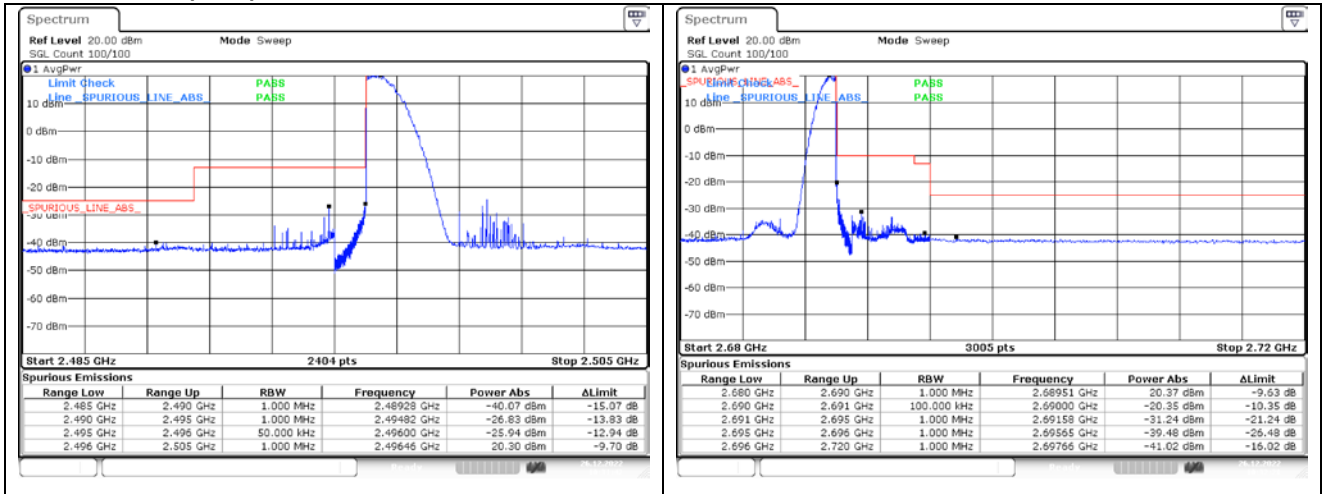
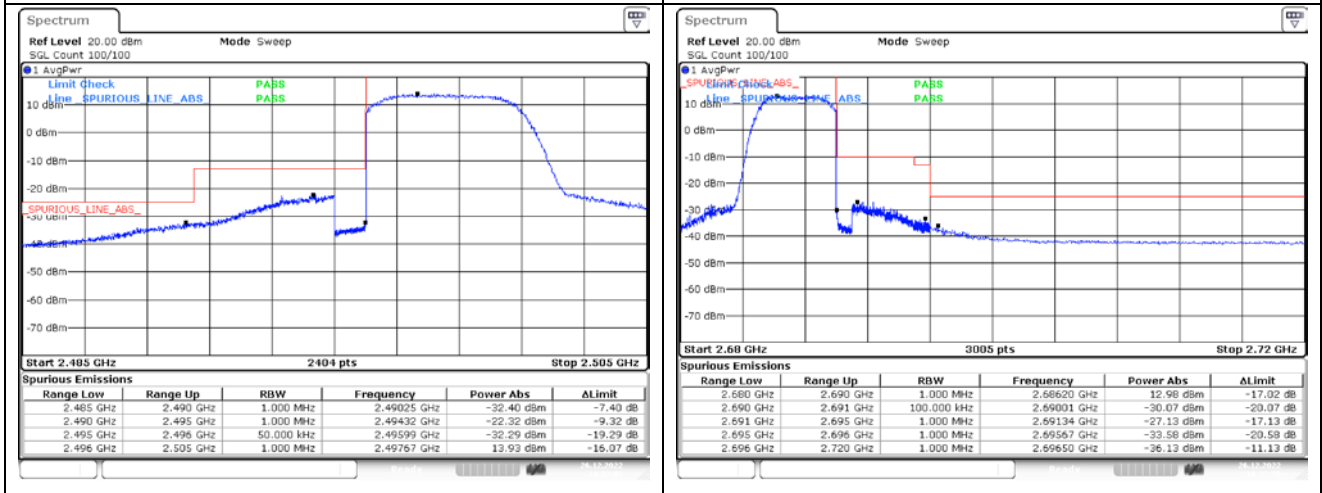


LTE band 41 (5 MHz)



