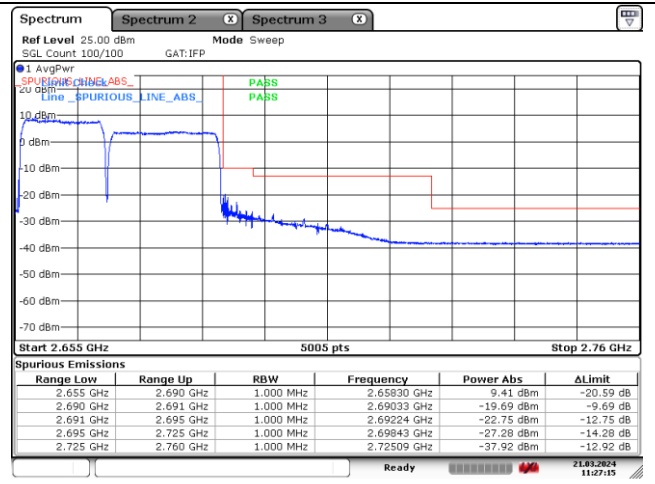
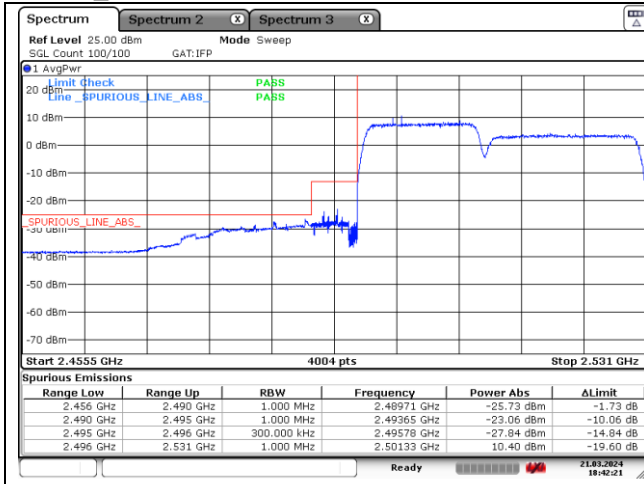
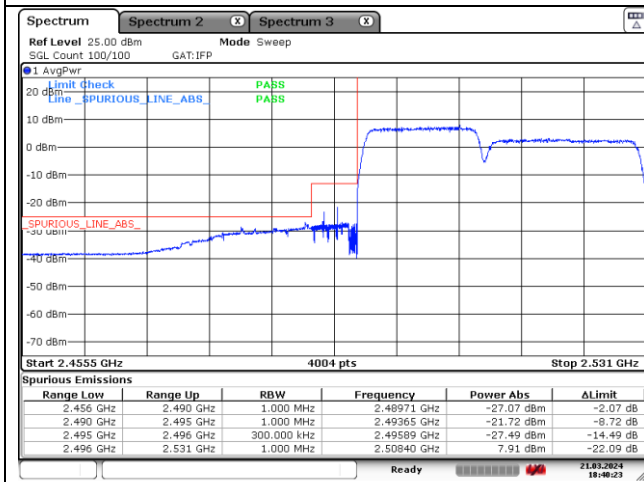


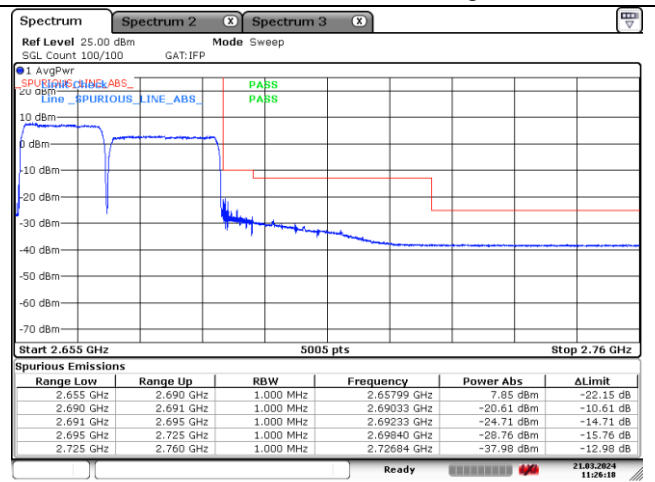
ULCA_41C



PCC 15 MHz + SCC 20 MHz_QPSK-Low Channel



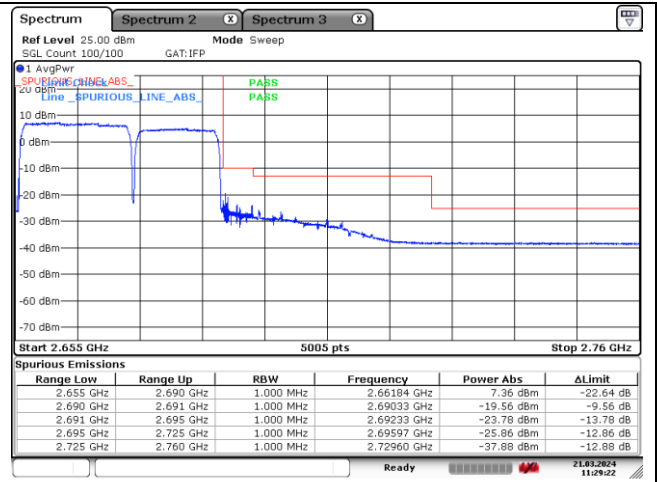
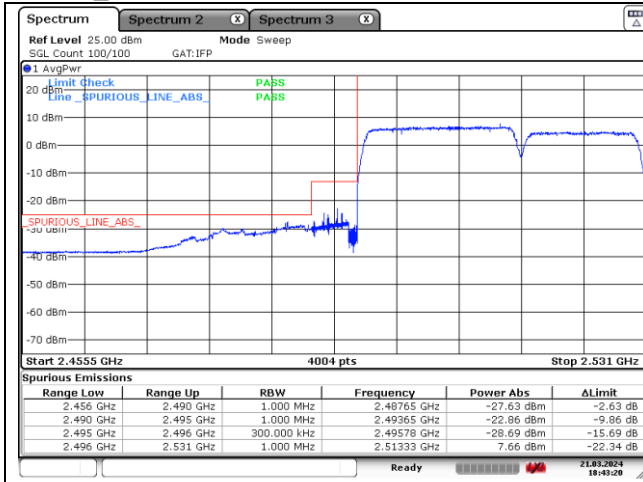
PCC 15 MHz + SCC 20 MHz_QPSK-High Channel



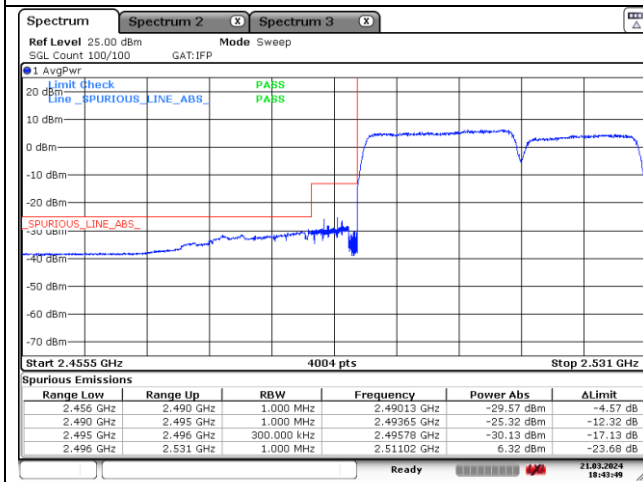
PCC 15 MHz + SCC 20 MHz_16QAM-Low Channel

PCC 15 MHz + SCC 20 MHz_16QAM-High Channel

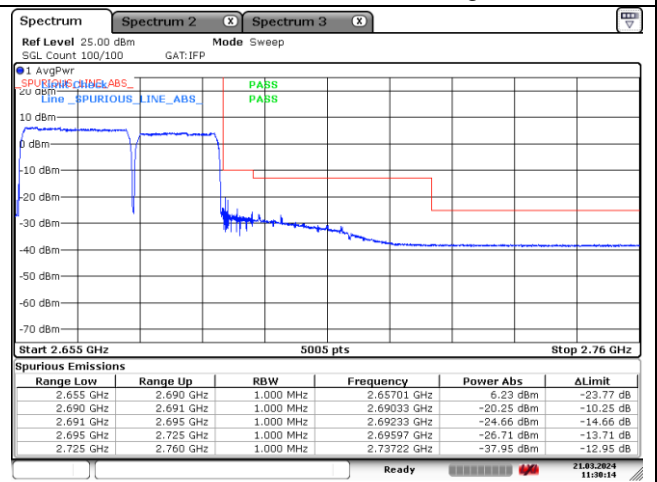
ULCA_41C



PCC 20 MHz + SCC 15 MHz_QPSK-Low Channel



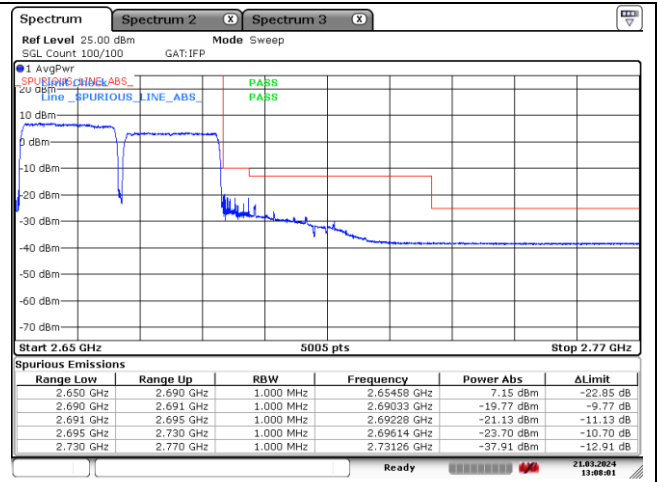
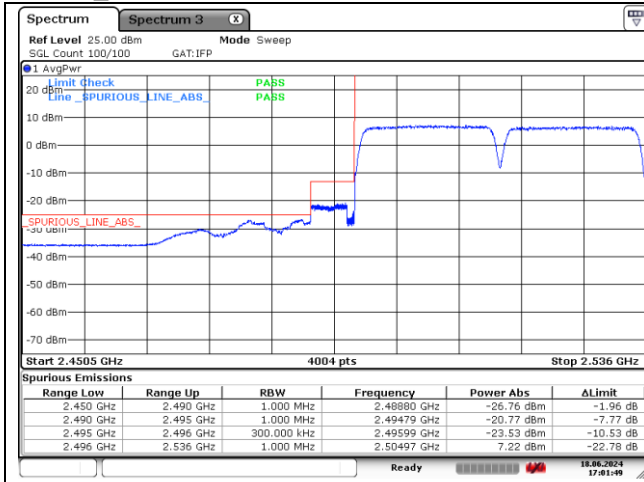
PCC 20 MHz + SCC 15 MHz_QPSK-High Channel



