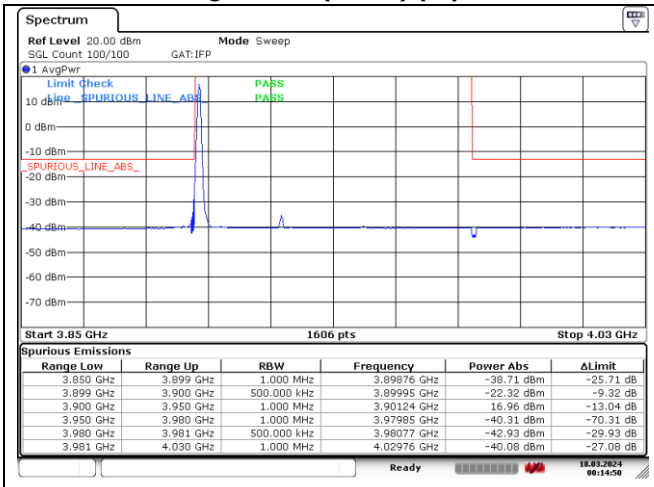
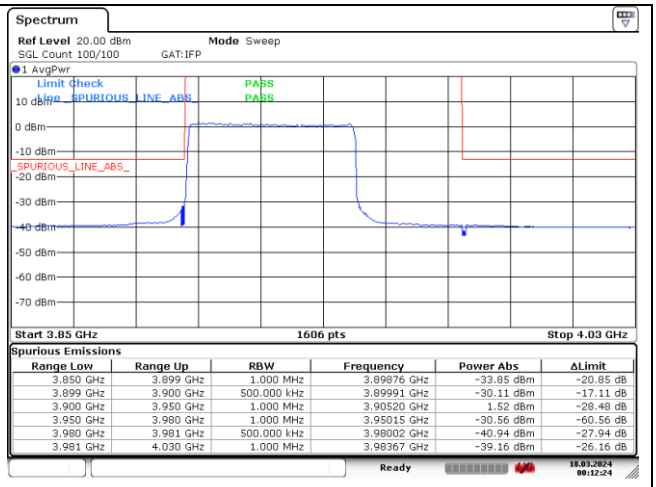
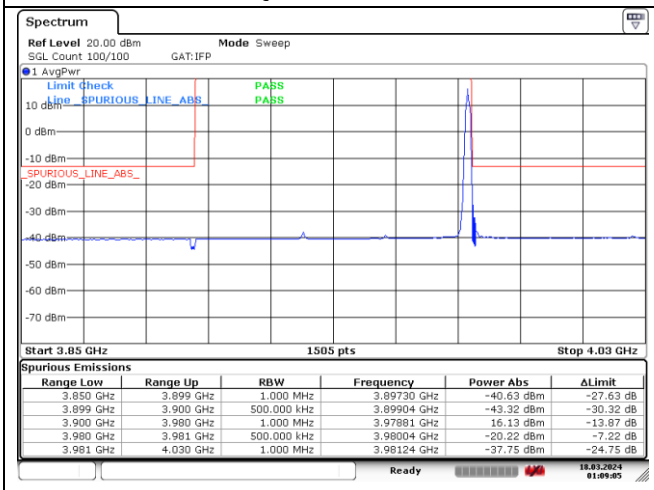
NR band 77_High Band (50 ㎒) (IC)



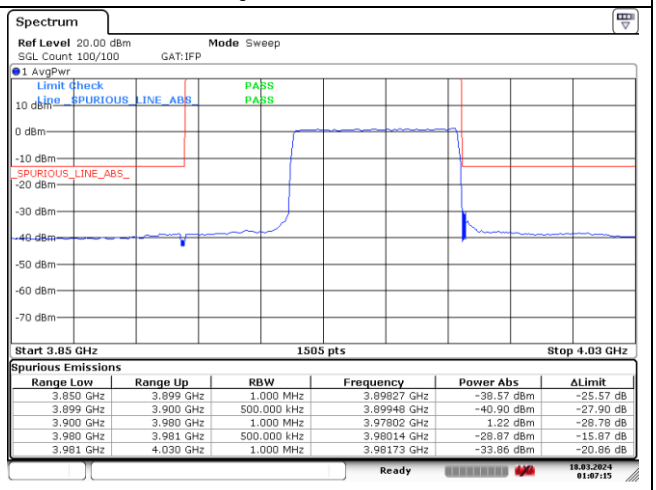
CP-OFDM 16QAM - Low Channel - 1 RB



CP-OFDM 16QAM - Low Channel - Full RB

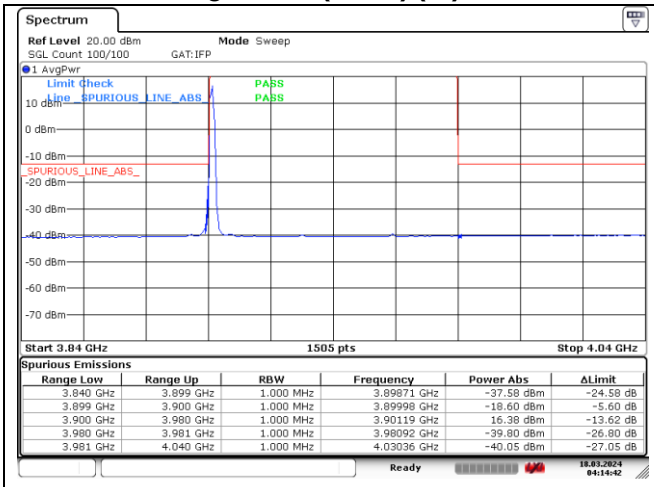


CP-OFDM 16QAM - High Channel - 1 RB

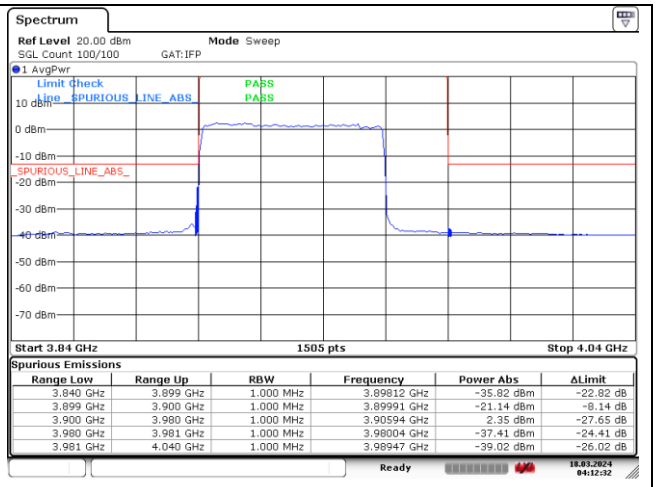


CP-OFDM 16QAM - High Channel - Full RB

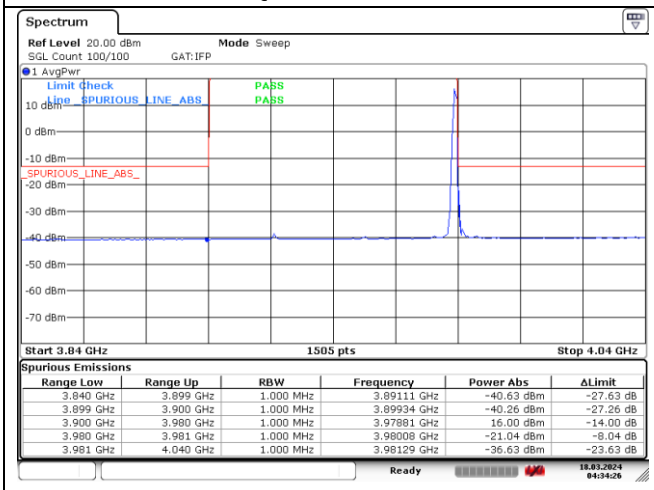
NR band 77_High Band (60 ㎒) (IC)