16QAM Low Channel - 1 RB

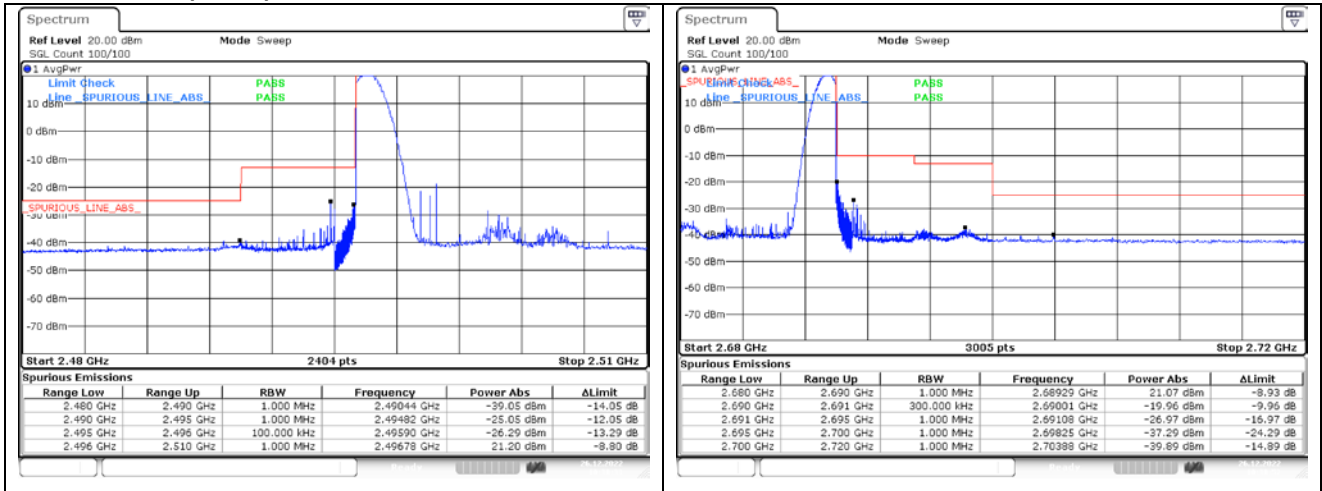
16QAM High Channel - 1 RB



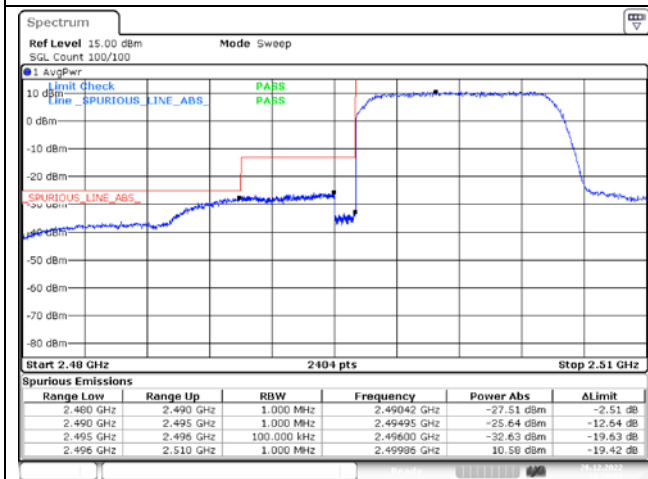
16QAM Low Channel - Full RB

16QAM High Channel - Full RB

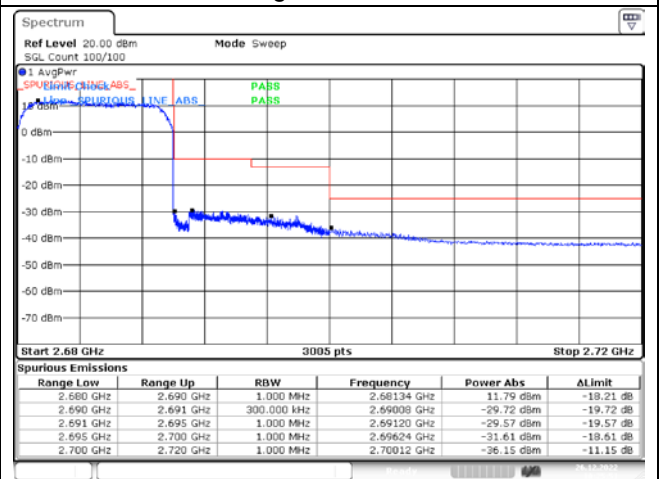
LTE band 41 (10 MHz)



