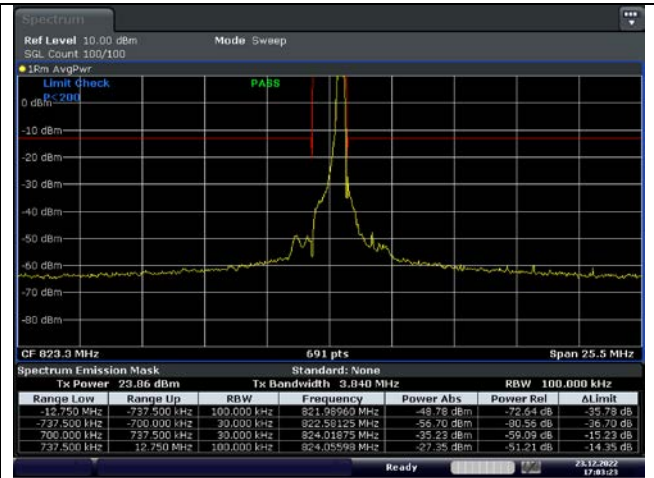
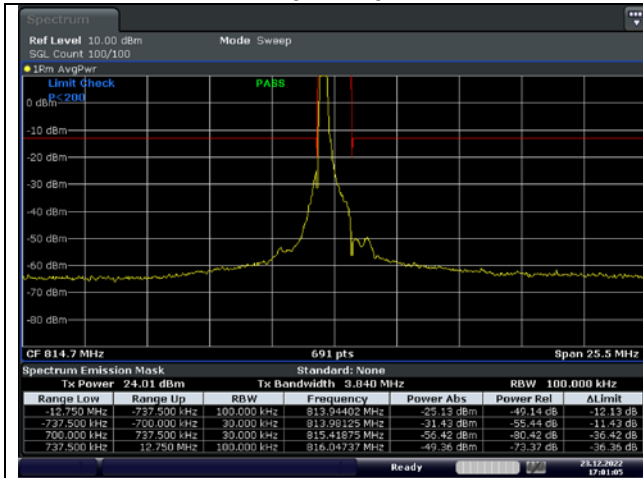
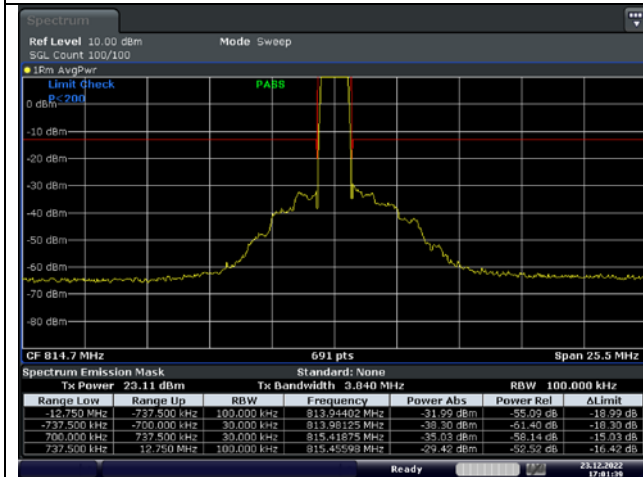


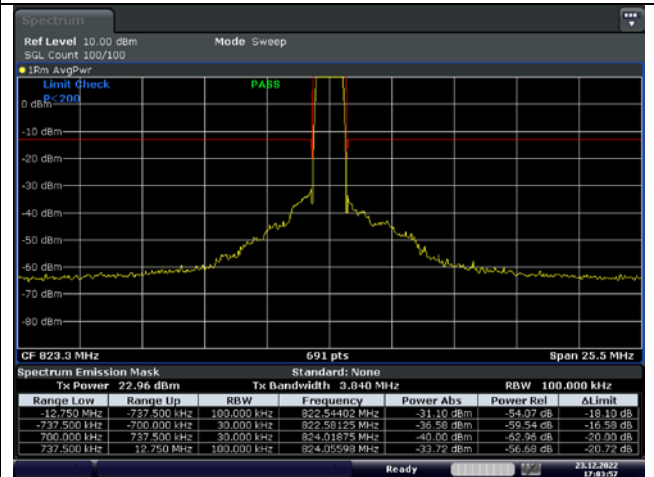
LTE band 26_Part 90 (1.4 MHz)



QPSK Low Channel - 1 RB



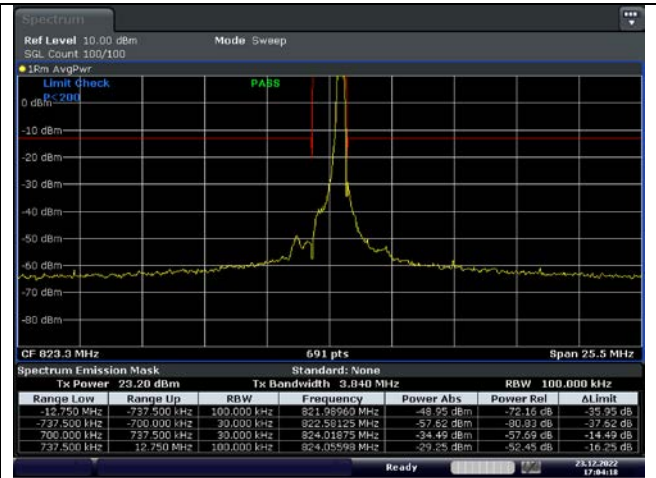
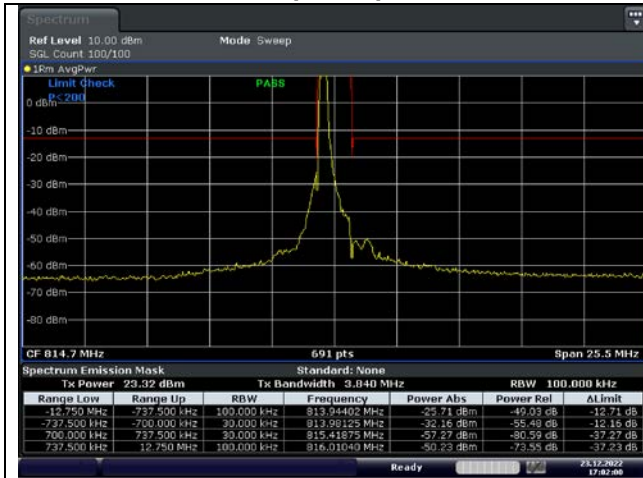
QPSK High Channel - 1 RB



QPSK Low Channel - Full RB

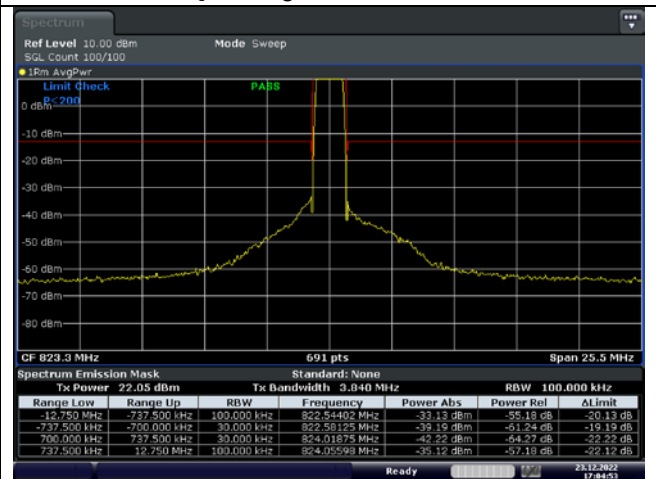
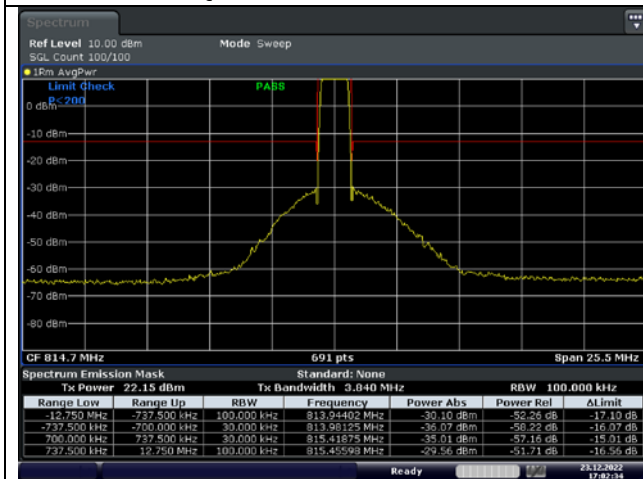
QPSK High Channel - Full RB

LTE band 26_Part 90 (1.4 MHz)