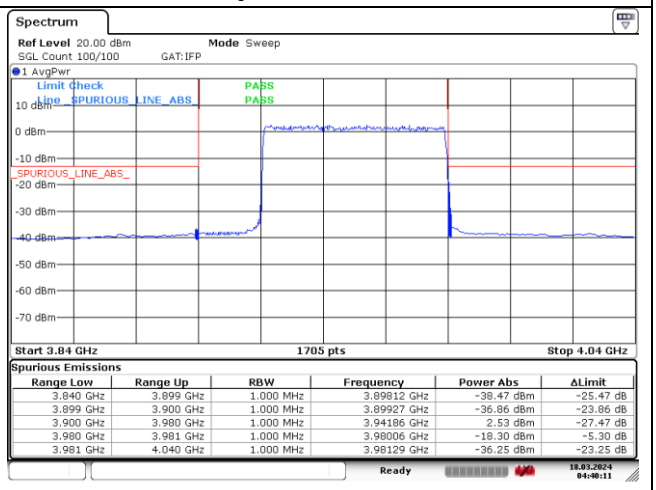
DFT-S-OFDM QPSK - Low Channel - 1 RB



DFT-S-OFDM QPSK - Low Channel - Full RB

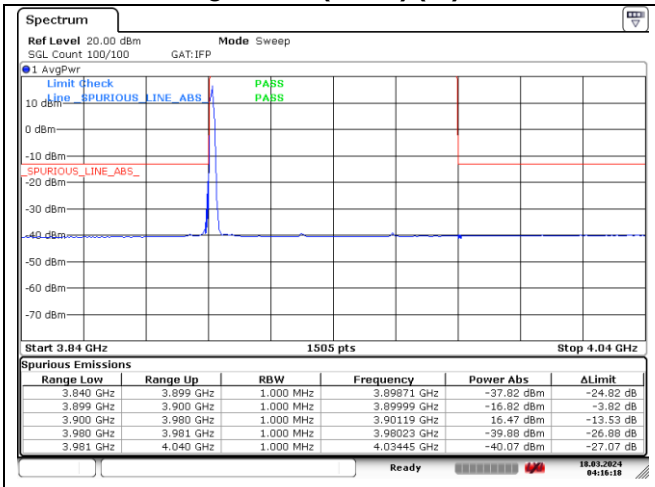


DFT-S-OFDM QPSK - High Channel - 1 RB

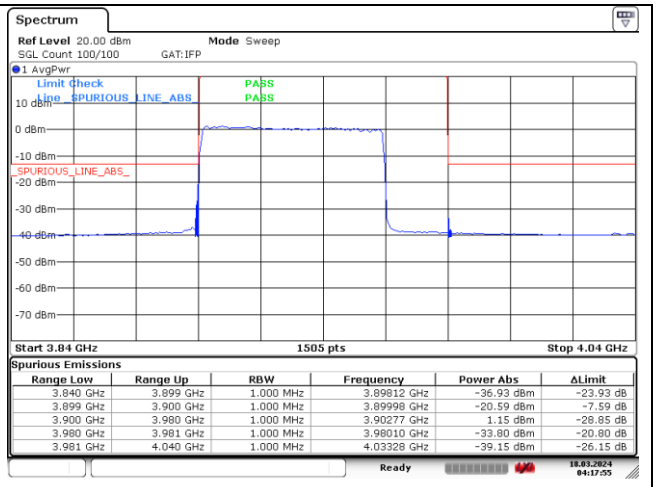


DFT-S-OFDM QPSK - High Channel - Full RB

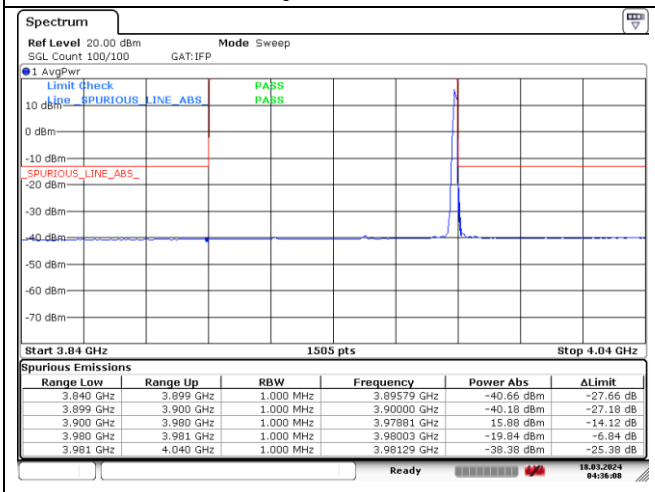
NR band 77_High Band (60 ㎒) (IC)



