



No. 1 Workshop, M-10, Middle section, Science & Technology Park, Nanshan
District, Shenzhen, Guangdong, China 518057

Telephone: +86 (0) 755 2601 2053
Fax: +86 (0) 755 2671 0594
Email: ee.shenzhen@sgs.com

Report No.: SZEM140900494504

Page: 1 of 85

Appendix for Test Report

Authorized Signature:



Jack Zhang

EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."



CONTENT

APPENDIX FOR TEST REPORT.....	1
1 APPENDIX_A: EFFECTIVE (ISOTROPIC) RADIATED POWER OUTPUT DATA	4
PART I - TEST RESULTS	4
2 APPENDIX_B: PEAK-TO-AVERAGE RATIO	6
PART I - TEST RESULTS	6
3 APPENDIX_C: MODULATION CHARACTERISTICS.....	7
PART I - TEST PLOTS	7
3.1 FOR GSM.....	7
3.1.1 TEST BAND = GSM850.....	7
3.1.2 TEST BAND = GSM1900.....	9
3.2 FOR UMTS.....	11
3.2.1 TEST BAND = WCDMA850.....	11
3.2.2 TEST BAND = WCDMA1900.....	12
4 APPENDIX_D: BANDWIDTH	13
4.1.1 TEST BAND = GSM850.....	14
4.1.2 TEST BAND = GSM1900.....	20
4.2 FOR UMTS.....	26
4.2.1 TEST BAND = WCDMA850.....	26
4.2.2 TEST BAND = WCDMA1900.....	29
5 APPENDIX_E: BAND EDGES COMPLIANCE	32
5.1 FOR GSM.....	32
5.1.1 TEST BAND = GSM850.....	32
5.1.2 TEST BAND = GSM1900.....	36
5.2 FOR UMTS.....	40
5.2.1 TEST BAND = WCDMA850.....	40
5.2.2 TEST BAND = WCDMA1900.....	42
6 APPENDIX_F: SPURIOUS EMISSION AT ANTENNA TERMINAL.....	44
6.1 FOR GSM.....	44
6.1.1 TEST BAND = GSM850.....	45
6.1.2 TEST BAND = GSM1900.....	51
6.2 FOR UMTS.....	54
6.2.1 TEST BAND = WCDMA850.....	55
6.2.2 TEST BAND = WCDMA1900.....	58
7 APPENDIX_G: FIELD STRENGTH OF SPURIOUS RADIATION	61
7.1 FOR GSM.....	61
7.1.1 TEST BAND = GSM850.....	61
7.1.2 Test Band = GSM1900.....	67
7.2 FOR UMTS.....	73
7.2.1 Test Band = WCDMA850.....	73
7.2.2 Test Band = WCDMA1900.....	76
8 APPENDIX_H: FREQUENCY STABILITY	79

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."



8.1	8.1 FOR GSM	79
8.1.1	8.1.1 FREQUENCY ERROR VS. VOLTAGE:	79
8.1.2	8.1.2 FREQUENCY ERROR VS. TEMPERATURE:	80
8.2	8.2 FOR UMTS	83
8.2.1	8.2.1 FREQUENCY ERROR VS. VOLTAGE:	83
8.2.2	8.2.2 FREQUENCY ERROR VS. TEMPERATURE:	84-85

**1 APPENDIX_A: EFFECTIVE (ISOTROPIC) RADIATED POWER OUTPUT DATA****Part I - Test Results**

Test Band	Test Mode	Test Channel	Measured[dBm]	ERP [dBm]	Limit [dBm]	Verdict
GSM850	GSM/TM1	LCH	31.55	28.80	38.5	PASS
		MCH	31.53	28.78	38.5	PASS
		HCH	31.31	28.56	38.5	PASS
	GSM/TM2	LCH	24.73	21.98	38.5	PASS
		MCH	24.53	21.78	38.5	PASS
		HCH	24.34	21.59	38.5	PASS
WCDMA850	UMTS/TM1	LCH	23.37	20.62	38.5	PASS
		MCH	23.46	20.71	38.5	PASS
		HCH	23.27	20.52	38.5	PASS

Note1: a, For getting the ERP (Efficient Radiated Power) in substitution method, the following formula should be taken to calculate it,

$$\text{ERP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBd]}$$

b, SGP=Signal Generator Level

Note2: RBW > emission bandwidth, VBW > 3 x RBW.