16QAM Low Channel - 1 RB

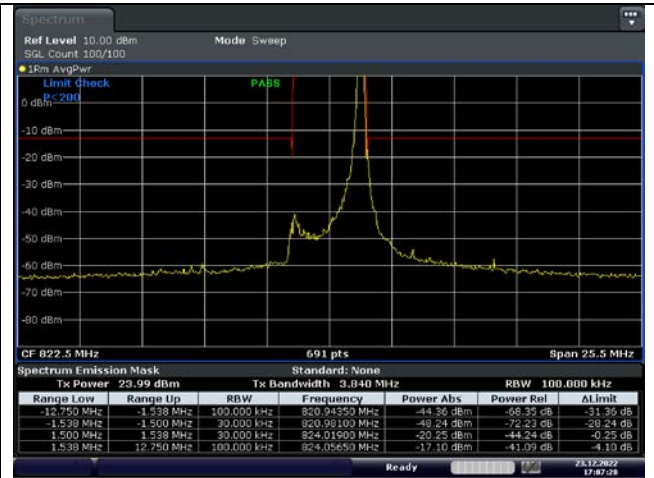
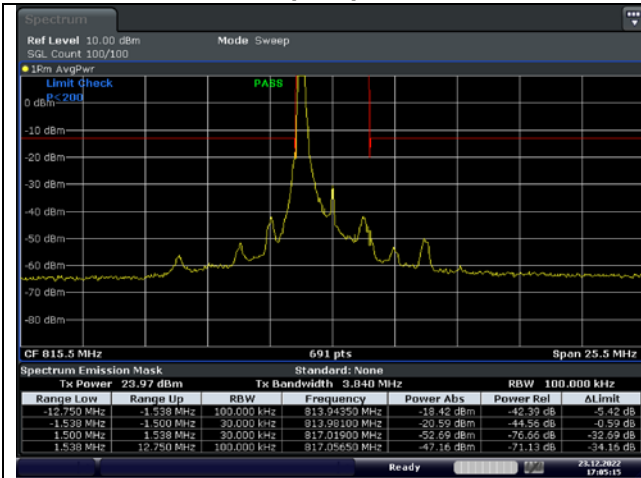
16QAM High Channel - 1 RB



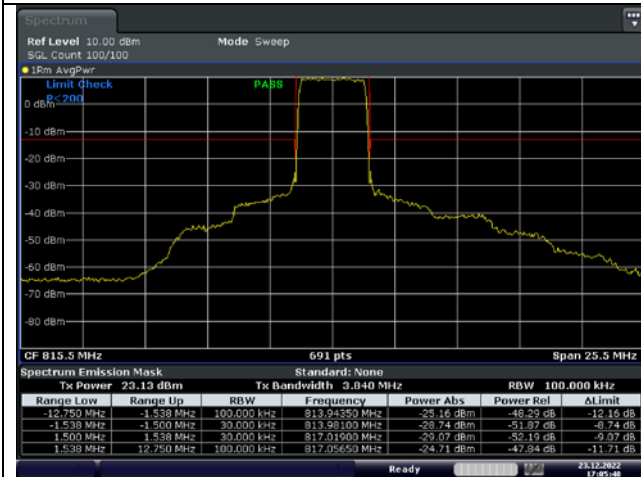
16QAM Low Channel - Full RB

16QAM High Channel - Full RB

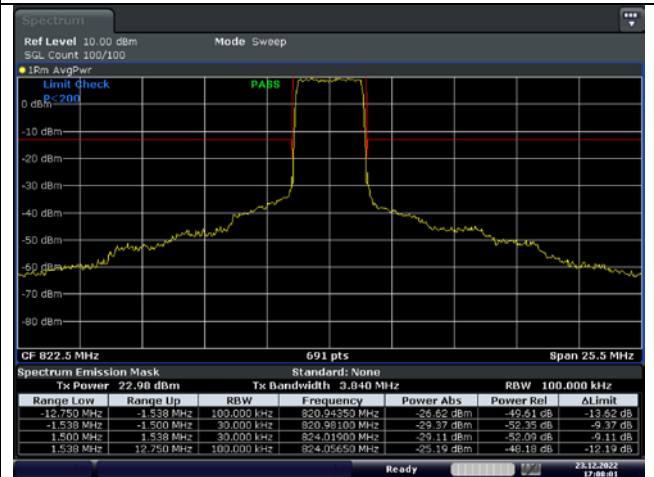
LTE band 26_Part 90 (3 MHz)



QPSK Low Channel - 1 RB



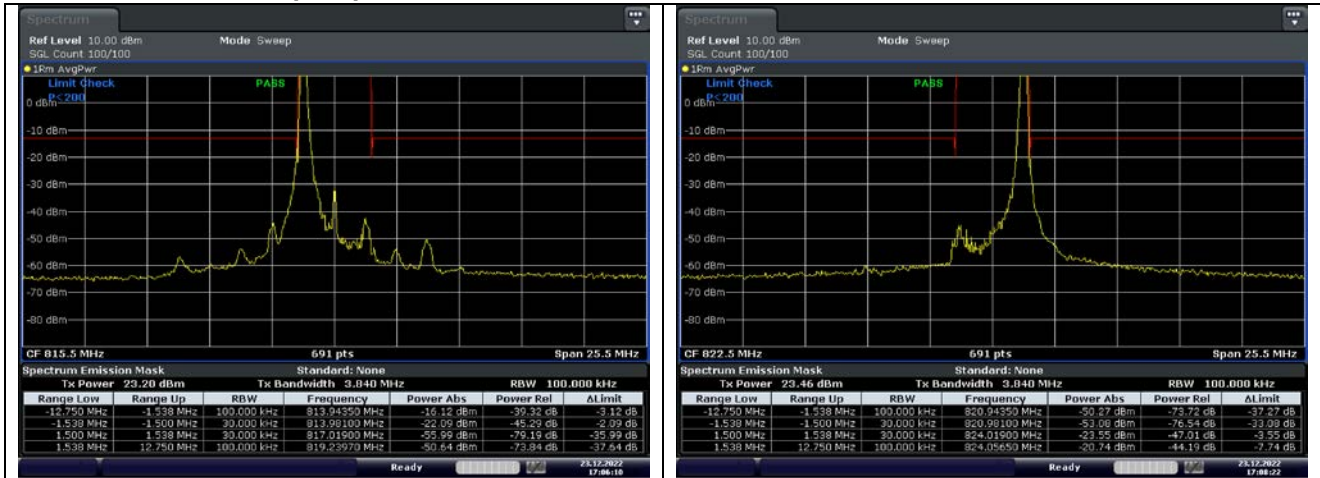
QPSK High Channel - 1 RB



QPSK Low Channel - Full RB

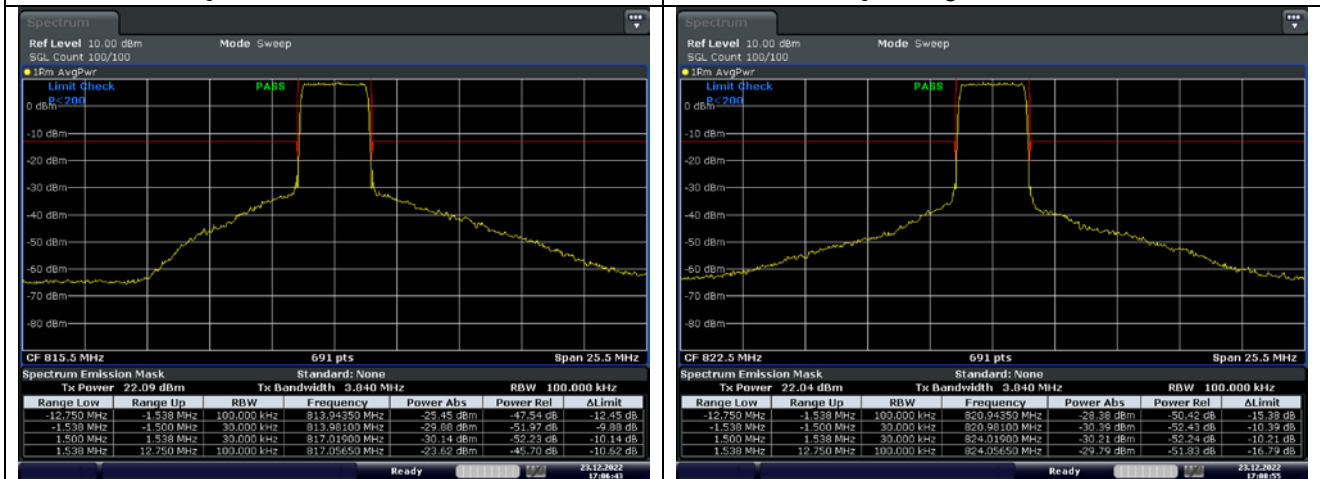
QPSK High Channel - Full RB

LTE band 26_Part 90 (3 MHz)