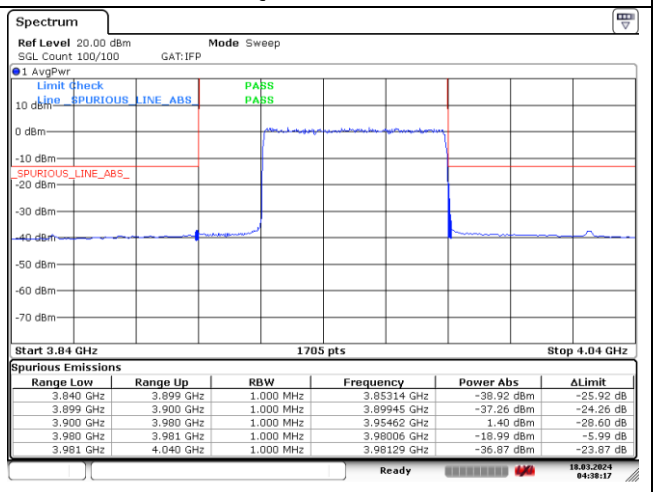
DFT-S-OFDM 16QAM - Low Channel - 1 RB



DFT-S-OFDM 16QAM - Low Channel - Full RB

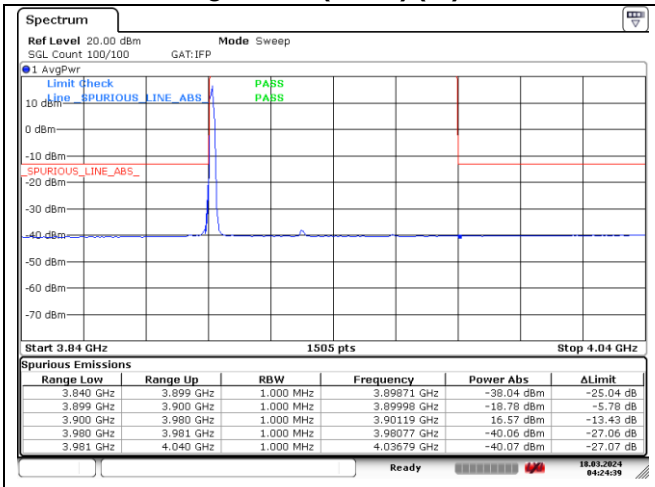


DFT-S-OFDM 16QAM - High Channel - 1 RB

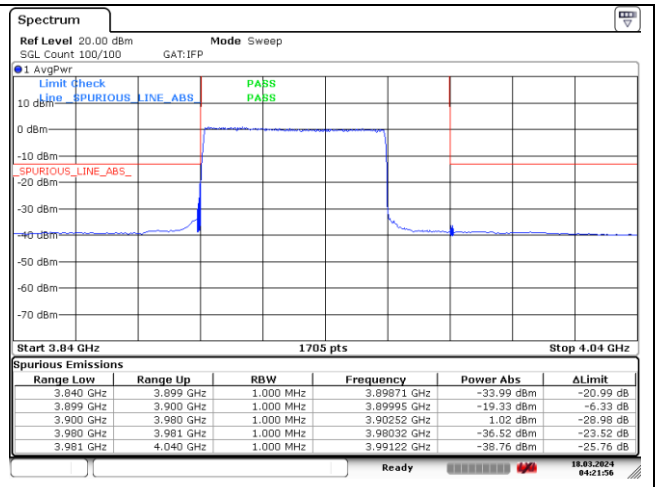


DFT-S-OFDM 16QAM - High Channel - Full RB

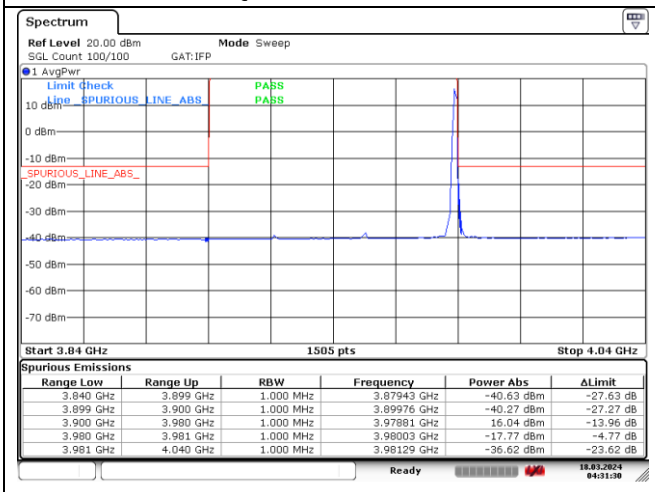
NR band 77_High Band (60 ㎒) (IC)



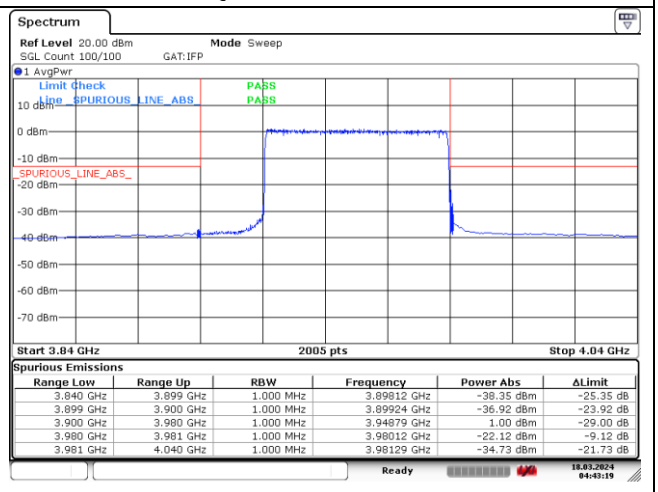
CP-OFDM QPSK - Low Channel - 1 RB



CP-OFDM QPSK - Low Channel - Full RB

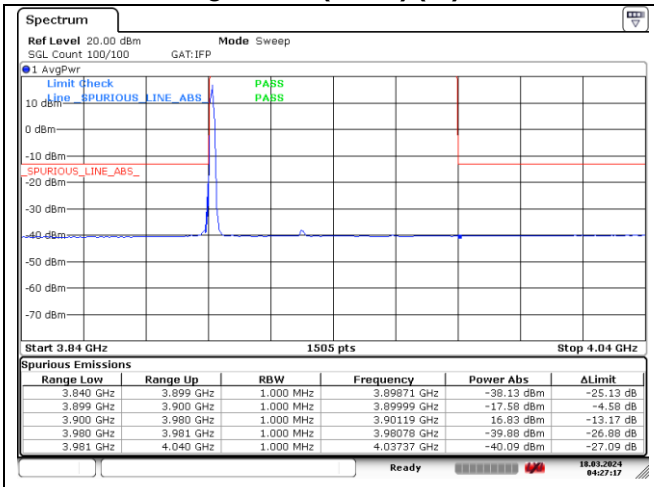


CP-OFDM QPSK - High Channel - 1 RB

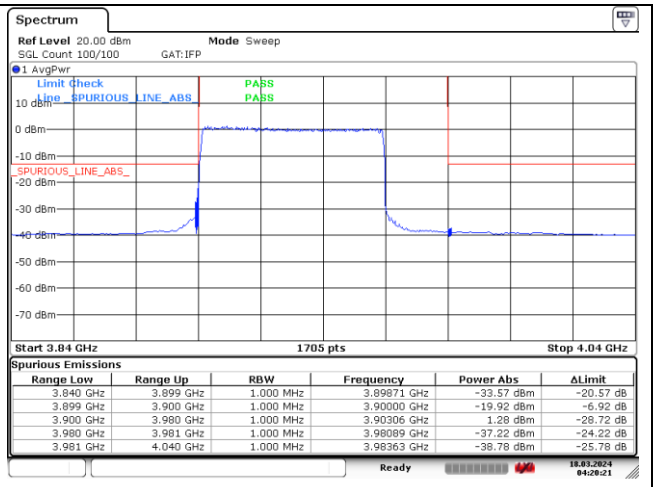


CP-OFDM QPSK - High Channel - Full RB

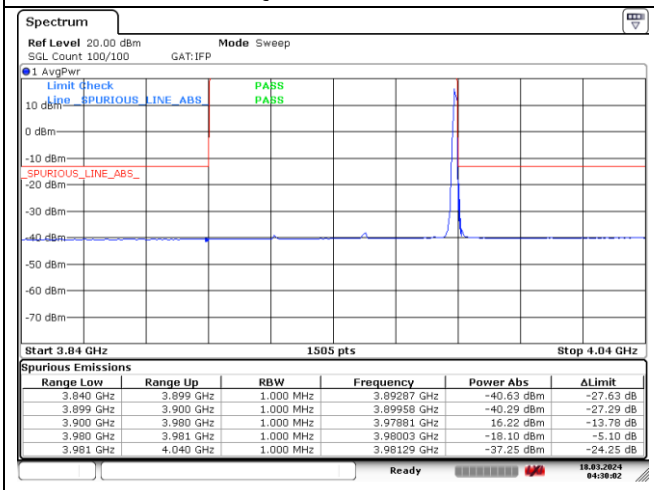
NR band 77_High Band (60 ㎒) (IC)



