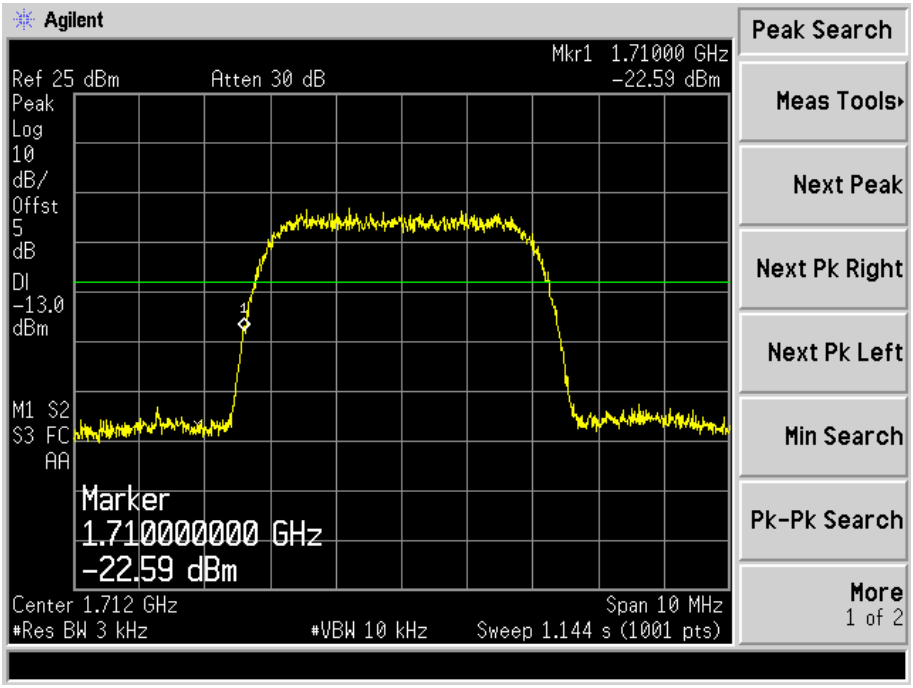
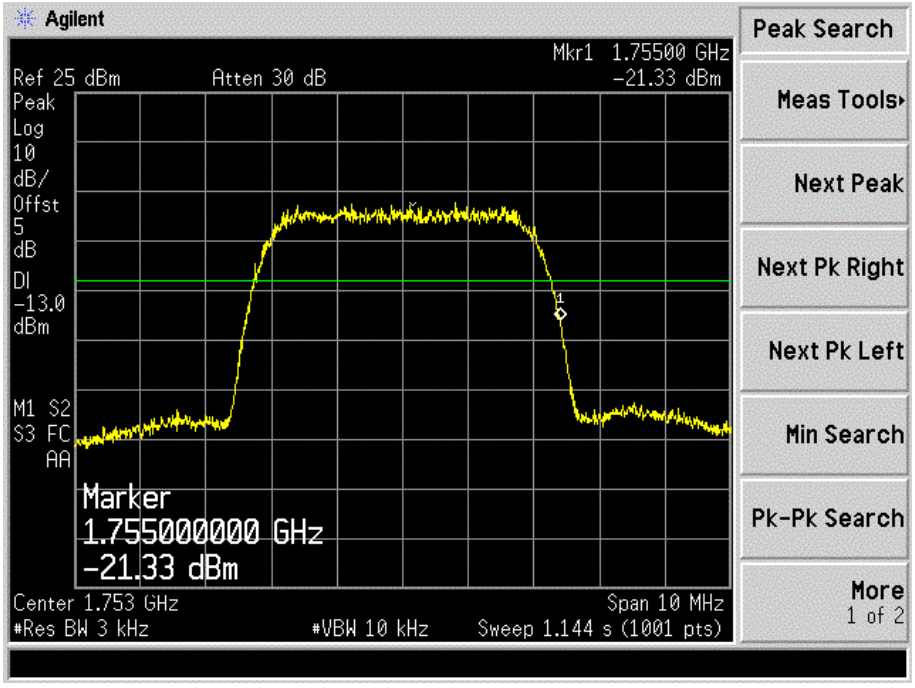
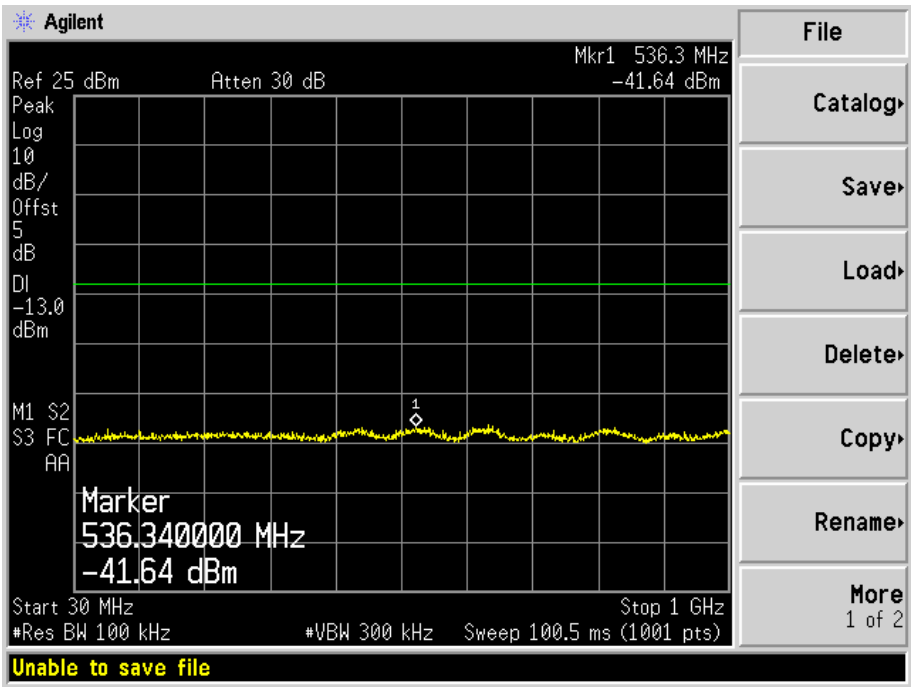
HSDPA Low Band Spurious Emission