16QAM Low Channel - 1 RB

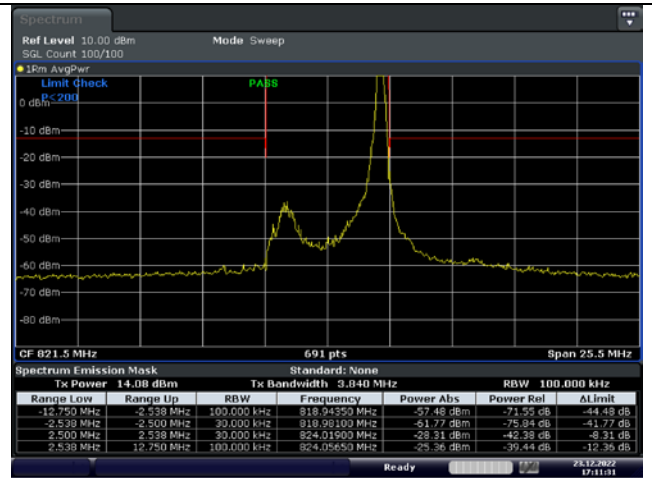
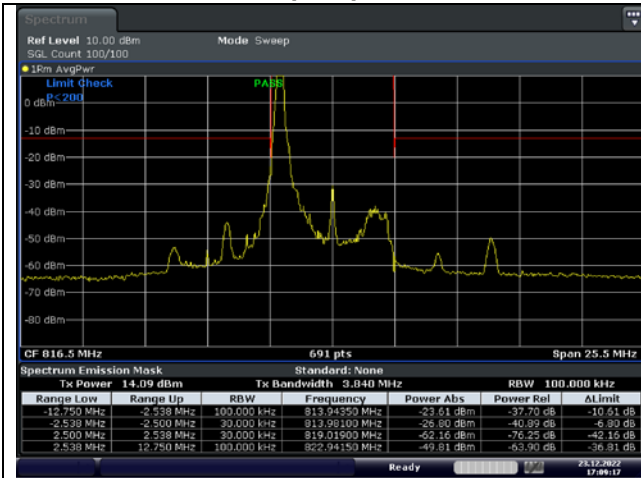
16QAM High Channel - 1 RB



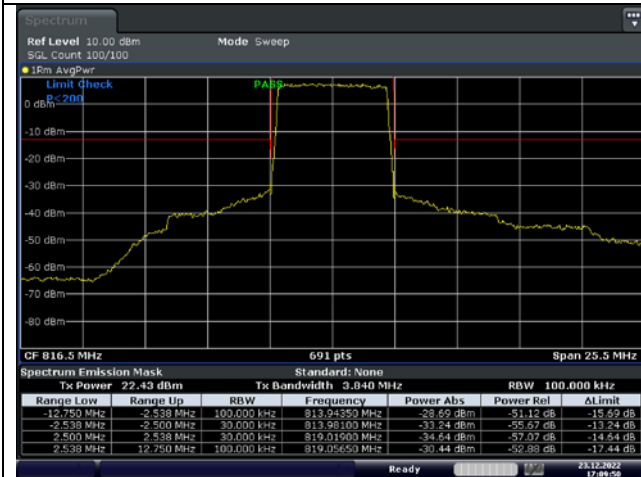
16QAM Low Channel - Full RB

16QAM High Channel - Full RB

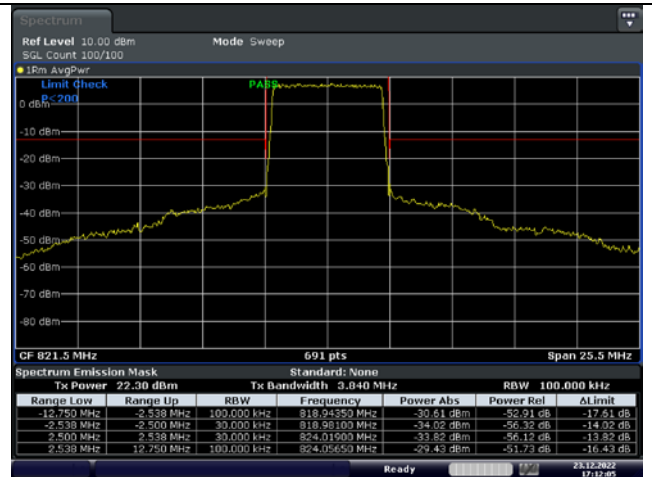
LTE band 26_Part 90 (5 MHz)



QPSK Low Channel - 1 RB



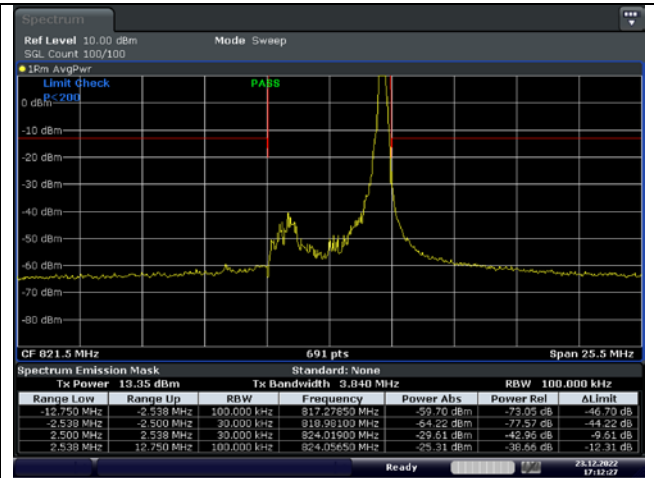
QPSK High Channel - 1 RB



QPSK Low Channel - Full RB

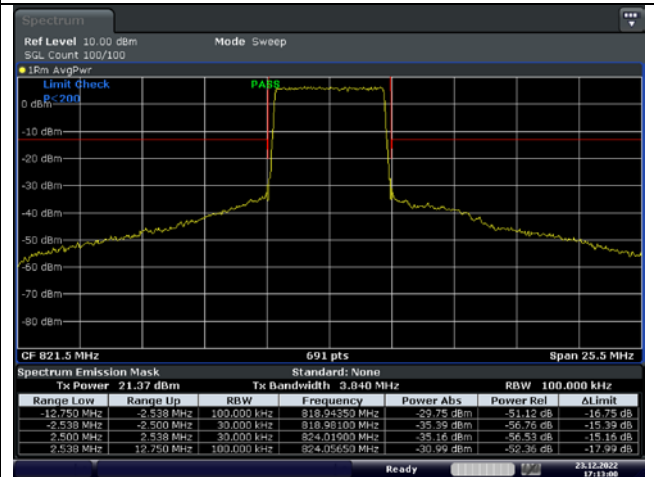
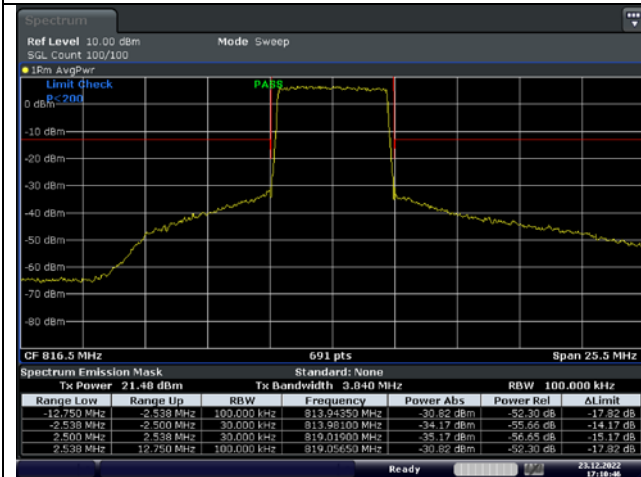
QPSK High Channel - Full RB

LTE band 26_Part 90 (5 MHz)