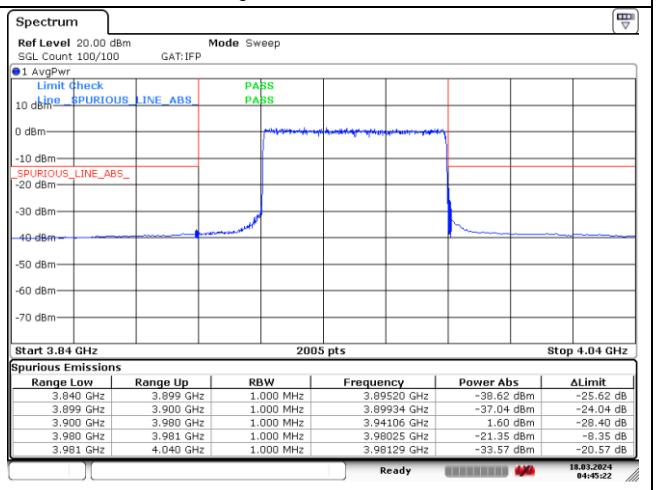
CP-OFDM 16QAM - Low Channel - 1 RB



CP-OFDM 16QAM - Low Channel - Full RB

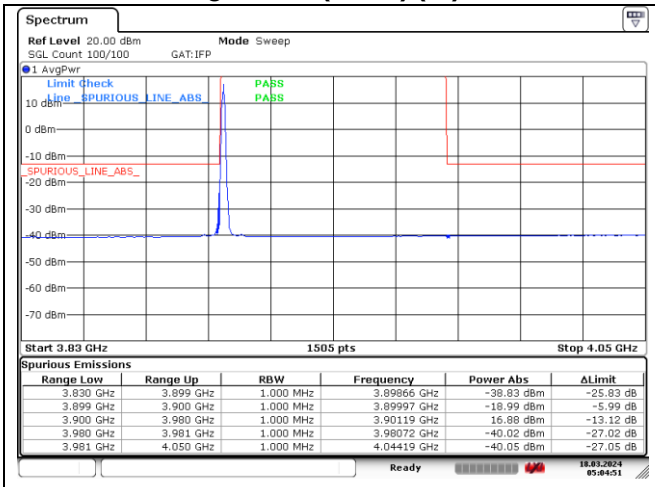


CP-OFDM 16QAM - High Channel - 1 RB

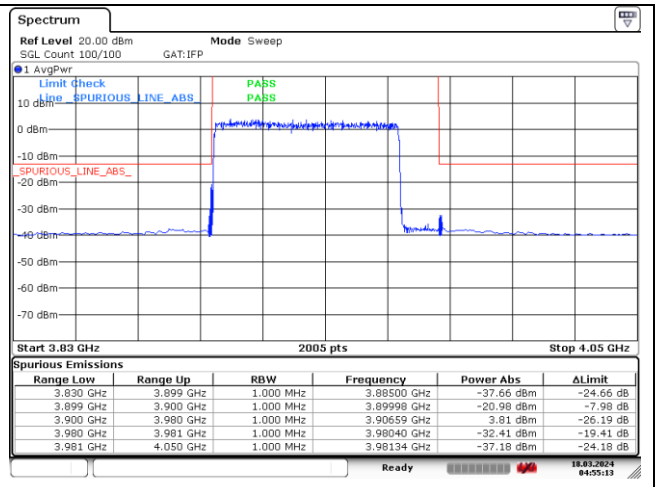


CP-OFDM 16QAM - High Channel - Full RB

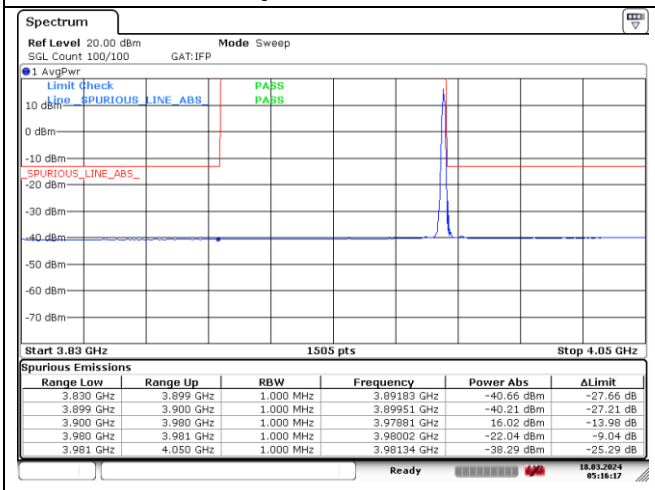
NR band 77_High Band (70 ㎒) (IC)



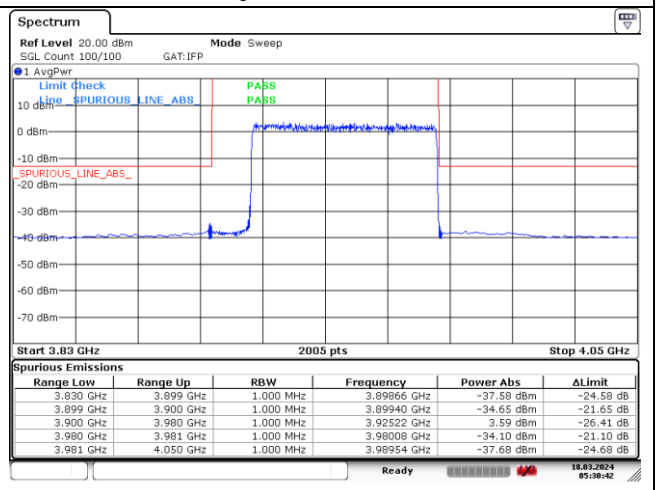
DFT-S-OFDM QPSK - Low Channel - 1 RB



DFT-S-OFDM QPSK - Low Channel - Full RB

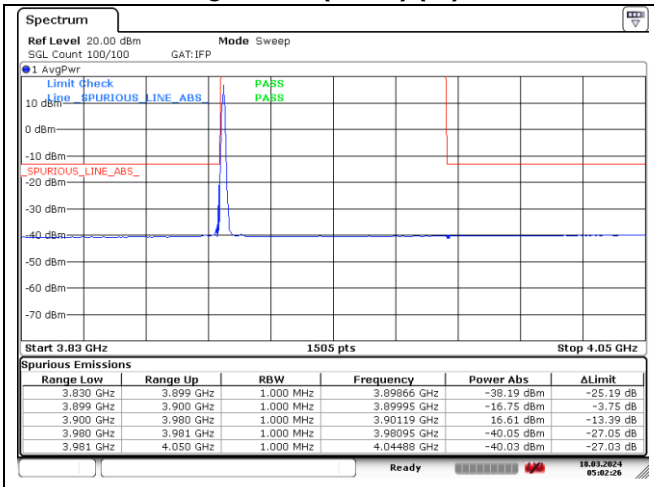


DFT-S-OFDM QPSK - High Channel - 1 RB

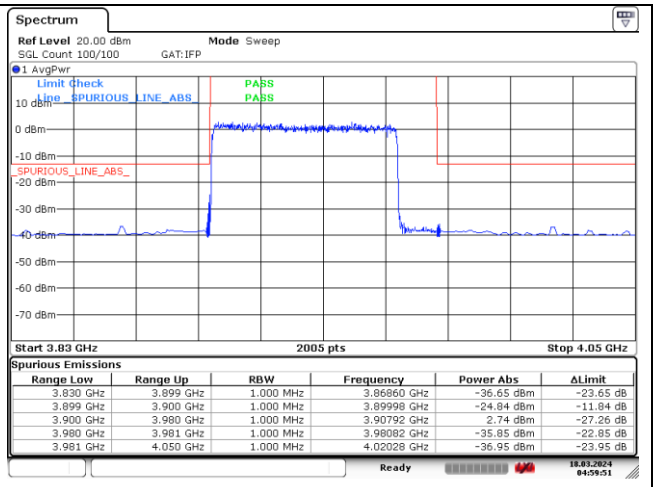


DFT-S-OFDM QPSK - High Channel - Full RB

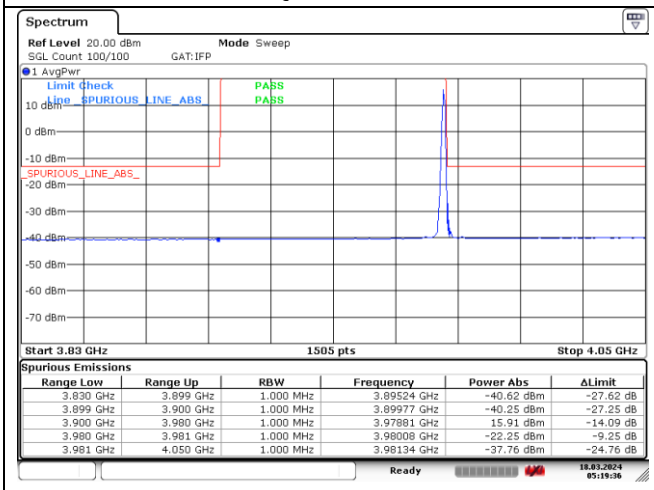
NR band 77_High Band (70 ㎒) (IC)