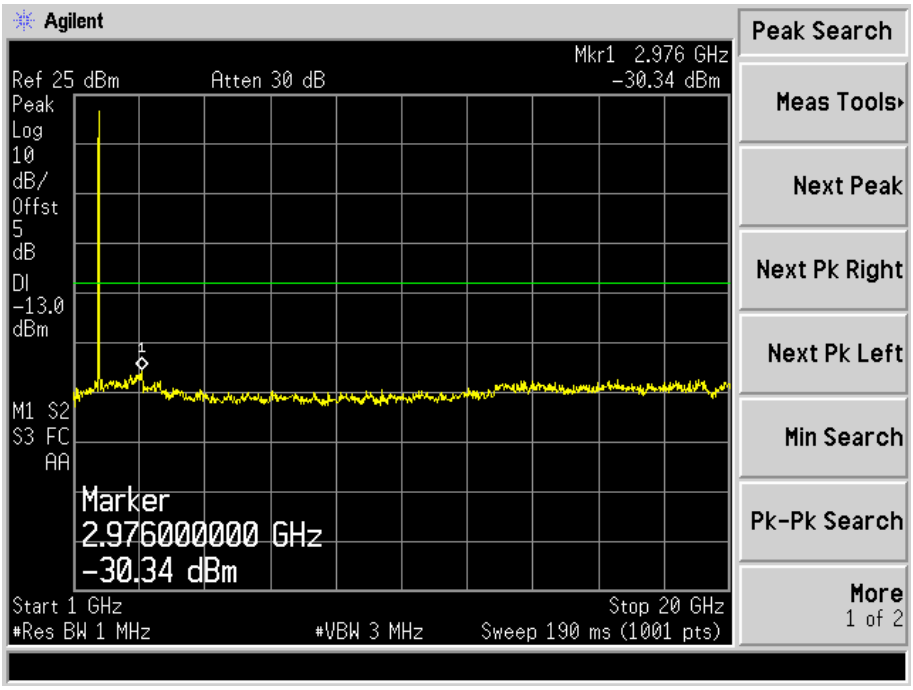
HSDPA High Band Spurious Emission



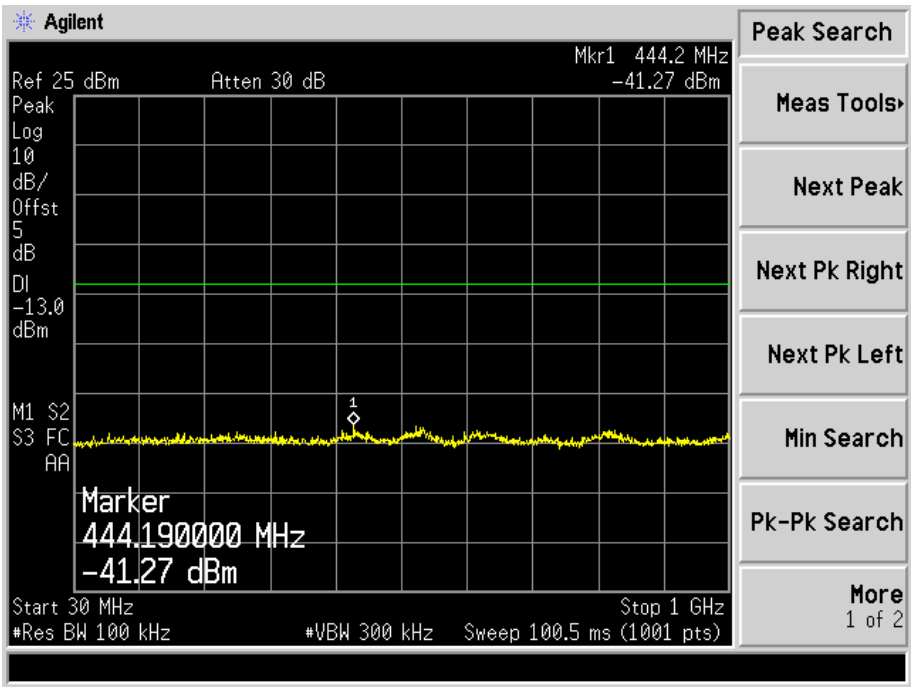
HSUPA Low Channel
30MHz to 1GHz



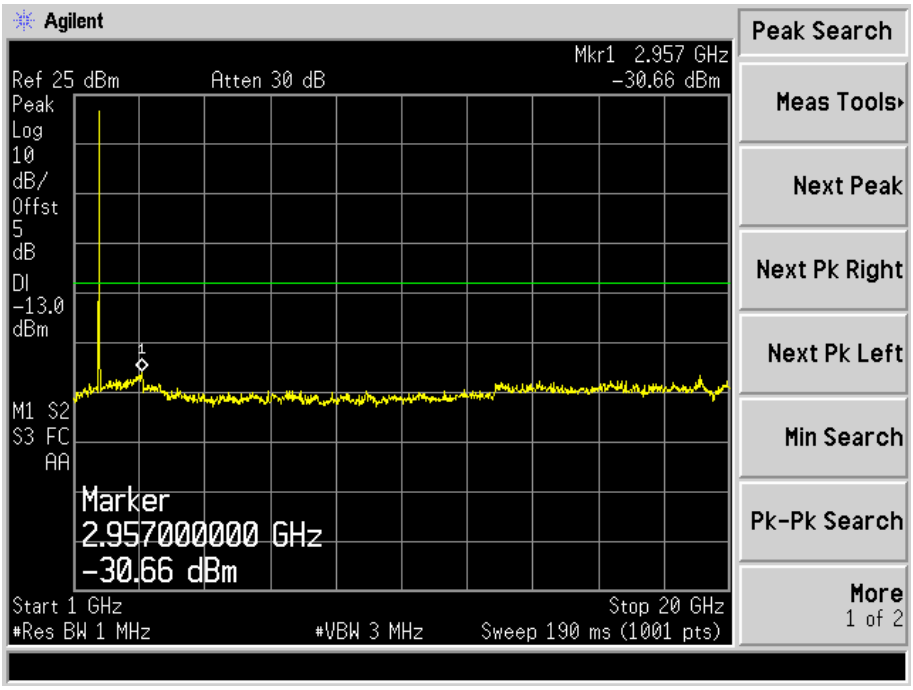
Above 1GHz



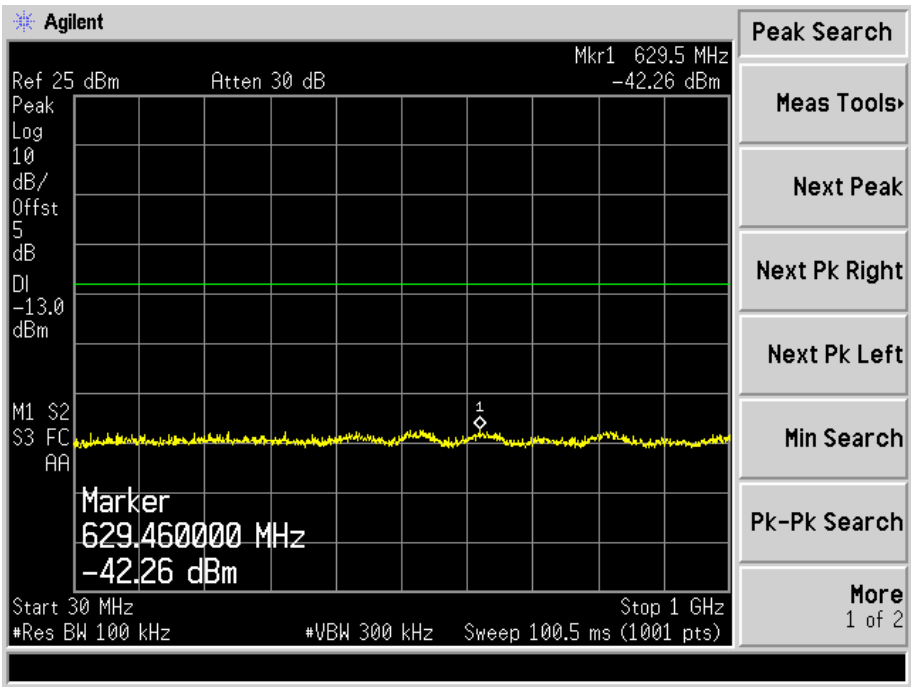
HSUPA Middle Channel
30MHz to 1GHz



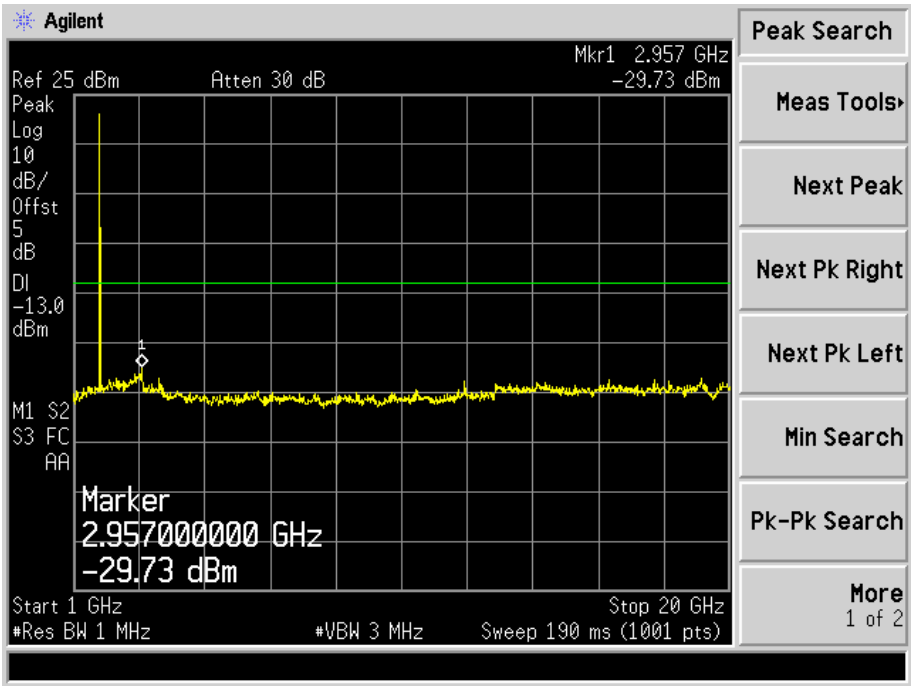
Above 1GHz



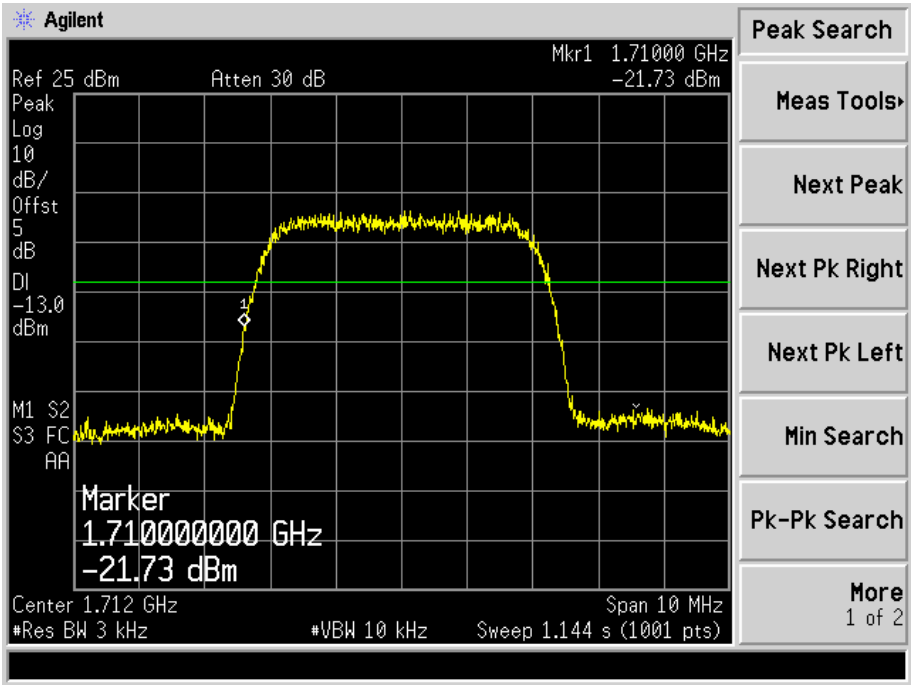
HSUPA High Channel
30MHz to 1GHz



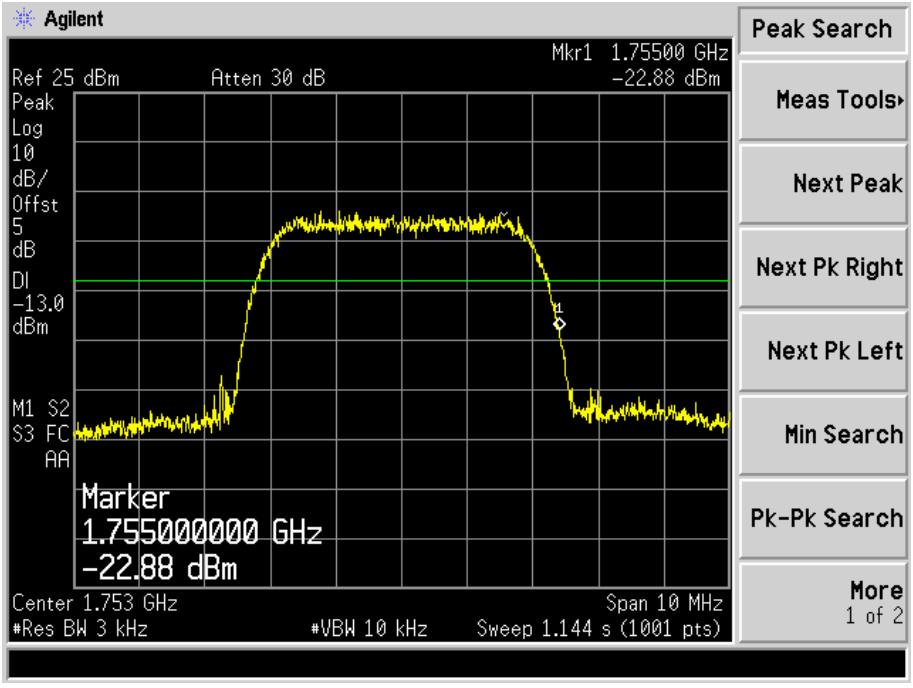
Above 1GHz



HSUPA Low Band Spurious Emission



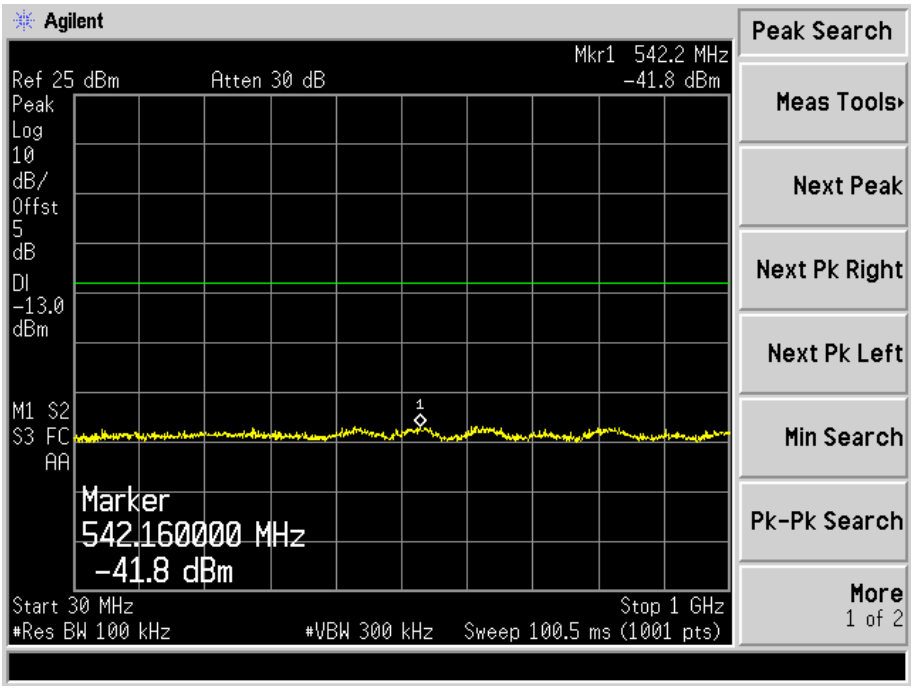
HSUPA High Band Spurious Emission



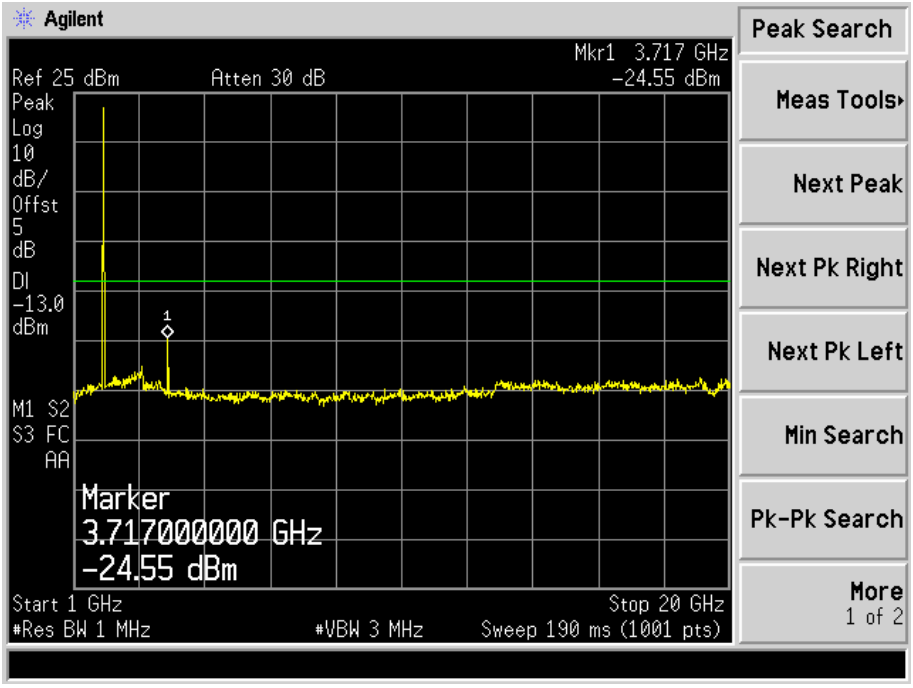
For Band II

WCDMA Low Channel

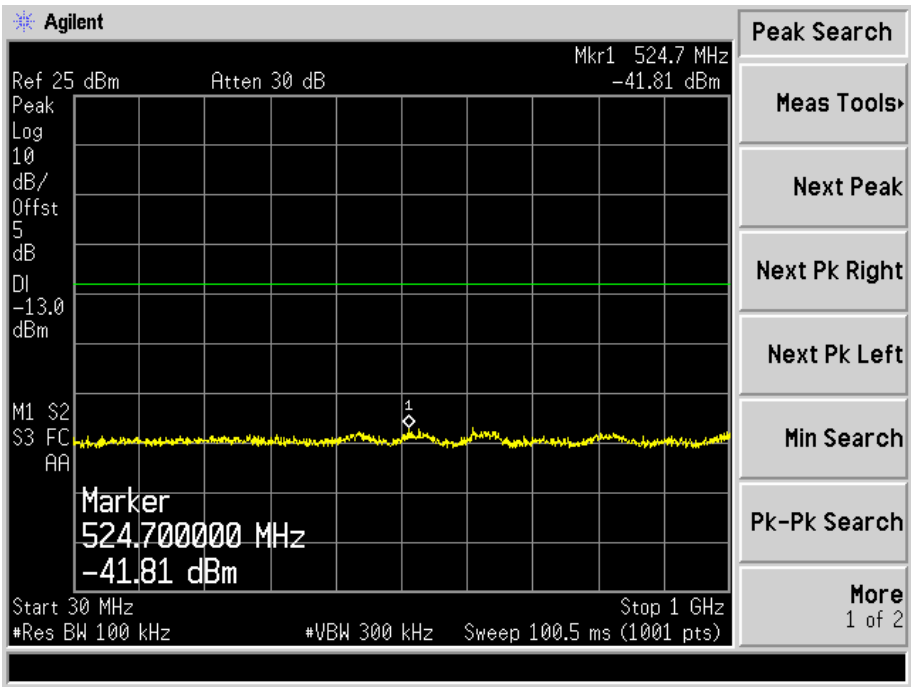
30MHz to 1GHz



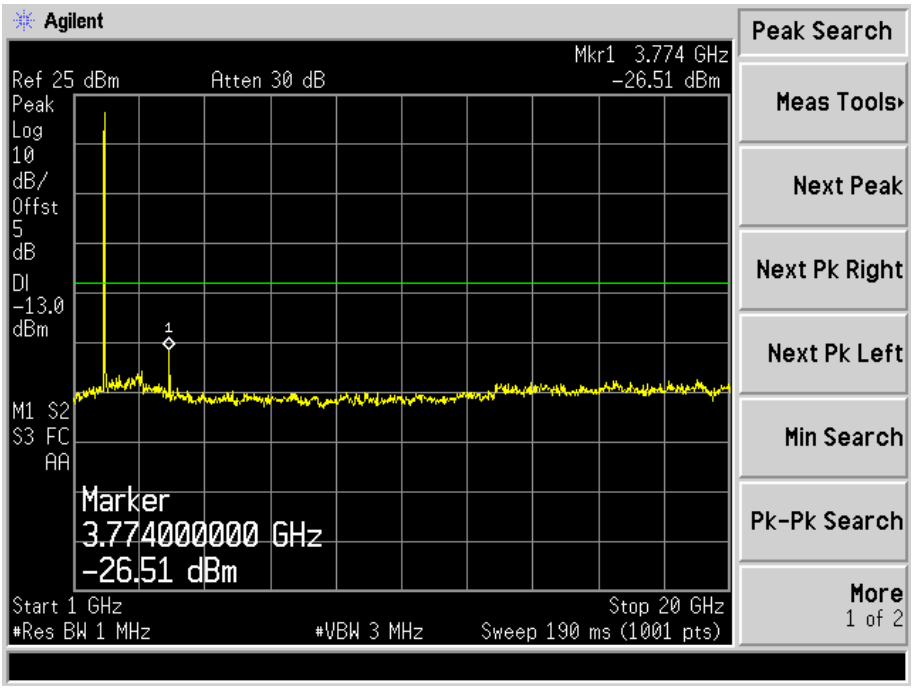
Above 1GHz