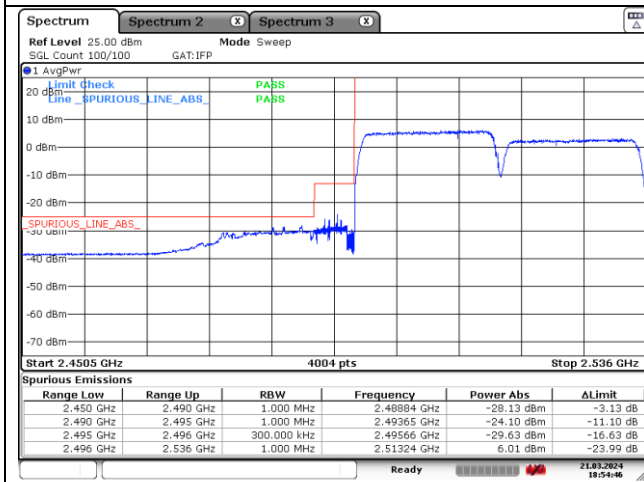
PCC 20 MHz + SCC 15 MHz_16QAM-Low Channel

PCC 20 MHz + SCC 15 MHz_16QAM-High Channel

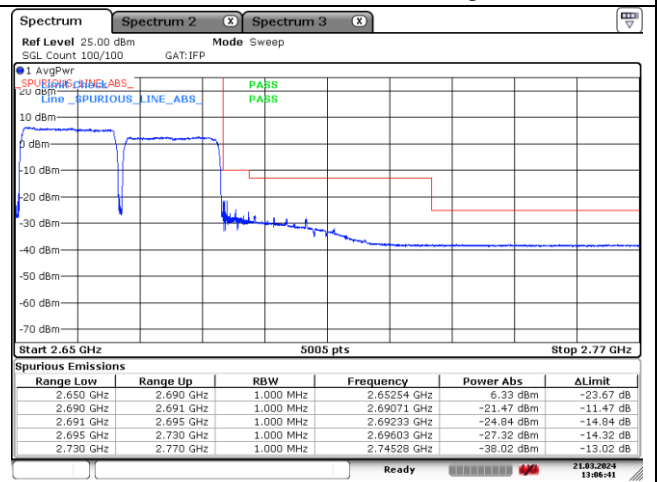
ULCA_41C



PCC 20 MHz + SCC 20 MHz_QPSK-Low Channel



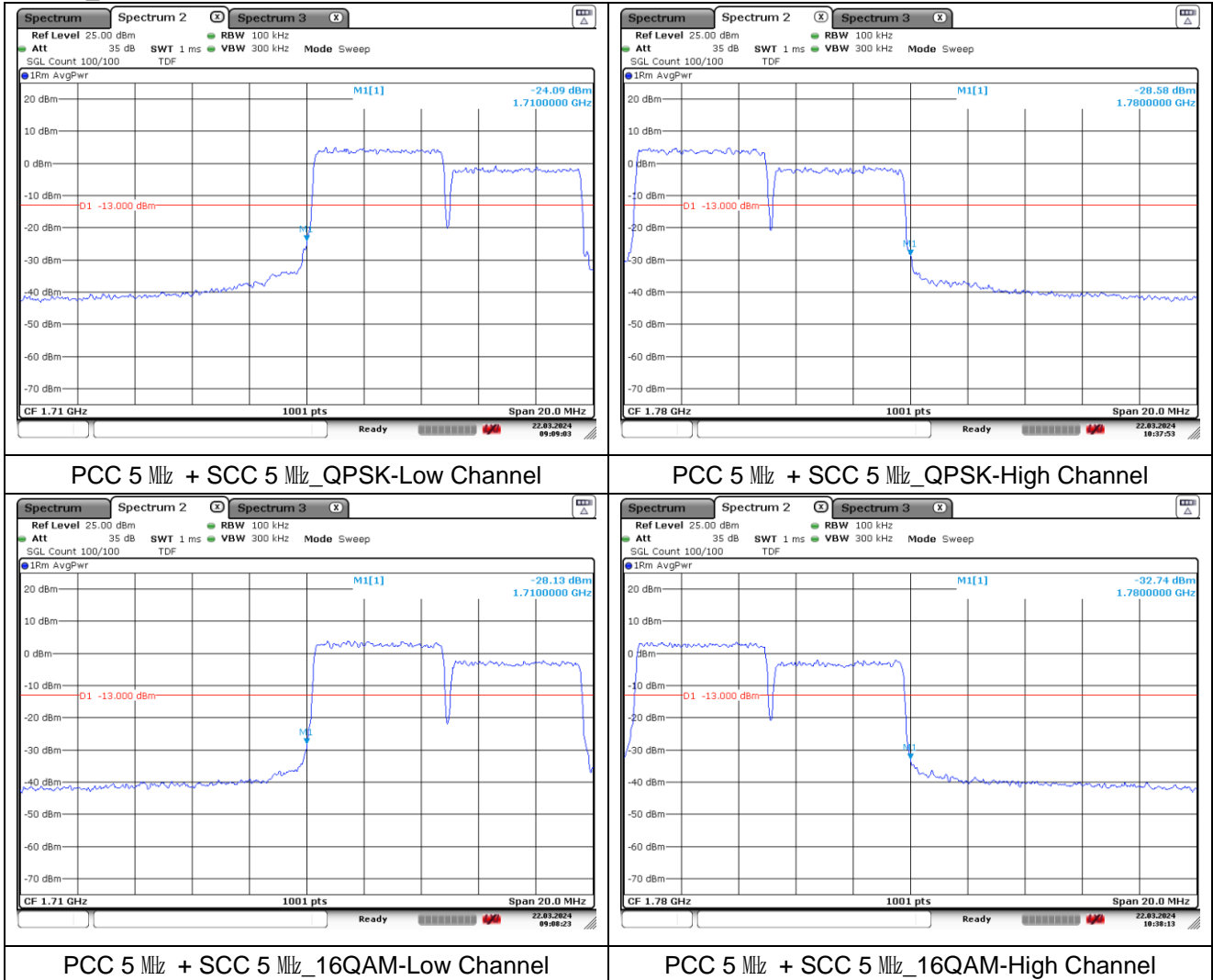
PCC 20 MHz + SCC 20 MHz_QPSK-High Channel



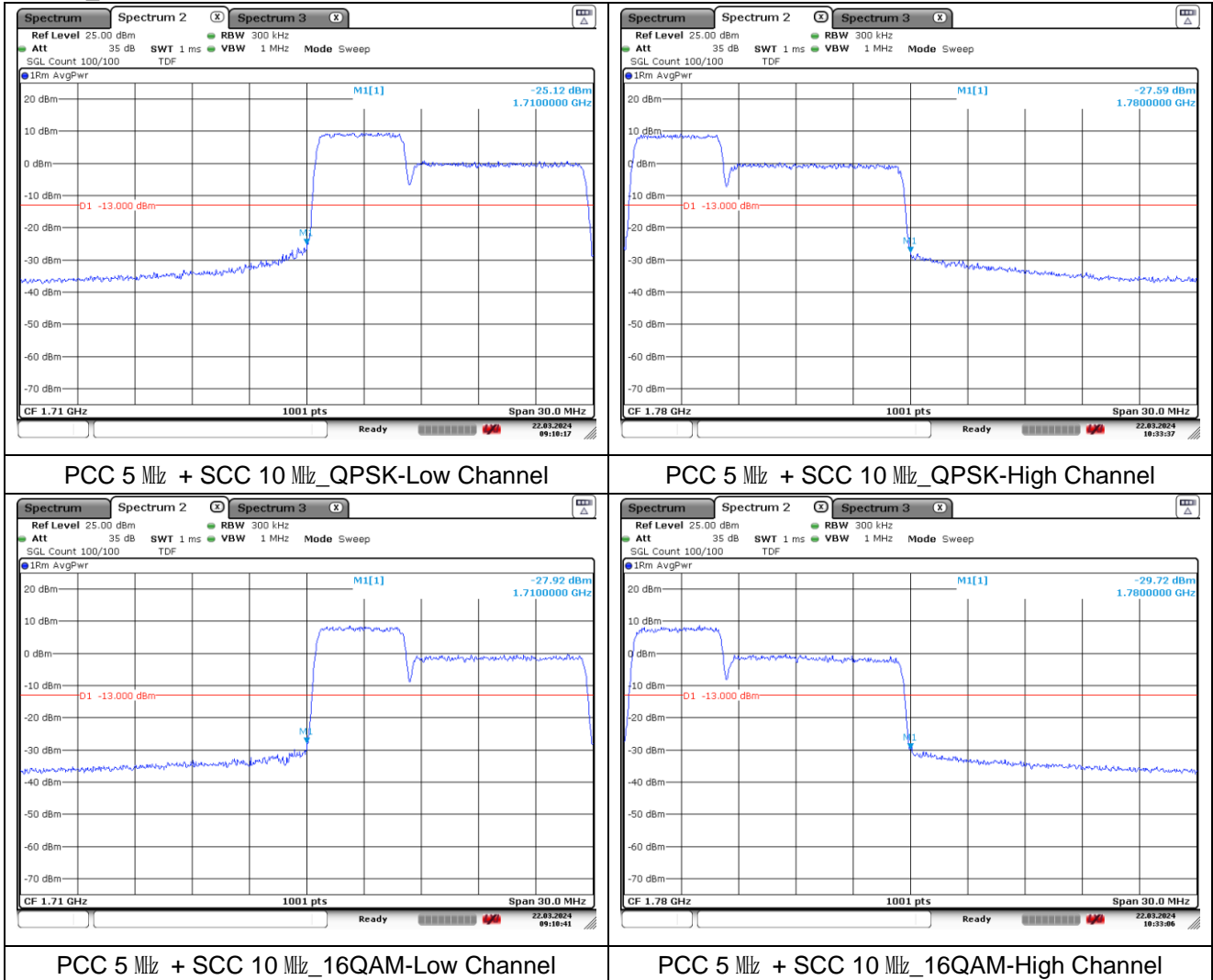
PCC 20 MHz + SCC 20 MHz_16QAM-Low Channel