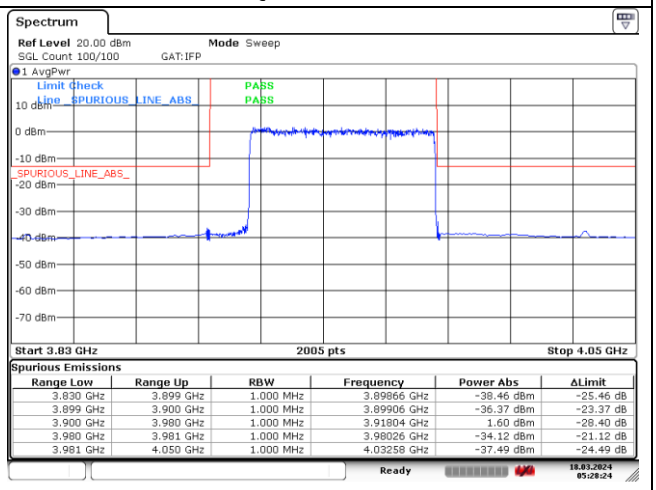
DFT-S-OFDM 16QAM - Low Channel - 1 RB



DFT-S-OFDM 16QAM - Low Channel - Full RB

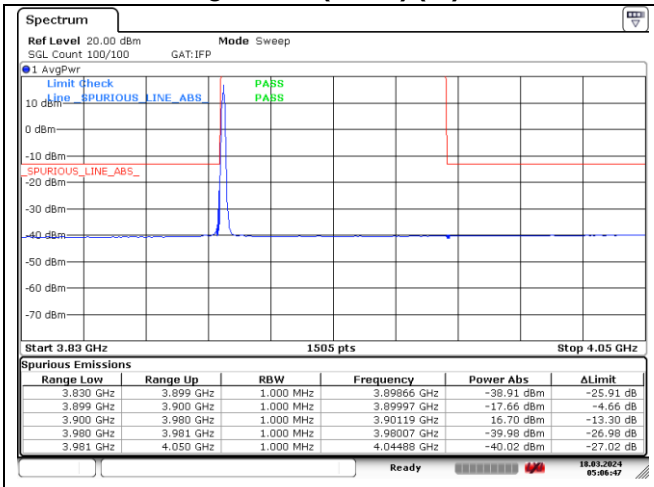


DFT-S-OFDM 16QAM - High Channel - 1 RB

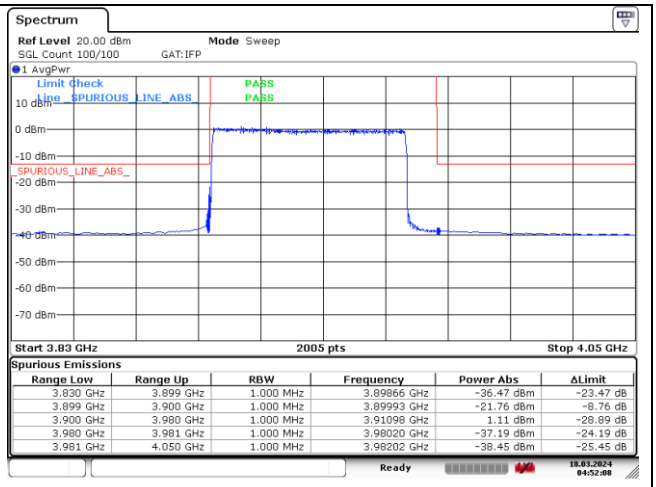


DFT-S-OFDM 16QAM - High Channel - Full RB

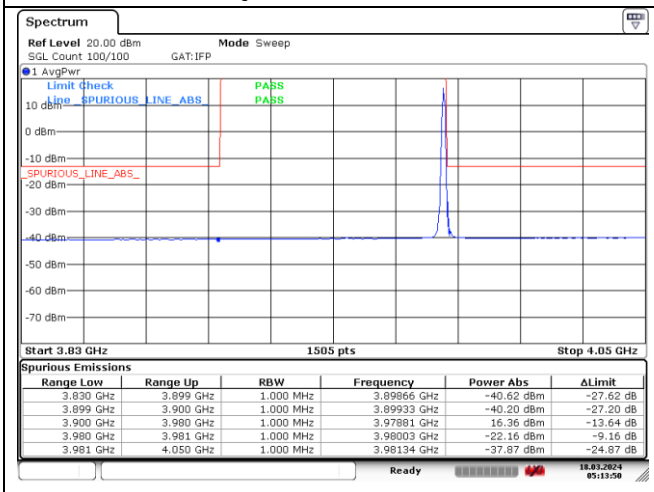
NR band 77_High Band (70 ㎒) (IC)



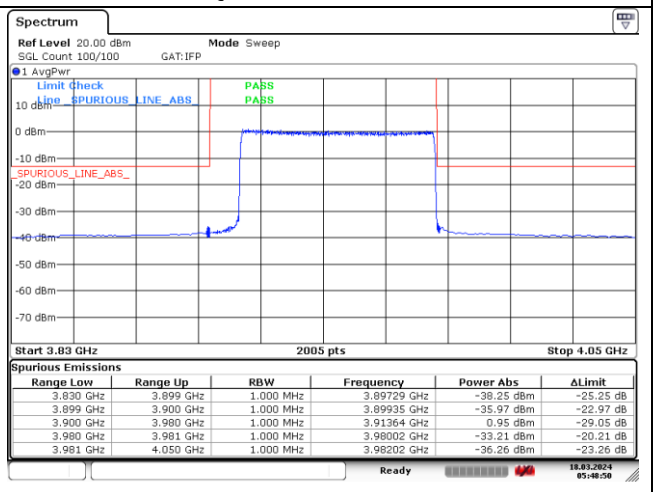
CP-OFDM QPSK - Low Channel - 1 RB



CP-OFDM QPSK - Low Channel - Full RB

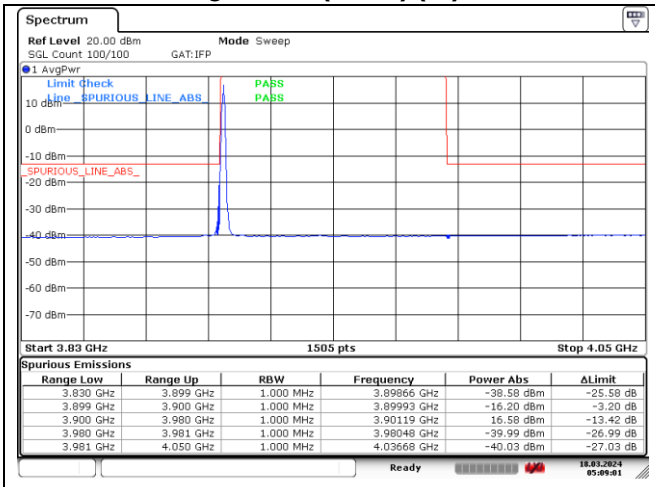


CP-OFDM QPSK - High Channel - 1 RB

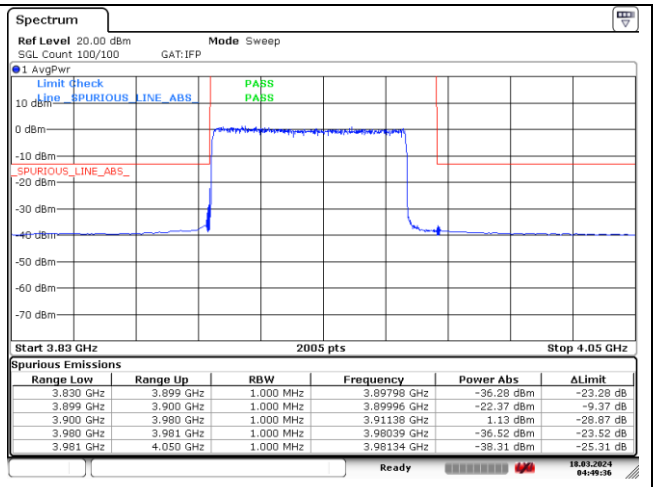


CP-OFDM QPSK - High Channel - Full RB

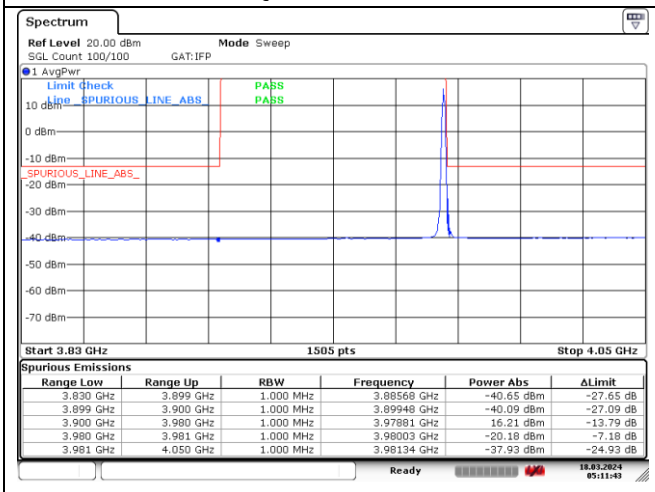
NR band 77_High Band (70 ㎒) (IC)