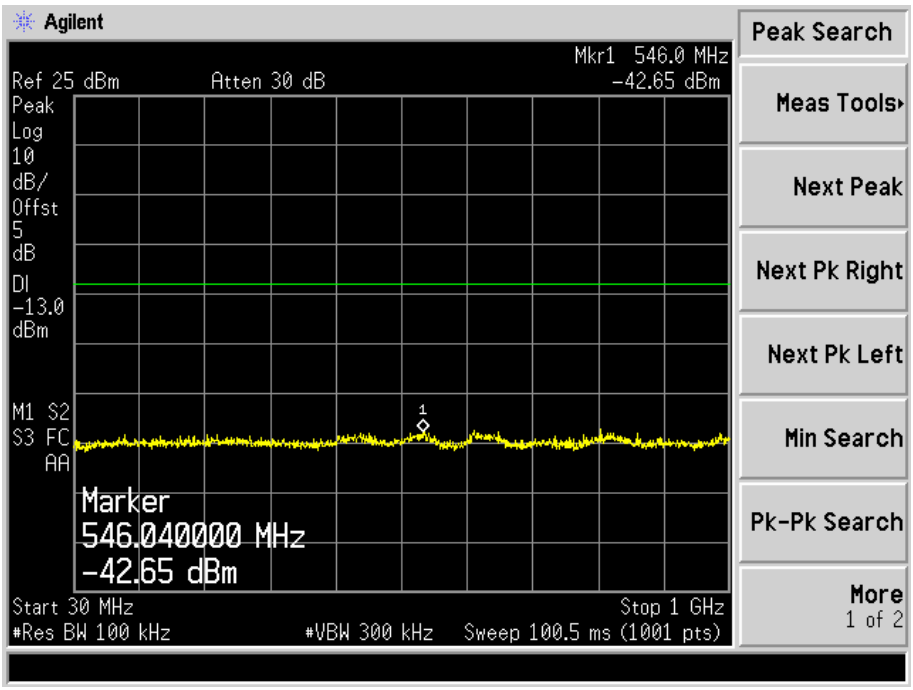
WCDMA Middle Channel
30MHz to 1GHz



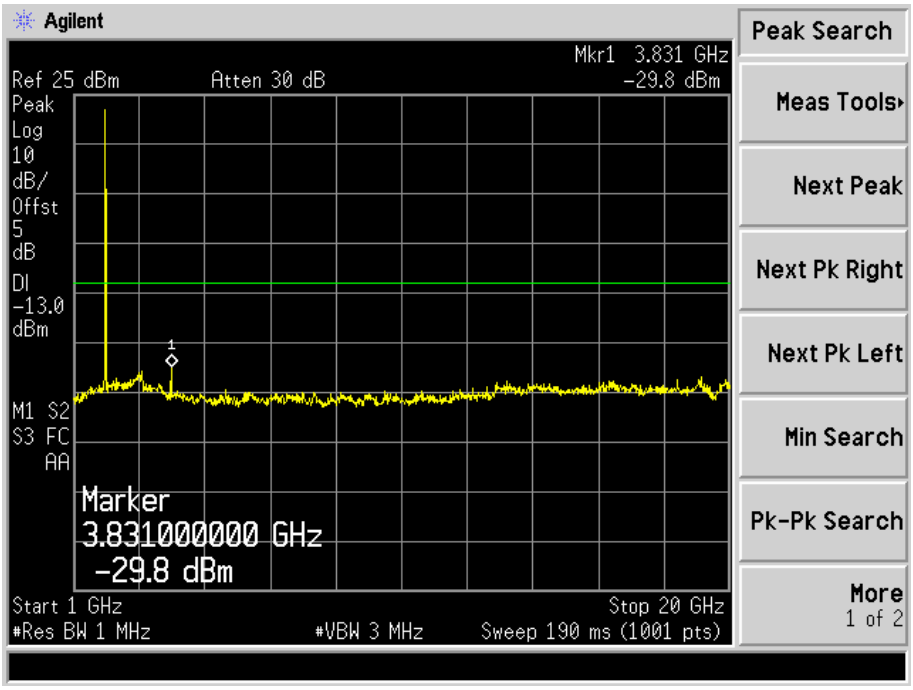
Above 1GHz



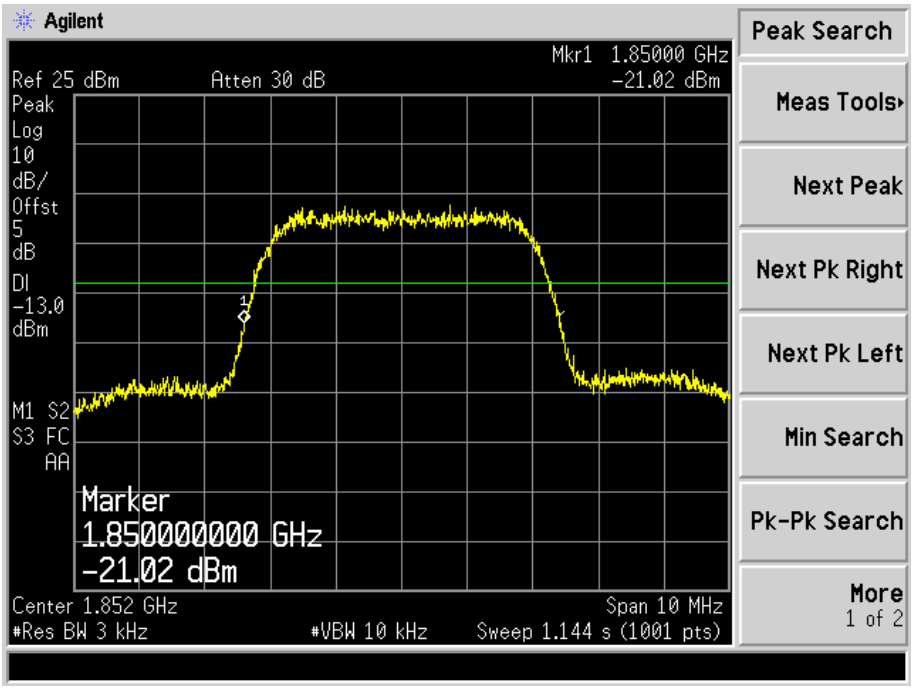
WCDMA High Channel
30MHz to 1GHz



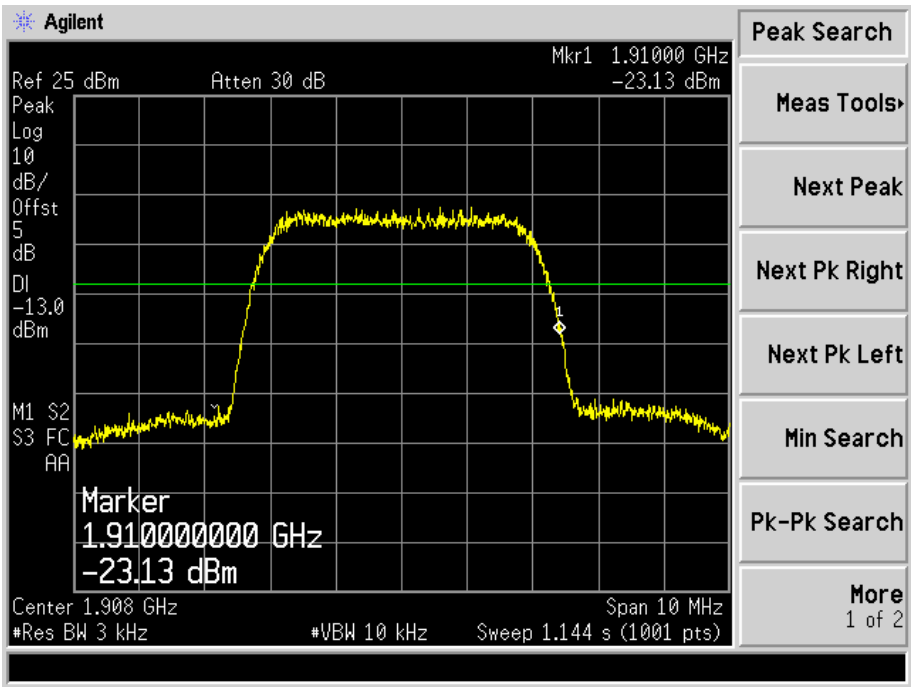
Above 1GHz



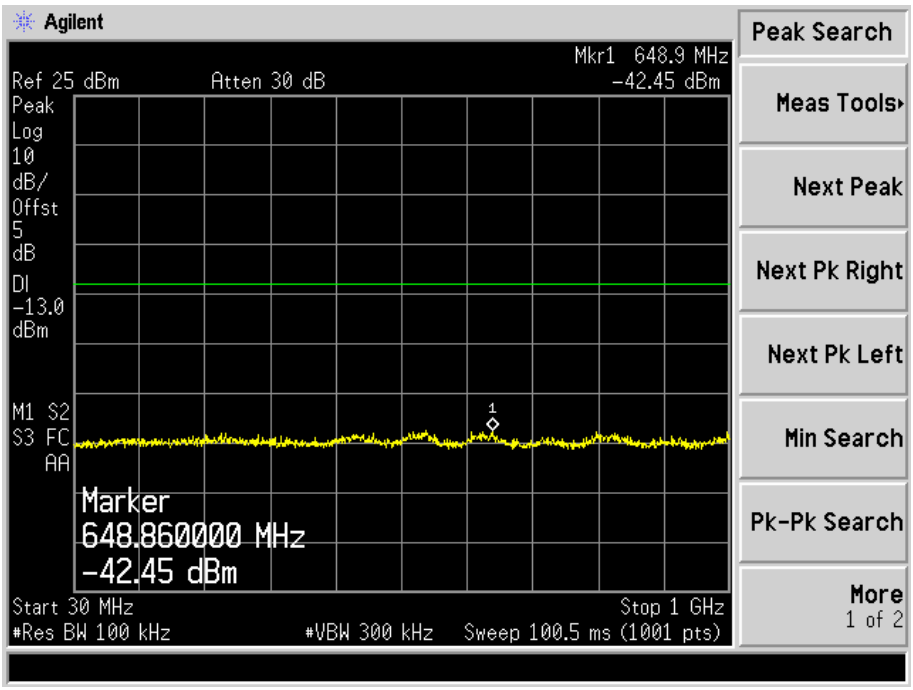
WCDMA Low Band Spurious Emission



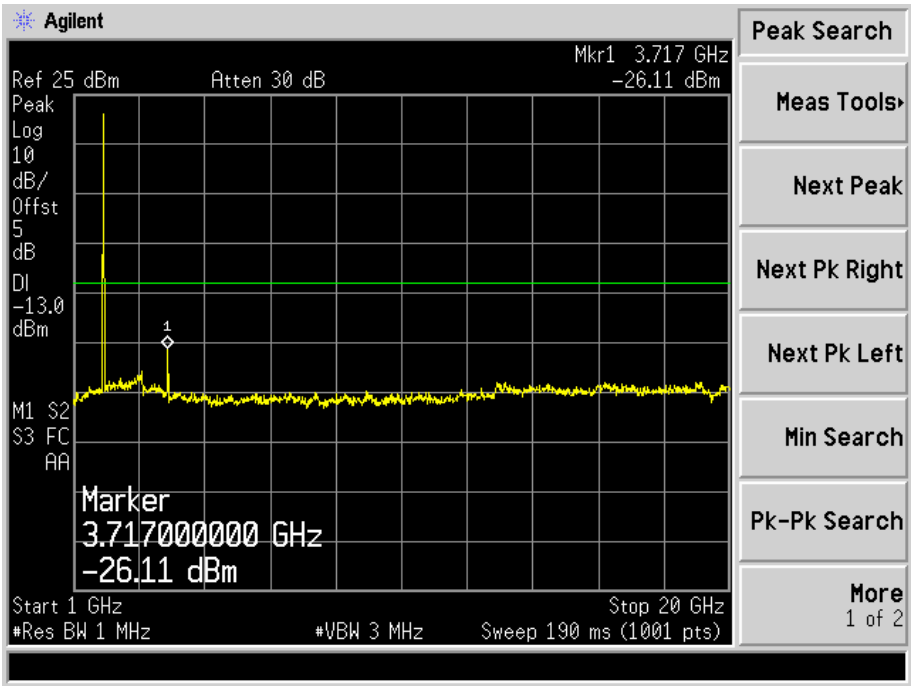
WCDMA High Band Spurious Emission



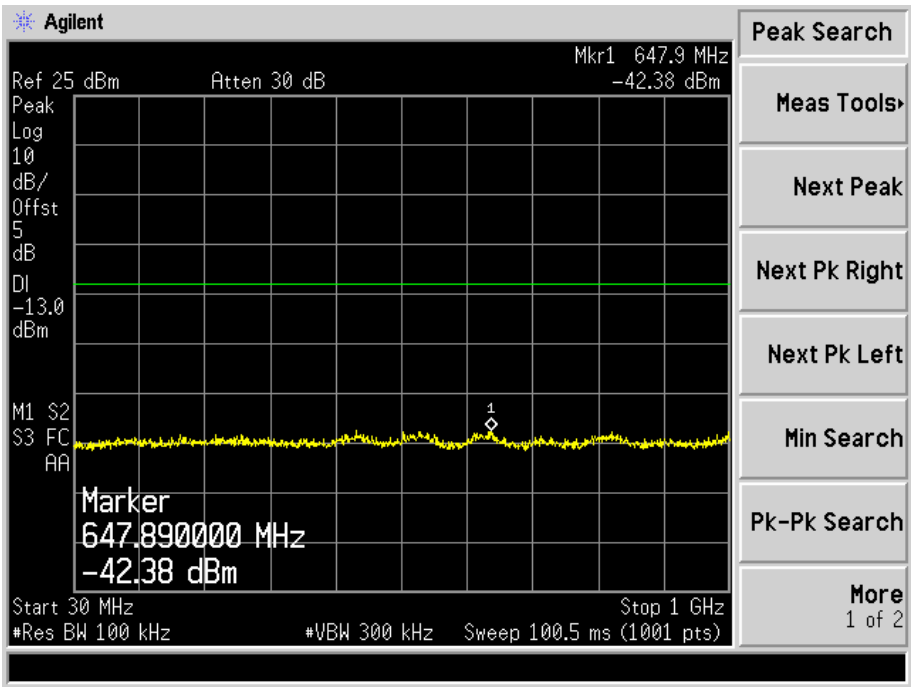
HSDPA Low Channel
30MHz to 1GHz



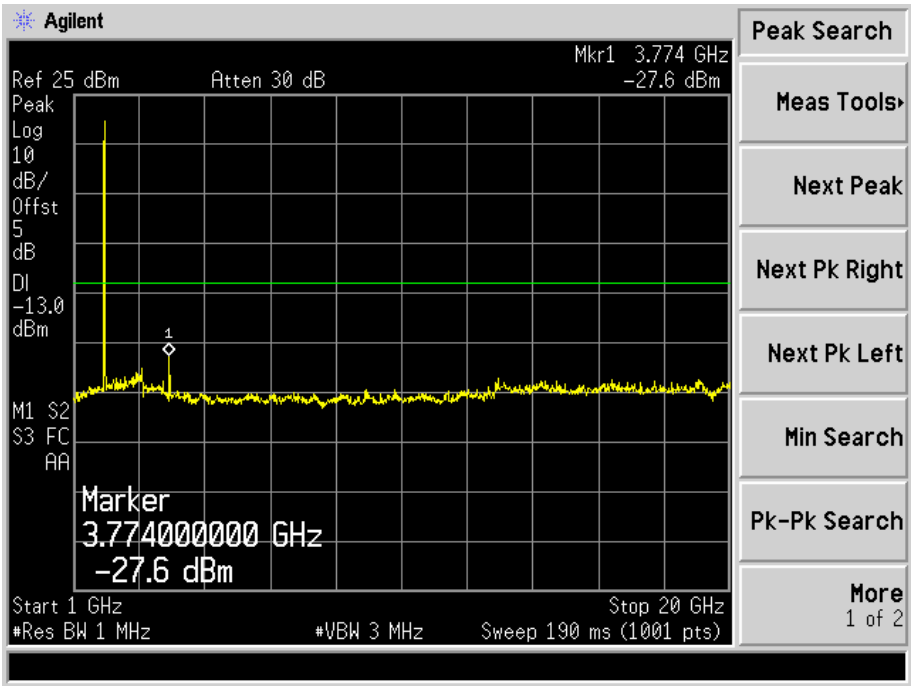
Above 1GHz



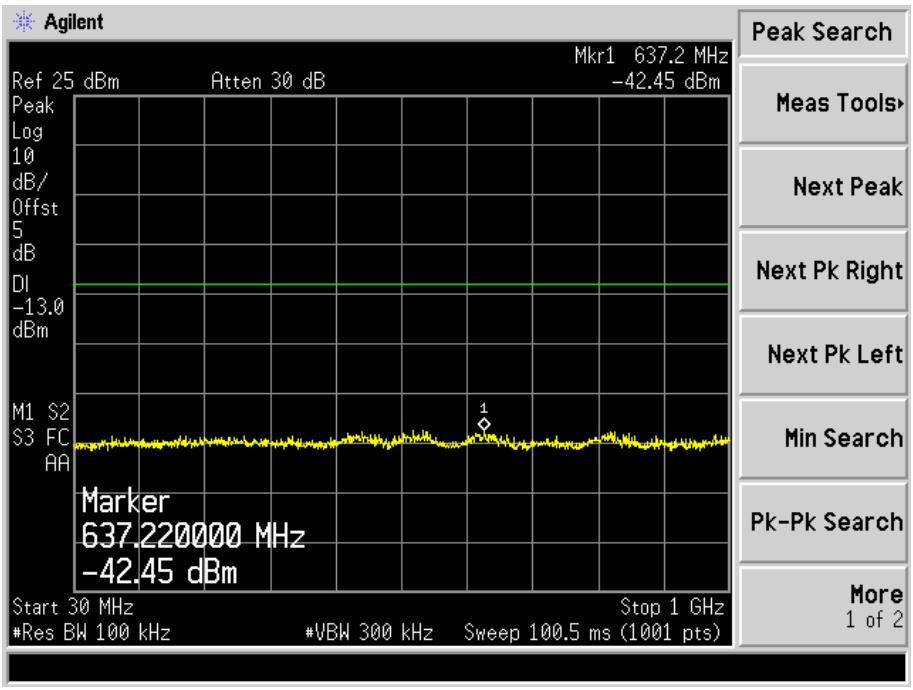
HSDPA Middle Channel
30MHz to 1GHz



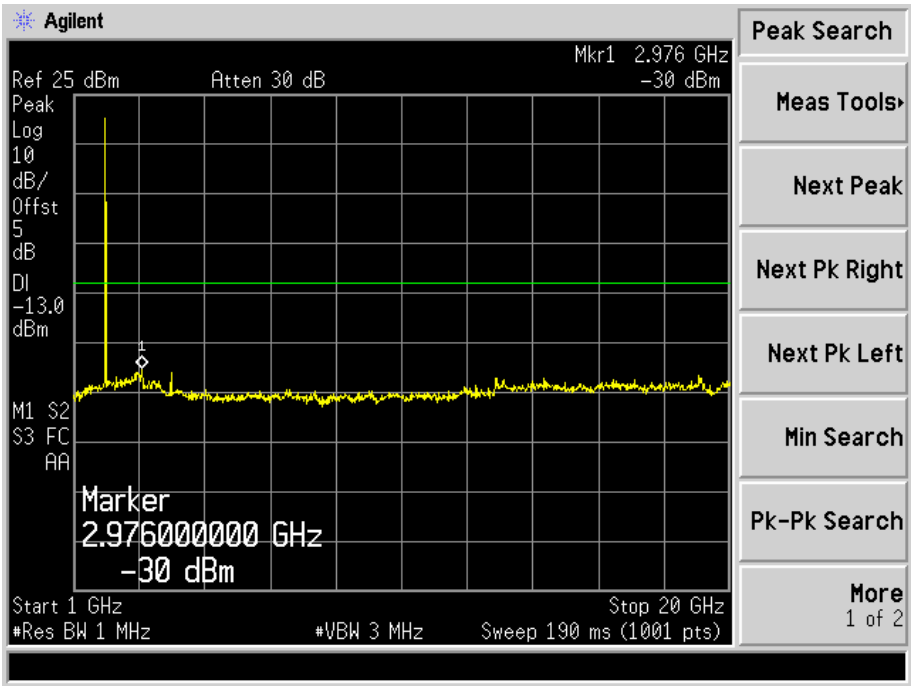
Above 1GHz



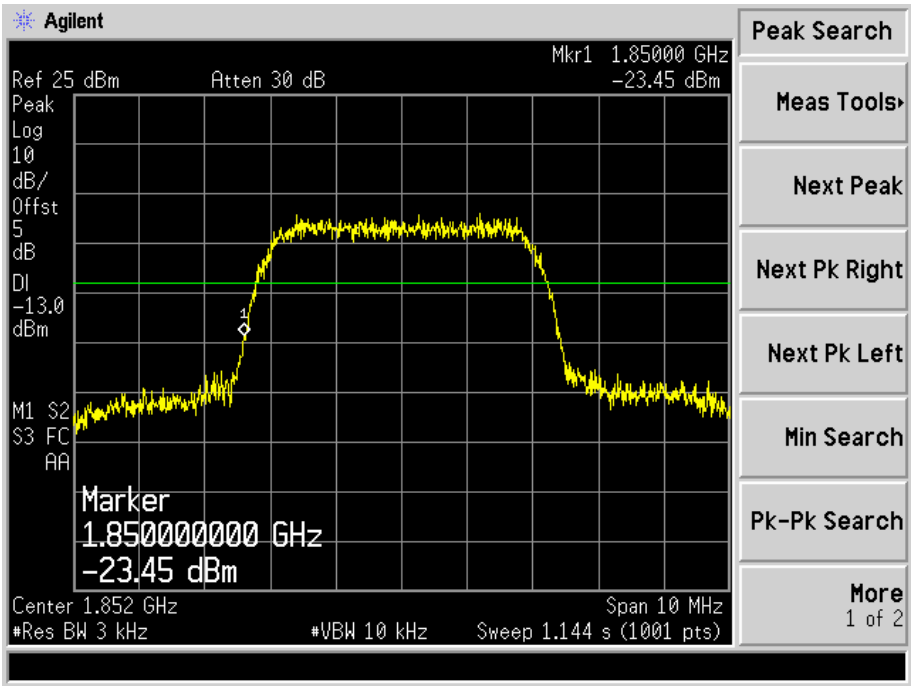
HSDPA High Channel
30MHz to 1GHz



