

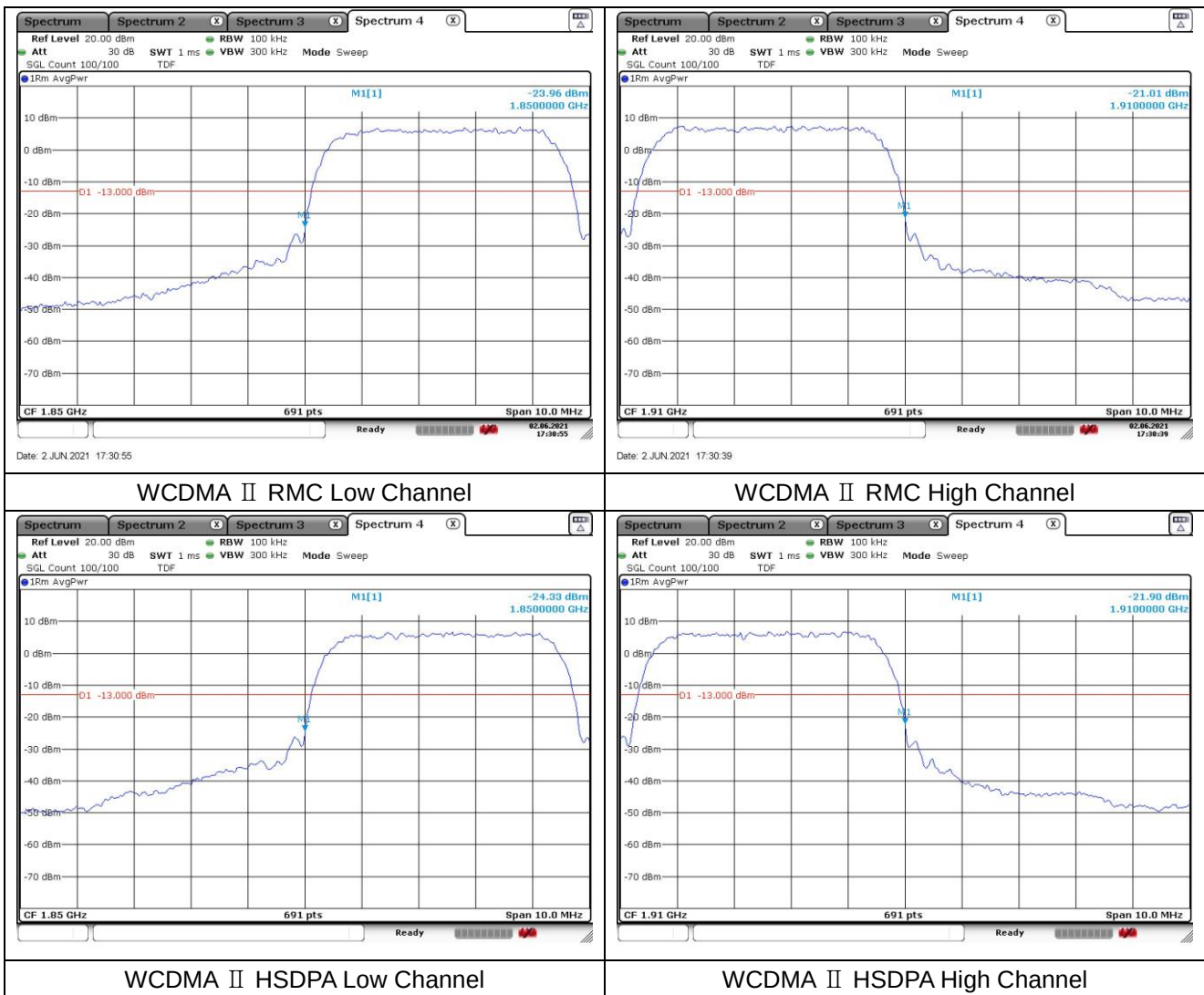
7.3. Test Results

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

- Test plots

SIM 1

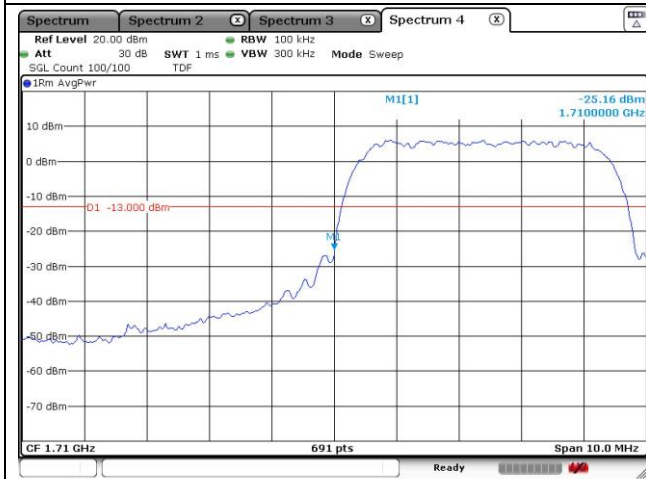
WCDMA II