QPSK Low Channel - 1 RB



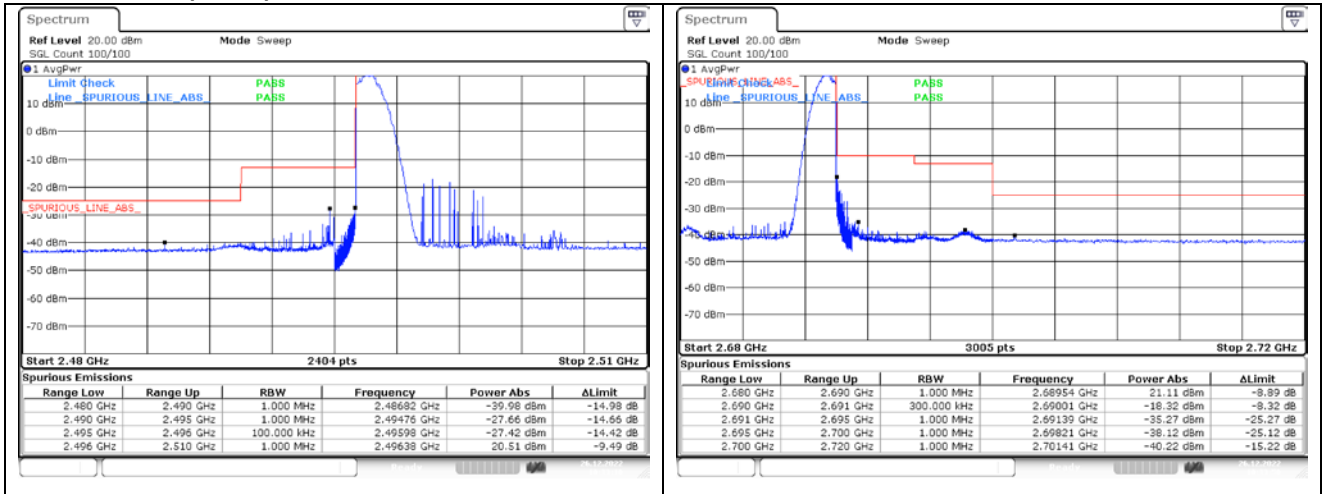
QPSK High Channel - 1 RB



QPSK Low Channel - Full RB

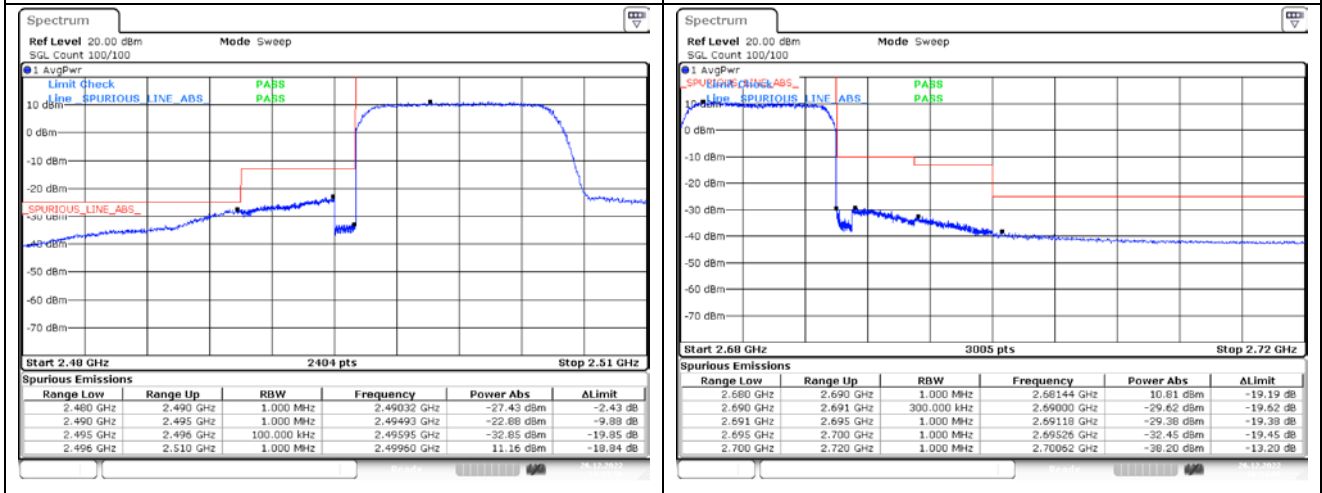
QPSK High Channel - Full RB

LTE band 41 (10 MHz)