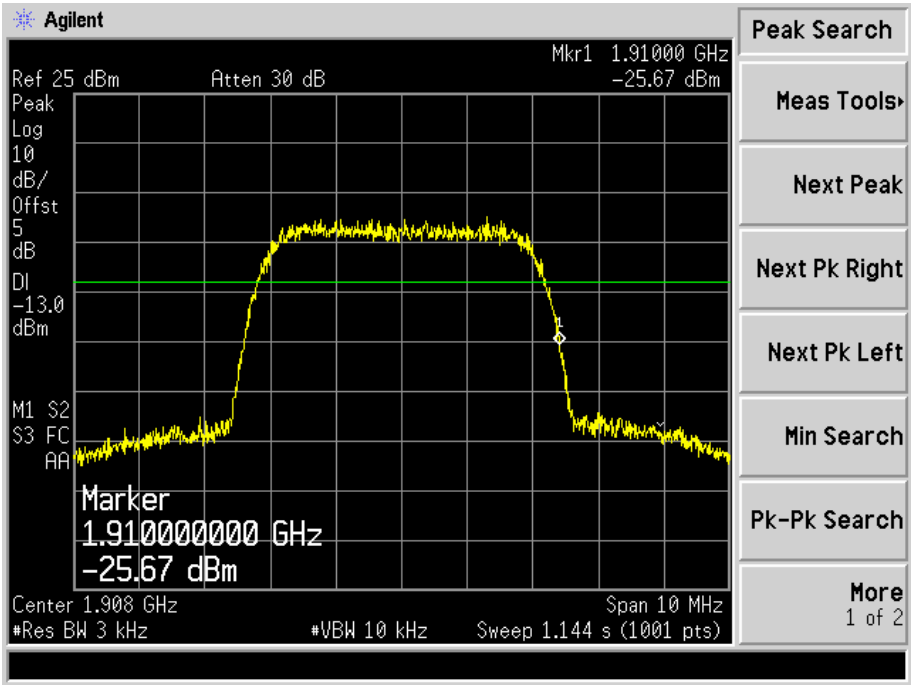
Above 1GHz



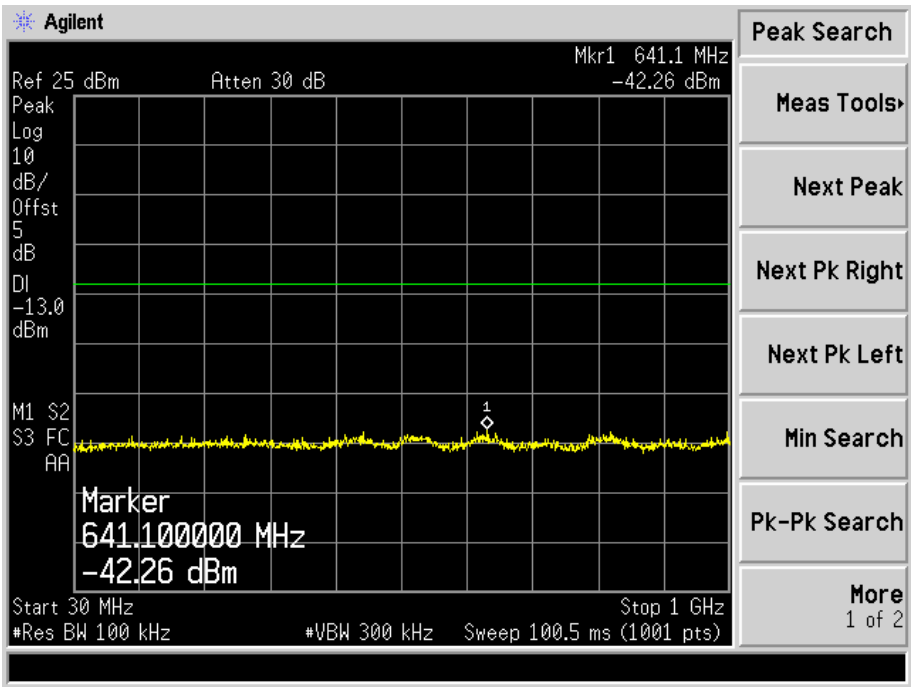
HSDPA Low Band Spurious Emission



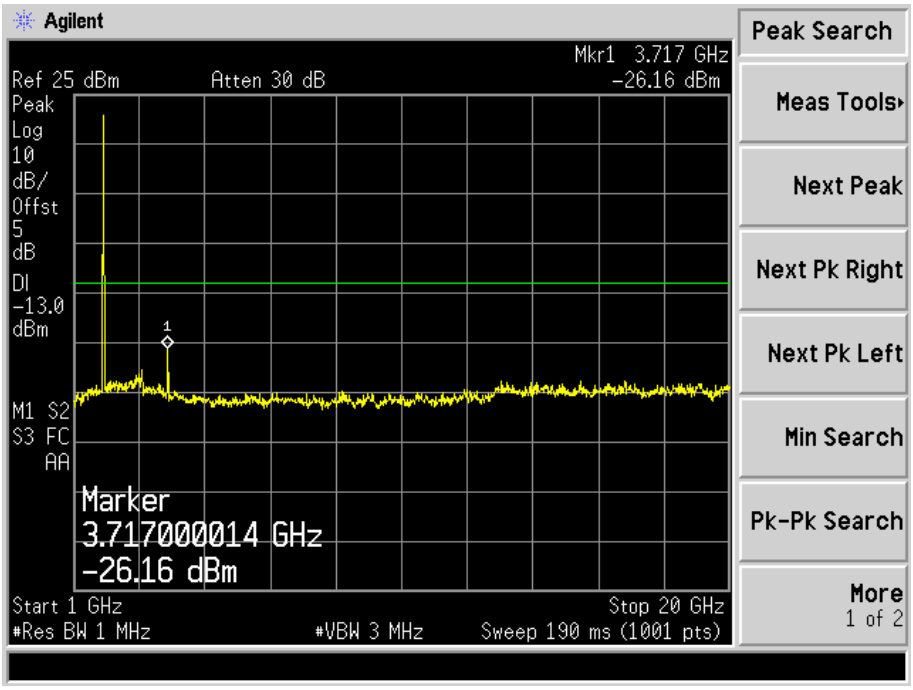
HSDPA High Band Spurious Emission



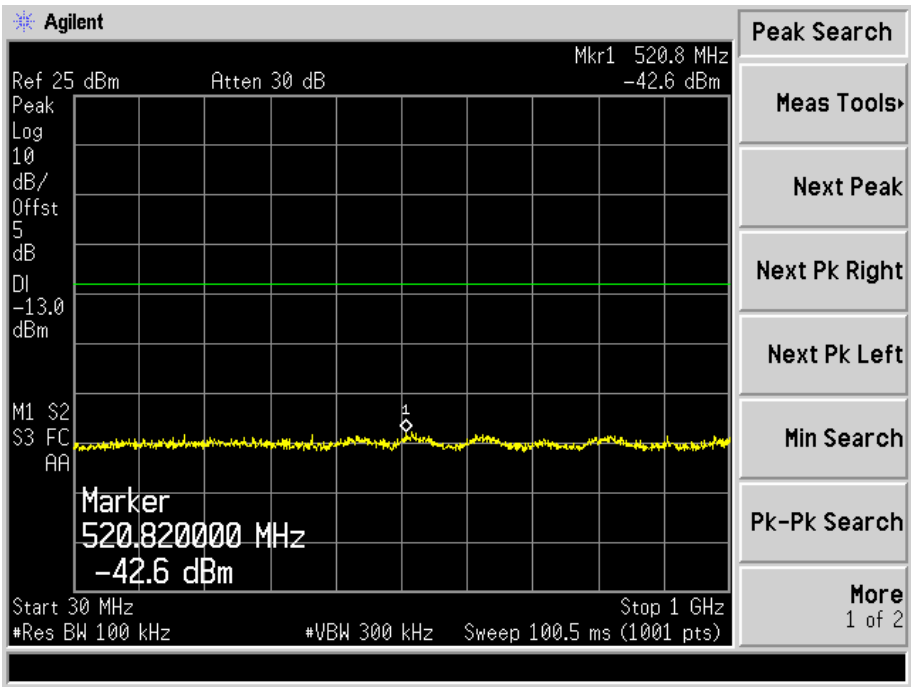
HSUPA Low Channel
30MHz to 1GHz



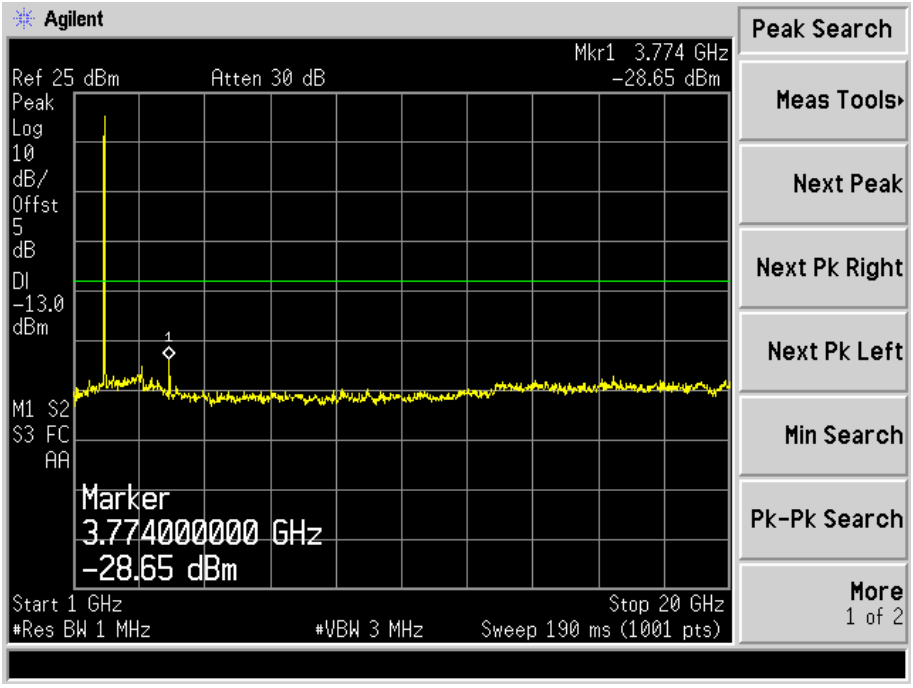
Above 1GHz



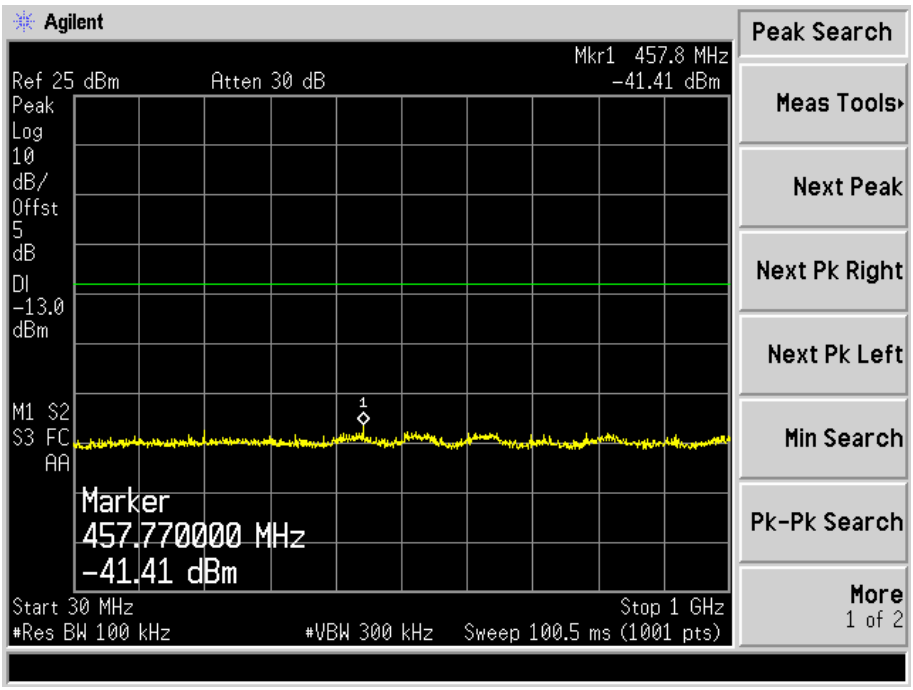
HSUPA Middle Channel
30MHz to 1GHz



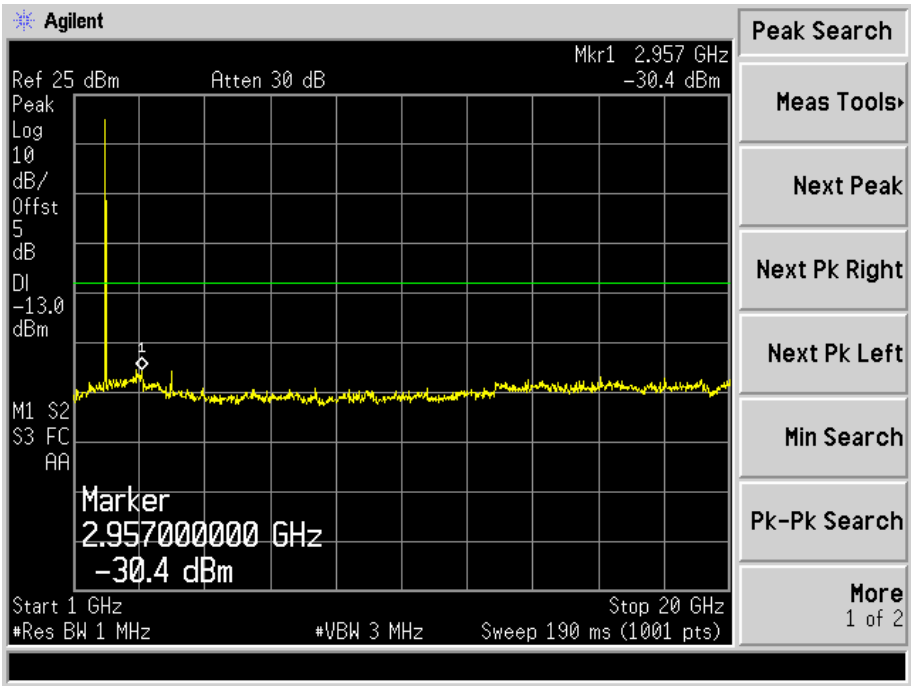
Above 1GHz



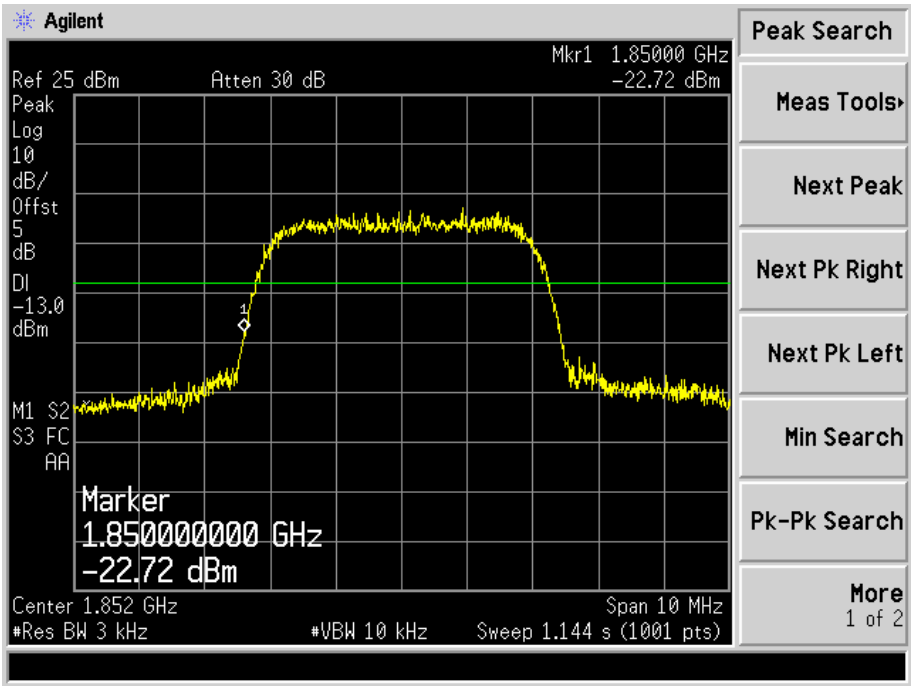
HSUPA High Channel
30MHz to 1GHz



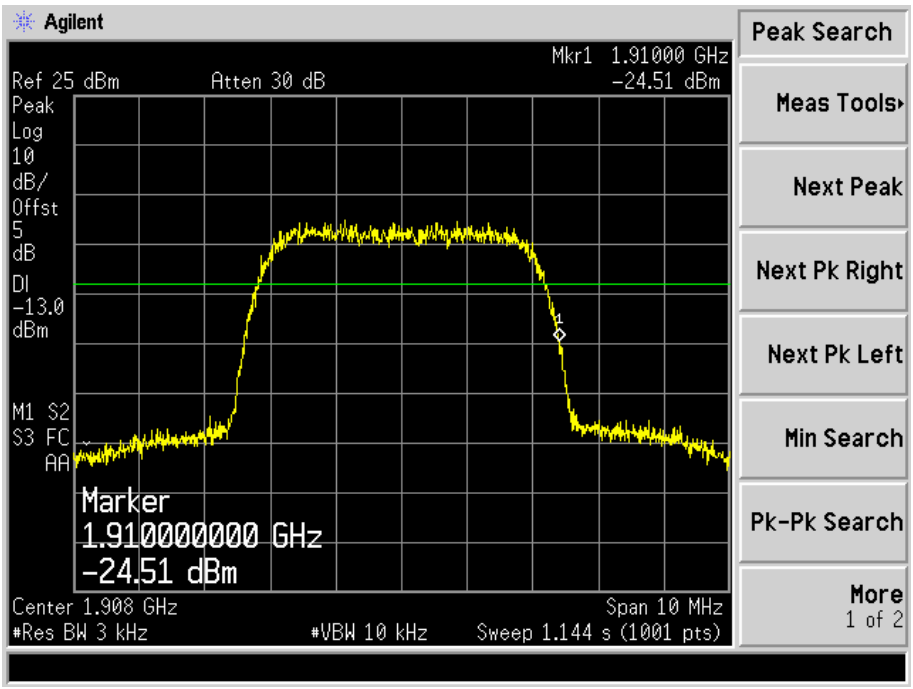
Above 1GHz



HSUPA Low Band Spurious Emission



HSUPA High Band Spurious Emission



8. Spurious Radiated Emissions

8.1 Standard Applicable

According to §22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