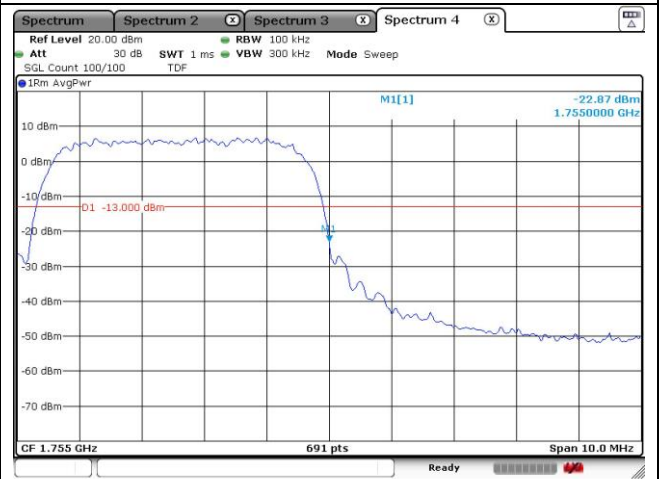
WCDMA IV



WCDMA IV RMC Low Channel



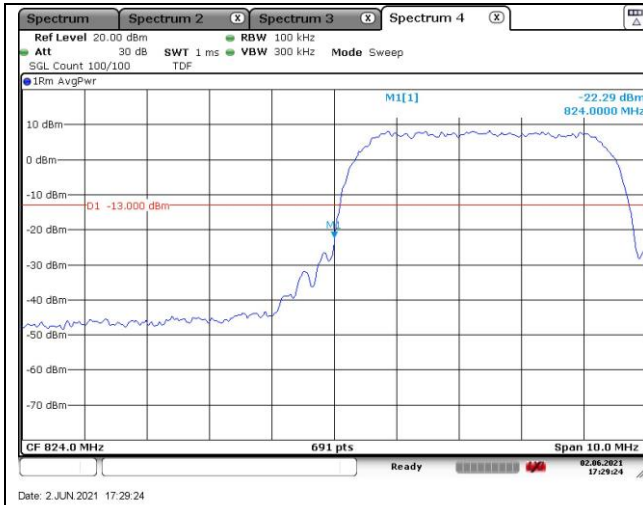
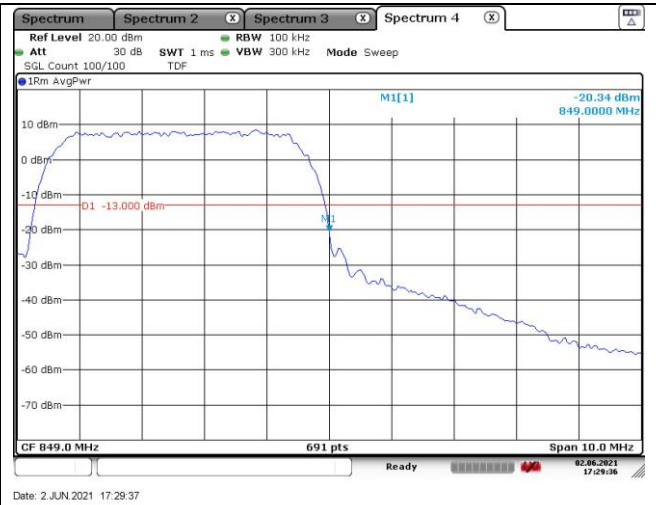
WCDMA IV RMC High Channel



