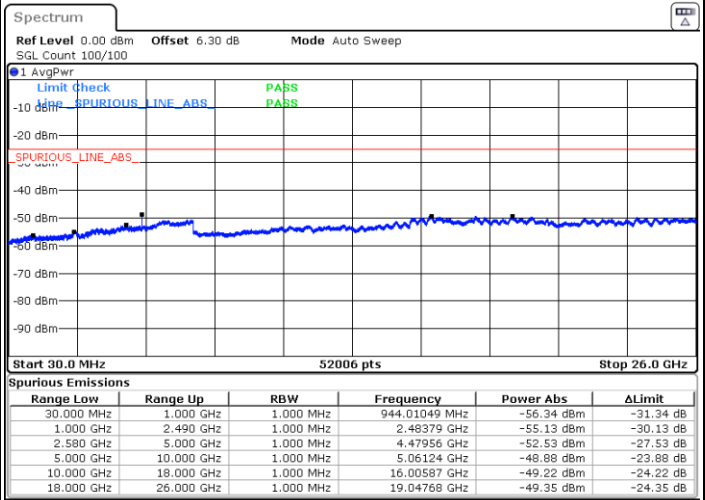
LTE Band 7 / 10MHz

Lowest Channel / QPSK



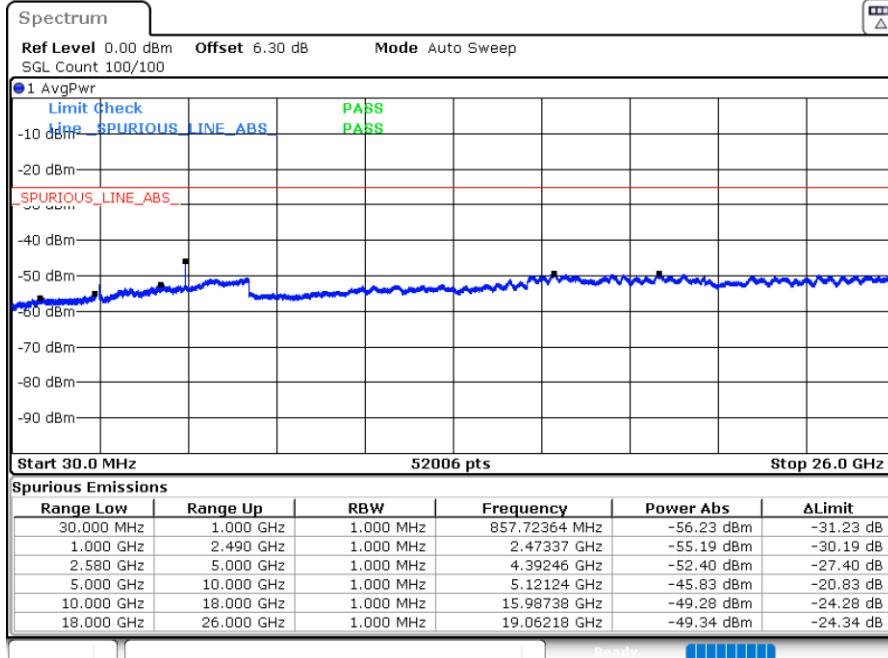
Date: 30.NOV.2024 19:04:53

Middle Channel / QPSK



Date: 30.NOV.2024 19:10:17

Highest Channel / QPSK

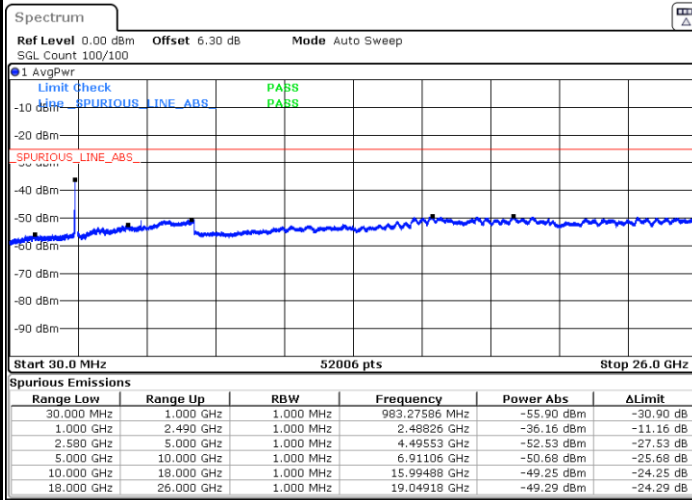


Date: 30.NOV.2024 19:11:36



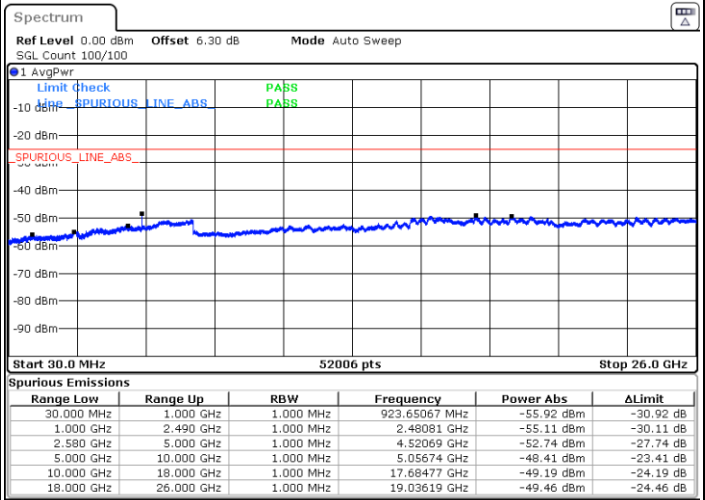
LTE Band 7 / 15MHz

Lowest Channel / QPSK



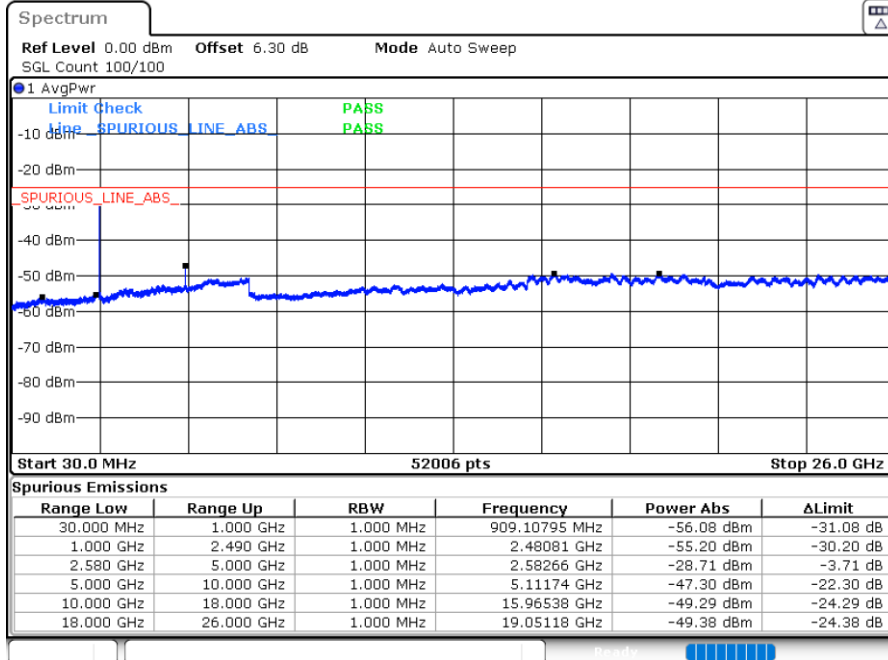