16QAM Low Channel - 1 RB

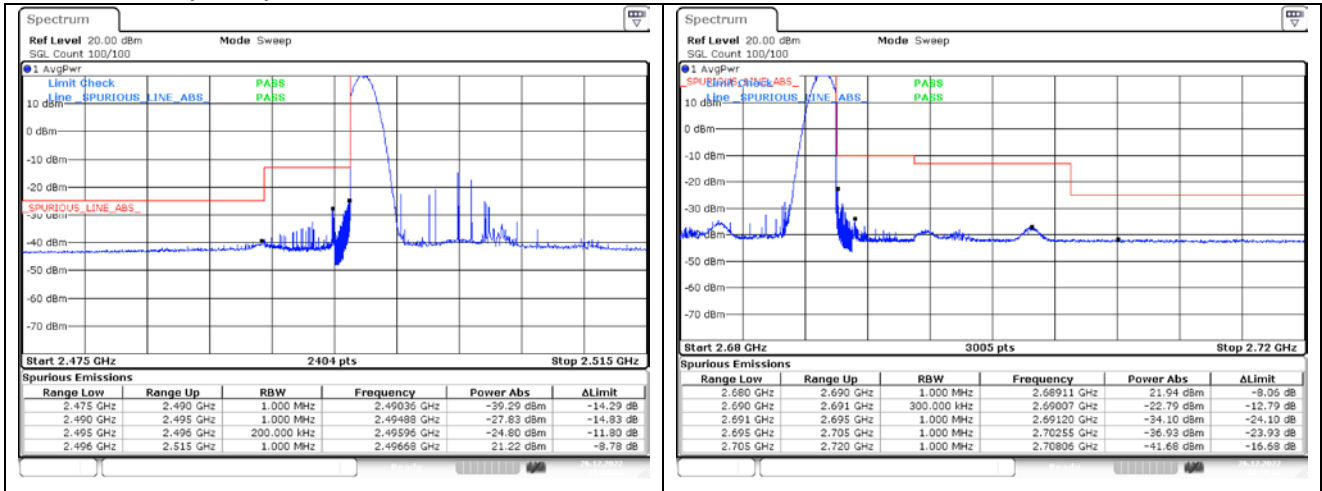
16QAM High Channel - 1 RB



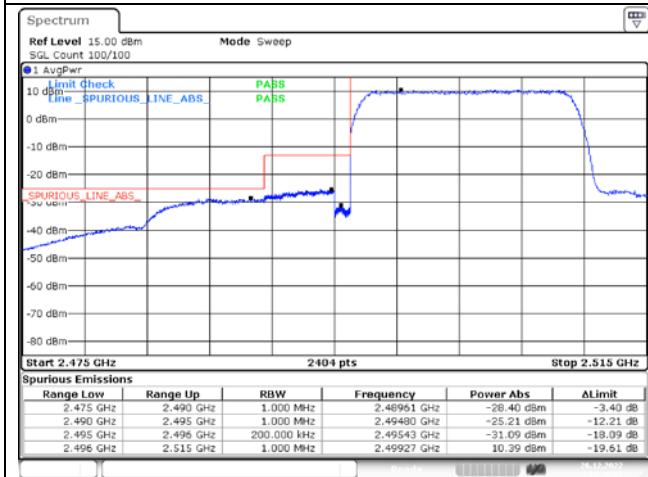
16QAM Low Channel - Full RB

16QAM High Channel - Full RB

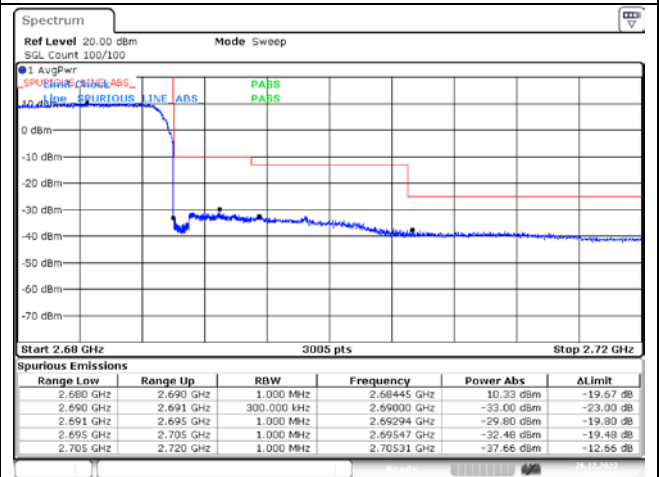
LTE band 41 (15 MHz)