16QAM Low Channel - 1 RB

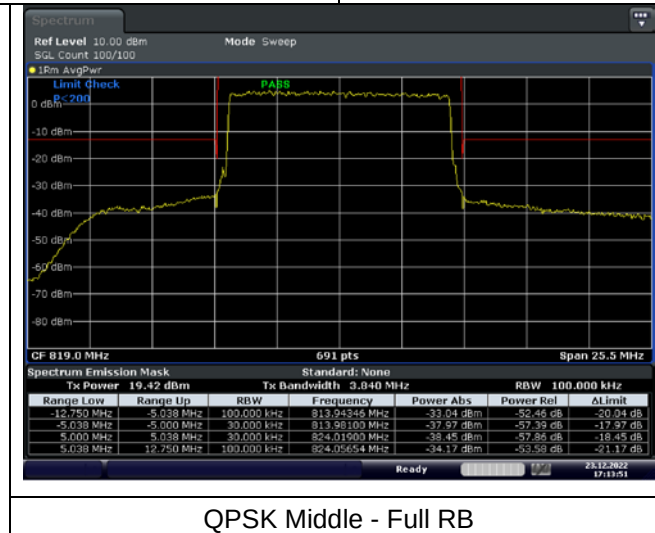
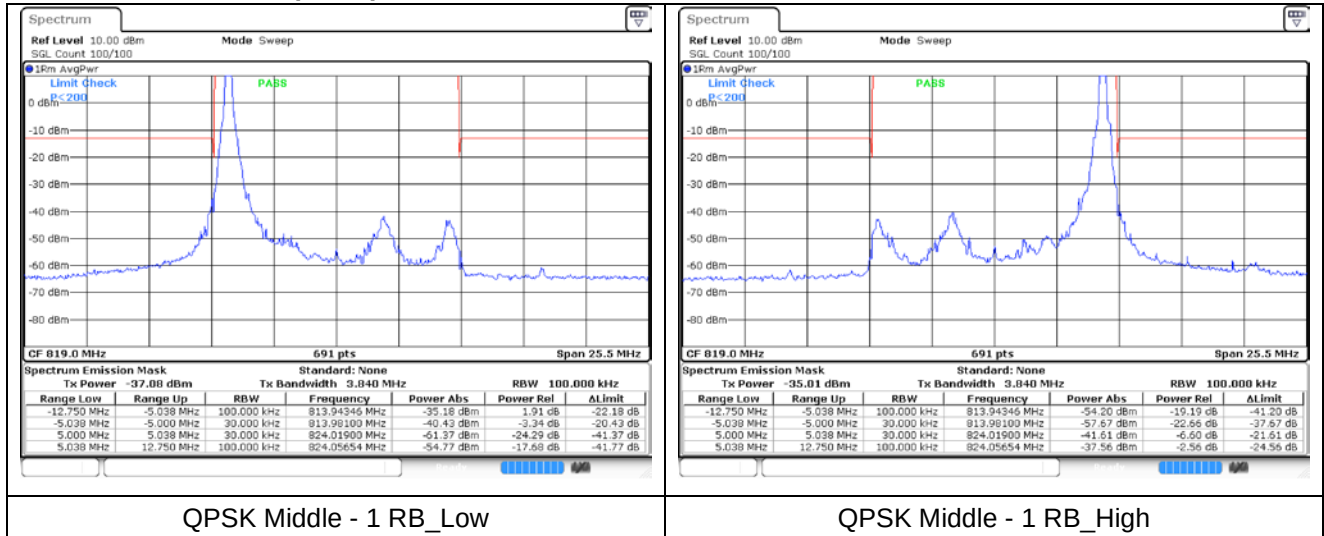
16QAM High Channel - 1 RB



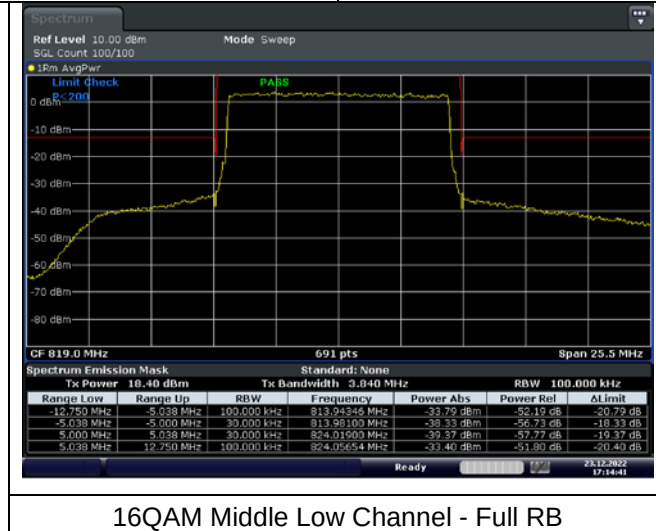
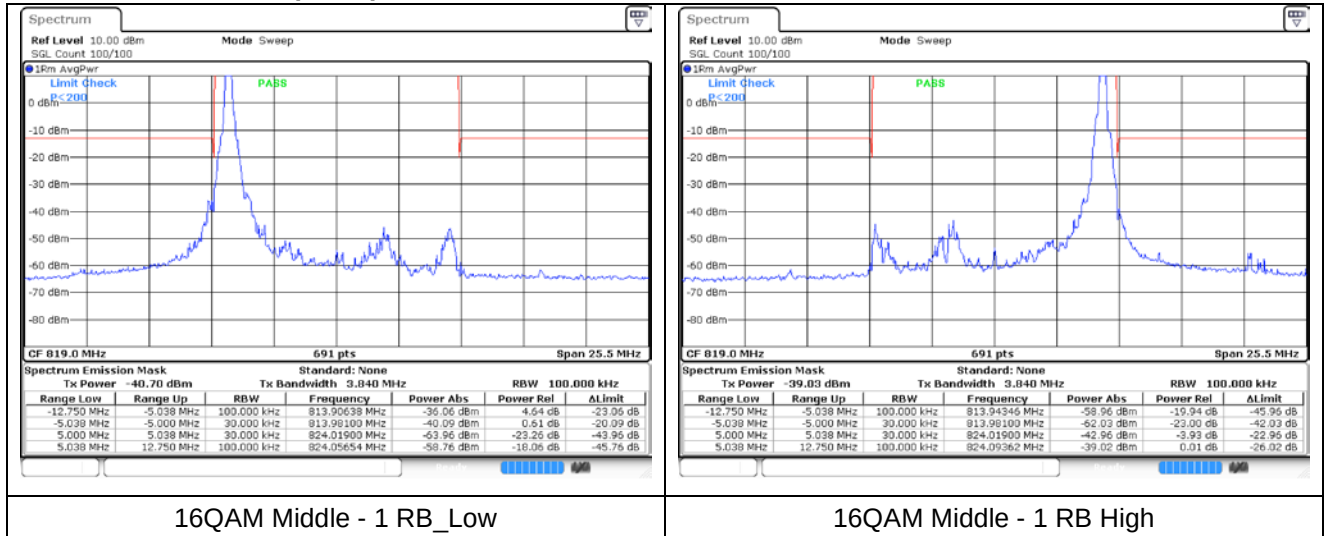
16QAM Low Channel - Full RB

16QAM High Channel - Full RB

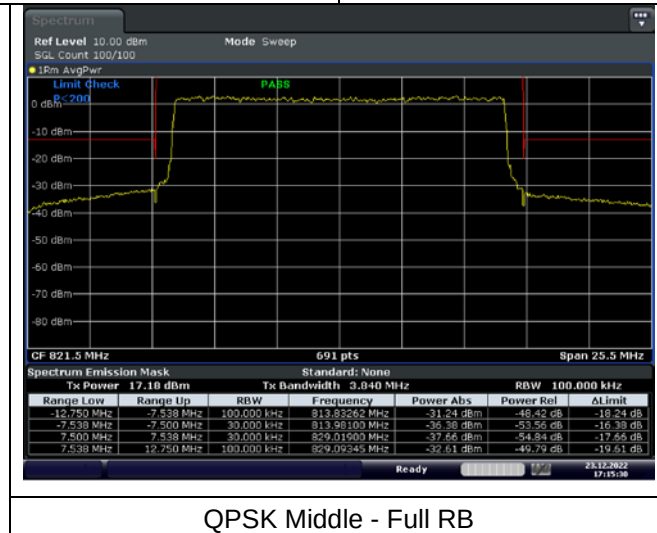
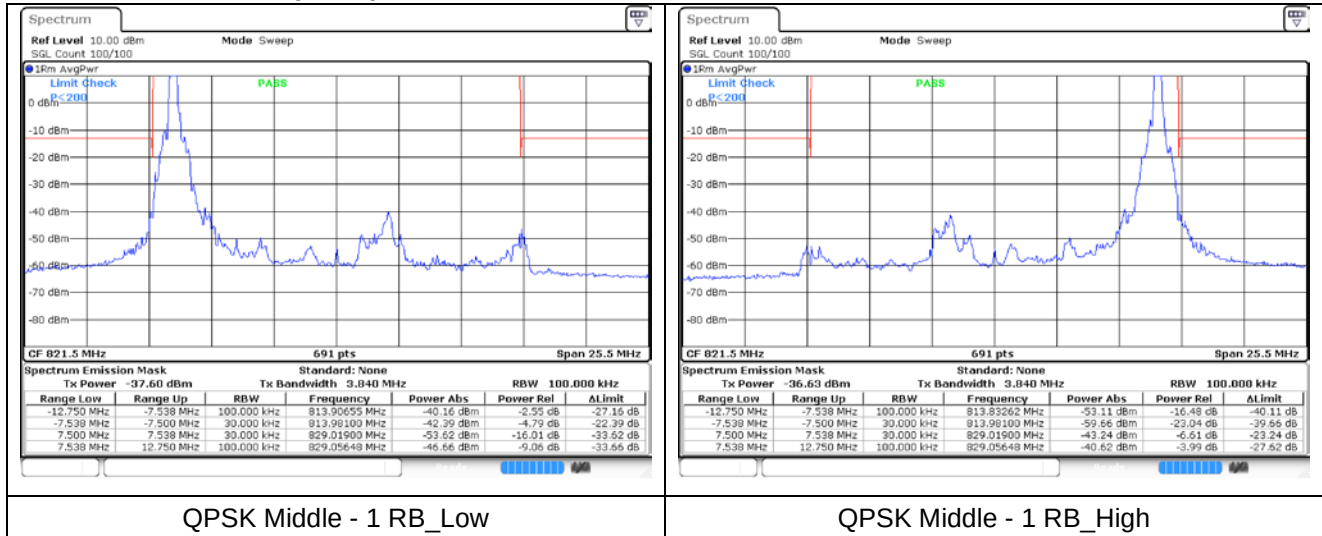
LTE band 26_Part 90 (10 MHz)