PCC 20 MHz + SCC 20 MHz_16QAM-High Channel

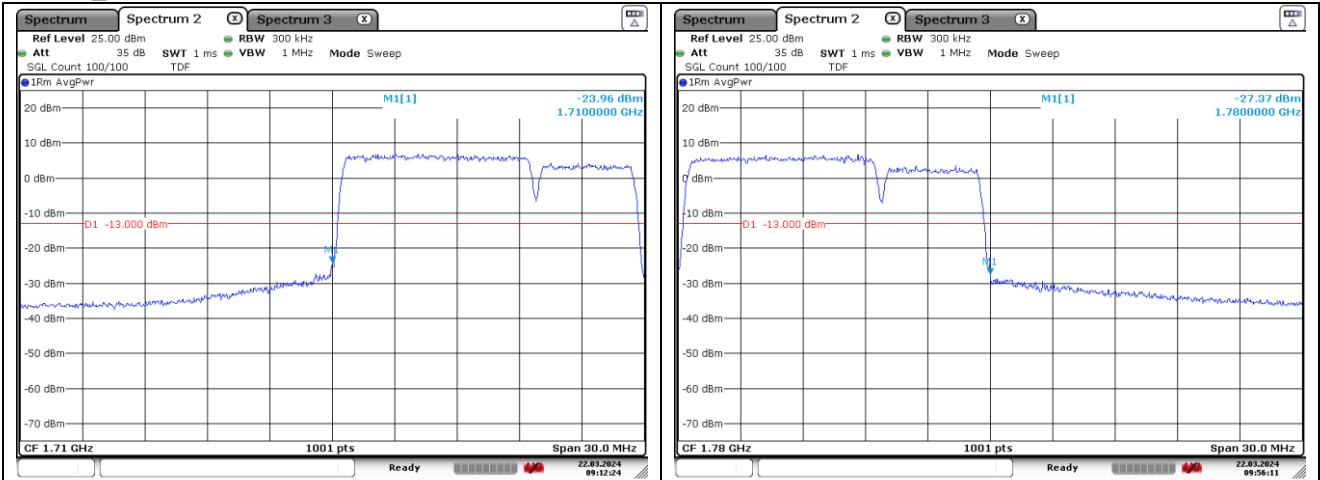
ULCA_66B



ULCA_66B

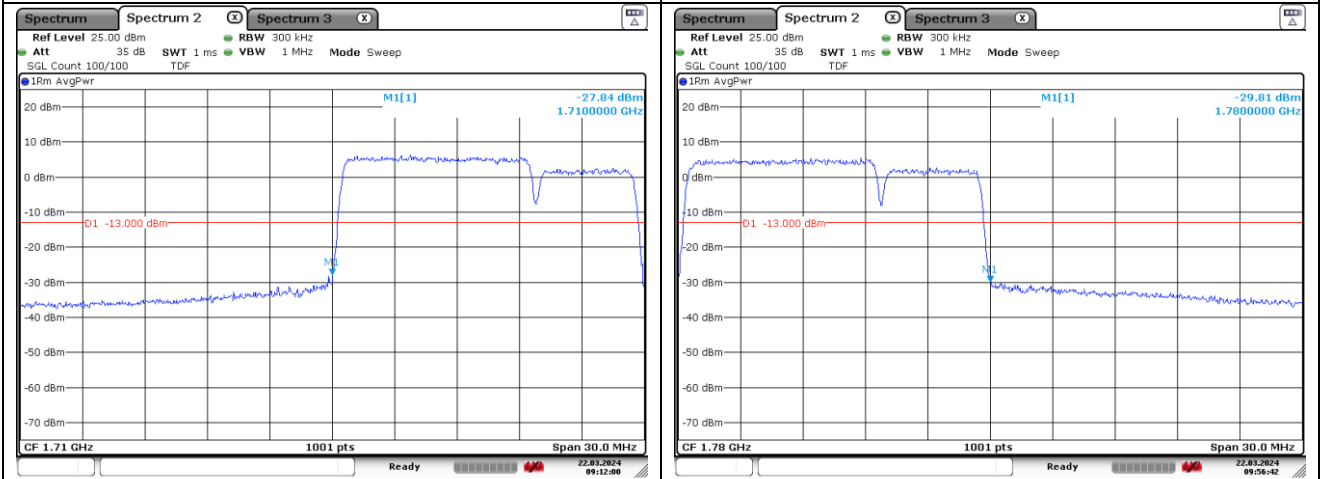


ULCA_66B



PCC 10 MHz + SCC 5 MHz_QPSK-Low Channel

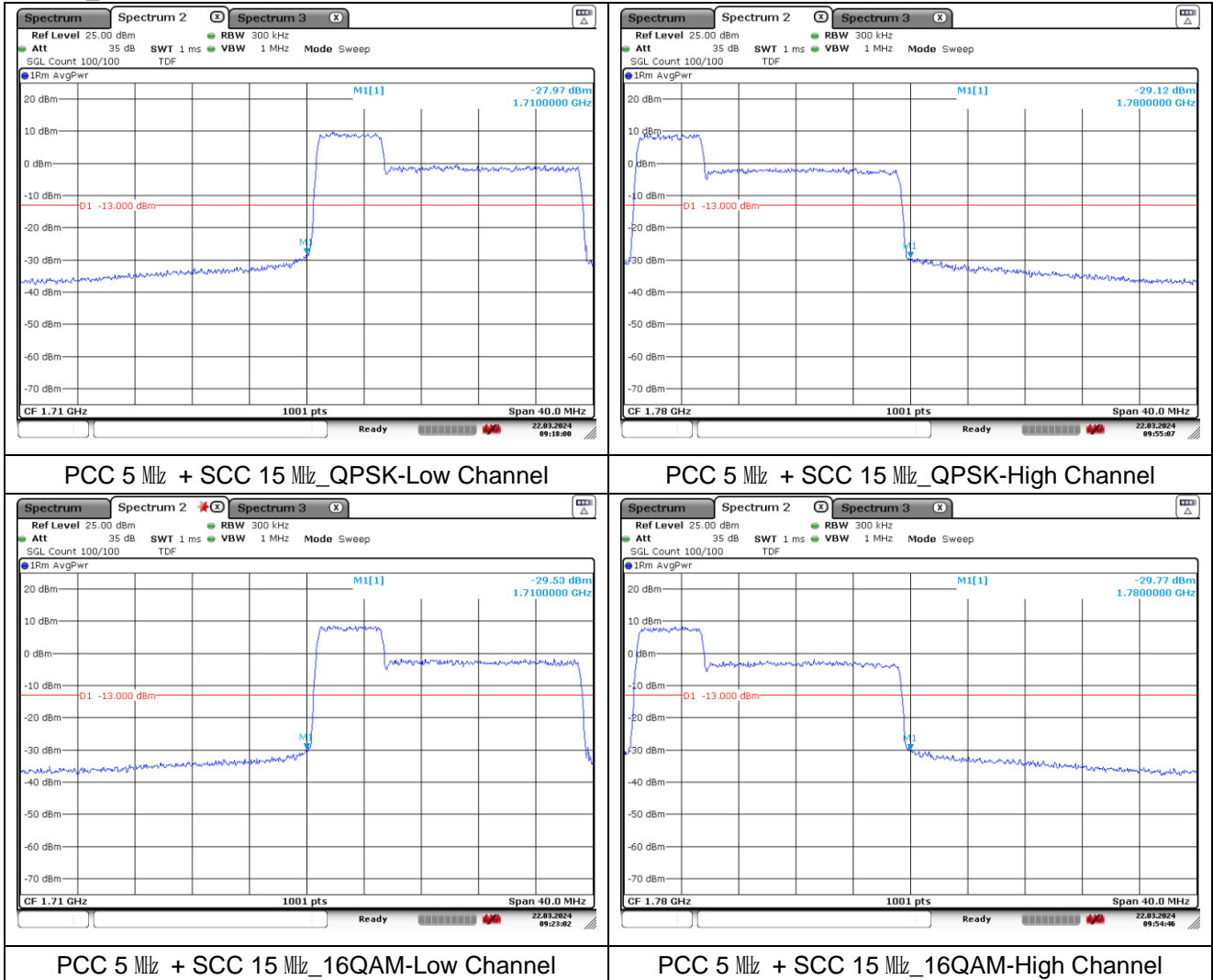
PCC 10 MHz + SCC 5 MHz_QPSK-High Channel