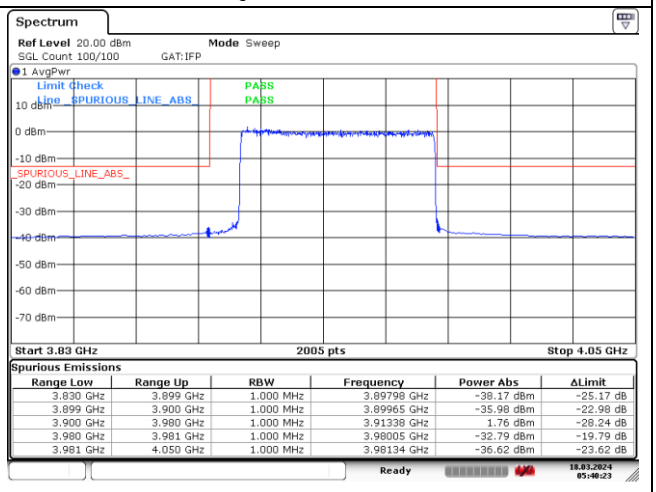
CP-OFDM 16QAM - Low Channel - 1 RB



CP-OFDM 16QAM - Low Channel - Full RB

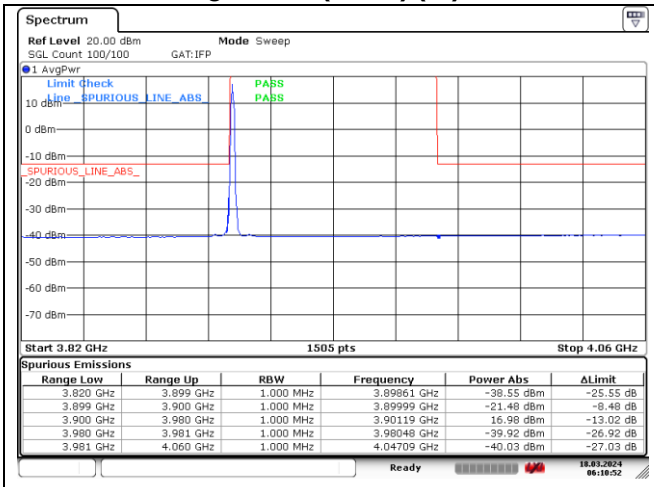


CP-OFDM 16QAM - High Channel - 1 RB

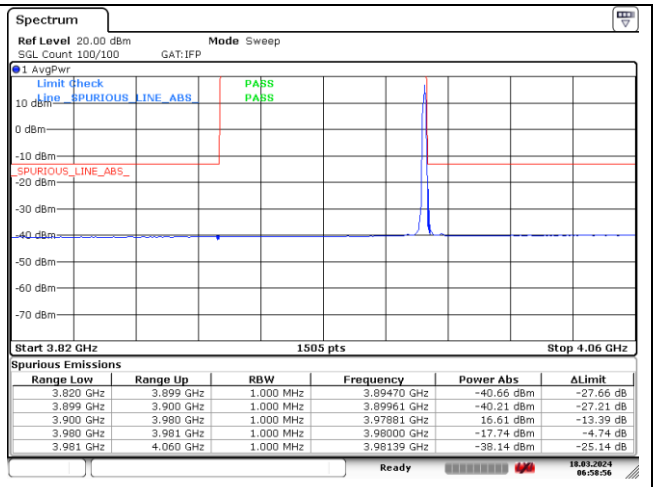


CP-OFDM 16QAM - High Channel - Full RB

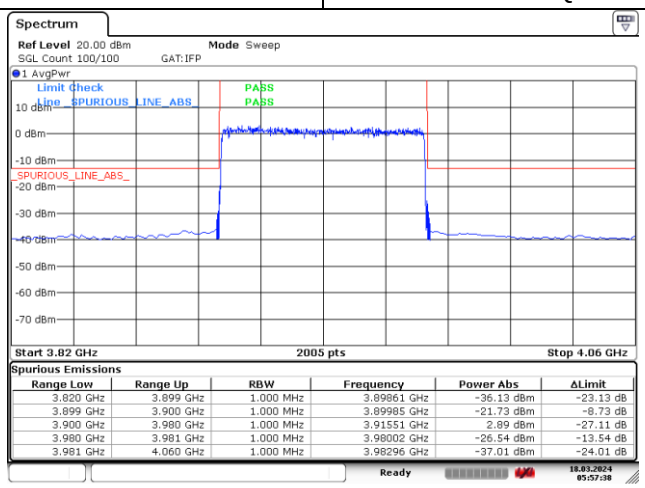
NR band 77_High Band (80 ㎒) (IC)



DFT-S-OFDM QPSK - Middle Channel - 1 RB

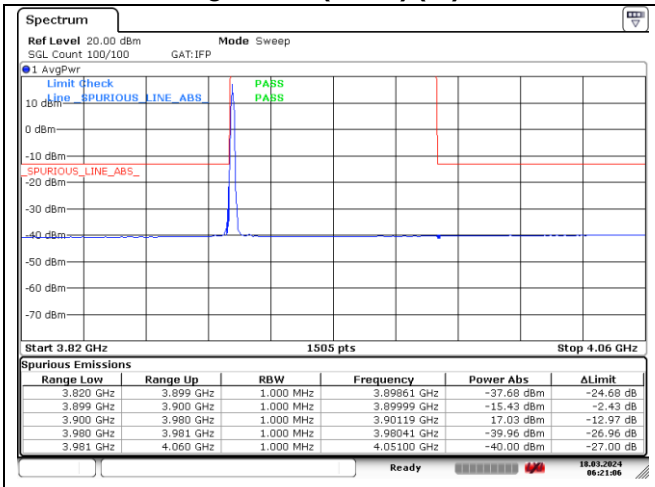


DFT-S-OFDM QPSK - Middle Channel - 1 RB

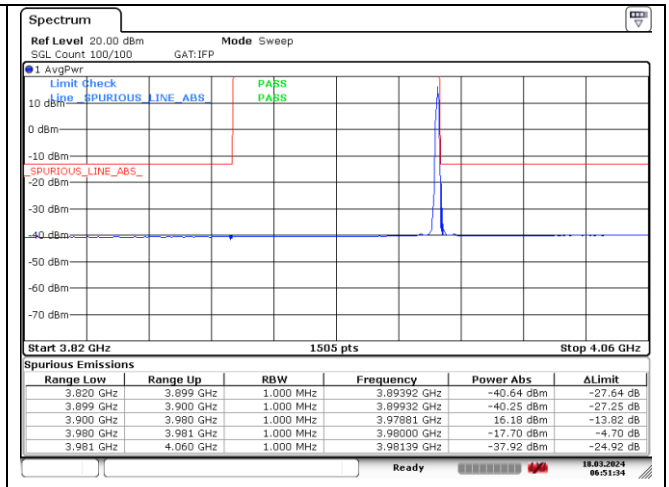


DFT-S-OFDM QPSK - Middle Channel - Full RB

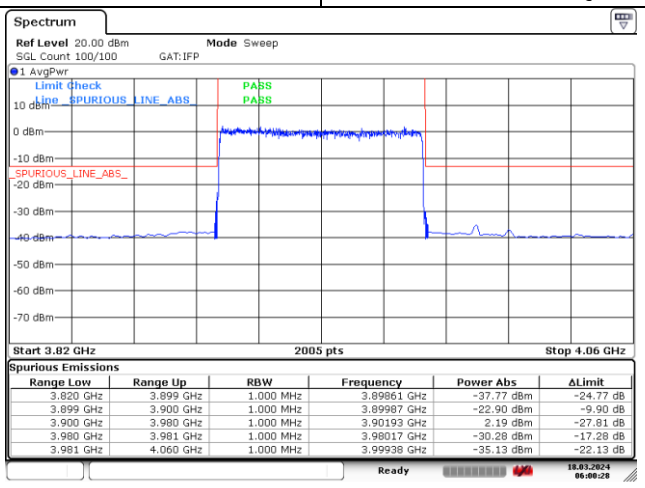
NR band 77_High Band (80 ㎒) (IC)