Detector: RMS



Test Band	Test Mode	Test Channel	Measured[dBm]	EIRP [dBm]	Limit [dBm]	Verdict
GSM1900	GSM/TM1	LCH	29.11	30.41	33	PASS
		MCH	29.13	30.43	33	PASS
		HCH	29.13	30.43	33	PASS
	GSM/TM2	LCH	29.16	30.46	33	PASS
		MCH	29.09	30.39	33	PASS
		HCH	29.16	30.46	33	PASS
WCDMA1900	UMTS/TM ₁	LCH	24.59	25.89	33	PASS
		MCH	23.89	25.19	33	PASS
		HCH	23.96	25.26	33	PASS

Note1: a, For getting the EIRP (Efficient Isotropic Radiated Power) in substitution method, the following formula should be taken to calculate it,

$$\text{EIRP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBi]}$$

b, SGP=Signal Generator Level

Note2: RBW > emission bandwidth, VBW > 3 x RBW

Detector: RMS



2 APPENDIX_B: PEAK-TO-AVERAGE RATIO

Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
GSM1900	GSM/TM1	LCH	0.06	13	PASS
		MCH	0.12	13	PASS
		HCH	0.14	13	PASS
	GSM/TM2	LCH	2.87	13	PASS
		MCH	3.02	13	PASS
		HCH	3.20	13	PASS
GSM1900	GSM/TM1	LCH	0.15	13	PASS
		MCH	0.11	13	PASS
		HCH	0.16	13	PASS
	GSM/TM2	LCH	2.89	13	PASS
		MCH	3.12	13	PASS
		HCH	3.17	13	PASS
Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
WCDMA1900	UMTS/TM1	LCH	2.89	13	PASS
		MCH	2.78	13	PASS
		HCH	3.01	13	PASS
WCDMA1900	UMTS/TM1	LCH	3.04	13	PASS
		MCH	3.11	13	PASS
		HCH	2.96	13	PASS