According to §27.53 (h), the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB.

8.2 Test Procedure

1. The setup of EUT is according with per ANSI/TIA Standard 603D and ANSI C63.4-2014 measurement procedure.
2. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.
3. The frequency range up to tenth harmonic of the fundamental frequency was investigated.
4. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious attenuation limit in dB =43+10 Log_{10} (power out in Watts)

8.3 Environmental Conditions

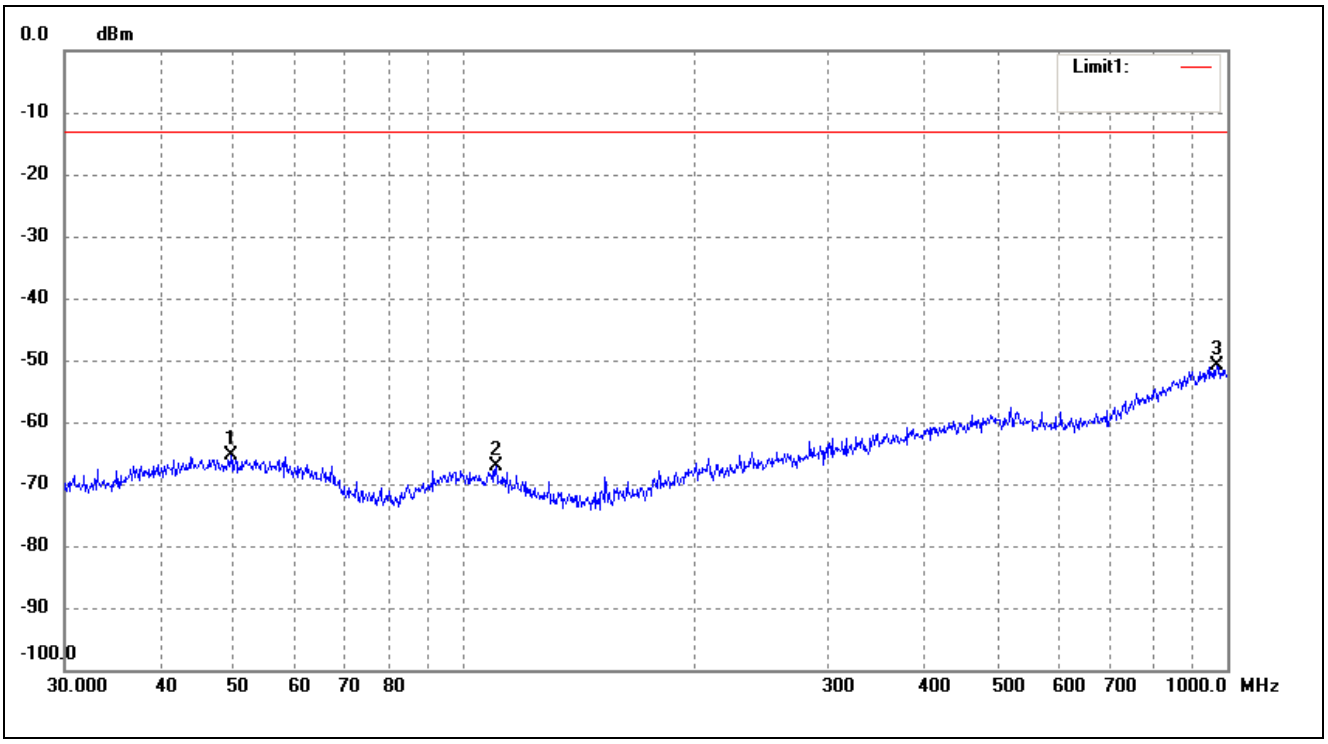
Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

8.4 Summary of Test Results/Plots

According to the data below, the FCC Part 22.917 and 24.238 standards, and had the worst margin of:

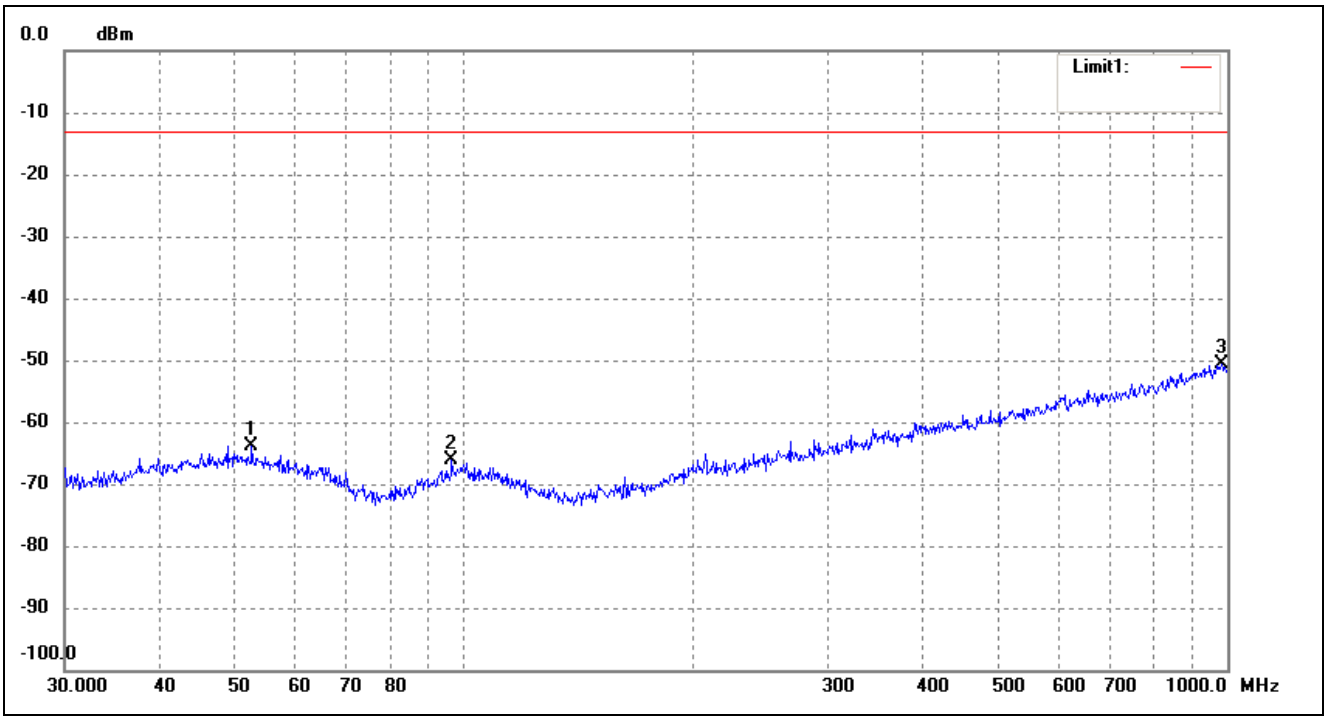
Note: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

Spurious Emission From 30MHz to 1GHz
For Cellular Band_ GSM850 Mode
Horizontal:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	Factor(dB)	(dBm)	(dBm)	(dB)	
1	49.5328	-69.71	4.35	-65.36	-13.00	-52.36	ERP
2	110.1816	-69.27	2.17	-67.10	-13.00	-54.10	ERP
3	968.9338	-68.86	18.01	-50.85	-13.00	-37.85	ERP

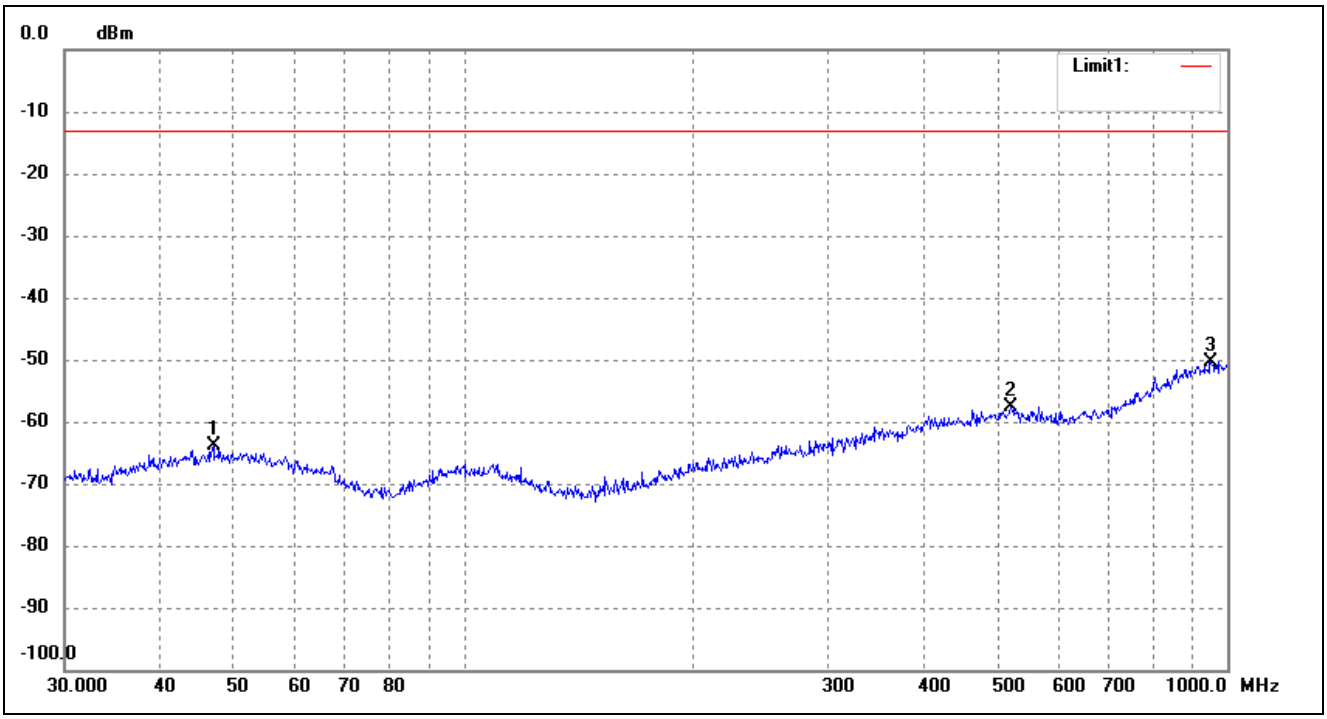
Vertical:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	Factor(dB)	(dBm)	(dBm)	(dB)	
1	52.7600	-67.91	4.07	-63.84	-13.00	-50.84	ERP
2	96.4362	-67.90	1.81	-66.09	-13.00	-53.09	ERP
3	982.6200	-68.92	18.22	-50.70	-13.00	-37.70	ERP

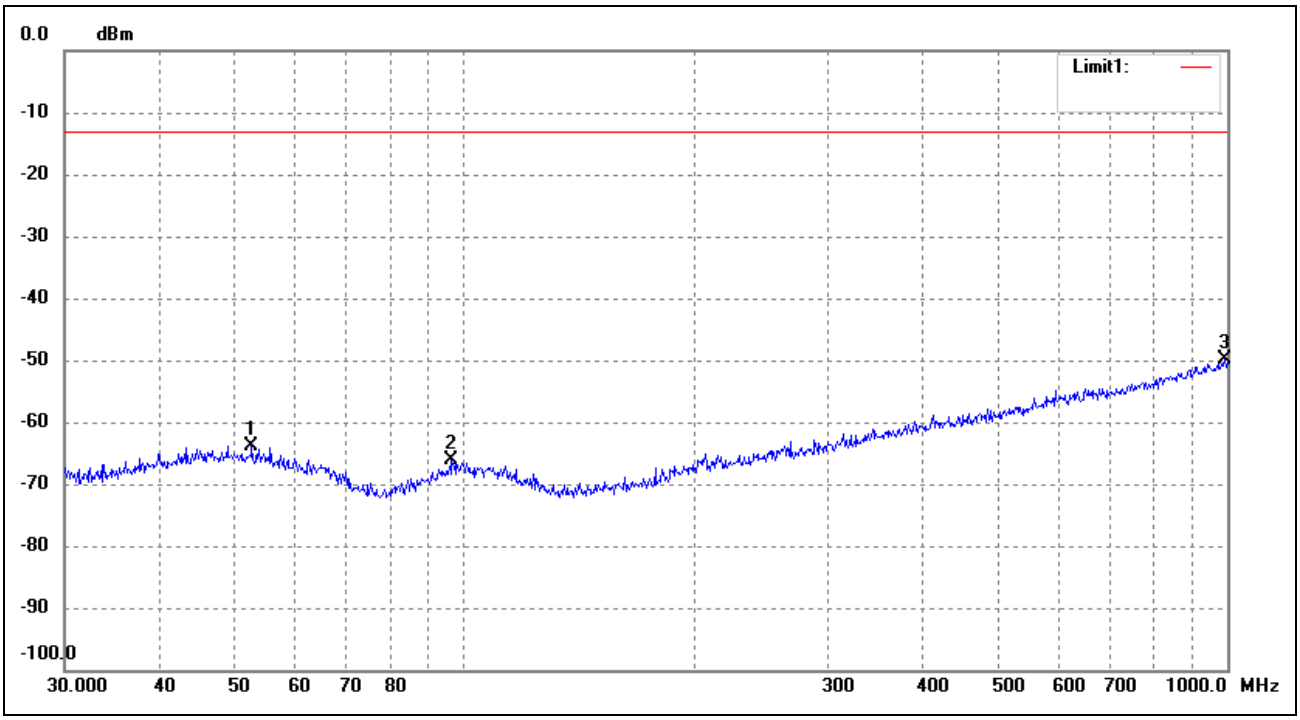
For Cellular Band_ GSM1900 Mode

Horizontal:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	Factor(dB)	(dBm)	(dBm)	(dB)	
1	46.9948	-68.28	4.35	-63.93	-13.00	-50.93	ERP
2	520.8882	-68.29	10.57	-57.72	-13.00	-44.72	ERP
3	952.0937	-68.14	17.76	-50.38	-13.00	-37.38	ERP

Vertical:

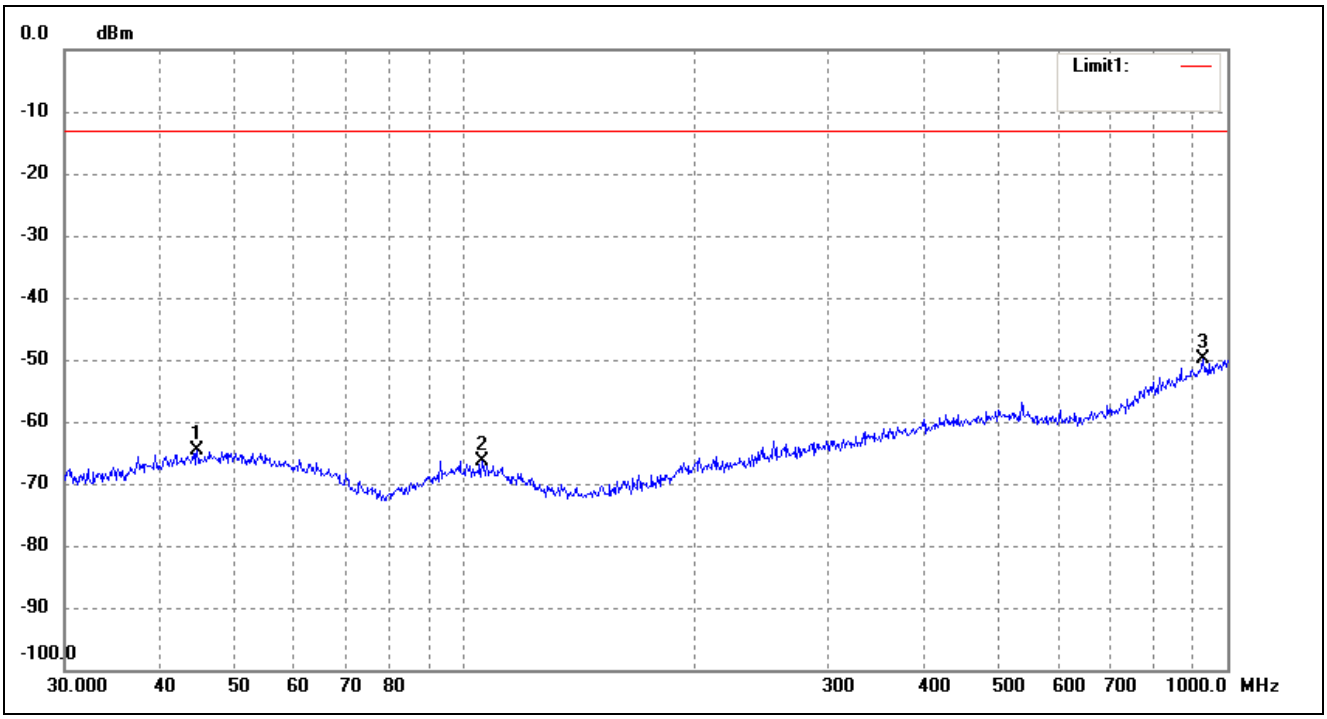


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	Factor(dB)	(dBm)	(dBm)	(dB)	
1	52.7600	-67.91	4.07	-63.84	-13.00	-50.84	ERP
2	96.4362	-67.90	1.81	-66.09	-13.00	-53.09	ERP
3	993.0114	-68.26	18.38	-49.88	-13.00	-36.88	ERP

Note: Margin= (Reading+ Correct)- Limit

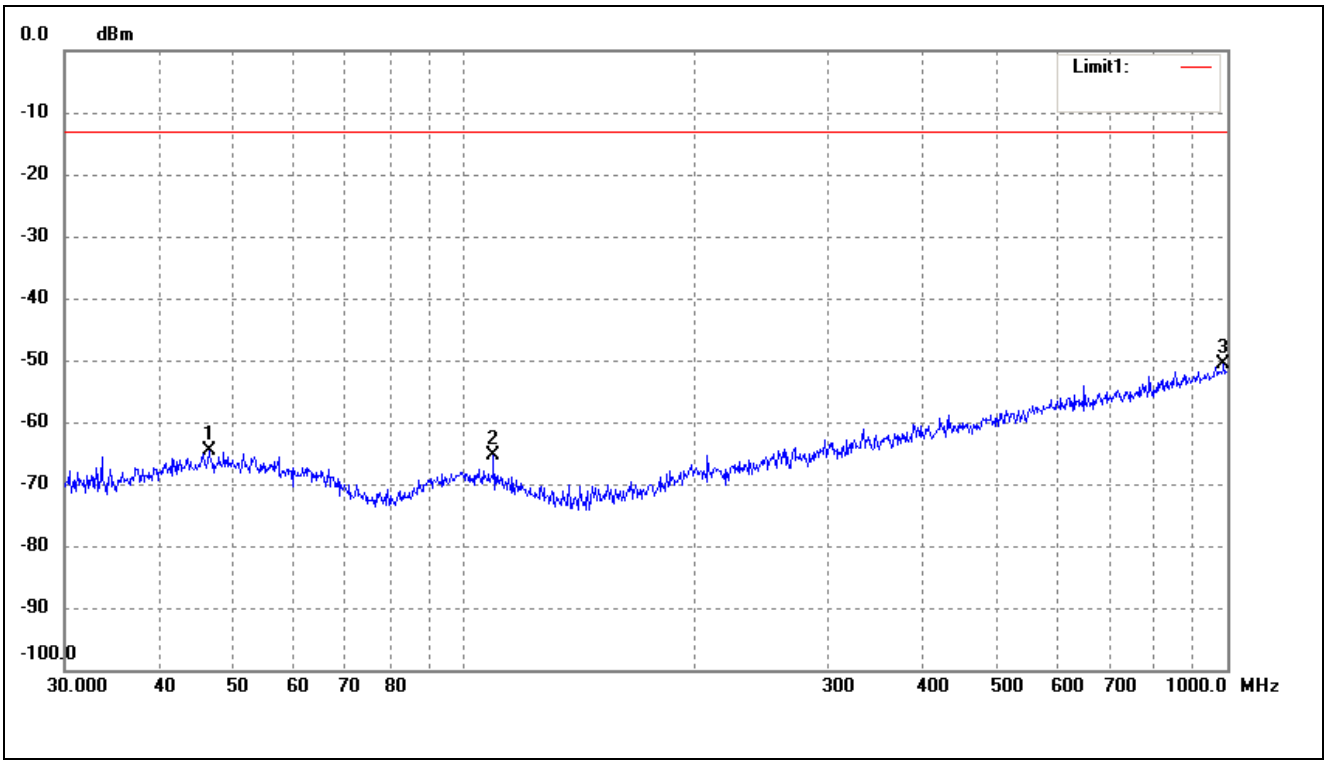
For band 5 Mode

Horizontal:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	Factor(dB)	(dBm)	(dBm)	(dB)	
1	44.7434	-68.86	4.28	-64.58	-13.00	-51.58	ERP
2	105.6415	-68.50	2.22	-66.28	-13.00	-53.28	ERP
3	929.0082	-67.31	17.50	-49.81	-13.00	-36.81	ERP