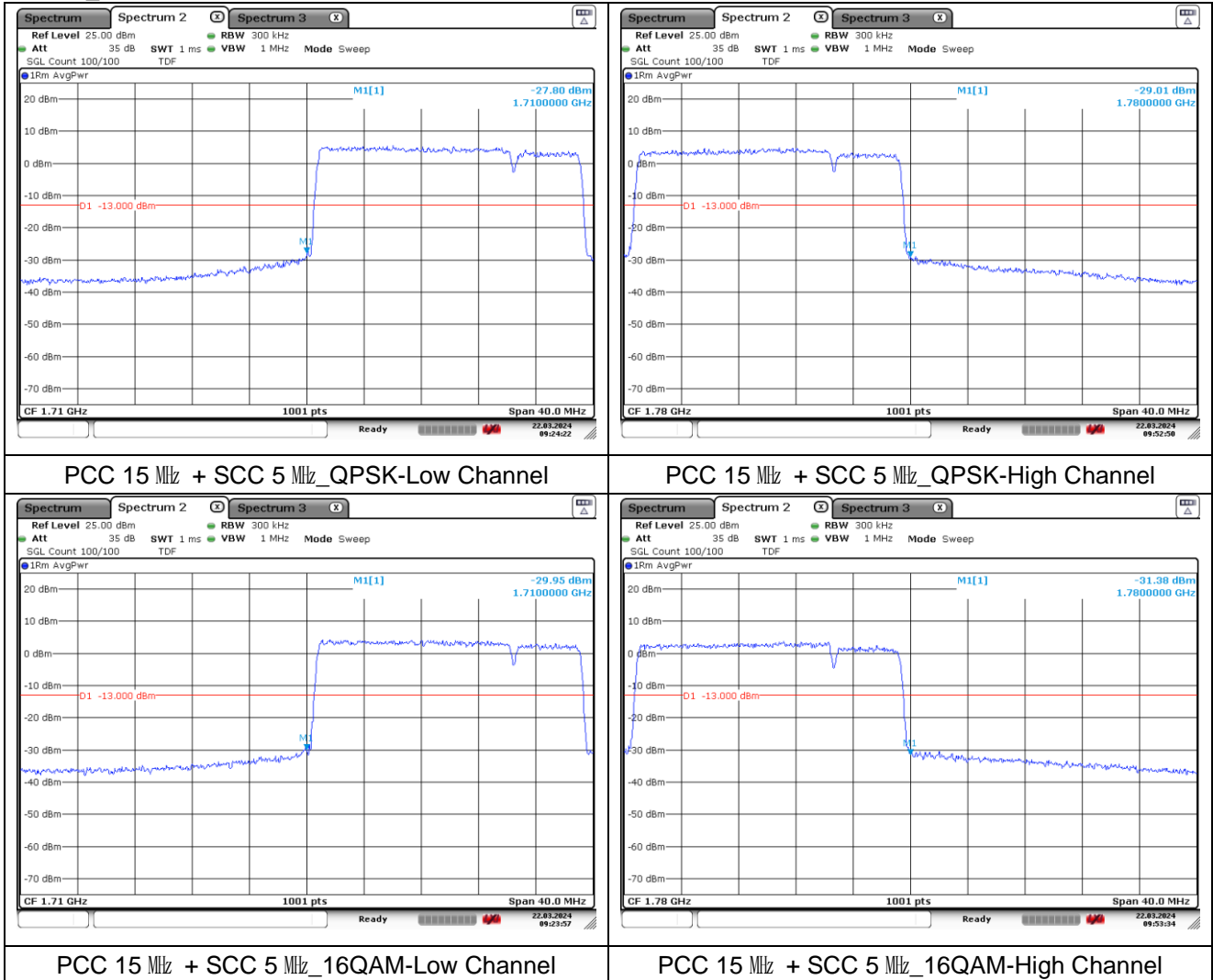
PCC 10 MHz + SCC 5 MHz_16QAM-Low Channel