3 APPENDIX_C: MODULATION CHARACTERISTICS

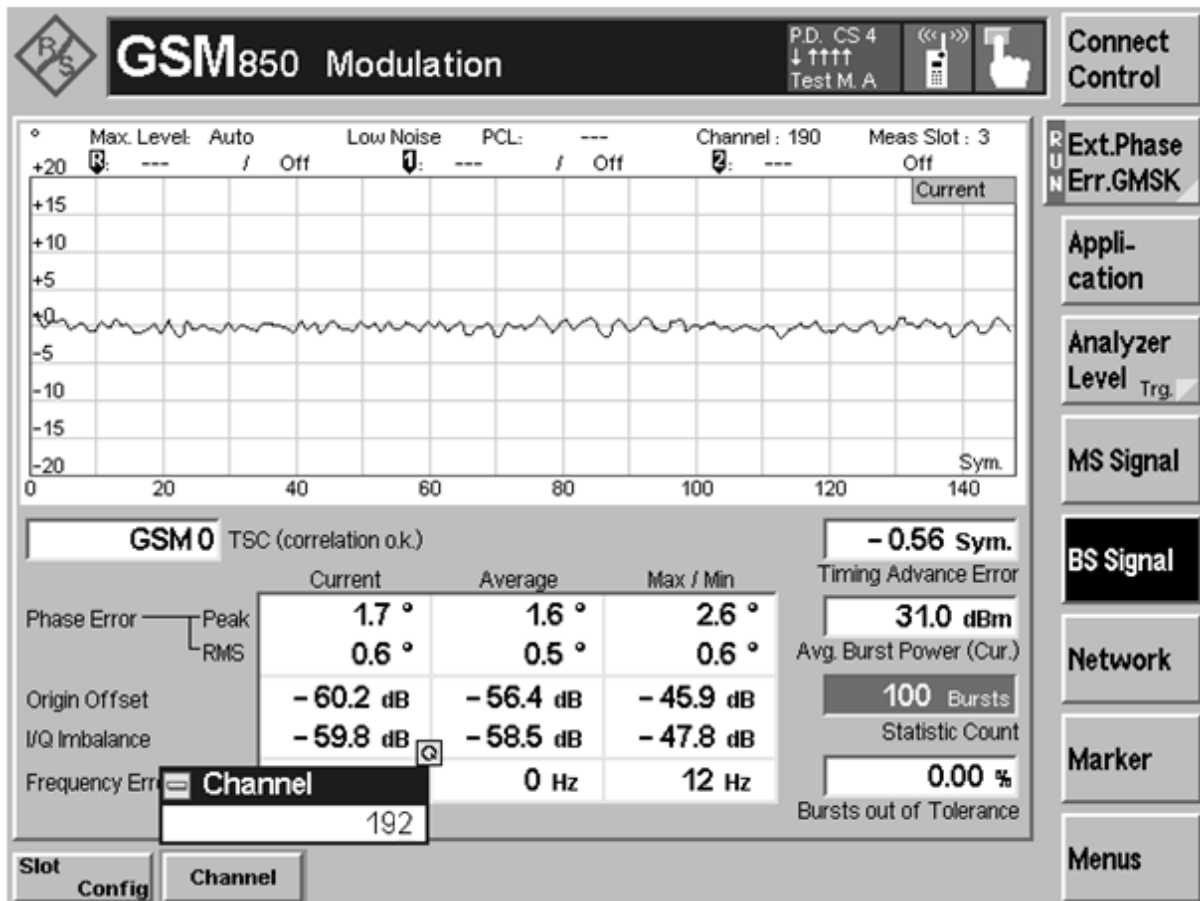
Part I - Test Plots

3.1 FOR GSM

3.1.1 TEST BAND = GSM850

3.1.1.1 Test Mode = GSM/TM1

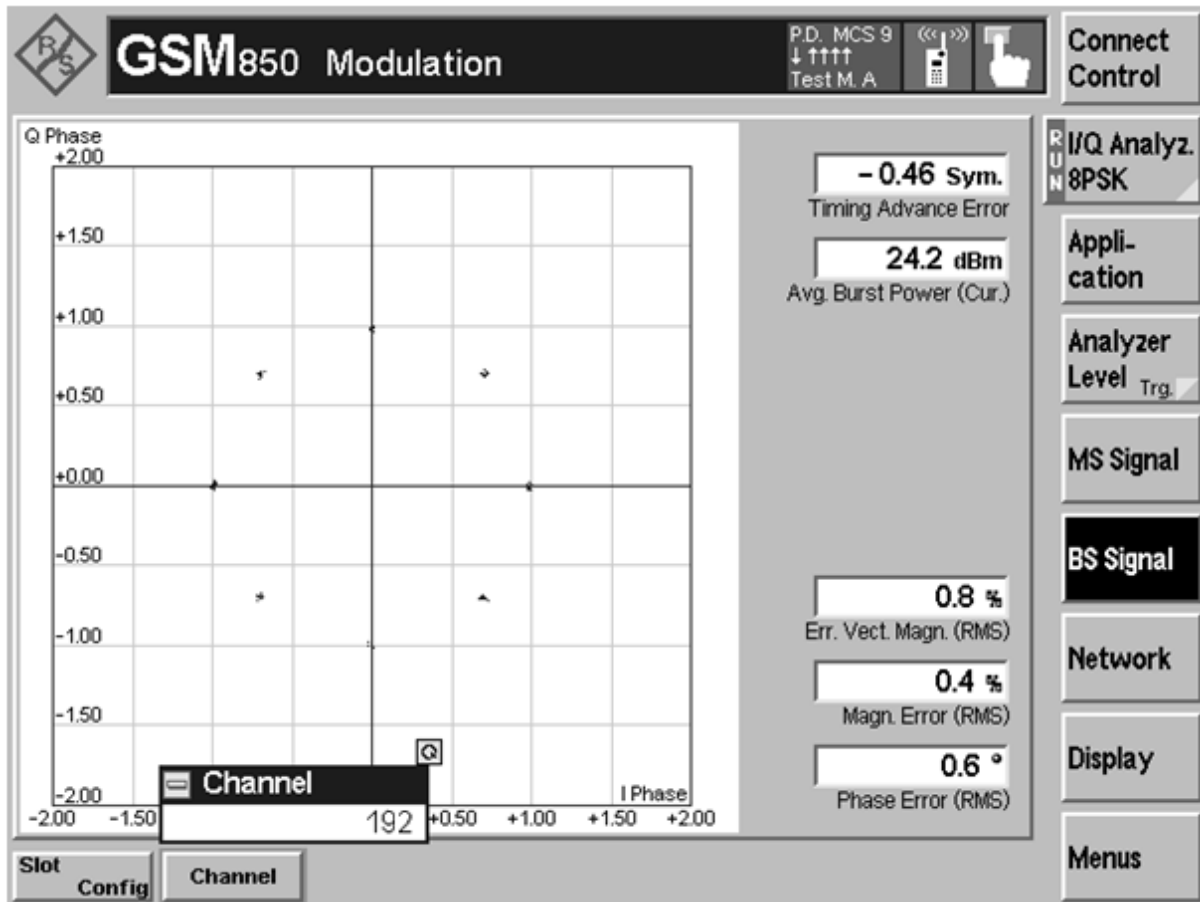