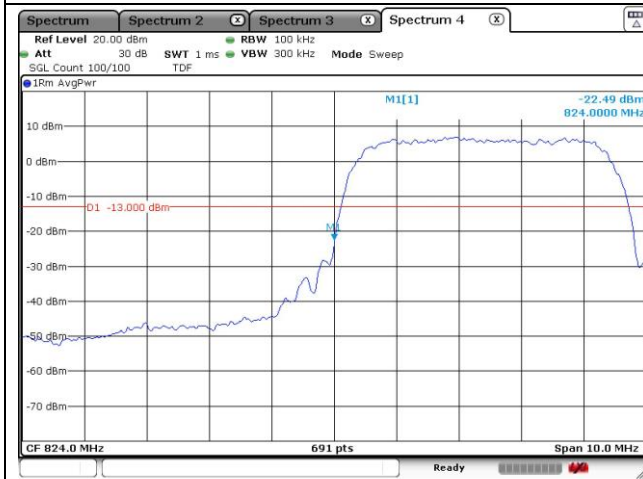
WCDMA IV HSDPA Low Channel

WCDMA IV HSDPA High Channel

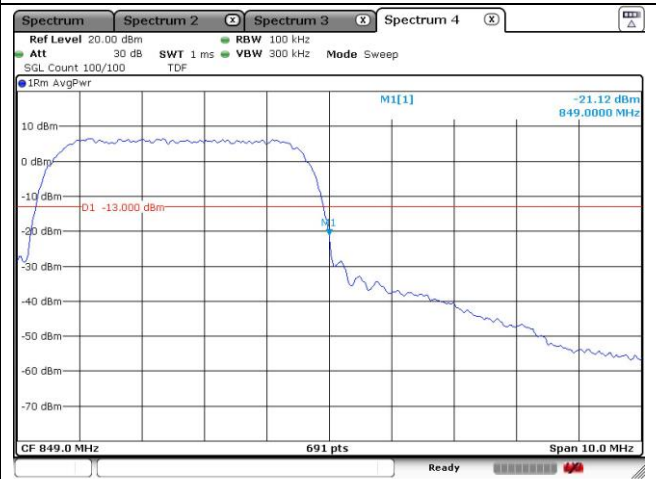
WCDMA V



WCDMA V RMC Low Channel



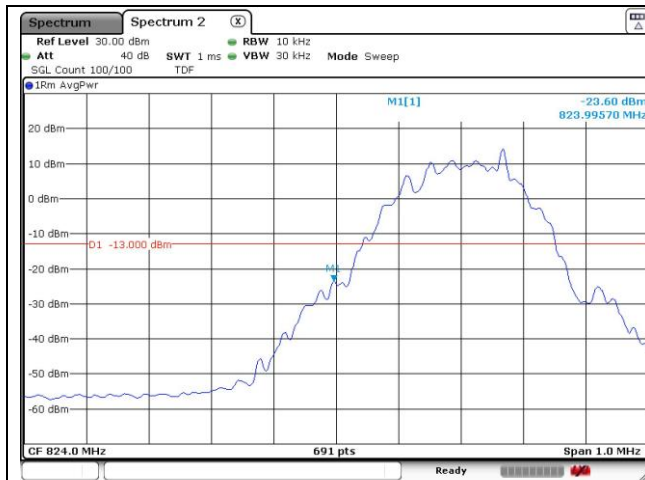
WCDMA V RMC High Channel



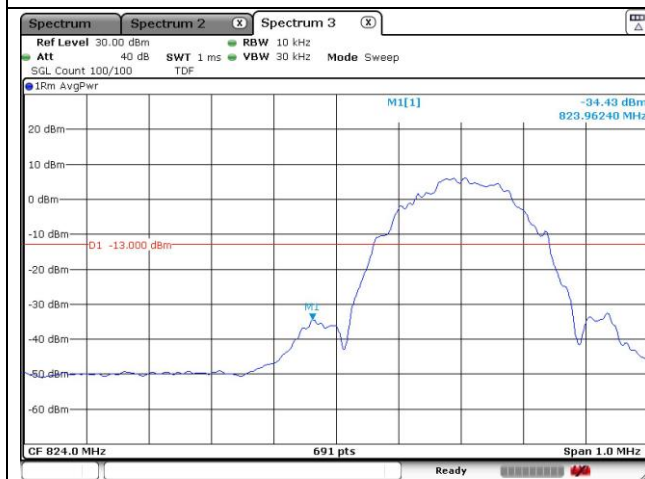
WCDMA V HSDPA Low Channel

WCDMA V HSDPA High Channel

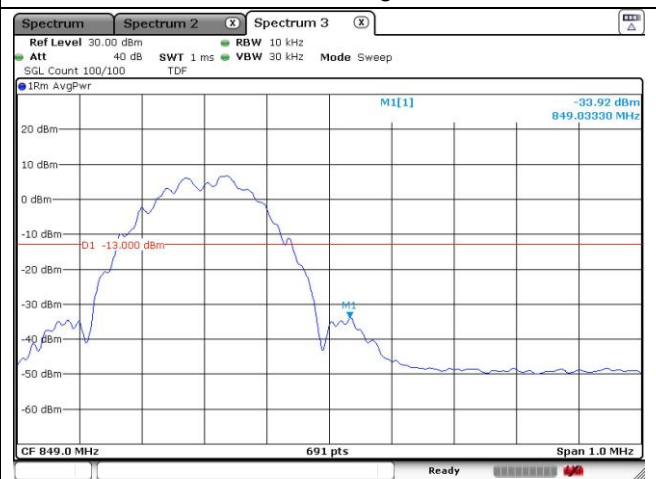