QPSK Low Channel - 1 RB



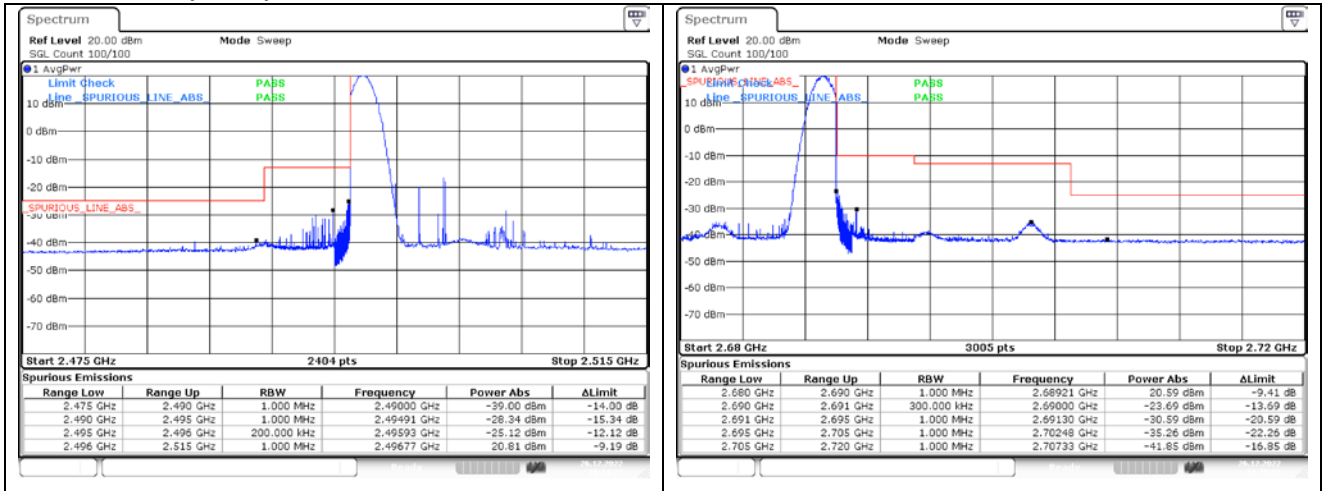
QPSK High Channel - 1 RB



QPSK Low Channel - Full RB

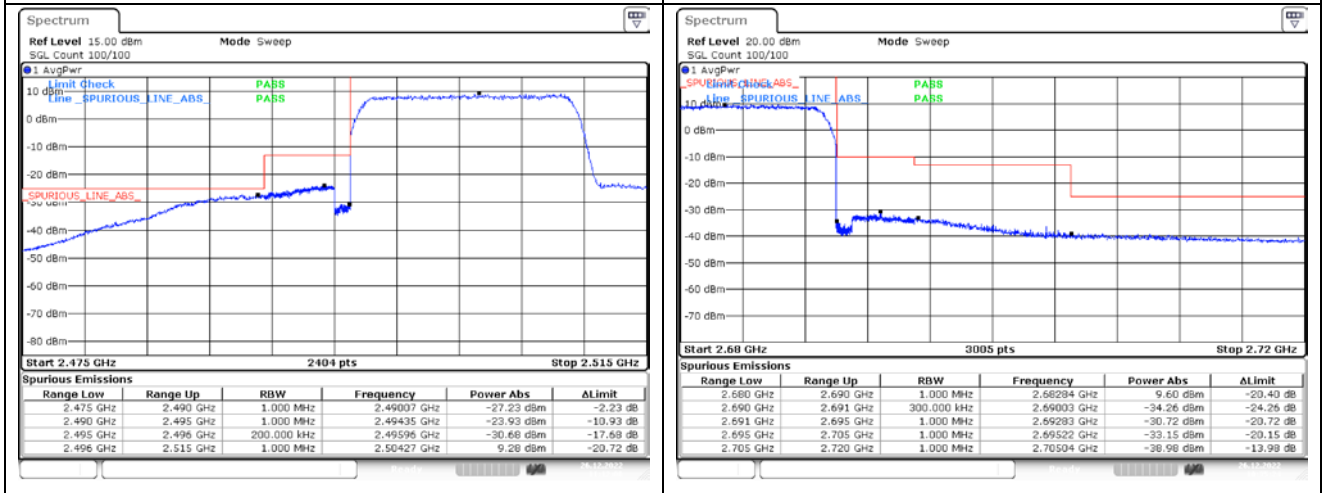
QPSK High Channel - Full RB

LTE band 41 (15 MHz)