LTE band 26_Part 90 (10 MHz)

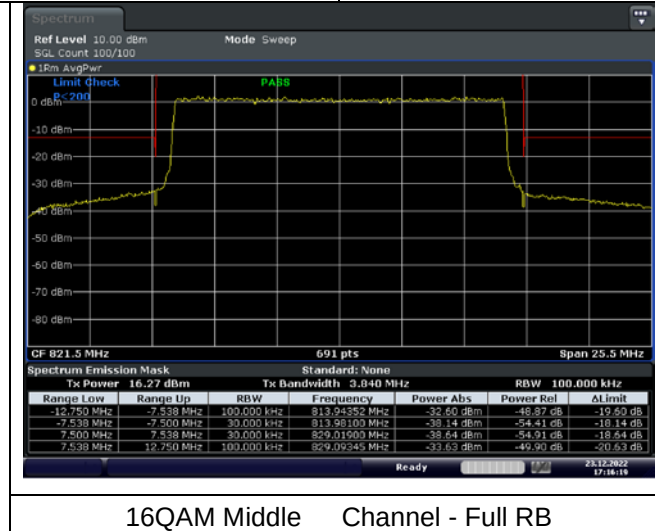
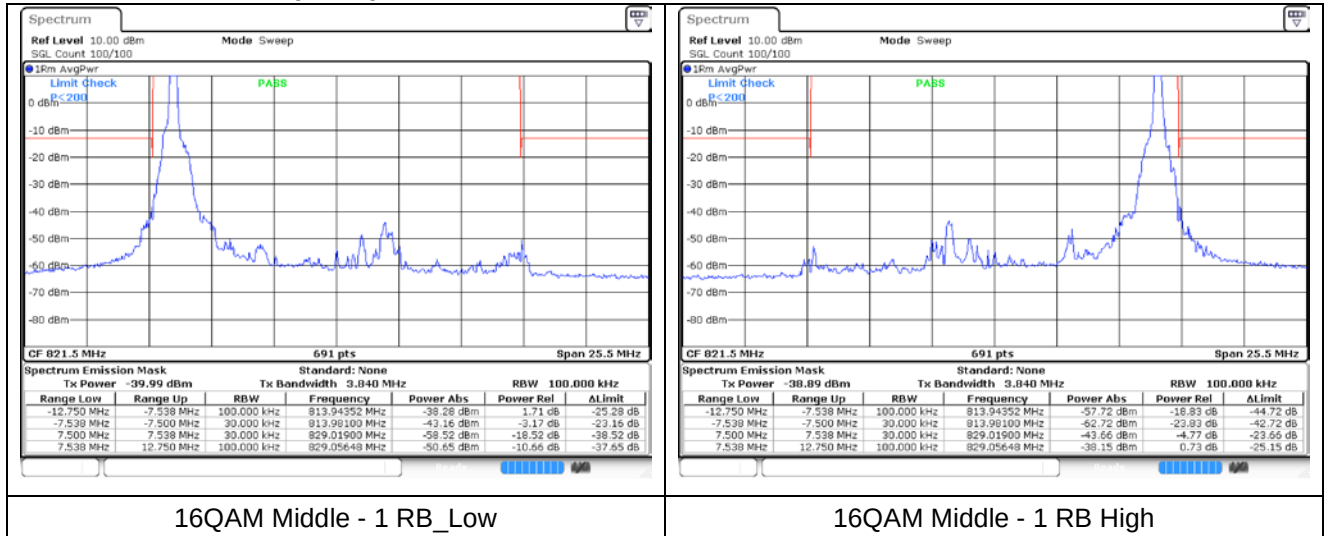


LTE band 26_Part 90 (15 MHz)

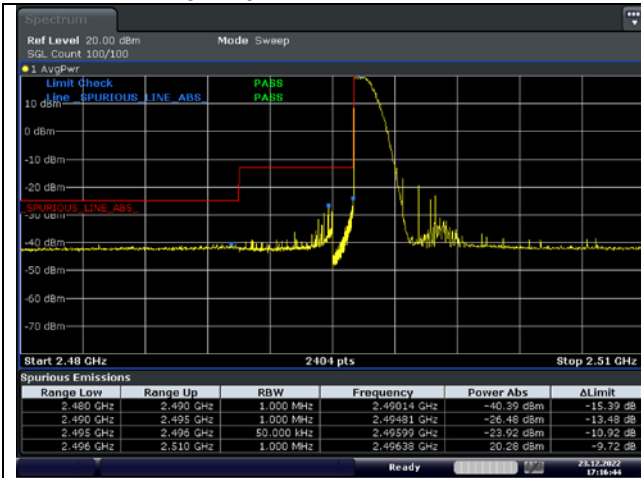


QPSK Middle - Full RB

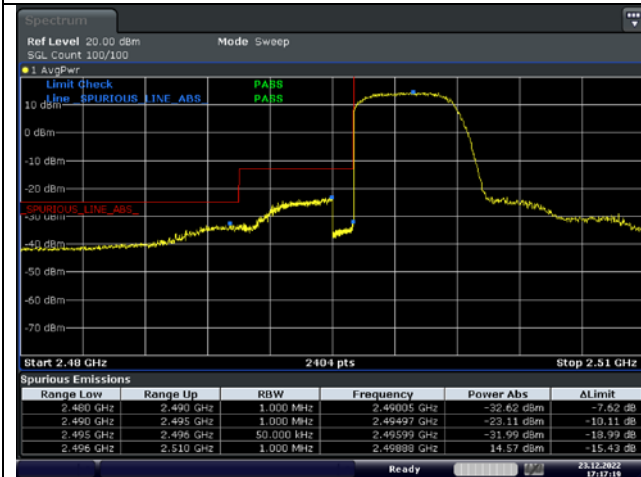
LTE band 26_Part 90 (15 MHz)



LTE band 41 (5 MHz)



QPSK Low Channel - 1 RB



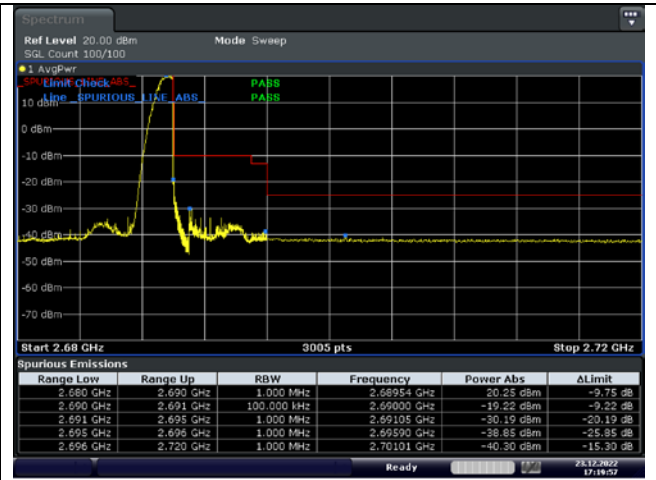
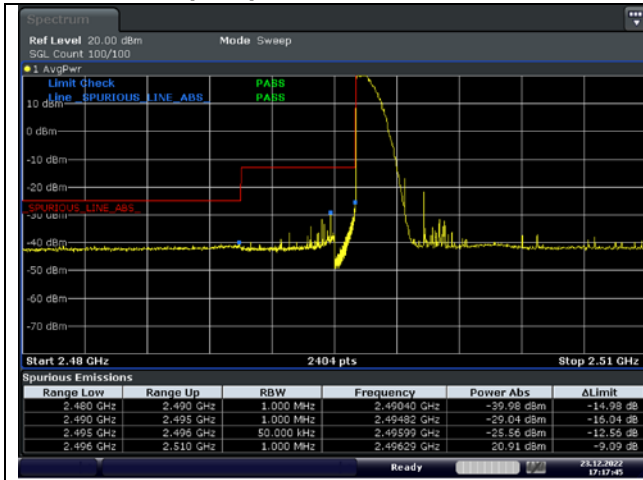
QPSK High Channel - 1 RB