GSM 850



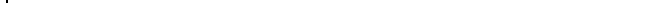
GSM 850 VOICE Low Channel



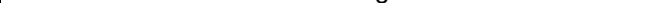
GSM 850 VOICE High Channel



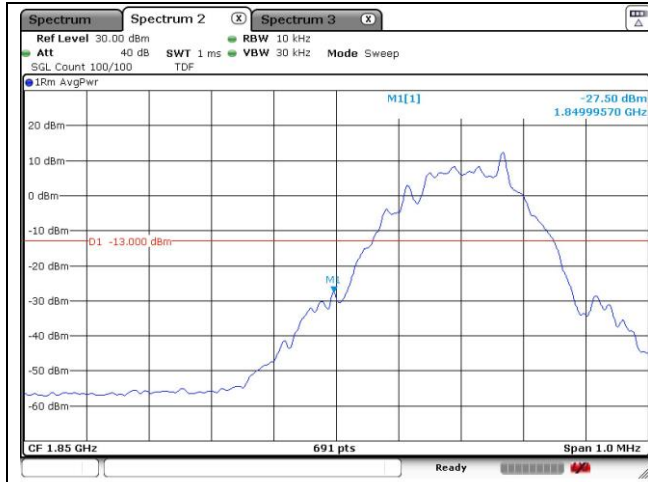
GSM 850 EDGE Low Channel



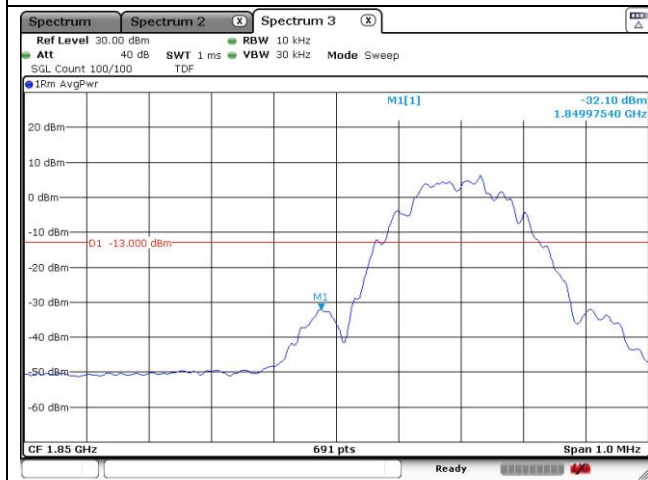
GSM 850 EDGE High Channel



GSM 1900



GSM 1900 VOICE Low Channel

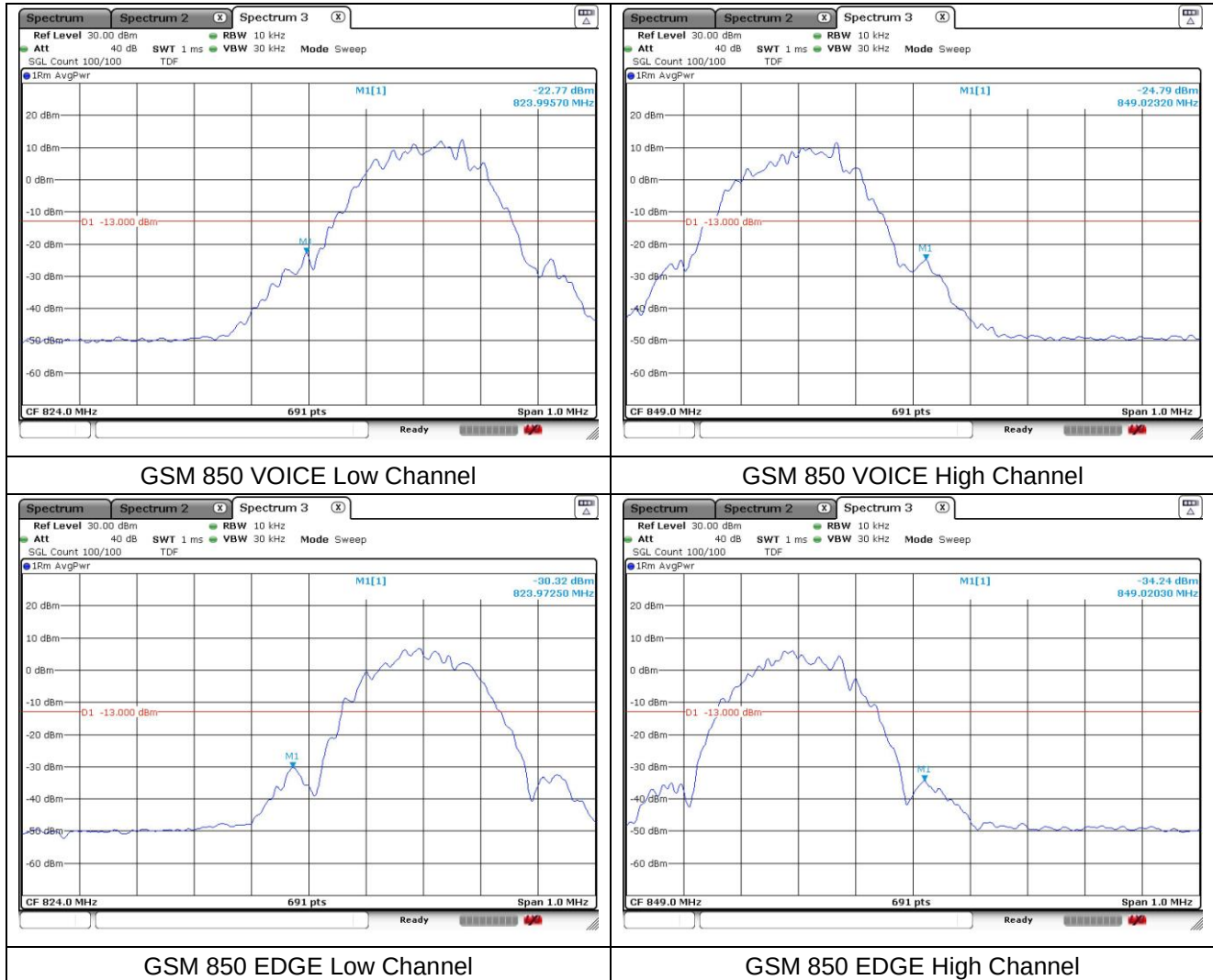