16QAM Low Channel - 1 RB

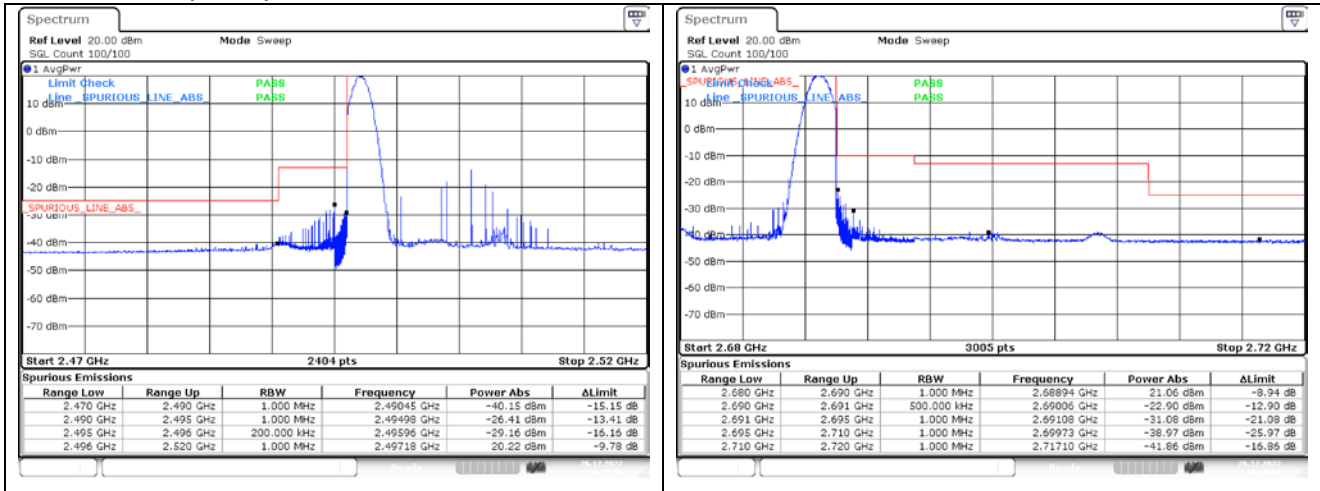
16QAM High Channel - 1 RB



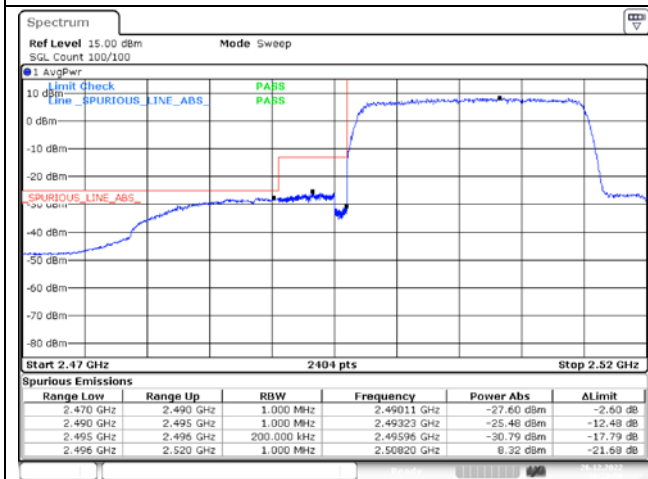
16QAM Low Channel - Full RB

16QAM High Channel - Full RB

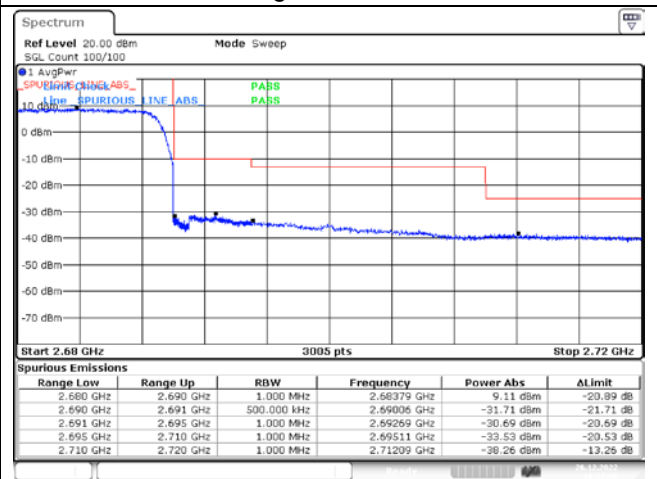
LTE band 41 (20 MHz)