PCC 10 MHz + SCC 5 MHz_16QAM-High Channel

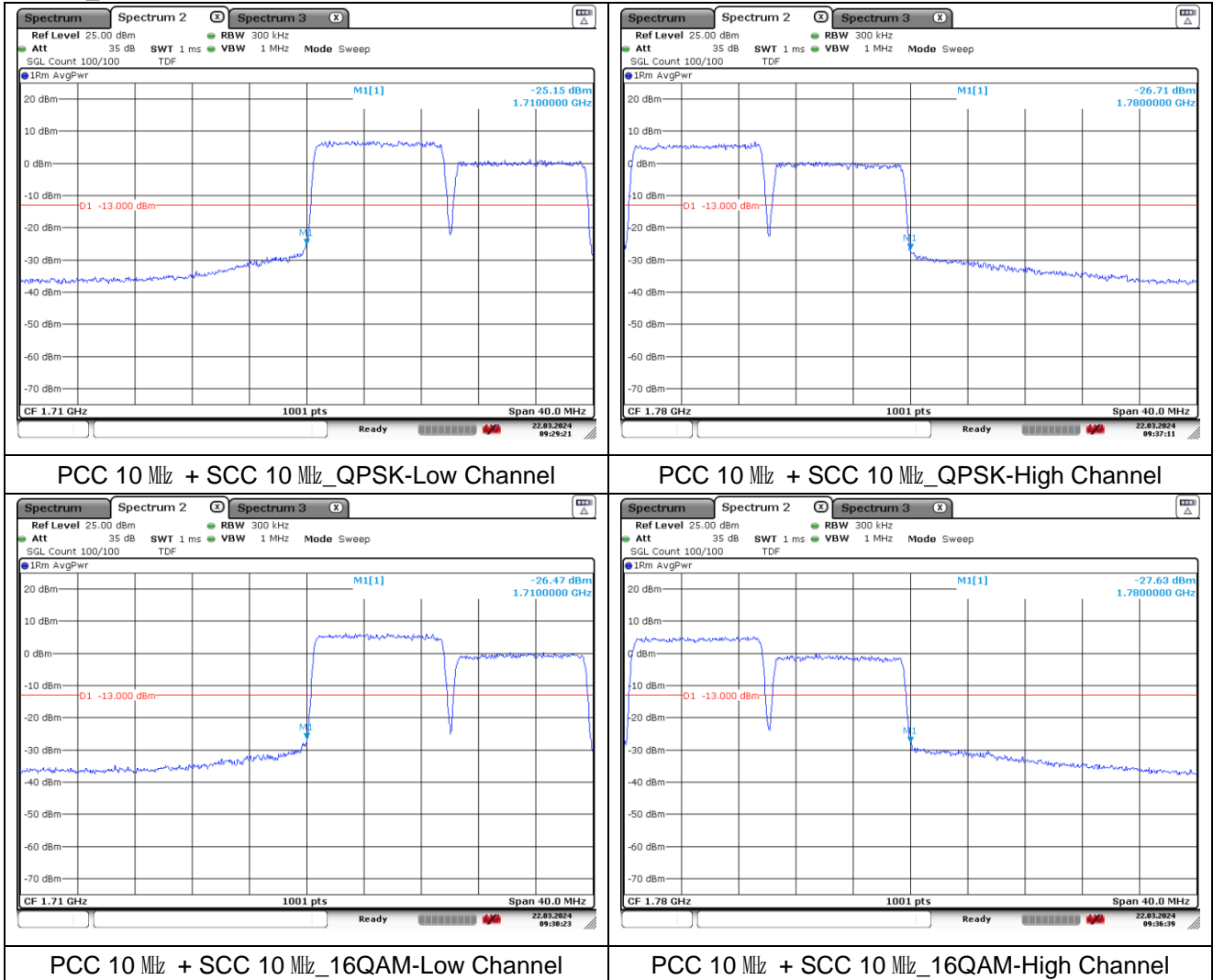
ULCA_66B



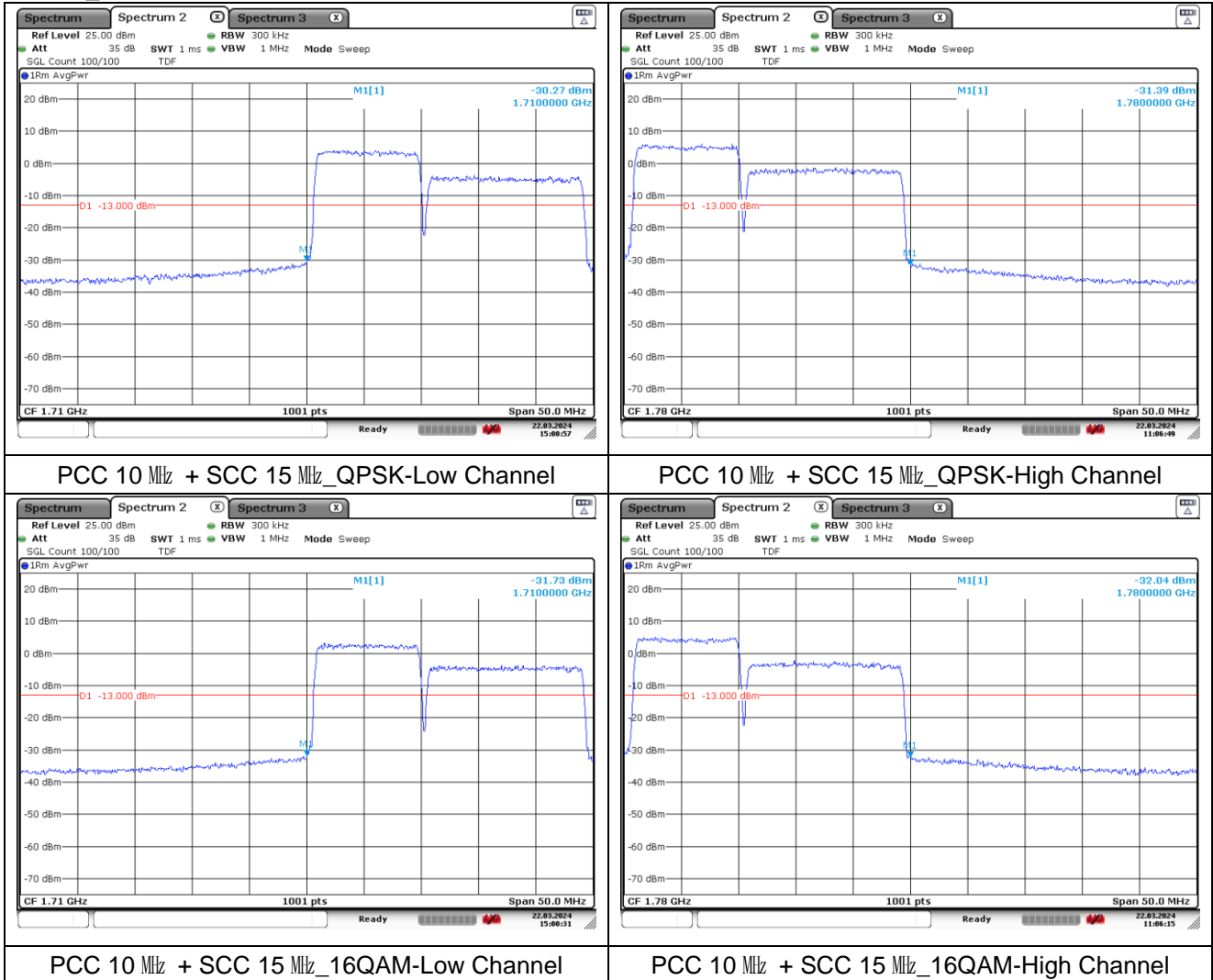
ULCA_66B



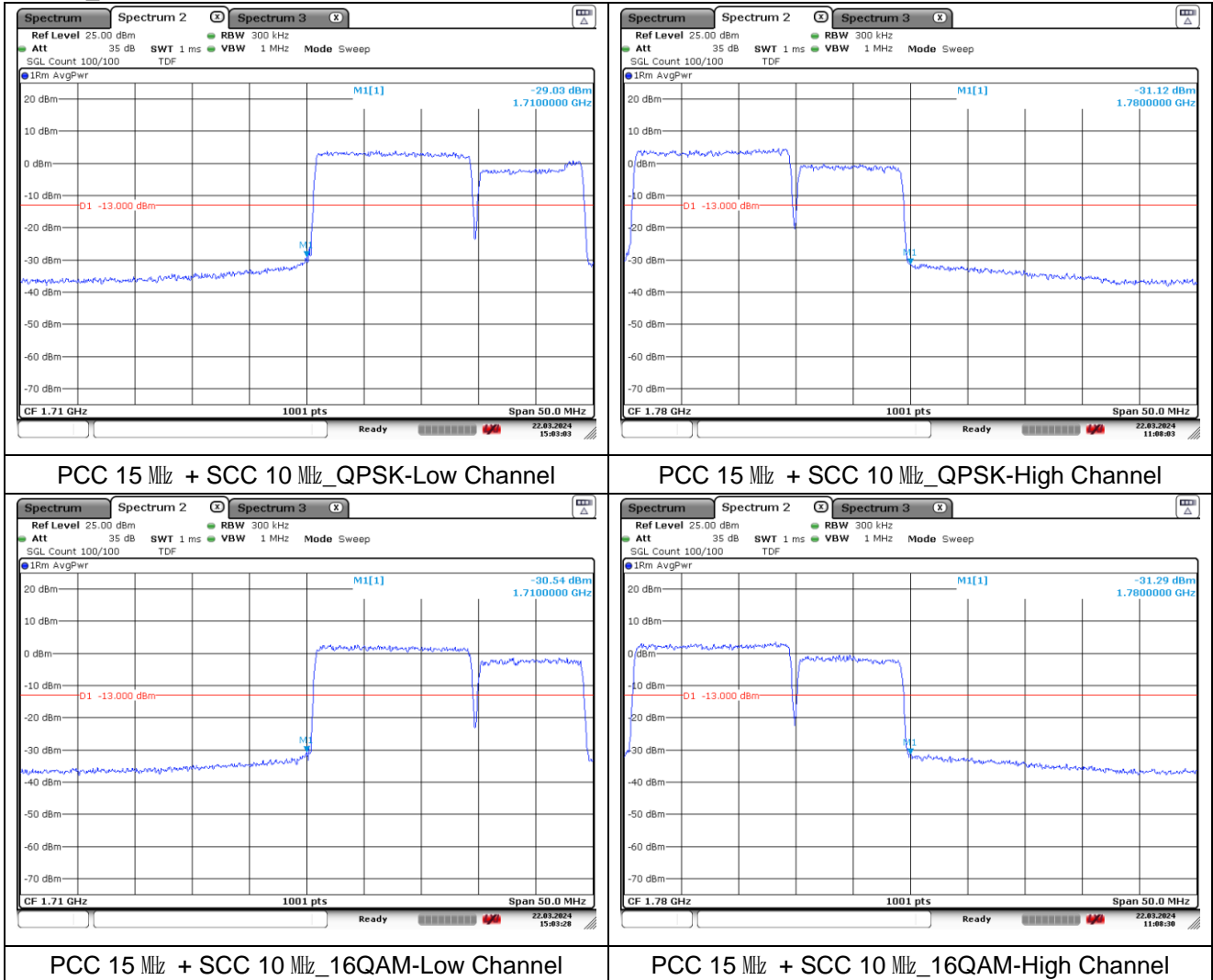
ULCA_66B



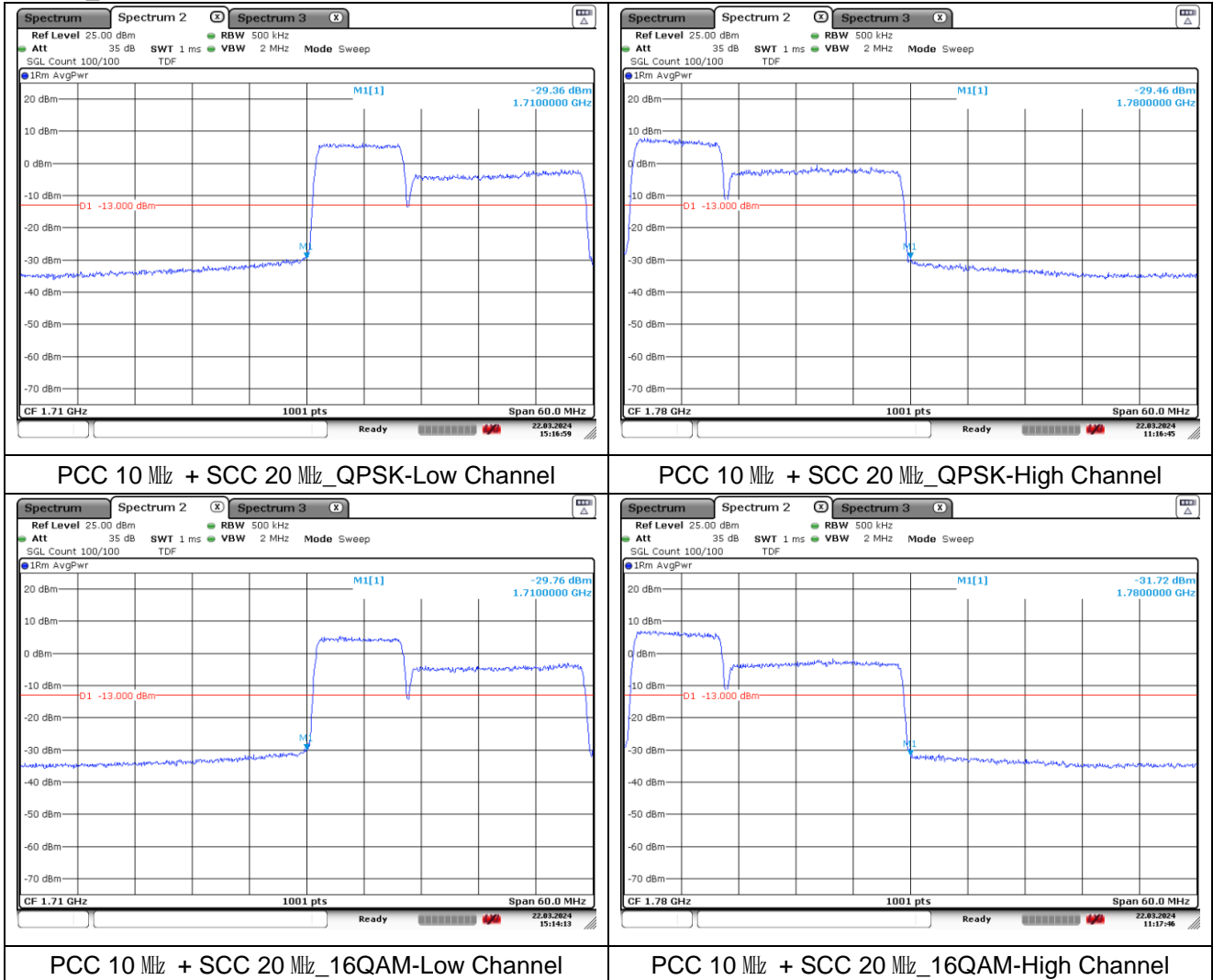
ULCA_66C



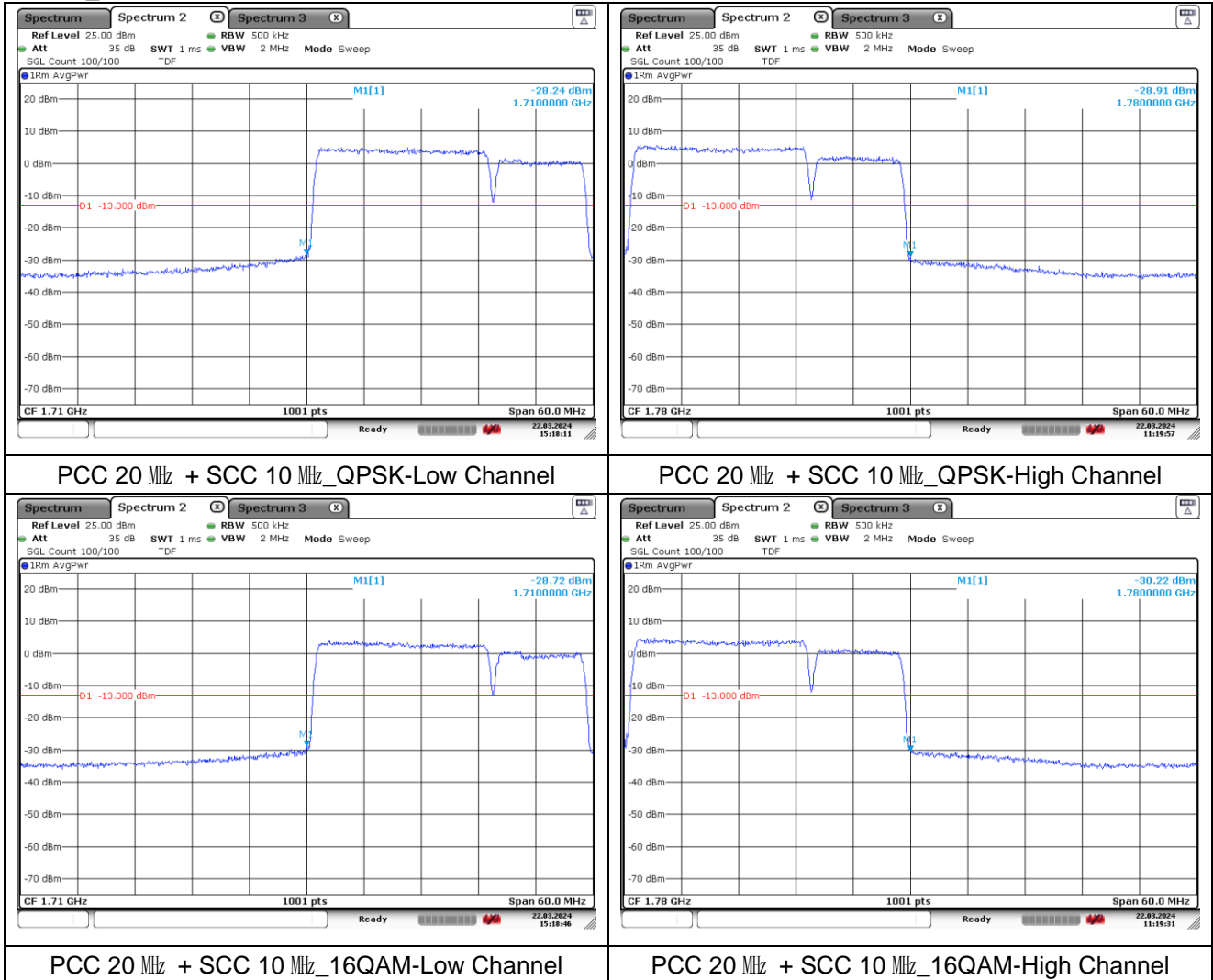
ULCA_66C



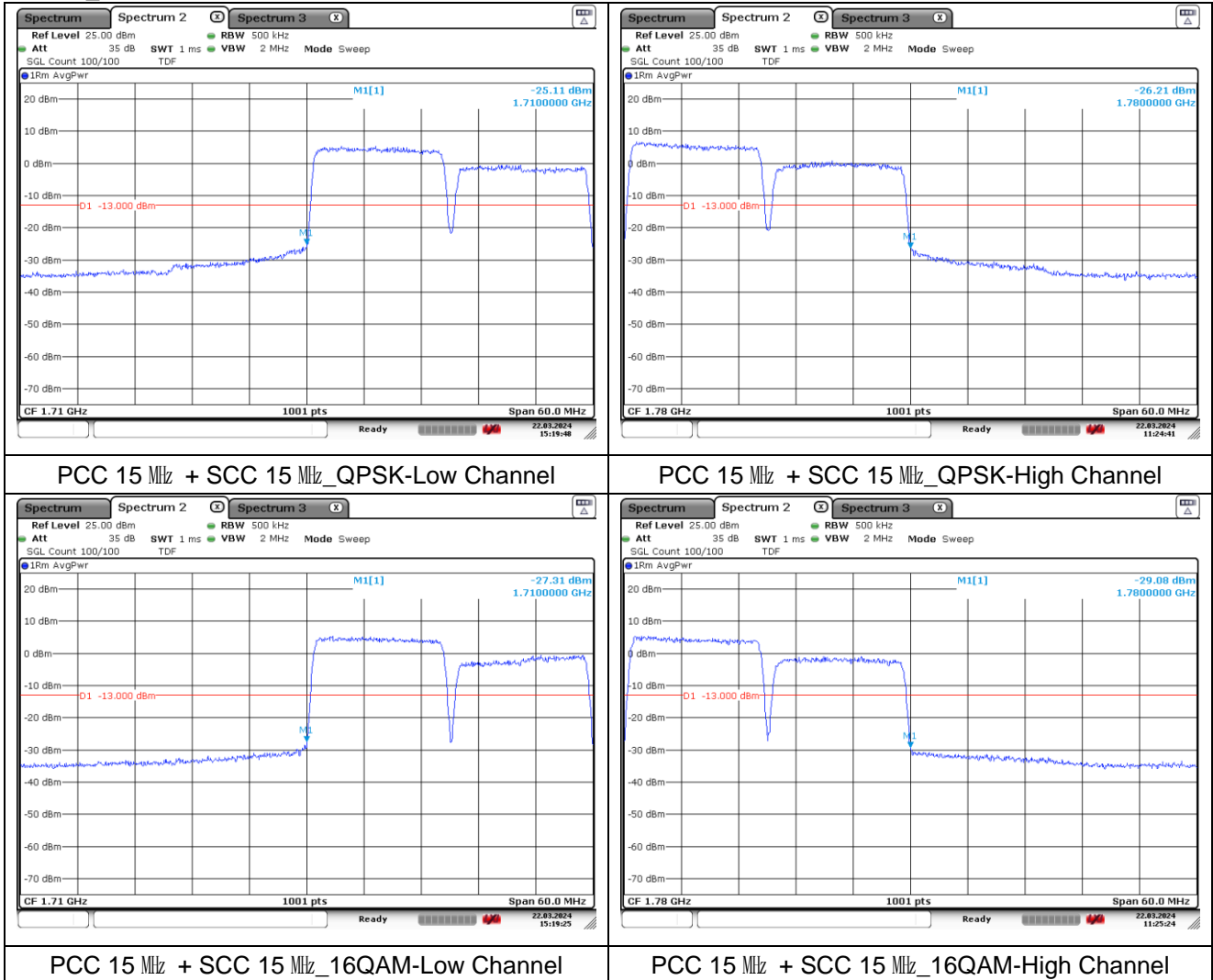
ULCA_66C



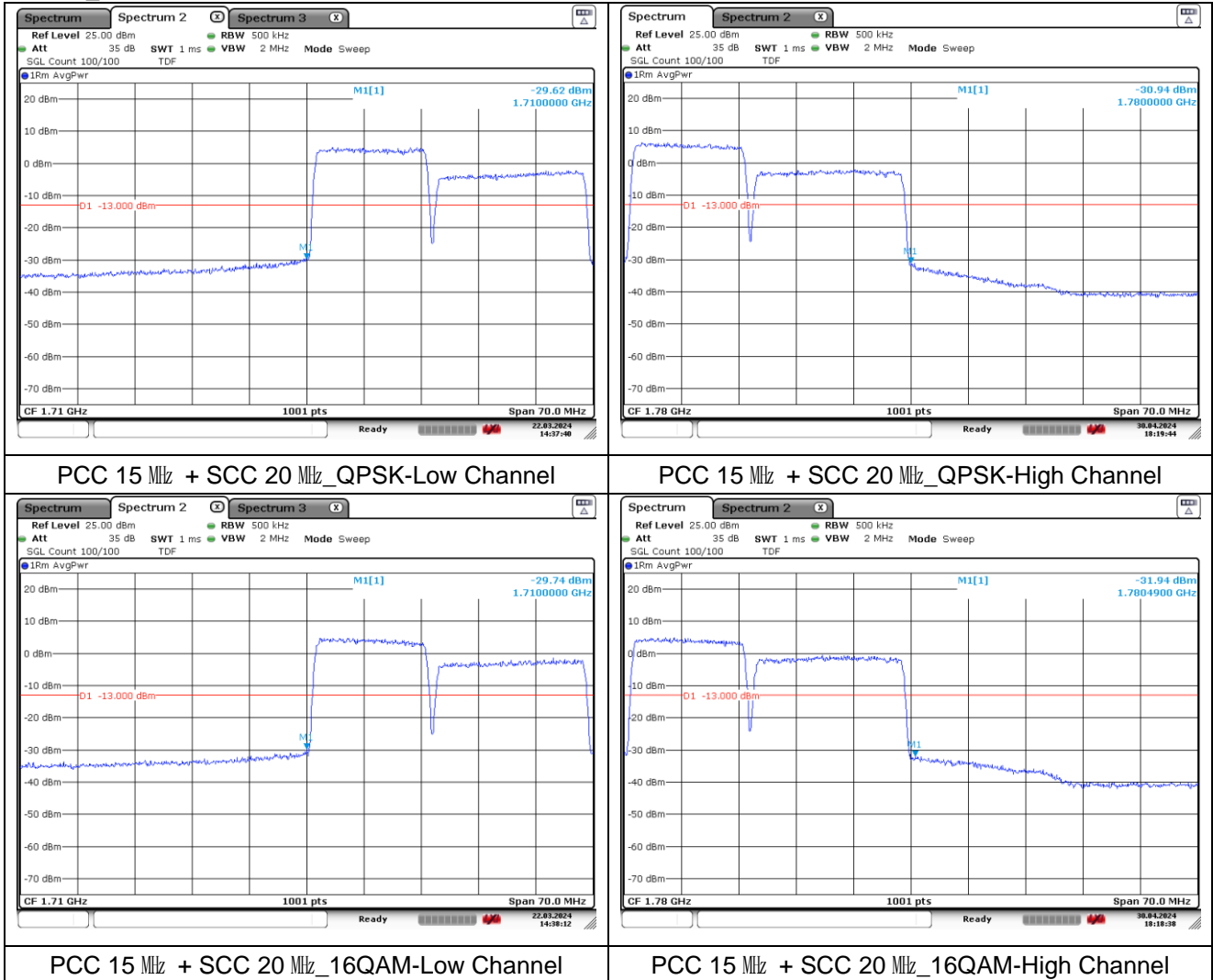
ULCA_66C



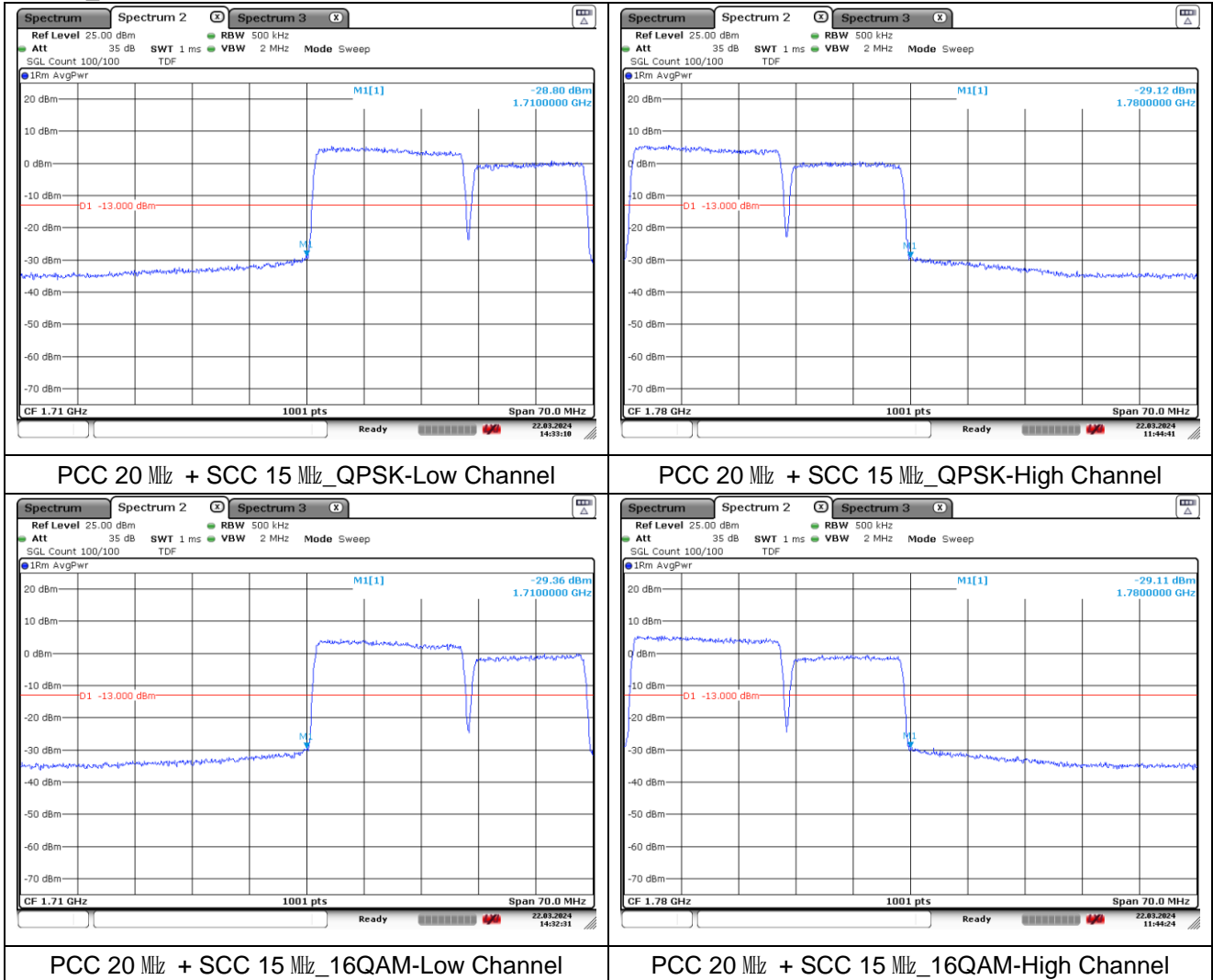
ULCA_66C



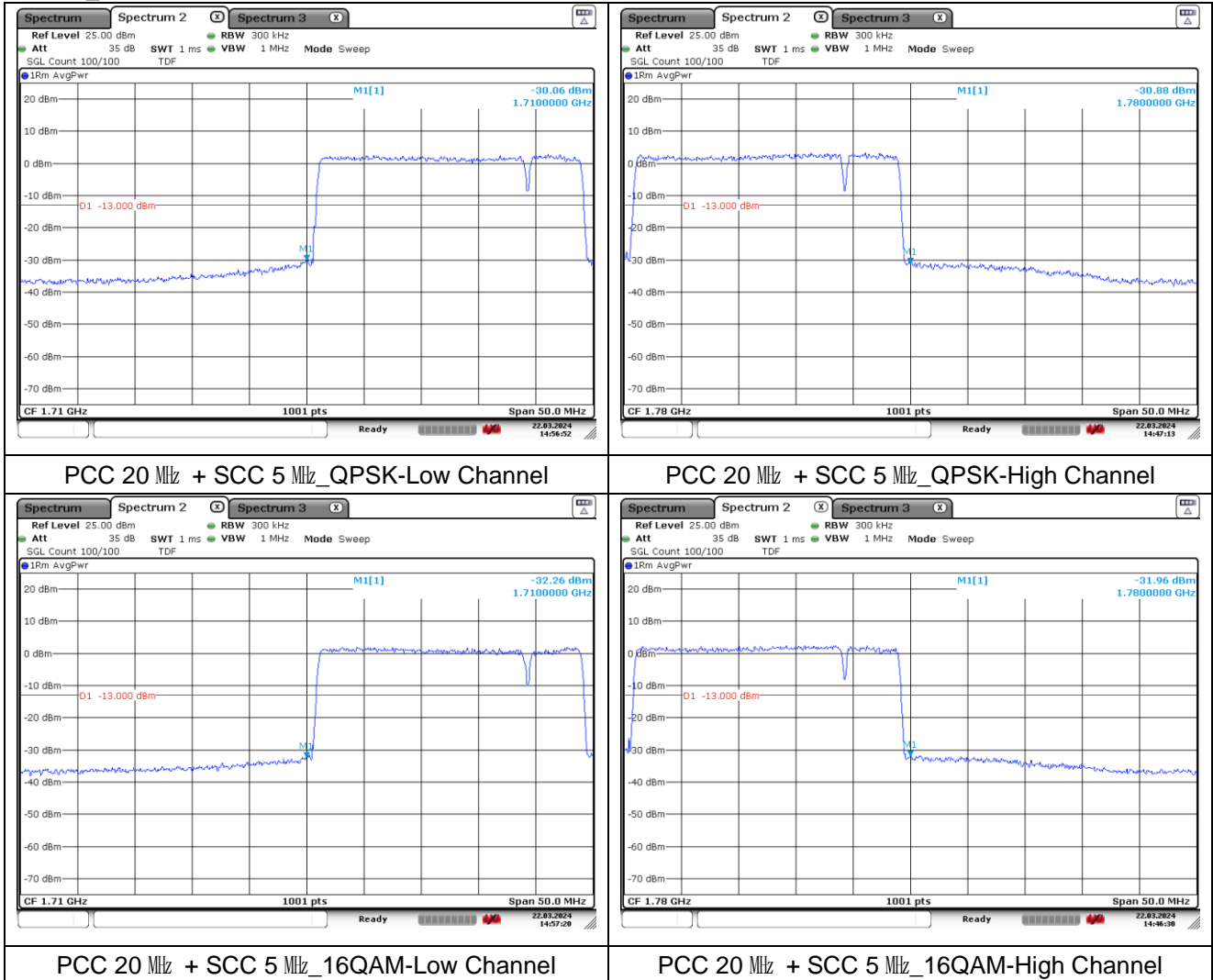
ULCA_66C



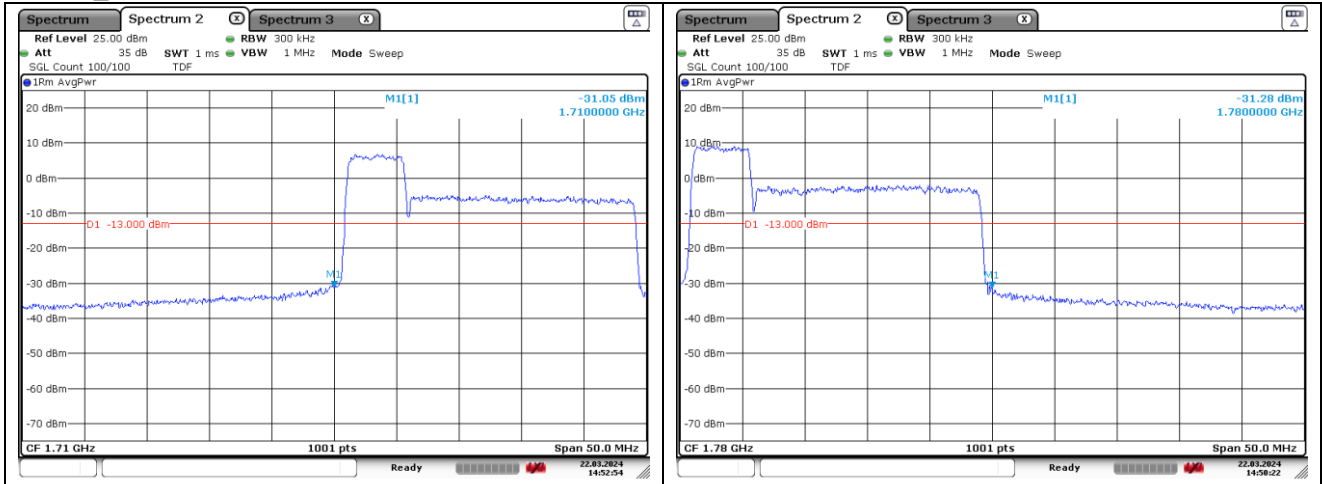
ULCA_66C



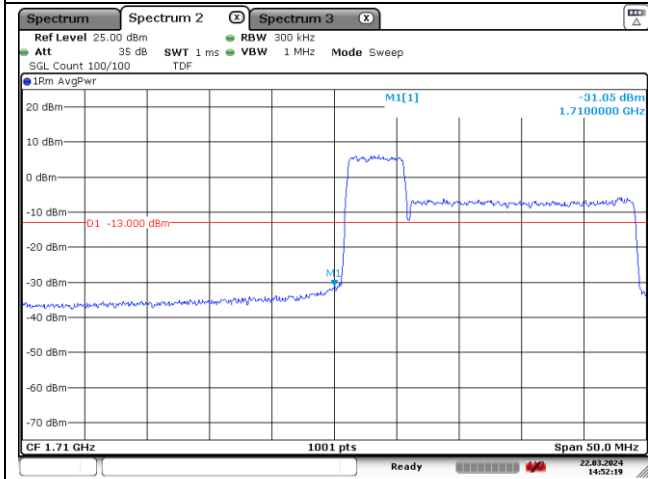
ULCA_66C



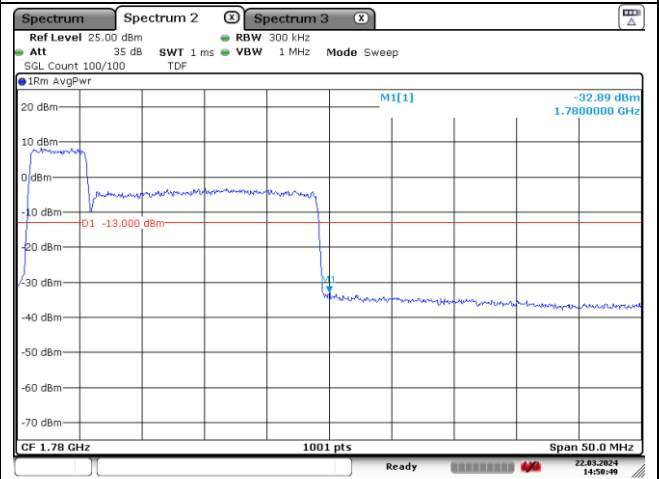
ULCA_66C



PCC 5 MHz + SCC 20 MHz_QPSK-Low Channel



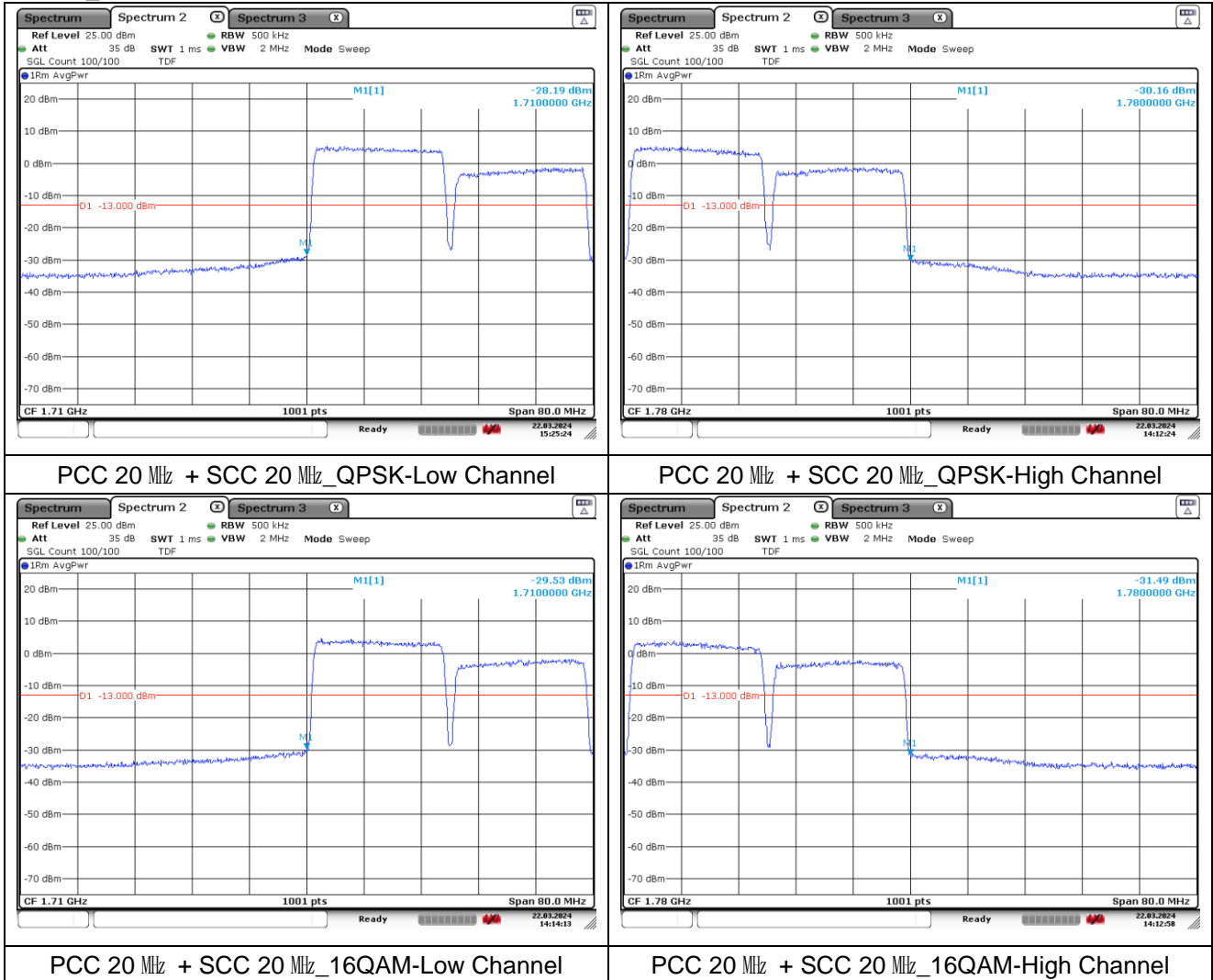
PCC 5 MHz + SCC 20 MHz_QPSK-High Channel



PCC 5 MHz + SCC 20 MHz_16QAM-Low Channel

PCC 5 MHz + SCC 20 MHz_16QAM-High Channel

ULCA_66C



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.

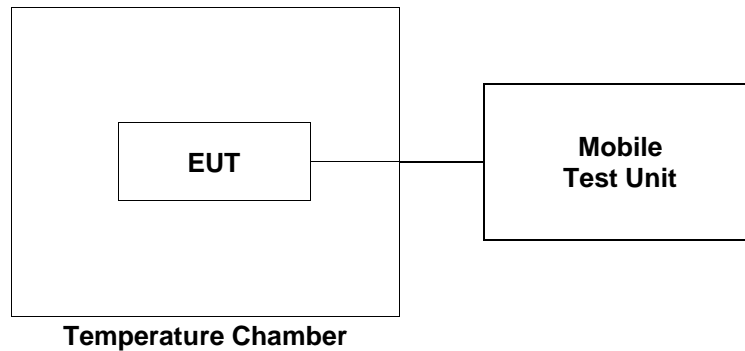
- §27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

- §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.

ULCA 5B at middle channel

Reference Frequency: PCC 834.1 MHz / SCC 838 MHz					
Frequency Stability versus Temperature					
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse			
		Frequency Error (Hz)		ppm	
		PCC	SCC	PCC	SCC
50	4.00	135.32	96.36	0.013 14	0.014 01
40		131.41	87.44	0.008 45	0.003 37
30		127.66	88.56	0.003 96	0.004 70
20(Ref.)		124.36	84.62	-	-