GSM 1900 EDGE Low Channel

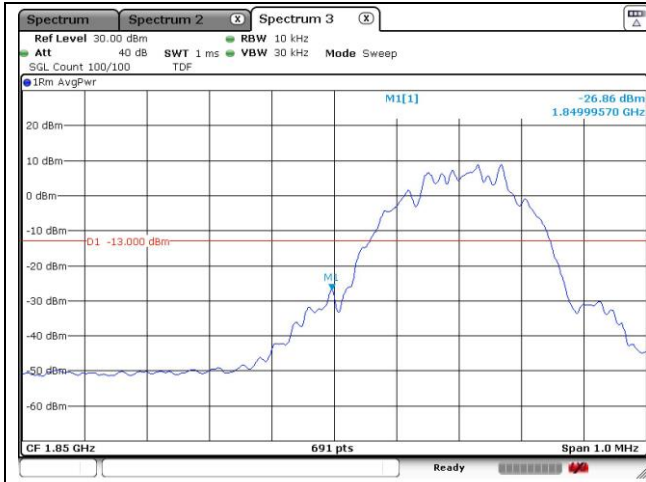
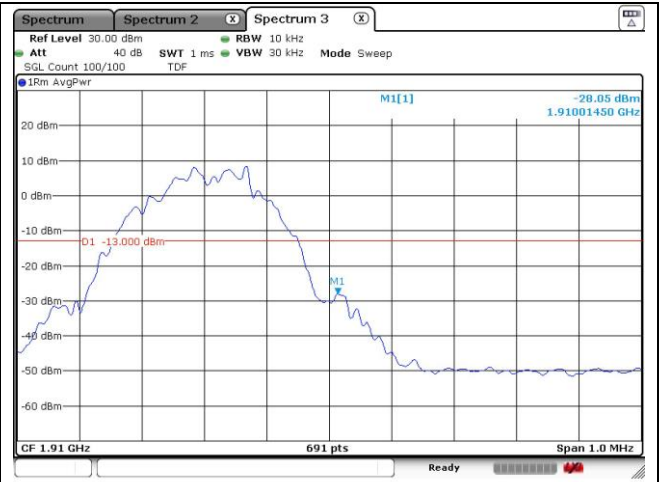
GSM 1900 EDGE High Channel

SIM 2

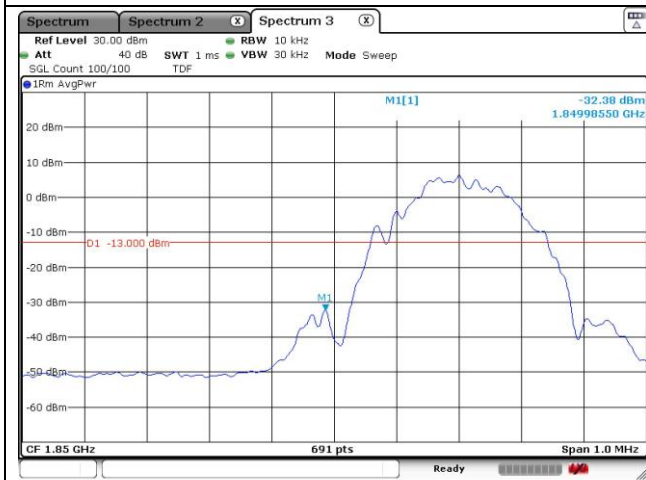
GSM 850



GSM 1900



GSM 1900 VOICE Low Channel



GSM 1900 EDGE Low Channel

GSM 1900 EDGE High Channel

8. Frequency Stability

8.1. Limit

FCC

- § 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.

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-132 Issue 3

5.3, The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations and ±1.5 ppm for base stations.

- RSS-133 Issue 6

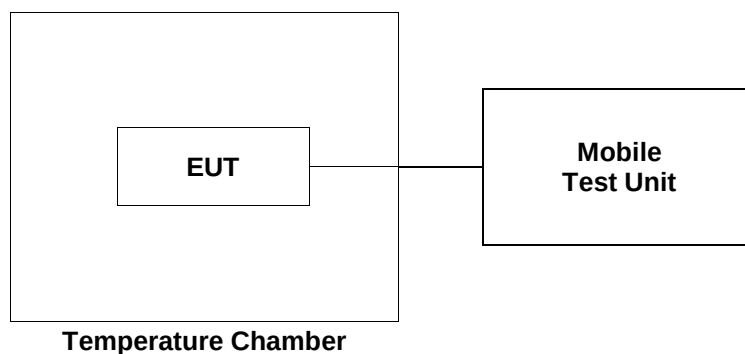
6.3, the carrier frequency shall not depart from the reference frequency, in excess of ±2.5 ppm for mobile stations and ±1.0 ppm for base stations.