QPSK Low Channel - 1 RB



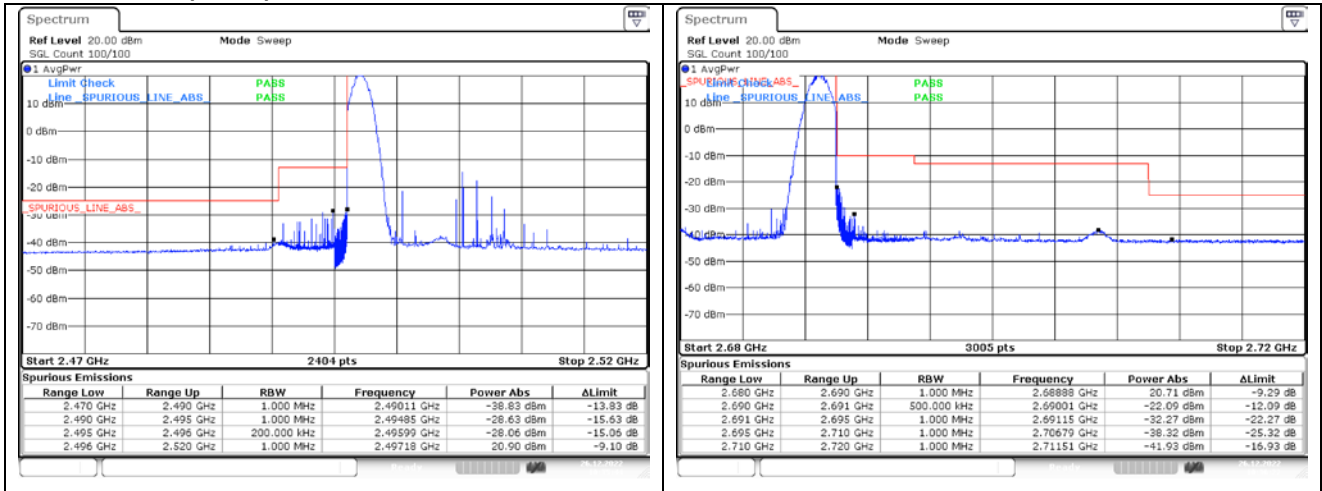
QPSK High Channel - 1 RB



QPSK Low Channel - Full RB

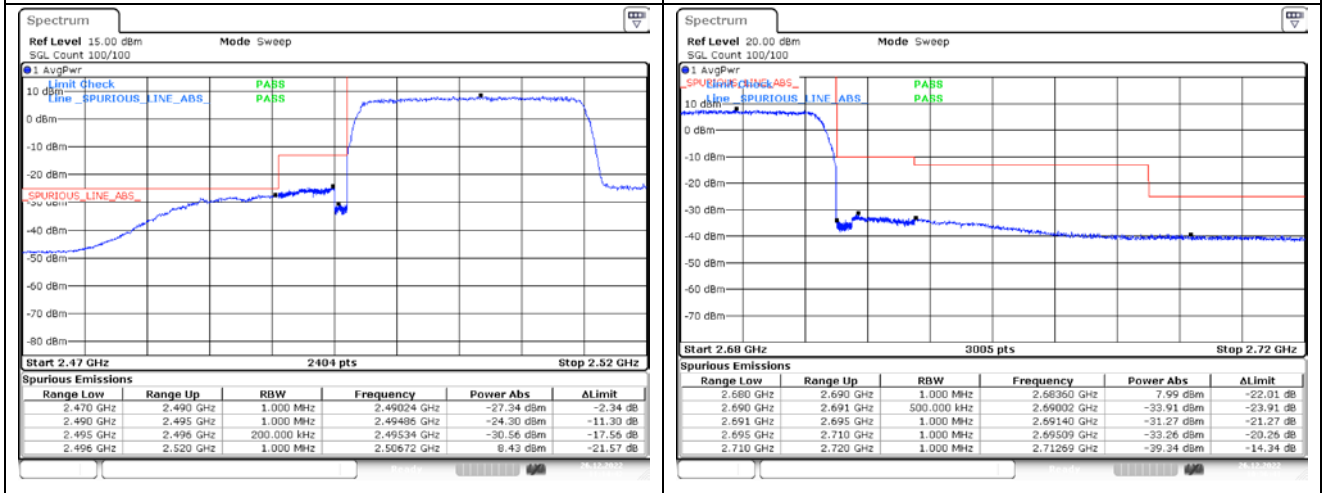
QPSK High Channel - Full RB

LTE band 41 (20 MHz)



16QAM Low Channel - 1 RB

16QAM High Channel - 1 RB



16QAM Low Channel - Full RB

16QAM High Channel - Full RB

8. Frequency Stability

8.1. Limit

- § 2.1055 (a), § 2.1055 (d) & following:

- §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table of this section.

For Mobile devices operating in the 824 to 849 MHz band at a power level less than or equal to 3 Watts, the limit specified in Table C-1 is +/- 2.5 ppm.

- §24.235, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

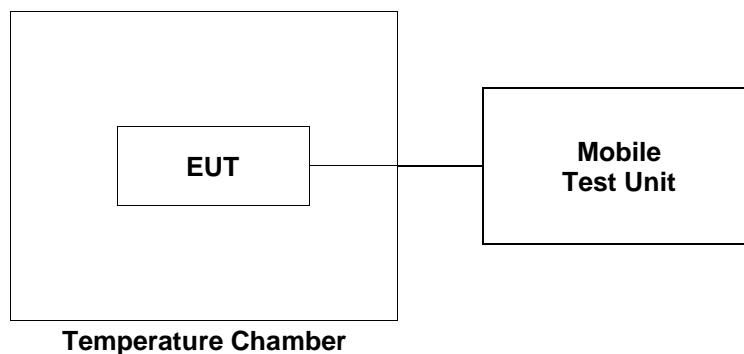
- §27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

- §90.213, transmitters used in the services governed by this part must have a minimum frequency stability as specified in the following table.