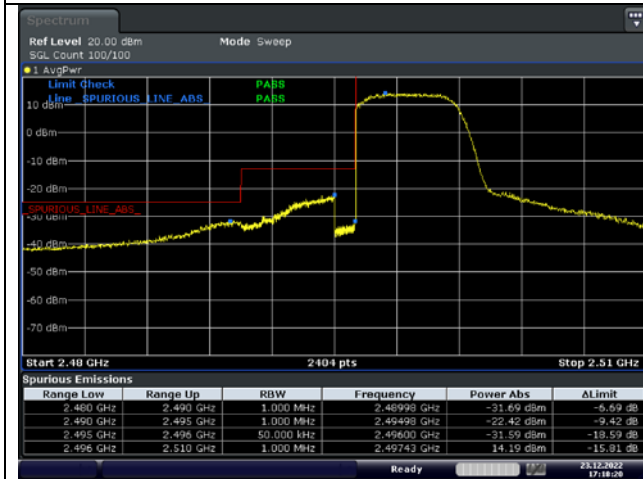
QPSK Low Channel - Full RB

QPSK High Channel - Full RB

LTE band 41 (5 MHz)



16QAM Low Channel - 1 RB



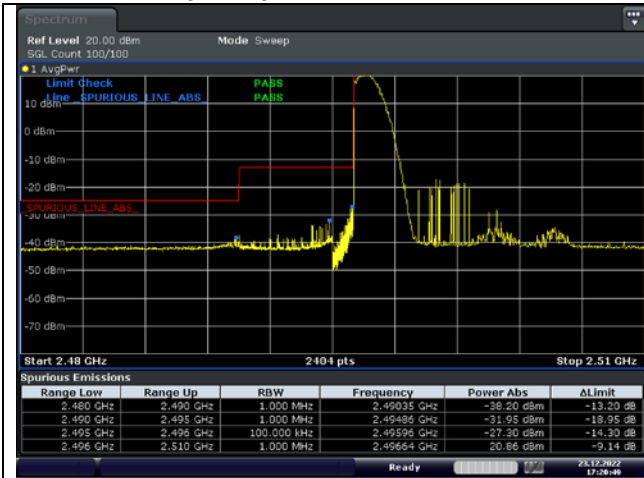
16QAM High Channel - 1 RB



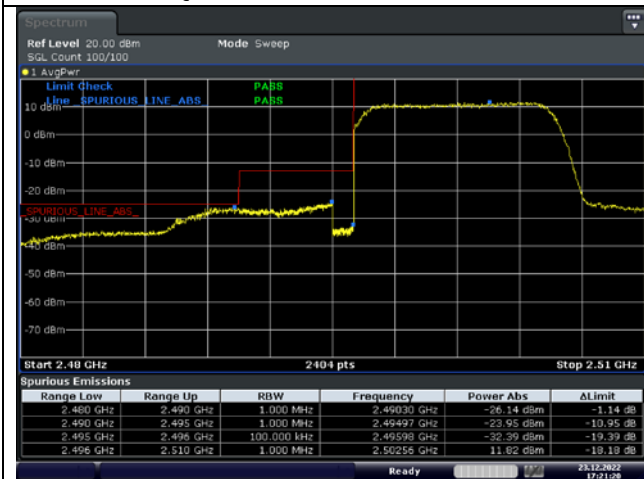
16QAM Low Channel - Full RB

16QAM High Channel - Full RB

LTE band 41 (10 MHz)



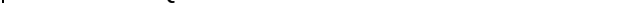
QPSK Low Channel - 1 RB



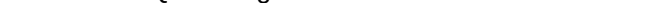
QPSK High Channel - 1 RB



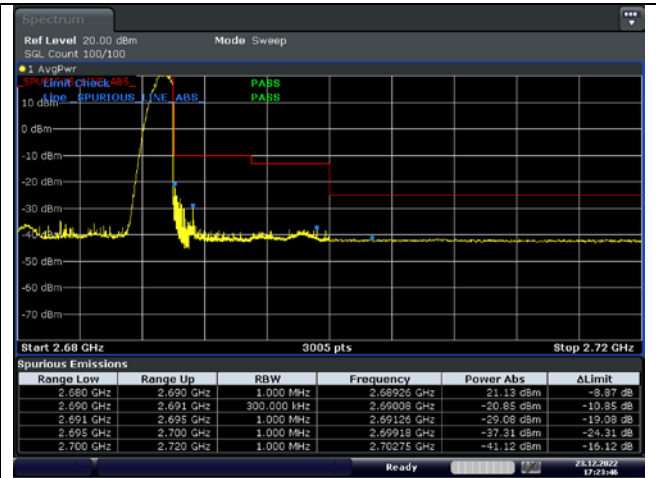
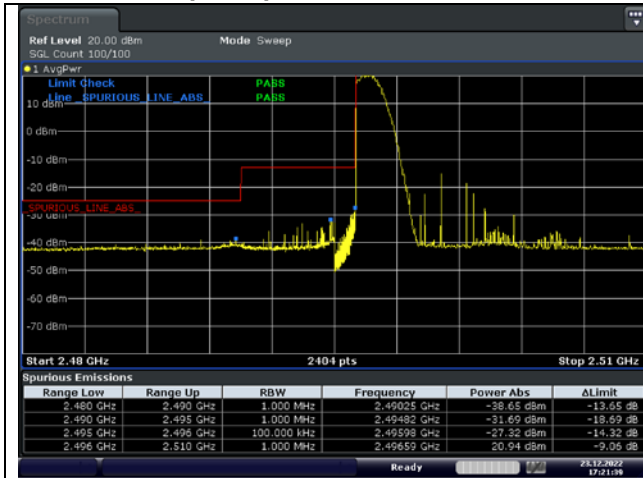
QPSK Low Channel - Full RB



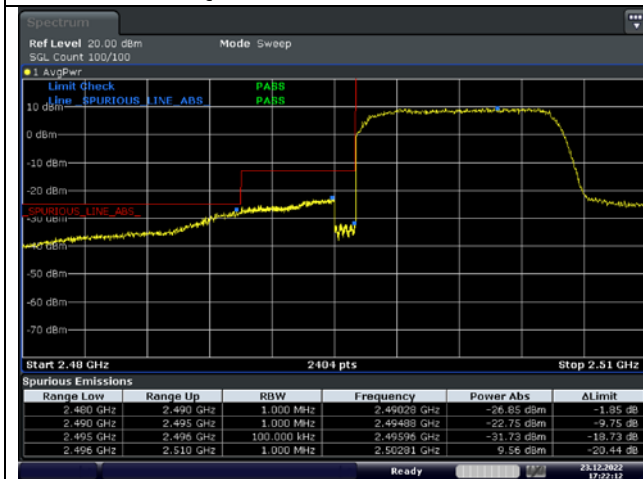
QPSK High Channel - Full RB



LTE band 41 (10 MHz)



16QAM Low Channel - 1 RB



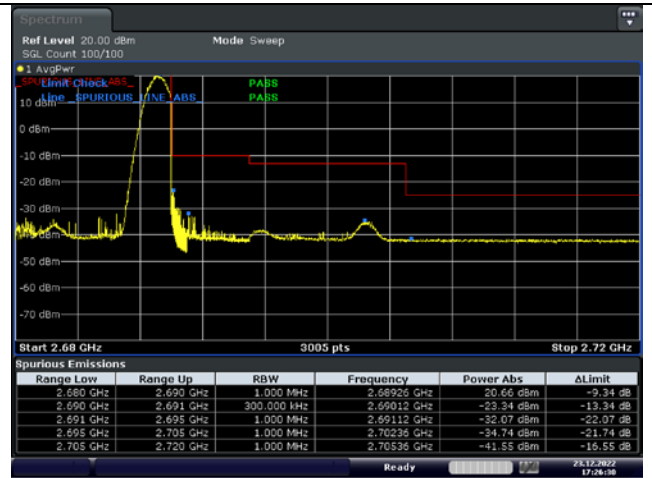
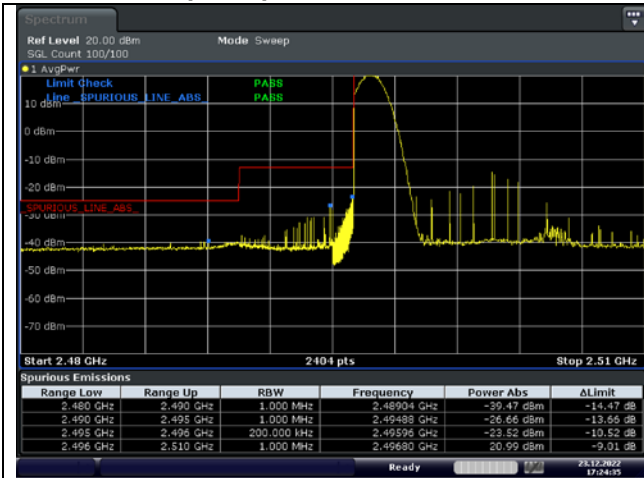
16QAM High Channel - 1 RB