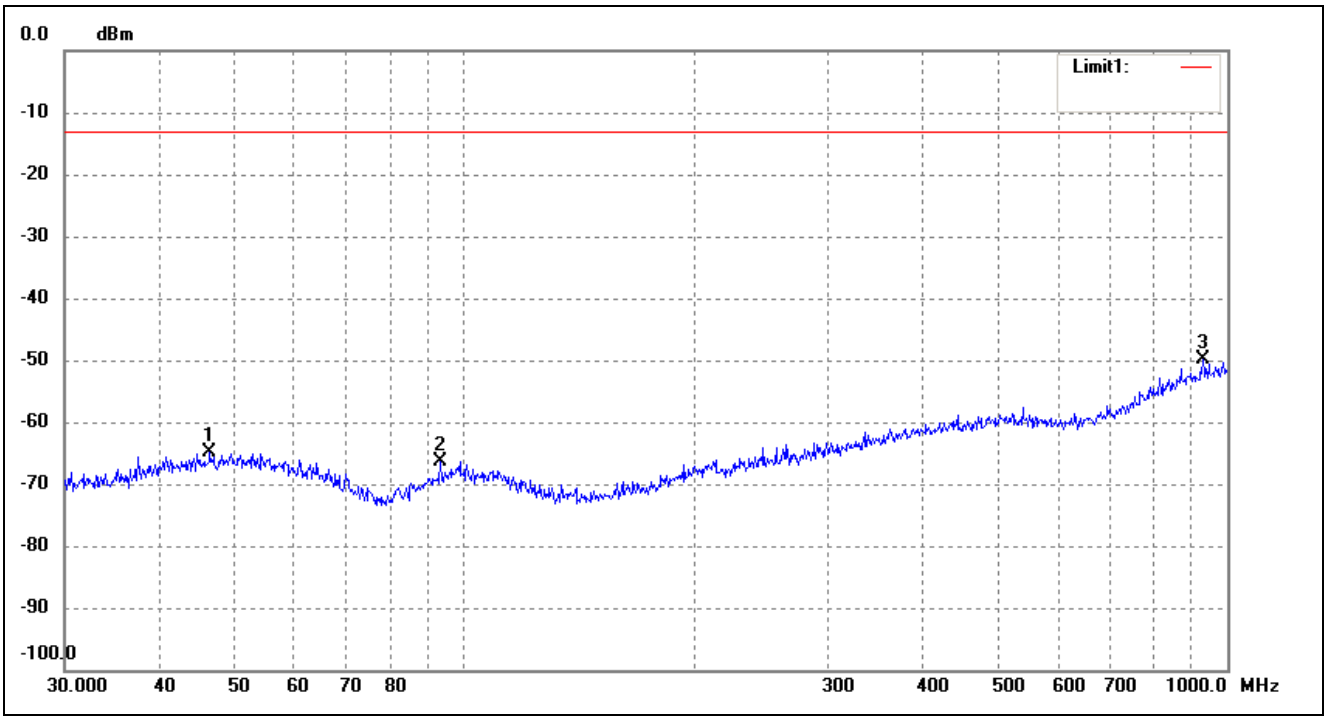
Vertical:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	46.3402	-69.04	4.34	-64.70	-13.00	-51.70	ERP
2	109.4116	-67.57	2.21	-65.36	-13.00	-52.36	ERP
3	989.5355	-68.85	18.32	-50.53	-13.00	-37.53	ERP

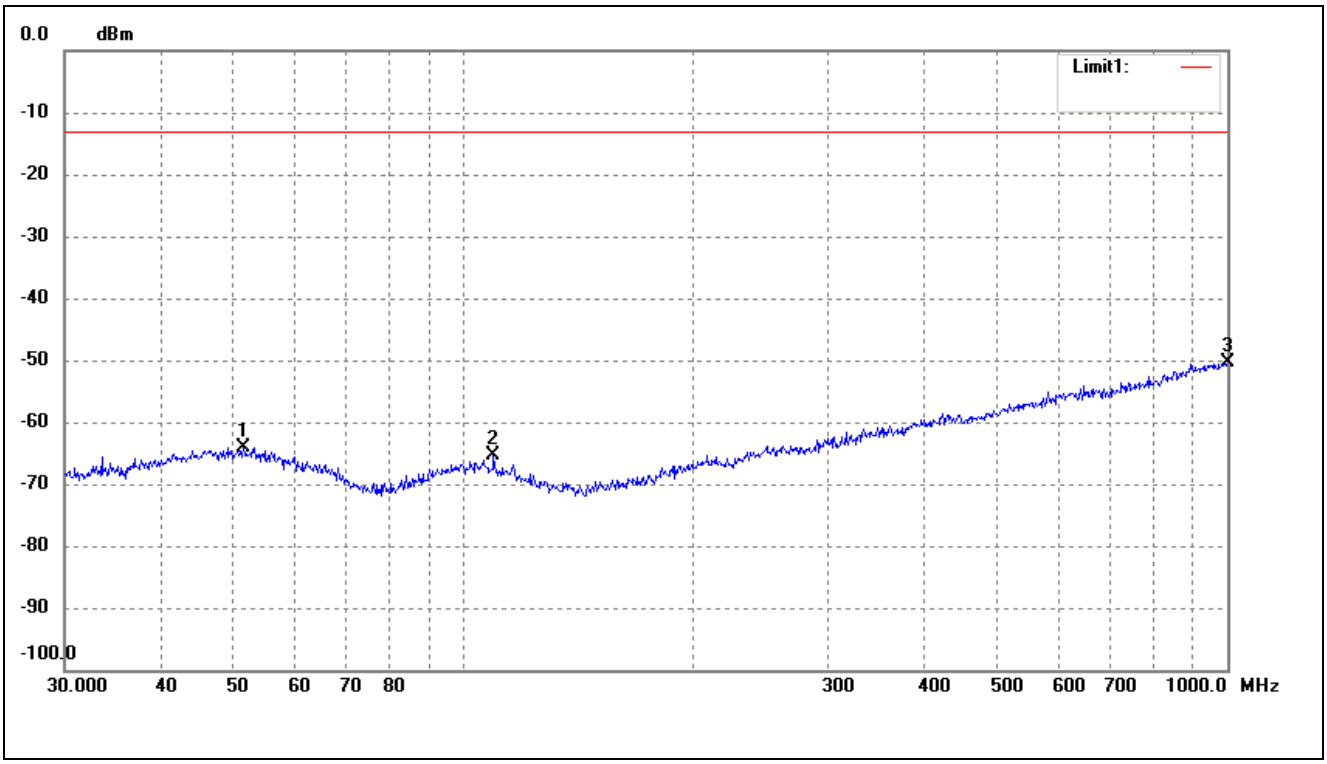
For band 4 Mode

Horizontal:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	Factor(dB)	(dBm)	(dBm)	(dB)	
1	46.5030	-69.18	4.34	-64.84	-13.00	-51.84	ERP
2	93.1132	-67.56	1.23	-66.33	-13.00	-53.33	ERP
3	929.0082	-67.31	17.50	-49.81	-13.00	-36.81	ERP

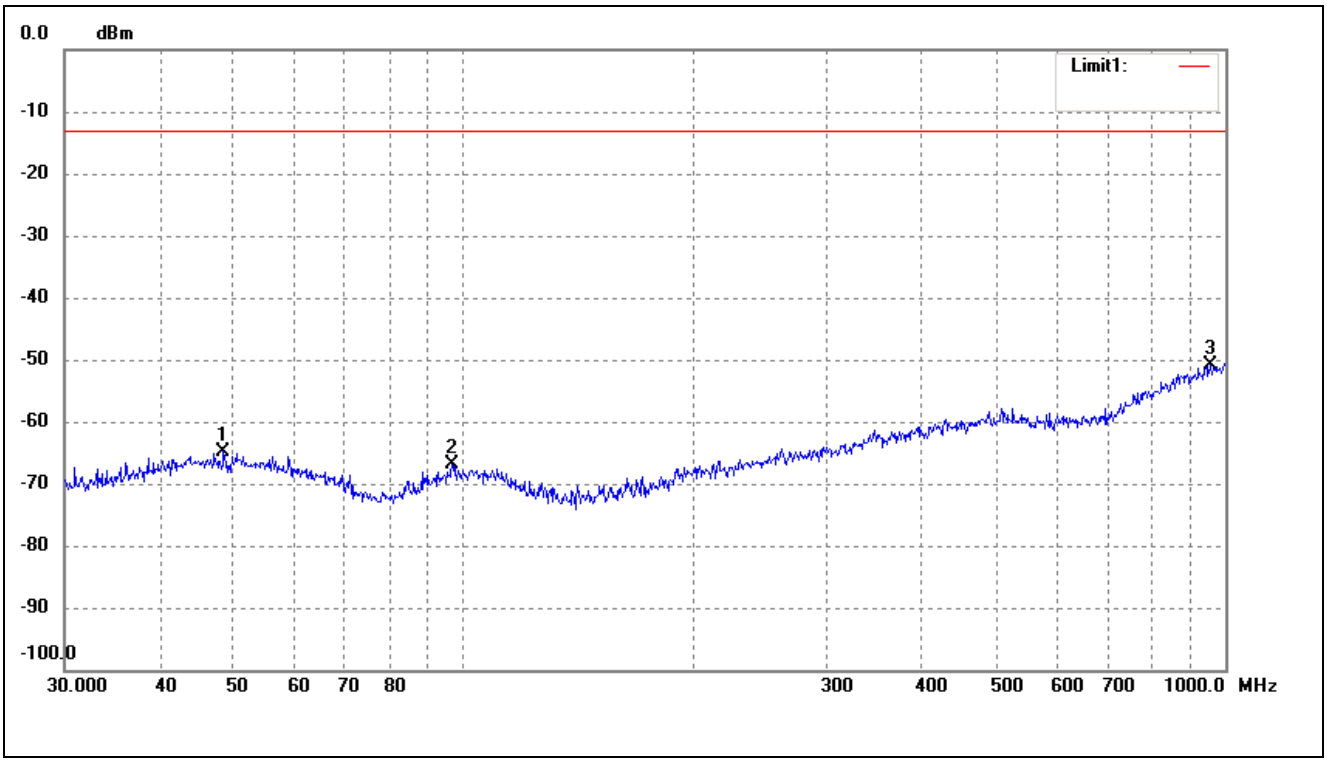
Vertical:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	51.4807	-68.27	4.21	-64.06	-13.00	-51.06	ERP
2	109.4116	-67.57	2.21	-65.36	-13.00	-52.36	ERP
3	1000.0000	-68.87	18.48	-50.39	-13.00	-37.39	ERP

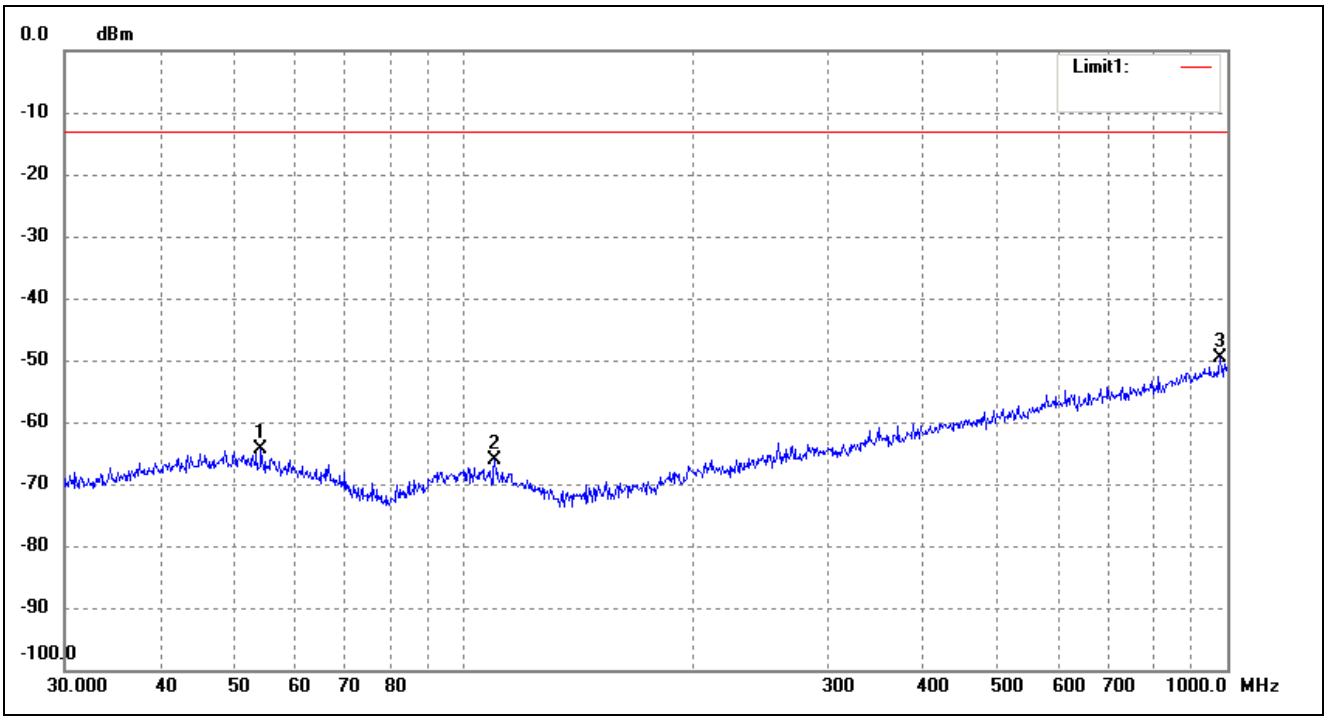
For band 2 Mode

Horizontal:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	
1	48.5016	-69.10	4.35	-64.75	-13.00	-51.75	ERP
2	96.7749	-68.65	1.85	-66.80	-13.00	-53.80	ERP
3	955.4381	-68.75	17.81	-50.94	-13.00	-37.94	ERP