DFT-S-OFDM 16QAM - Middle Channel - 1 RB

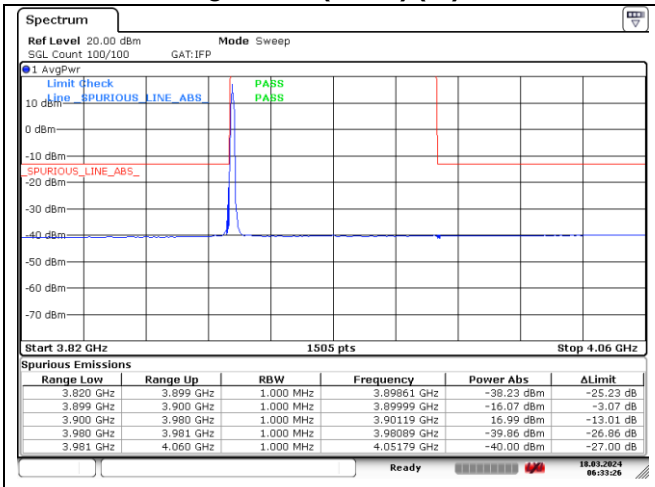


DFT-S-OFDM 16QAM - Middle Channel - 1 RB

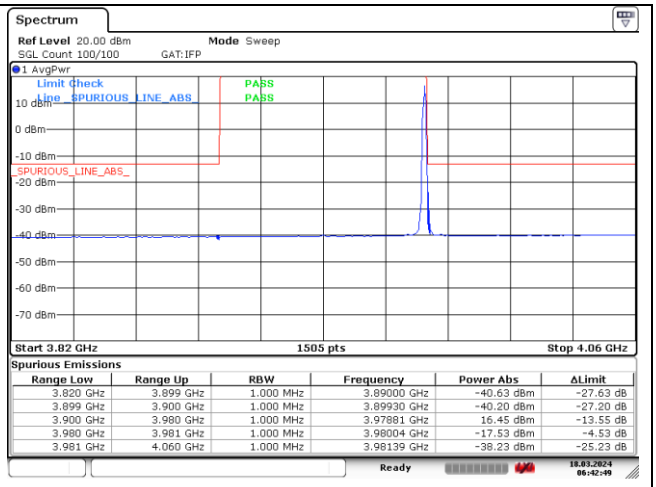


DFT-S-OFDM 16QAM - Middle Channel - Full RB

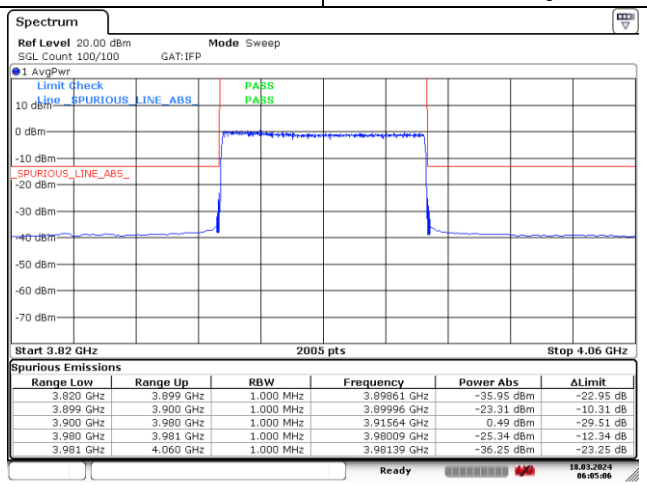
NR band 77_High Band (80 ㎒) (IC)



CP-OFDM QPSK - Middle Channel - 1 RB

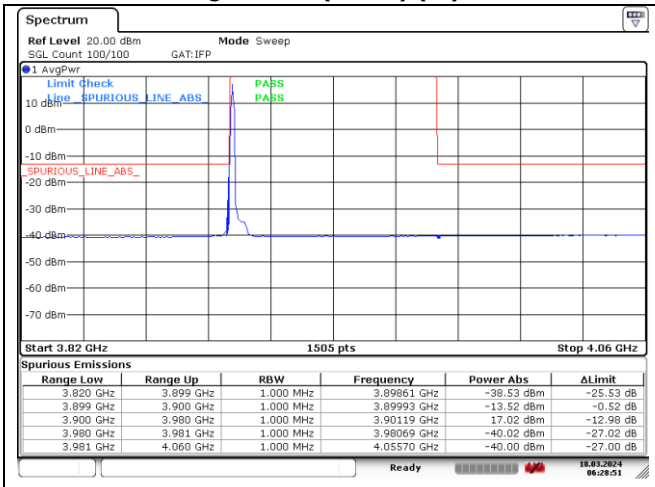


CP-OFDM QPSK - Middle Channel - 1 RB

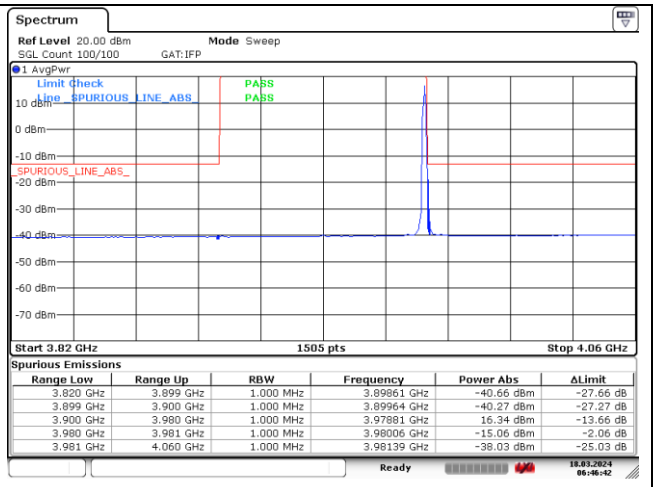


CP-OFDM QPSK - Middle Channel - Full RB

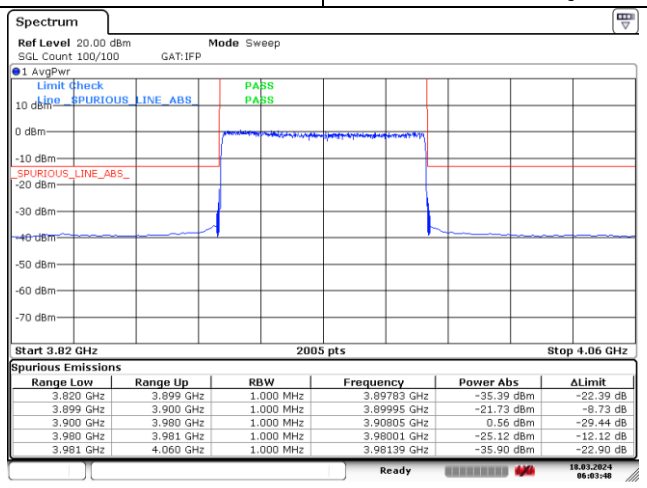
NR band 77_High Band (80 ㎒) (IC)