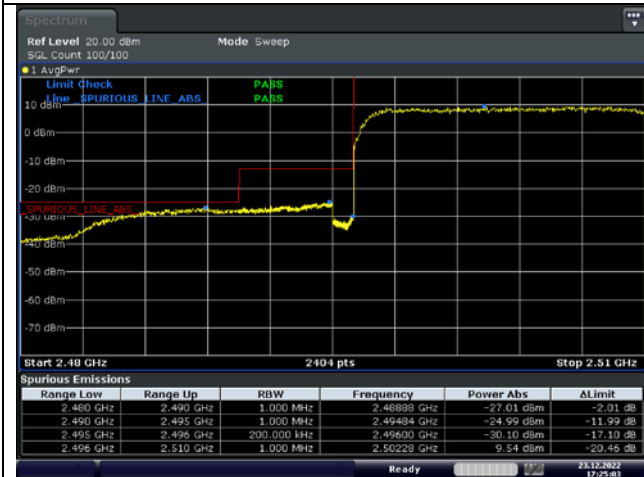
16QAM Low Channel - Full RB

16QAM High Channel - Full RB

LTE band 41 (15 MHz)



QPSK Low Channel - 1 RB



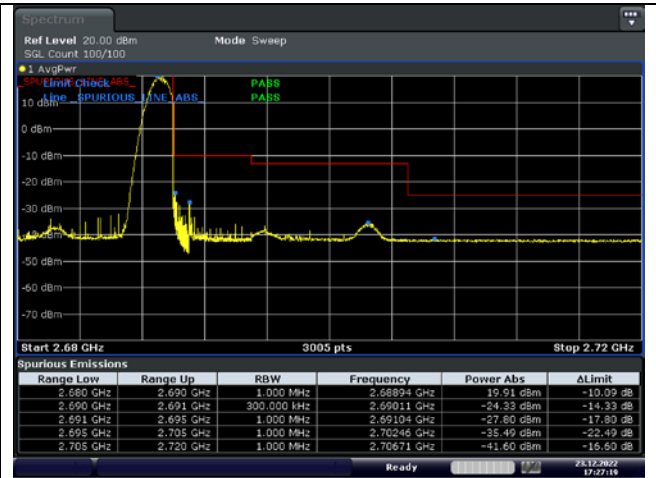
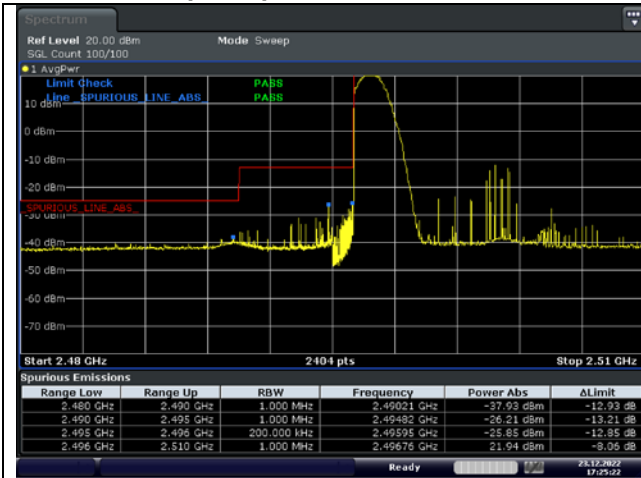
QPSK High Channel - 1 RB



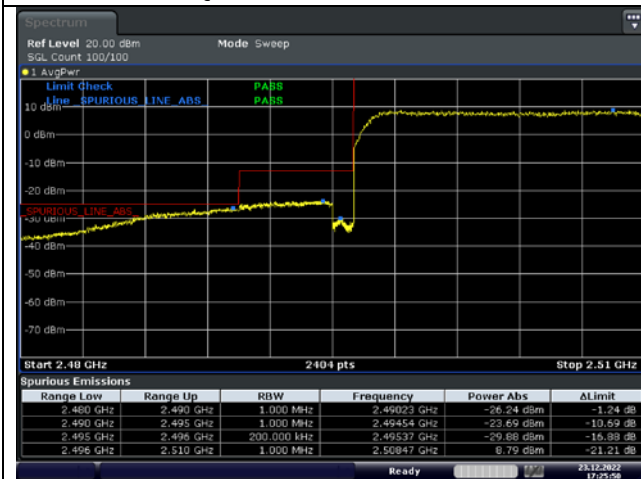
QPSK Low Channel - Full RB

QPSK High Channel - Full RB

LTE band 41 (15 MHz)



16QAM Low Channel - 1 RB



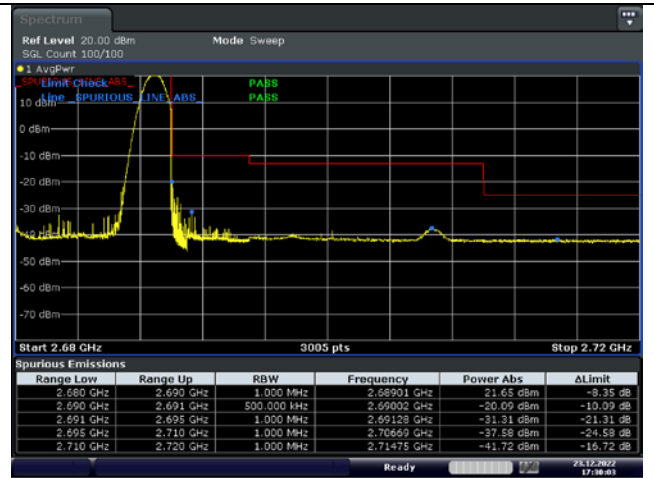
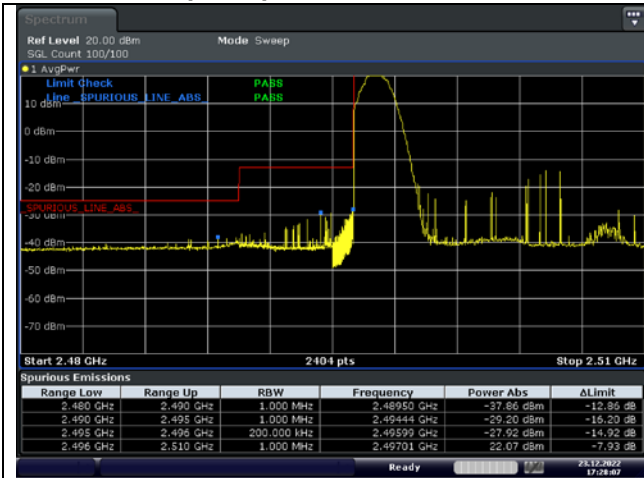
16QAM High Channel - 1 RB



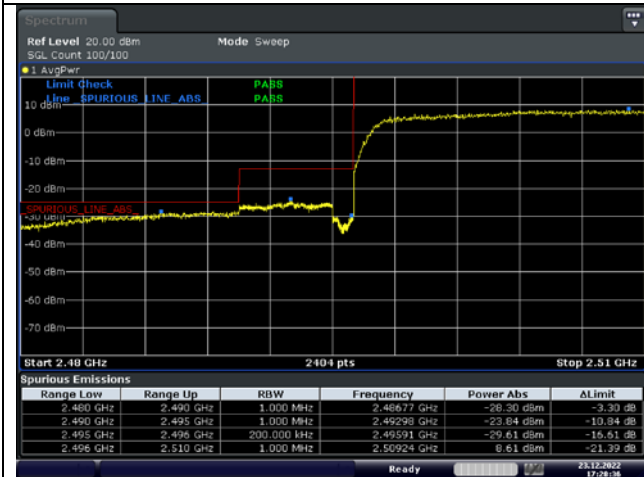
16QAM Low Channel - Full RB

16QAM High Channel - Full RB

LTE band 41 (20 MHz)