Vertical:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	Factor(dB)	(dBm)	(dBm)	(dB)	
1	54.2610	-68.33	3.92	-64.41	-13.00	-51.41	ERP
2	109.7960	-68.29	2.20	-66.09	-13.00	-53.09	ERP
3	979.1804	-67.81	18.17	-49.64	-13.00	-36.64	ERP

Note: Margin= (Reading+ Correct)- Limit

Spurious Emissions Above 1GHz

For Cellular Band_GSM850 Mode

Frequency	Reading	Correct	Result	Limit	Margin	Polar
(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	H/V
Low Channel (824.2MHz)						
1648.4	-52.90	4.94	-47.96	-13.00	-34.96	H
2472.6	-51.75	8.46	-43.29	-13.00	-30.29	H
1648.4	-49.12	4.94	-44.18	-13.00	-31.18	V
2472.6	-49.68	8.46	-41.22	-13.00	-28.22	V
Middle Channel (836.6MHz)						
1673.2	-54.14	5.11	-49.03	-13.00	-36.03	H
2509.8	-52.99	8.54	-44.45	-13.00	-31.45	H
1673.2	-50.36	5.11	-45.25	-13.00	-32.25	V
2509.8	-50.92	8.54	-42.38	-13.00	-29.38	V
High Channel (848.8MHz)						
1697.6	-54.64	5.29	-49.35	-13.00	-36.35	H
2546.4	-57.01	8.59	-48.42	-13.00	-35.42	H
1697.6	-54.51	5.29	-49.22	-13.00	-36.22	V
2546.4	-56.94	8.59	-48.35	-13.00	-35.35	V

For PCS Band_GSM1900 Mode

Frequency	Reading	Correct	Result	Limit	Margin	Polar
(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	H/V
Low Channel (1850.2MHz)						
3700.4	-53.66	10.54	-43.12	-13.00	-30.12	H
5550.6	-56.38	13.37	-43.01	-13.00	-30.01	H
3700.4	-52.66	10.54	-42.12	-13.00	-29.12	V
5550.6	-56.38	13.37	-43.01	-13.00	-30.01	V
Middle Channel (1880MHz)						
3760.0	-51.76	10.64	-41.12	-13.00	-28.12	H
5640.0	-56.55	13.54	-43.01	-13.00	-30.01	H
3760.0	-51.76	10.64	-41.12	-13.00	-28.12	V
5640.0	-56.55	13.54	-43.01	-13.00	-30.01	V
High Channel (1909.8MHz)						
3819.6	-53.16	10.74	-42.42	-13.00	-29.42	H
5729.4	-56.69	13.71	-42.98	-13.00	-29.98	H
3819.6	-53.86	10.74	-43.12	-13.00	-30.12	V
5729.4	-56.19	13.71	-42.48	-13.00	-29.48	V

For Band 5 Mode

Frequency	Reading	Correct	Result	Limit	Margin	Polar
(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	H/V
Low Channel (826.4MHz)						
1652.8	-54.97	4.94	-50.03	-13.00	-37.03	H
2479.2	-55.49	8.46	-47.03	-13.00	-34.03	H
1652.8	-53.94	4.94	-49.00	-13.00	-36.00	V
2479.2	-55.17	8.46	-46.71	-13.00	-33.71	V
Middle Channel (836.6MHz)						
1672.8	-54.20	5.11	-49.09	-13.00	-36.09	H
2509.2	-54.69	8.54	-46.15	-13.00	-33.15	H
1672.8	-55.15	5.11	-50.04	-13.00	-37.04	V
2509.2	-56.18	8.54	-47.64	-13.00	-34.64	V
High Channel (846.6MHz)						
1693.2	-53.28	5.29	-47.99	-13.00	-34.99	H
2539.8	-56.30	8.59	-47.71	-13.00	-34.71	H
1693.2	-53.78	5.29	-48.49	-13.00	-35.49	V
2539.8	-55.22	8.59	-46.63	-13.00	-33.63	V

For Band 4 Mode

Frequency	Reading	Correct	Result	Limit	Margin	Polar
(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	H/V
Low Channel (1712.4MHz)						
3424.8	-54.97	9.87	-45.10	-13.00	-35.34	H
5137.2	-55.49	13.02	-42.47	-13.00	-32.71	H
3424.8	-53.94	9.87	-44.07	-13.00	-34.31	V
5137.2	-55.17	13.02	-42.15	-13.00	-32.39	V
Middle Channel (1732.4MHz)						
3464.8	-54.20	9.96	-44.24	-13.00	-31.24	H
5197.2	-54.69	13.32	-41.37	-13.00	-28.37	H
3464.8	-55.15	9.96	-45.19	-13.00	-32.19	V
5197.2	-56.18	13.32	-42.86	-13.00	-29.86	V
High Channel (1752.6MHz)						
3505.2	-53.28	10.03	-43.25	-13.00	-30.25	H
5257.8	-56.30	14.03	-42.27	-13.00	-29.27	H
3505.2	-53.78	10.03	-43.75	-13.00	-30.75	V
5257.8	-55.22	14.03	-41.19	-13.00	-28.19	V

For Band 2 Mode

Frequency	Reading	Correct	Result	Limit	Margin	Polar
(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	H/V
Low Channel (1852.4MHz)						
3704.8	-54.33	10.17	-44.16	-13.00	-31.16	H
5557.2	-54.89	14.69	-40.20	-13.00	-27.20	H
3704.8	-55.39	10.17	-45.22	-13.00	-32.22	V
5557.2	-55.62	14.69	-40.93	-13.00	-27.93	V
Middle Channel (1880MHz)						
3760.8	-54.81	10.26	-44.55	-13.00	-31.55	H
5640.0	-54.66	14.78	-39.88	-13.00	-26.88	H
3760.8	-54.38	10.26	-44.12	-13.00	-31.12	V
5640.0	-54.93	14.78	-40.15	-13.00	-27.15	V
High Channel (1907.6MHz)						
3815.2	-54.82	10.59	-44.23	-13.00	-31.23	H
5722.8	-54.86	15.03	-39.83	-13.00	-26.83	H
3815.2	-55.12	10.59	-44.53	-13.00	-31.53	V
5722.8	-54.45	15.03	-39.42	-13.00	-26.42	H

Note: Result=Reading+ Correct, Margin= Result- Limit

Testing is carried out with frequency rang 9kHz to 20GHz, which above 3th Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured, so the data is not display.

9. Frequency Stability

9.1 Standard Applicable

According to §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table below:

Frequency Tolerance for Cellular Band

Frequency range (MHz)	Base, fixed (ppm)	Mobile ≤3 watts (ppm)	Mobile ≤3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929	5.0	N/A	N/A
929 to 960	1.5	N/A	N/A
2110 to 2220	10.0	N/A	N/A

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

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

9.2 Test Procedure

According to §2.1055, the following test procedure was performed.
The Frequency Stability is measured directly with a Frequency Domain Analyzer. Frequency Deviation in ppm is calculated from the measured peak to peak value.
The Carrier Frequency Stability over Power Supply Voltage and over Temperature is measured with a Frequency Domain Analyzer in histogram mode

Temperature:	Supply Voltage
20°C	DC 3.3-4.2V of nominal voltage declared by manufacturer
-30°C to +50°C	Normal

9.3 Environmental Conditions

Temperature:	20°C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

9.4 Summary of Test Results/Plots

For Cellular Band GSM Mode

Reference Frequency(Middle Channel): 836.6 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	76	0.0908
40	3.7	72	0.0861
30	3.7	67	0.0801
20	3.7	65	0.0777
10	3.7	70	0.0837
0	3.7	64	0.0765
-10	3.7	49	0.0586
-20	3.7	60	0.0717
-30	3.7	57	0.0681

For PCS Band GSM Mode

Reference Frequency(Middle Channel): 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	49	0.0261
40	3.7	36	0.0191
30	3.7	32	0.0170
20	3.7	41	0.0218
10	3.7	27	0.0144
0	3.7	16	0.0085
-10	3.7	62	0.0330
-20	3.7	45	0.0239
-30	3.7	32	0.0170

For Cellular Band GPRS Mode

Reference Frequency(Middle Channel): 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	63	0.0753
40	3.7	59	0.0705
30	3.7	54	0.0645
20	3.7	52	0.0622
10	3.7	57	0.0681
0	3.7	51	0.0610
-10	3.7	36	0.0430
-20	3.7	47	0.0562
-30	3.7	44	0.0526

For PCS Band GPRS Mode

Reference Frequency(Middle Channel): 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	68	0.0362
40	3.7	55	0.0293
30	3.7	51	0.0271
20	3.7	60	0.0319
10	3.7	46	0.0245
0	3.7	35	0.0186
-10	3.7	81	0.0431
-20	3.7	64	0.0340
-30	3.7	51	0.0271

For Cellular Band EDGE Mode

Reference Frequency(Middle Channel): 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	65	0.0777
40	3.7	61	0.0729
30	3.7	56	0.0669
20	3.7	54	0.0645
10	3.7	59	0.0705
0	3.7	53	0.0634
-10	3.7	38	0.0454
-20	3.7	49	0.0586
-30	3.7	46	0.0550

For PCS Band EDGE Mode

Reference Frequency(Middle Channel): 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	53	0.0282
40	3.7	40	0.0213
30	3.7	36	0.0191
20	3.7	45	0.0239
10	3.7	31	0.0165
0	3.7	20	0.0106
-10	3.7	66	0.0351
-20	3.7	49	0.0261
-30	3.7	36	0.0191

For WCDMA Band 5 Mode

Reference Frequency(Middle Channel): 836.6 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	69	0.0825
40	3.7	65	0.0777
30	3.7	60	0.0717
20	3.7	58	0.0693
10	3.7	63	0.0753
0	3.7	57	0.0681
-10	3.7	42	0.0502
-20	3.7	53	0.0634
-30	3.7	50	0.0598

For WCDMA Band 4 Mode

Reference Frequency(Middle Channel): 1732.4 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	72	0.0416
40	3.7	59	0.0341
30	3.7	55	0.0317
20	3.7	64	0.0369
10	3.7	50	0.0289
0	3.7	39	0.0225
-10	3.7	85	0.0491
-20	3.7	68	0.0393
-30	3.7	58	0.0335

For WCDMA Band 2 Mode

Reference Frequency(Middle Channel): 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	64	0.0340
40	3.7	51	0.0271
30	3.7	47	0.0250
20	3.7	56	0.0298
10	3.7	42	0.0223
0	3.7	31	0.0165
-10	3.7	77	0.0410
-20	3.7	60	0.0319
-30	3.7	50	0.0266

For HSDPA Band 5 Mode

Reference Frequency(Middle Channel): 836.6 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	67	0.0801
40	3.7	63	0.0753
30	3.7	58	0.0693
20	3.7	56	0.0669
10	3.7	61	0.0729
0	3.7	55	0.0657
-10	3.7	40	0.0478
-20	3.7	51	0.0610
-30	3.7	48	0.0574

For HSDPA Band 4 Mode

Reference Frequency(Middle Channel): 1732.4 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	63	0.0364
40	3.7	50	0.0289
30	3.7	46	0.0266
20	3.7	55	0.0317
10	3.7	41	0.0237
0	3.7	30	0.0173
-10	3.7	76	0.0439
-20	3.7	59	0.0341
-30	3.7	49	0.0283

For HSDPA Band 2 Mode

Reference Frequency(Middle Channel): 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	59	0.0314
40	3.7	46	0.0245
30	3.7	42	0.0223
20	3.7	51	0.0271
10	3.7	37	0.0197
0	3.7	26	0.0138
-10	3.7	72	0.0383
-20	3.7	55	0.0293
-30	3.7	42	0.0223

For HSUPA Band 5 Mode

Reference Frequency(Middle Channel): 836.6 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	75	0.0896
40	3.7	71	0.0849
30	3.7	66	0.0789
20	3.7	64	0.0765
10	3.7	69	0.0825
0	3.7	63	0.0753
-10	3.7	48	0.0574
-20	3.7	59	0.0705
-30	3.7	56	0.0669

For HSUPA Band 4 Mode

Reference Frequency(Middle Channel): 1732.4 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	73	0.0421
40	3.7	60	0.0346
30	3.7	56	0.0323
20	3.7	65	0.0375
10	3.7	51	0.0294
0	3.7	40	0.0231
-10	3.7	86	0.0496
-20	3.7	69	0.0398
-30	3.7	56	0.0323

For HSUPA Band 2 Mode

Reference Frequency(Middle Channel): 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	71	0.0378
40	3.7	58	0.0309
30	3.7	54	0.0287
20	3.7	63	0.0335
10	3.7	49	0.0261
0	3.7	38	0.0202
-10	3.7	84	0.0447
-20	3.7	67	0.0356
-30	3.7	54	0.0287

So, Frequency Stability Versus Input Voltage is:

Reference Frequency(Middle Channel): GSM 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	69	0.0825
	3.7	66	0.0789
	4.2	67	0.0800
Reference Frequency(Middle Channel): GSM 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	51	0.0271
	3.7	50	0.0266
	4.2	52	0.0277
Reference Frequency(Middle Channel): GPRS 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	47	0.0562
	3.7	52	0.0622
	4.2	53	0.0634
Reference Frequency(Middle Channel): GPRS 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	73	0.0388
	3.7	74	0.0394
	4.2	74	0.0394

Reference Frequency(Middle Channel): EDGE 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	52	0.0621
	3.7	54	0.0645
	4.2	53	0.0634
Reference Frequency(Middle Channel): EDGE 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	66	0.0351
	3.7	69	0.0367
	4.2	71	0.0378
Reference Frequency(Middle Channel): WCDMA 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	51	0.0610
	3.7	58	0.0693
	4.2	59	0.0705
Reference Frequency(Middle Channel): WCDMA 1732.4MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	61	0.0369
	3.7	64	0.0369
	4.2	66	0.0381
Reference Frequency(Middle Channel): WCDMA 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	54	0.0287
	3.7	56	0.0298
	4.2	58	0.0309

Reference Frequency(Middle Channel): HSDPA 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	54	0.0645
	3.7	56	0.0669
	4.2	57	0.0681
Reference Frequency(Middle Channel): HSDPA 1732.4MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	56	0.0323
	3.7	55	0.0317
	4.2	53	0.0306
Reference Frequency(Middle Channel): HSDPA 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	53	0.0282
	3.7	51	0.0271
	4.2	48	0.0255
Reference Frequency(Middle Channel): HSUPA 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	65	0.0777
	3.7	64	0.0765
	4.2	66	0.0789
Reference Frequency(Middle Channel): HSUPA 1732.4MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	67	0.0387
	3.7	65	0.0375
	4.2	62	0.0358

Reference Frequency(Middle Channel): HSUPA 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.3	64	0.0340
	3.7	63	0.0335
	4.2	65	0.0346

******* END OF REPORT *******