10		125.23	89.47	0.001 04	0.005 79
0		129.36	84.36	0.005 99	-0.000 31
-10		133.22	87.47	0.010 62	0.003 40
-20		137.25	85.52	0.015 45	0.001 07
-30		139.36	90.87	0.017 98	0.007 46
Frequency Stability versus Power Supply					
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse			
		Frequency Error (Hz)		Ppm	
		PCC	SCC	PCC	SCC
20	3.40 (85%)	125.21	84.55	0.001 02	-0.000 08
	4.60 (115%)	113.58	96.63	-0.012 92	0.014 33

ULCA 7C at middle channel

Reference Frequency: PCC 2 525.6 MHz / SCC 2 540 MHz					
Frequency Stability versus Temperature					
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse			
		Frequency Error (Hz)		ppm	
		PCC	SCC	PCC	SCC
50	4.00	115.32	108.36	-0.005 16	0.008 56
40		133.41	84.44	0.002 00	-0.000 86
30		138.66	69.56	0.004 08	-0.006 72
20(Ref.)		128.36	86.62	-	-
10		118.23	70.47	-0.004 01	-0.006 36
0		148.36	90.36	0.007 92	0.001 47
-10		117.22	70.47	-0.004 41	-0.006 36
-20		128.25	99.52	-0.000 04	0.005 08
-30		139.36	91.87	0.004 36	0.002 07
Frequency Stability versus Power Supply					
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse			
		Frequency Error (Hz)		ppm	
		PCC	SCC	PCC	SCC
20	3.40 (85%)	127.21	85.55	-0.000 46	-0.000 42
	4.60 (115%)	131.58	106.63	0.001 27	0.007 88

ULCA 38C at middle channel

Reference Frequency: PCC 2 587.5 MHz / SCC 2 602.5 MHz					
Frequency Stability versus Temperature					
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse			
		Frequency Error (Hz)		ppm	
		PCC	SCC	PCC	SCC
50	4.00	88.96	76.52	-0.000 21	0.005 03