QPSK Low Channel - 1 RB



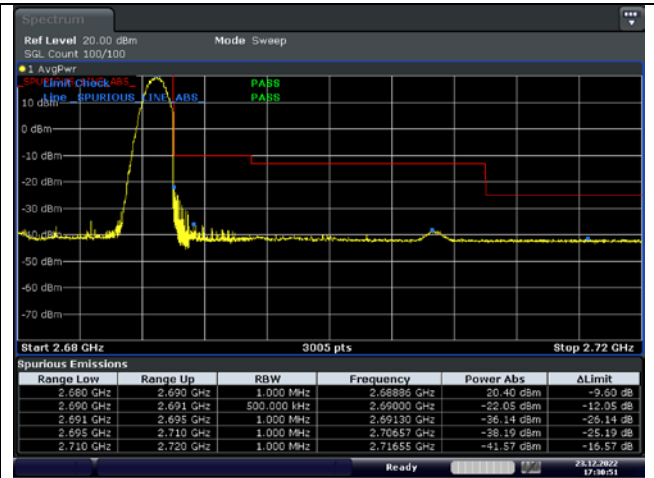
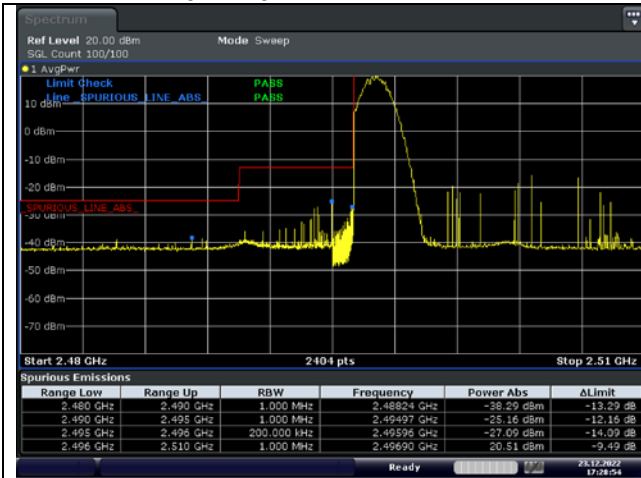
QPSK High Channel - 1 RB



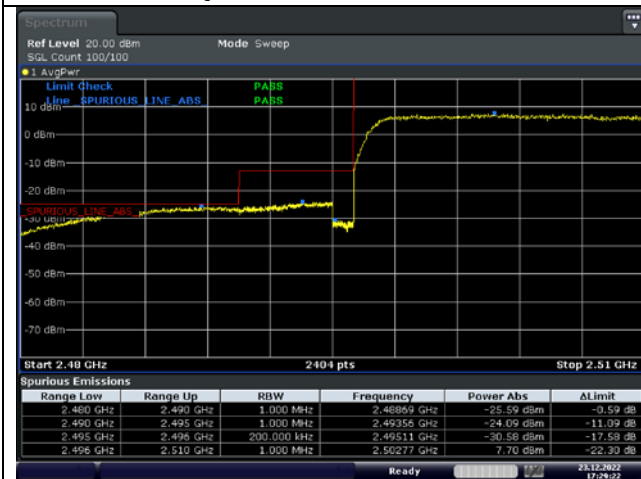
QPSK Low Channel - Full RB

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.

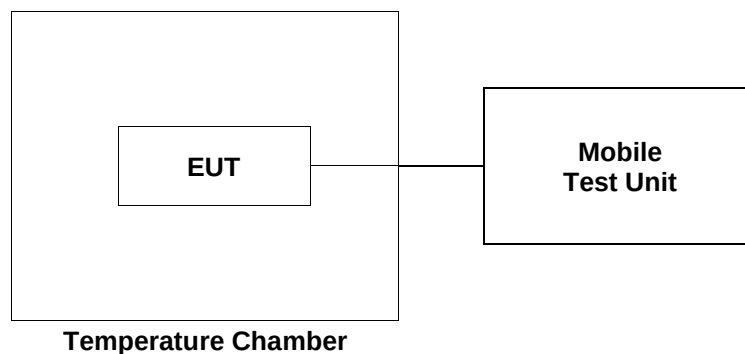
- §27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

- §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.

SIM 1

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	-8.50	-0.009 95
40		-10.70	-0.011 12
30		-11.40	-0.011 49
20(Ref.)		10.20	-
10		9.10	-0.000 59
0		-12.80	-0.012 23
-10		-9.60	-0.010 53
-20		9.90	-0.000 16
-30		7.90	-0.001 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%)	-9.80	-0.010 64
	14.38 (115%)	-10.80	-0.011 17

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	9.70	0.000 75
40		-6.50	-0.008 60
30		10.60	0.001 27
20(Ref.)		8.40	-
10		9.10	0.000 40
0		-10.40	-0.010 85
-10		9.60	0.000 69
-20		-9.60	-0.010 39
-30		7.20	-0.000 69
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	10.63 (85%)	-9.10	-0.010 10
	14.38 (115%)	9.50	0.000 63

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	-11.60	-0.012 31
40		-7.40	-0.010 65
30		-18.40	-0.014 99
20(Ref.)		19.60	-
10		-11.00	-0.012 07
0		18.80	-0.000 32
-10		14.50	-0.002 01
-20		-10.80	-0.011 99
-30		9.60	-0.003 94
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	10.63 (85%)	11.70	-0.003 12
	14.38 (115%)	10.20	-0.003 71

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	2.40	-0.004 66
40		-7.10	-0.018 09
30		6.60	0.001 27
20(Ref.)		5.70	-
10		4.30	-0.001 98
0		7.70	0.002 83
-10		4.60	-0.001 55
-20		-3.40	-0.012 86
-30		4.70	-0.001 41
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	10.63 (85%)	4.60	-0.001 55
	14.38 (115%)	5.40	-0.000 42

LTE band 26/5 Part 22 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	-7.70	-0.014 70
40		2.40	-0.002 63
30		6.30	0.002 03
20(Ref.)		4.60	-
10		3.80	-0.000 96
0		4.20	-0.000 48
-10		3.60	-0.001 20
-20		3.90	-0.000 84
-30		6.30	0.002 03
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	10.63 (85%)	4.30	-0.000 36
	14.38 (115%)	5.20	0.000 72

LTE band 26 Part 90 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	-3.50	-0.015 38
40		-7.60	-0.020 39
30		8.40	-0.000 85
20(Ref.)		9.10	-
10		6.10	-0.003 66
0		-6.40	-0.018 93
-10		-4.00	-0.016 00
-20		-6.80	-0.019 41
-30		-6.20	-0.018 68
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	10.63 (85%)	-7.00	-0.019 66
	14.38 (115%)	-7.60	-0.020 39

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	-17.50	-0.002 74
40		-16.90	-0.002 51
30		-15.90	-0.002 12
20(Ref.)		-10.40	
10		-13.30	-0.001 12
0		-12.40	-0.000 77
-10		-9.10	0.000 50
-20		-5.80	0.001 77
-30		-11.40	-0.000 39
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	10.63 (85%)	-12.70	-0.000 89
	14.38 (115%)	-15.50	-0.001 97

SIM 2

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	-6.00	0.001 76
40		-9.50	-0.000 11
30		9.70	0.010 11
20(Ref.)		-9.30	-
10		-9.60	-0.000 16
0		7.30	0.008 83
-10		8.00	0.009 20
-20		-9.20	0.000 05
-30		12.70	0.011 70
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	-0.001 06
	14.38 (115%)	-9.90	-0.000 32

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	8.20	0.008 43
40		7.10	0.007 79
30		-6.90	-0.000 29
20(Ref.)		-6.40	-
10		-8.80	-0.001 39
0		-7.10	-0.000 40
-10		-8.40	-0.001 15
-20		-10.50	-0.002 37
-30		11.20	0.010 16
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	10.63 (85%)	-11.00	-0.002 66
	14.38 (115%)	-9.70	-0.001 90

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	-9.80	0.000 51
40		-12.60	-0.000 59
30		10.50	0.008 52
20(Ref.)		-11.10	-
10		-9.60	0.000 59
0		-10.20	0.000 36
-10		-9.80	0.000 51
-20		-10.40	0.000 28
-30		10.70	0.008 60
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	10.63 (85%)	-10.50	0.000 24
	14.38 (115%)	-11.20	-0.000 04

LTE band 26/5 Part 22 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	-5.00	-0.014 58
40		-5.20	-0.014 82
30		3.60	-0.004 30
20(Ref.)		7.20	-
10		-4.70	-0.014 23
0		-3.40	-0.012 67
-10		4.50	-0.003 23
-20		5.20	-0.002 39
-30		6.50	-0.000 84
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	10.63 (85%)	-7.40	-0.017 45
	14.38 (115%)	-5.40	-0.015 06

LTE band 26 Part 90 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	-6.30	-0.000 37
40		-7.10	-0.001 34
30		-8.30	-0.002 81
20(Ref.)		-6.00	-
10		-4.80	0.001 47
0		-6.20	-0.000 24
-10		-7.00	-0.001 22
-20		-5.30	0.000 85
-30		-7.00	-0.001 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%)	-6.70	-0.000 85
	14.38 (115%)	-7.00	-0.001 22

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	-13.30	0.002 31
40		-15.60	0.001 43
30		-14.40	0.001 89
20(Ref.)		-19.30	-
10		-15.30	0.001 54
0		-14.80	0.001 74
-10		-14.60	0.001 81
-20		-16.40	0.001 12
-30		-14.50	0.001 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%)	-17.40	0.000 73
	14.38 (115%)	-14.80	0.001 74

- End of the Test Report -