For Mobile devices operating in the 809 to 824 MHz band at a power level 2 Watts or less, the limit specified in Table is +/- 2.5 ppm.

8.2. Test Procedure

1. Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to a Mobile Test Unit via feed-through attenuators.
2. The EUT was placed inside the temperature chamber.
3. After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from Mobile Test Unit.



8.3. Test Results

Ambient temperature : (23 ± 1) °C
 Relative humidity : 47 % R.H.

LTE band 2 at middle channel

Reference Frequency: 1 880.0 MHz			
Frequency Stability versus Temperature			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
50	12.5	16.39	0.002 87
40		-16.53	-0.014 64
30		10.07	-0.000 49
20(Ref.)		10.99	-
10		-11.97	-0.012 21
0		16.56	0.002 96
-10		-11.69	-0.012 06
-20		12.07	0.000 57
-30		15.92	0.002 62
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	10.63 (85%)	13.57	0.001 37
	14.38 (115%)	11.21	0.000 12

LTE band 4 at middle channel

Reference Frequency: 1 732.5 MHz			
Frequency Stability versus Temperature			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
50	12.5	13.28	0.000 85
40		-12.91	-0.014 27
30		-14.14	-0.014 98
20(Ref.)		11.81	-
10		14.72	0.001 68
0		11.42	-0.000 23
-10		-14.33	-0.015 09
-20		13.55	0.001 00
-30		13.28	0.000 85
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	10.63 (85%)	15.93	0.002 38
	14.38 (115%)	-12.34	-0.013 94

LTE band 7 at middle channel

Reference Frequency: 2 535.0 MHz			
Frequency Stability versus Temperature			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
50	12.5	10.94	-0.001 65
40		16.90	0.000 70
30		11.38	-0.001 48
20(Ref.)		15.13	-
10		-13.57	-0.011 32
0		14.37	-0.000 30
-10		-12.63	-0.010 95
-20		14.00	-0.000 45
-30		12.10	-0.001 20
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	10.63 (85%)	15.16	0.000 01
	14.38 (115%)	12.71	-0.000 95

LTE band 12/17 at middle channel

Reference Frequency: 707.5 MHz			
Frequency Stability versus Temperature			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
50	12.5	15.86	0.002 93
40		-15.36	-0.041 20
30		12.96	-0.001 17
20(Ref.)		13.79	-
10		11.93	-0.002 63
0		11.19	-0.003 67
-10		-13.08	-0.037 98
-20		16.29	0.003 53
-30		10.66	-0.004 42
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	10.63 (85%)	-11.75	-0.036 10
	14.38 (115%)	12.01	-0.002 52

LTE band 26/5 at middle channel

Reference Frequency: 836.5 MHz			
Frequency Stability versus Temperature			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
50	12.5	14.39	0.000 57
40		15.22	0.001 57
30		-10.55	-0.029 24
20(Ref.)		13.91	-
10		12.05	-0.002 22
0		-10.80	-0.029 54
-10		12.14	-0.002 12
-20		15.11	0.001 43
-30		13.73	-0.000 22
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	10.63 (85%)	11.30	-0.003 12
	14.38 (115%)	15.76	0.002 21

LTE band 26 at middle channel

Reference Frequency: 819 MHz			
Frequency Stability versus Temperature			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
50	12.5	12.37	-0.000 72
40		-12.09	-0.030 59
30		11.14	-0.002 22
20(Ref.)		12.96	-
10		11.45	-0.001 84
0		13.47	0.000 62
-10		16.60	0.004 44
-20		16.59	0.004 43
-30		-10.78	-0.028 99
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	10.63 (85%)	13.09	0.000 16
	14.38 (115%)	-10.61	-0.028 78

LTE band 41 at middle channel

Reference Frequency: 2 593.0 MHz			
Frequency Stability versus Temperature			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
50	12.5	15.43	0.011 06
40		15.14	0.010 95
30		15.11	0.010 94
20(Ref.)		-13.26	-
10		12.34	0.009 87
0		10.76	0.009 26
-10		14.32	0.010 64
-20		16.25	0.011 38
-30		-16.96	-0.001 43
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	10.63 (85%)	11.03	0.009 37
	14.38 (115%)	12.99	0.010 12

- End of the Test Report -