40		101.36	81.44	0.004 58	0.006 92
30		121.52	43.25	0.012 37	-0.007 75
20(Ref.)		89.51	63.43	-	-
10		96.56	76.36	0.002 72	0.004 97
0		122.25	85.36	0.012 65	0.008 43
-10		118.43	72.36	0.011 18	0.003 43
-20		123.52	89.63	0.013 14	0.010 07
-30		128.63	74.15	0.015 12	0.004 12
Frequency Stability versus Power Supply					
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse			
		Frequency Error (Hz)		ppm	
		PCC	SCC	PCC	SCC
20	3.40 (85%)	89.44	61.36	-0.000 03	-0.000 80
	4.60 (115%)	90.51	86.25	0.000 39	0.008 77

ULCA 41C at middle channel

Reference Frequency: PCC 2 583.8 MHz / SCC 2 595.5 MHz					
Frequency Stability versus Temperature					
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse			
		Frequency Error (Hz)		ppm	
		PCC	SCC	PCC	SCC
50	4.00	135.32	100.36	0.006 56	-0.000 87
40		147.41	68.44	0.011 24	-0.013 17
30		133.66	76.56	0.018 34	-0.010 04
20(Ref.)		118.36	102.62	-	-
10		111.23	84.47	-0.008 55	-0.006 99
0		129.36	83.36	0.013 19	-0.007 42
-10		113.22	90.47	-0.006 16	-0.004 68
-20		118.25	98.52	-0.000 13	-0.001 58
-30		135.36	89.87	0.020 38	-0.004 91
Frequency Stability versus Power Supply					
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse			
		Frequency Error (Hz)		ppm	
		PCC	SCC	PCC	SCC
20	3.40 (85%)	135.21	96.55	0.006 52	-0.002 34
	4.60 (115%)	133.58	87.63	0.005 89	-0.005 78

ULCA 66B at middle channel

Reference Frequency: PCC 1 752.6 MHz / SCC 1 757.4 MHz					
Frequency Stability versus Temperature					