CP-OFDM 16QAM - Middle Channel - 1 RB



CP-OFDM 16QAM - Middle Channel - 1 RB



CP-OFDM 16QAM - Middle Channel - Full RB

8. Frequency Stability

8.1. Limit

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

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

IC
- RSS-Gen Issue 5
6.11, for licensed devices, the following measurement conditions apply:
a. at the temperatures of -30°C (-22°F), +20°C (+68°F) and +50°C (+122°F), and at the manufacturer's rated supply voltage

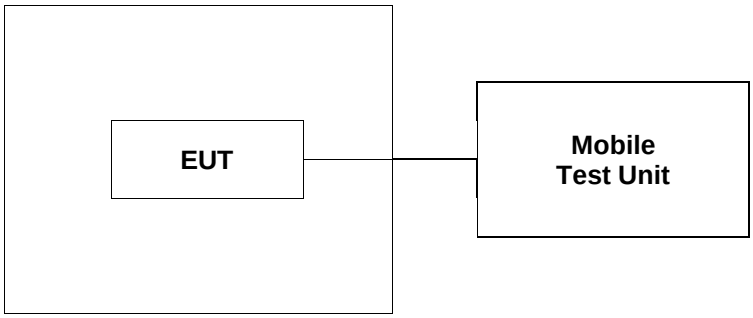
- RSS-192 Issue 5
5.4, the frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block or frequency block group when tested at the temperature and supply voltage variations specified in RSS-Gen.

- RSS-198 Issue 1
5.4, the frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block or frequency block group when tested at the temperature and supply voltage variations specified in RSS-Gen.

- RSS-199 Issue 4
5.4, the frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block or frequency block group when tested to the temperature and supply voltage variations specified in RSS-Gen.

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.



Temperature Chamber

8.3. Test Results

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

NR band 41(FCC) at middle channel

Reference Frequency: 2 592.99 ㎒			
Frequency Stability versus Temperature			
Environment Temperature (℃)	**Power Supplied (V)**	**Frequency Measure with Time Elapse**	
		Frequency Error (㎐)	**ppm**
50	4.10	-9.20	-0.001 70
40		6.00	0.004 17
30		5.20	0.003 86
20(Ref.)		-4.80	-
10		-3.10	0.000 66
0		8.00	0.004 94
-10		-3.30	0.000 58
-20		7.30	0.004 67
-30		-8.80	-0.001 54
Frequency Stability versus Power Supply			
Environment Temperature (℃)	**Power Supplied (V)**	**Frequency Measure with Time Elapse**	
		Frequency Error (㎐)	**ppm**
20	3.49 (85%)	2.70	0.002 89
	4.72 (115%)	-5.70	-0.000 35

NR band 41(IC) at middle channel

Reference Frequency: 2 595.0 ㎒			
Frequency Stability versus Temperature			
Environment Temperature (℃)	**Power Supplied (V)**	**Frequency Measure with Time Elapse**	
		Frequency Error (㎐)	**ppm**
50	4.10	3.90	0.000 19
40		3.50	0.000 04
30		-17.30	-0.007 98
20(Ref.)		3.40	-
10		7.40	0.001 54
0		1.70	-0.000 66
-10		3.30	-0.000 04
-20		10.40	0.002 70
-30		10.30	0.002 66
Frequency Stability versus Power Supply			
Environment Temperature (℃)	**Power Supplied (V)**	**Frequency Measure with Time Elapse**	
		Frequency Error (㎐)	**ppm**
20	3.49 (85%)	3.70	0.000 12
	4.72 (115%)	8.90	0.002 12

NR band 48(IC) at middle channel

Reference Frequency: 3 624.99 ㎒			
Frequency Stability versus Temperature			
Environment Temperature (℃)	**Power Supplied (V)**	**Frequency Measure with Time Elapse**	
		Frequency Error (㎐)	**ppm**
50	4.10	4.10	-0.000 41
40		9.20	0.000 99
30		10.00	0.001 21
20(Ref.)		5.60	-
10		-2.80	-0.002 32
0		0.40	-0.001 43
-10		6.70	0.000 30
-20		7.20	0.000 44
-30		1.70	-0.001 08
Frequency Stability versus Power Supply			
Environment Temperature (℃)	**Power Supplied (V)**	**Frequency Measure with Time Elapse**	
		Frequency Error (㎐)	**ppm**
20	3.49 (85%)	-4.20	-0.002 70
	4.72 (115%)	0.30	-0.001 46

NR band 77/78_Low Band at middle channel (FCC)

Reference Frequency: 3 500.01 ㎒			
Frequency Stability versus Temperature			
Environment Temperature (℃)	**Power Supplied (V)**	**Frequency Measure with Time Elapse**	
		Frequency Error (㎐)	**ppm**
50	4.10	1.60	0.001 66
40		-7.20	-0.000 86
30		-5.70	-0.000 43
20(Ref.)		-4.20	-
10		-1.70	0.000 71
0		-1.50	0.000 77
-10		19.90	0.006 89
-20		11.40	0.004 46
-30		10.50	0.004 20
Frequency Stability versus Power Supply			
Environment Temperature (℃)	**Power Supplied (V)**	**Frequency Measure with Time Elapse**	
		Frequency Error (㎐)	**ppm**
20	3.49 (85%)	2.50	0.001 91
	4.72 (115%)	7.90	0.003 46

NR band 77/78_High Band at middle channel (FCC)

Reference Frequency: 3 840 ㎒			
Frequency Stability versus Temperature			
Environment Temperature (℃)	**Power Supplied (V)**	**Frequency Measure with Time Elapse**	
		Frequency Error (㎐)	**ppm**
50	4.10	-9.50	-0.004 14
40		2.10	-0.001 12
30		-5.00	-0.002 97
20(Ref.)		6.40	-
10		0.40	-0.001 56
0		11.40	0.001 30
-10		-7.00	-0.003 49
-20		6.40	0.000 00
-30		-1.20	-0.001 98
Frequency Stability versus Power Supply			
Environment Temperature (℃)	**Power Supplied (V)**	**Frequency Measure with Time Elapse**	
		Frequency Error (㎐)	**ppm**
20	3.49 (85%)	-5.10	-0.002 99
	4.72 (115%)	7.20	0.000 21

NR band 77/78_Low Band at middle channel (IC)

Reference Frequency: 3 675 ㎒			
Frequency Stability versus Temperature			
Environment Temperature (℃)	**Power Supplied (V)**	**Frequency Measure with Time Elapse**	
		Frequency Error (㎐)	**ppm**
50	4.10	5.10	-0.000 11
40		2.80	-0.000 73
30		-18.50	-0.006 53
20(Ref.)		5.50	-
10		-10.20	-0.004 27
0		-0.70	-0.001 69
-10		5.70	0.000 05
-20		3.60	-0.000 52
-30		4.10	-0.000 38
Frequency Stability versus Power Supply			
Environment Temperature (℃)	**Power Supplied (V)**	**Frequency Measure with Time Elapse**	
		Frequency Error (㎐)	**ppm**
20	3.49 (85%)	4.90	-0.000 16
	4.72 (115%)	1.20	-0.001 17

NR band 77_High Band at middle channel (IC)

Reference Frequency: 3 939.99 ㎒			
Frequency Stability versus Temperature			
Environment Temperature (℃)	**Power Supplied (V)**	**Frequency Measure with Time Elapse**	
		Frequency Error (㎐)	**ppm**
50	4.10	5.00	0.000 63
40		1.20	-0.000 33
30		-3.00	-0.001 40
20(Ref.)		2.50	-
10		-6.30	-0.002 23
0		-1.30	-0.000 96
-10		-11.30	-0.003 50
-20		2.60	0.000 03
-30		3.30	0.000 20
Frequency Stability versus Power Supply			
Environment Temperature (℃)	**Power Supplied (V)**	**Frequency Measure with Time Elapse**	
		Frequency Error (㎐)	**ppm**
20	3.49 (85%)	6.90	0.001 12
	4.72 (115%)	-9.80	-0.003 12

- End of the Test Report -