Date: 30.NOV.2024 19:17:02

Middle Channel / QPSK



Date: 30.NOV.2024 19:37:21

Highest Channel / QPSK

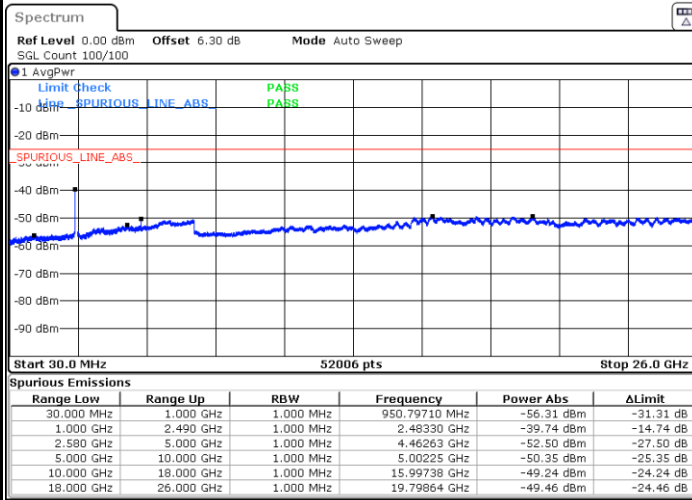


Date: 30.NOV.2024 19:38:40



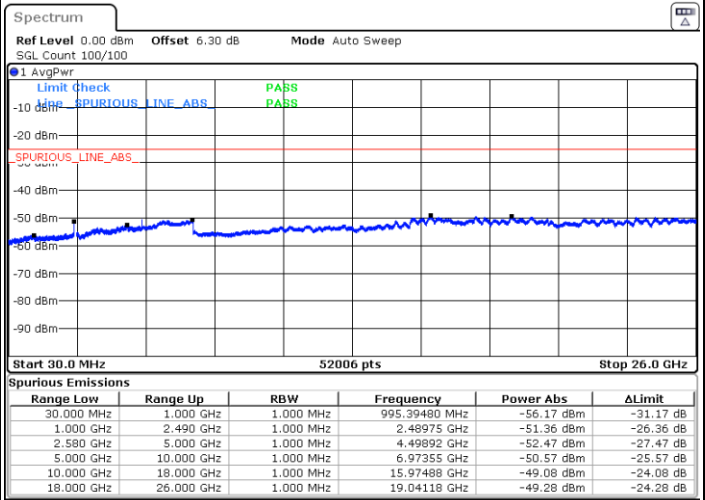
LTE Band 7 / 20MHz

Lowest Channel / QPSK



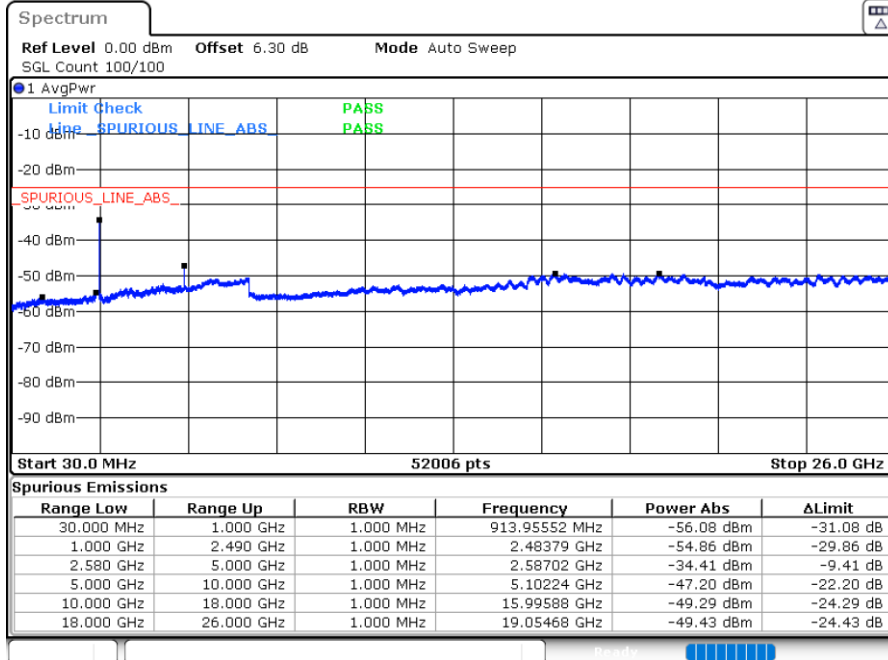
Date: 30.NOV.2024 19:44:05

Middle Channel / QPSK



Date: 30.NOV.2024 19:49:31

Highest Channel / QPSK



Date: 30.NOV.2024 19:50:50

Frequency Stability

Test Conditions		LTE Band 7 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0011	PASS
40	Normal Voltage	0.0052	
30	Normal Voltage	0.0019	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0029	
0	Normal Voltage	0.0034	
-10	Normal Voltage	0.0008	
-20	Normal Voltage	0.0025	
-30	Normal Voltage	0.0014	
20	Maximum Voltage	0.0026	
20	Normal Voltage	0.0015	
20	Minimum Voltage	0.0083	

Note:

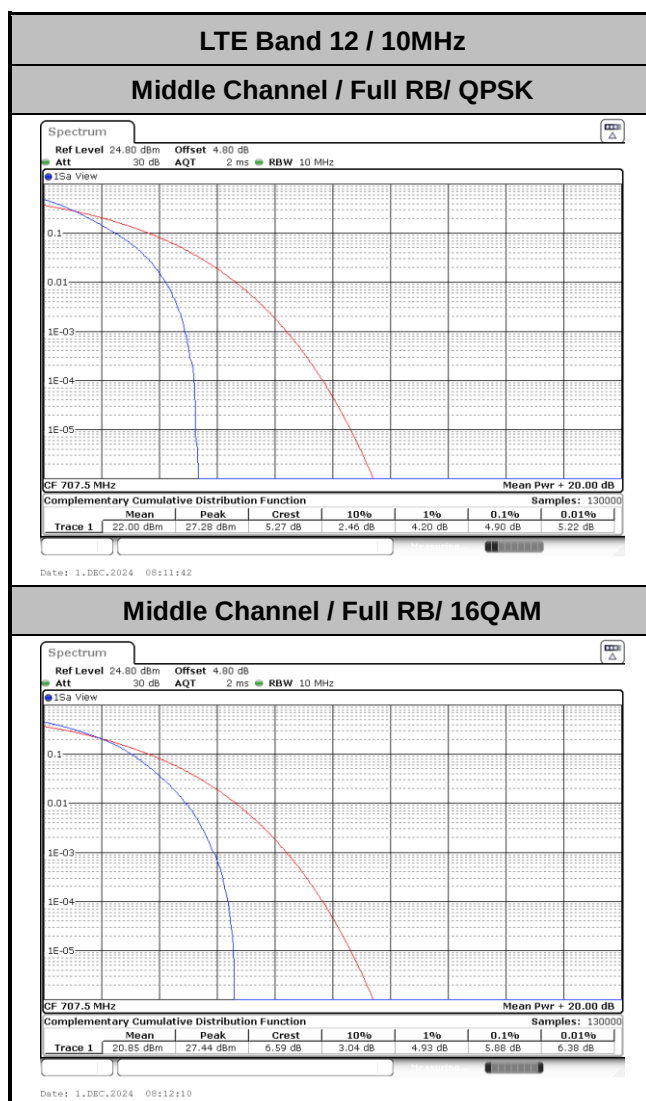
1. Normal Voltage =3.8 V. ; Minimum Voltage =3.2 V. ; Maximum Voltage =4.75 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

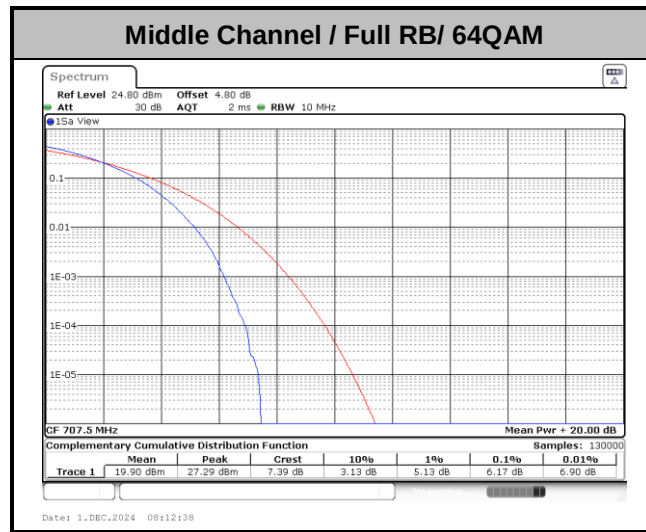


LTE Band 12

Peak-to-Average Ratio

Mode	LTE Band 12 / 10MHz				
Mod.	QPSK	16QAM	64QAM		Limit: 13dB
RB Size	Full RB	Full RB	Full RB		Result
Middle CH	4.9	5.88	6.17		PASS





**26dB Bandwidth**

Mode	LTE Band 12 : 26dB BW(MHz)	
BW	1.4MHz	
Mod.	QPSK	16QAM
Middle CH	1.28	1.28
BW	3MHz	
Mod.	QPSK	16QAM
Middle CH	3.02	2.96
BW	5MHz	
Mod.	QPSK	16QAM
Middle CH	4.89	4.87
BW	10MHz	
Mod.	QPSK	16QAM
Middle CH	9.73	9.73