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse			
		Frequency Error (Hz)		ppm	
		PCC	SCC	PCC	SCC
50	4.00	145.32	91.36	0.004 54	0.006 68
40		134.41	72.44	-0.001 68	-0.004 09
30		125.66	69.56	-0.006 68	-0.005 72
20(Ref.)		137.36	79.62	-	-
10		132.23	96.47	-0.002 93	0.009 59
0		147.36	100.36	0.005 71	0.011 80
-10		113.22	99.47	-0.013 77	0.011 30
-20		152.25	92.52	0.008 50	0.007 34
-30		141.36	97.87	0.002 28	0.010 38
Frequency Stability versus Power Supply					
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse			
		Frequency Error (Hz)		ppm	
		PCC	SCC	PCC	SCC
20	3.40 (85%)	121.21	67.55	-0.009 21	-0.006 87
	4.60 (115%)	125.58	103.63	-0.006 72	0.013 66

ULCA 66C at middle channel

Reference Frequency: PCC 1 747.9 MHz / SCC 1 759.9 MHz					
Frequency Stability versus Temperature					
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse			
		Frequency Error (Hz)		ppm	
		PCC	SCC	PCC	SCC
50	4.00	132.32	96.36	-0.001 17	0.002 69
40		113.41	86.44	-0.011 99	-0.002 94
30		126.66	87.56	-0.004 41	-0.002 31
20(Ref.)		134.36	91.62	-	-
10		118.23	88.47	-0.009 23	-0.001 79
0		131.36	100.36	-0.001 72	0.004 97
-10		135.22	81.47	0.000 49	-0.005 77
-20		135.25	97.52	0.000 51	0.003 35
-30		139.36	77.87	0.002 86	-0.007 81
Frequency Stability versus Power Supply					
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse			
		Frequency Error (Hz)		ppm	
		PCC	SCC	PCC	SCC
20	3.40 (85%)	114.21	73.55	-0.011 53	-0.010 27
	4.60 (115%)	130.58	95.63	-0.002 16	0.002 28

- End of the Test Report -