- RSS-139 Issue 3

6.4, the frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block 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.



8.3. Test Results

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

SIM 1

WCDMA II mode 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	12.57	0.000 51
40		11.96	0.000 18
30		12.34	0.000 38
20(Ref.)		11.62	-
10		11.35	-0.000 14
0		11.24	-0.000 20
-10		11.08	-0.000 29
-20		11.37	-0.000 13
-30		11.24	-0.000 20
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	14.38 (115%)	11.28	-0.000 18
	10.63 (85%)	11.53	-0.000 05

WCDMA IV mode at middle channel

Reference Frequency: 1 732.6 MHz			
Frequency Stability versus Temperature			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
50	12.5	-11.36	0.000 27
40		-11.05	0.000 44
30		-11.79	0.000 02
20(Ref.)		-11.82	-
10		-12.51	-0.000 40
0		-11.96	-0.000 08
-10		-11.86	-0.000 02
-20		-12.36	-0.000 31
-30		-13.05	-0.000 71
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	14.38 (115%)	-11.79	0.000 02
	10.63 (85%)	-11.59	0.000 13

WCDMA V mode at middle channel

Reference Frequency: 836.6 MHz			
Frequency Stability versus Temperature			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
50	12.5	-4.21	-0.001 86
40		-3.02	-0.000 44
30		-3.11	-0.000 55
20(Ref.)		-2.65	-
10		-3.25	-0.000 72
0		-2.77	-0.000 14
-10		-3.19	-0.000 65
-20		-2.96	-0.000 37
-30		-4.16	-0.001 80
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	14.38 (115%)	-2.89	-0.000 29
	10.63 (85%)	-3.10	-0.000 54

GSM 850 mode at middle channel

Reference Frequency: 836.6 MHz			
Frequency Stability versus Temperature			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
50	12.5	7.10	0.001 30
40		6.24	0.000 27
30		6.36	0.000 42
20(Ref.)		6.01	-
10		6.55	0.000 65
0		6.36	0.000 42
-10		6.78	0.000 92
-20		7.51	0.001 79
-30		6.99	0.001 17
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	14.38 (115%)	7.36	0.001 61
	10.63 (85%)	6.99	0.001 17

GSM 1900 mode 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	-4.89	0.000 23
40		-5.11	0.000 12
30		-5.52	-0.000 10
20(Ref.)		-5.33	-
10		-5.71	-0.000 20
0		-5.91	-0.000 31
-10		-6.22	-0.000 47
-20		-5.78	-0.000 24
-30		-6.31	-0.000 52
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	14.38 (115%)	-4.98	0.000 19
	10.63 (85%)	-5.64	-0.000 16

SIM 2

GSM 850 mode at middle channel

Reference Frequency: 836.6 MHz			
Frequency Stability versus Temperature			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
50	12.5	9.22	0.003 04
40		8.12	0.001 72
30		6.92	0.000 29
20(Ref.)		6.68	-
10		6.77	0.000 11
0		9.61	0.003 50
-10		8.74	0.002 46
-20		8.53	0.002 21
-30		9.11	0.002 90
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	14.38 (115%)	6.36	-0.000 38
	10.63 (85%)	7.51	0.000 99

GSM 1900 mode 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	11.53	-0.000 63
40		11.91	-0.000 43
30		11.68	-0.000 55
20(Ref.)		12.72	-
10		12.36	-0.000 19
0		12.54	-0.000 10
-10		12.84	0.000 06
-20		13.11	0.000 21
-30		13.50	0.000 41
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	14.38 (115%)	12.54	-0.000 10
	10.63 (85%)	13.51	0.000 42

- End of the Test Report -