3.1.1.1.1 Test Channel = MCH





3.1.1.2 Test Mode = GSM/TM2

3.1.1.2.1 Test Channel = MCH

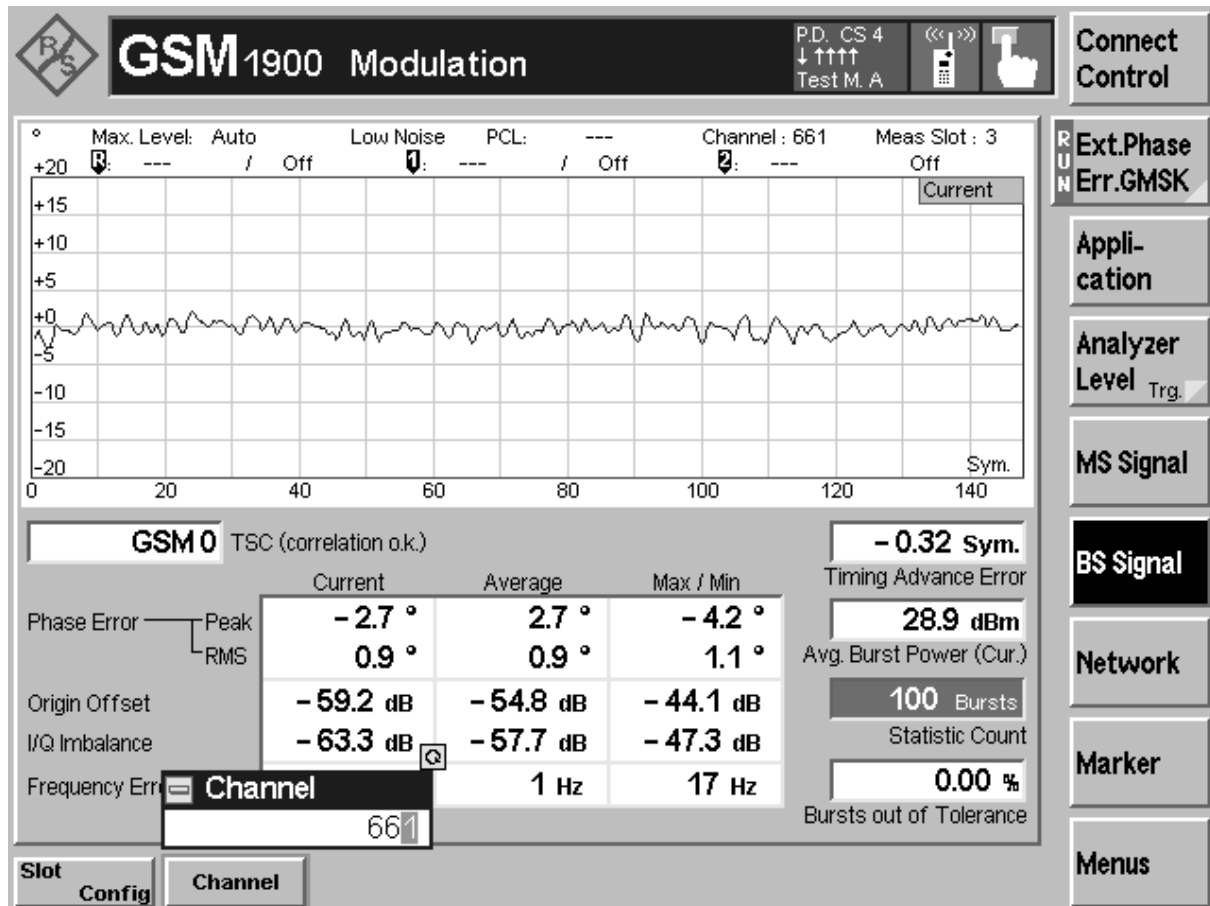




3.1.2 TEST BAND = GSM1900

3.1.2.1 Test Mode = GSM/TM1

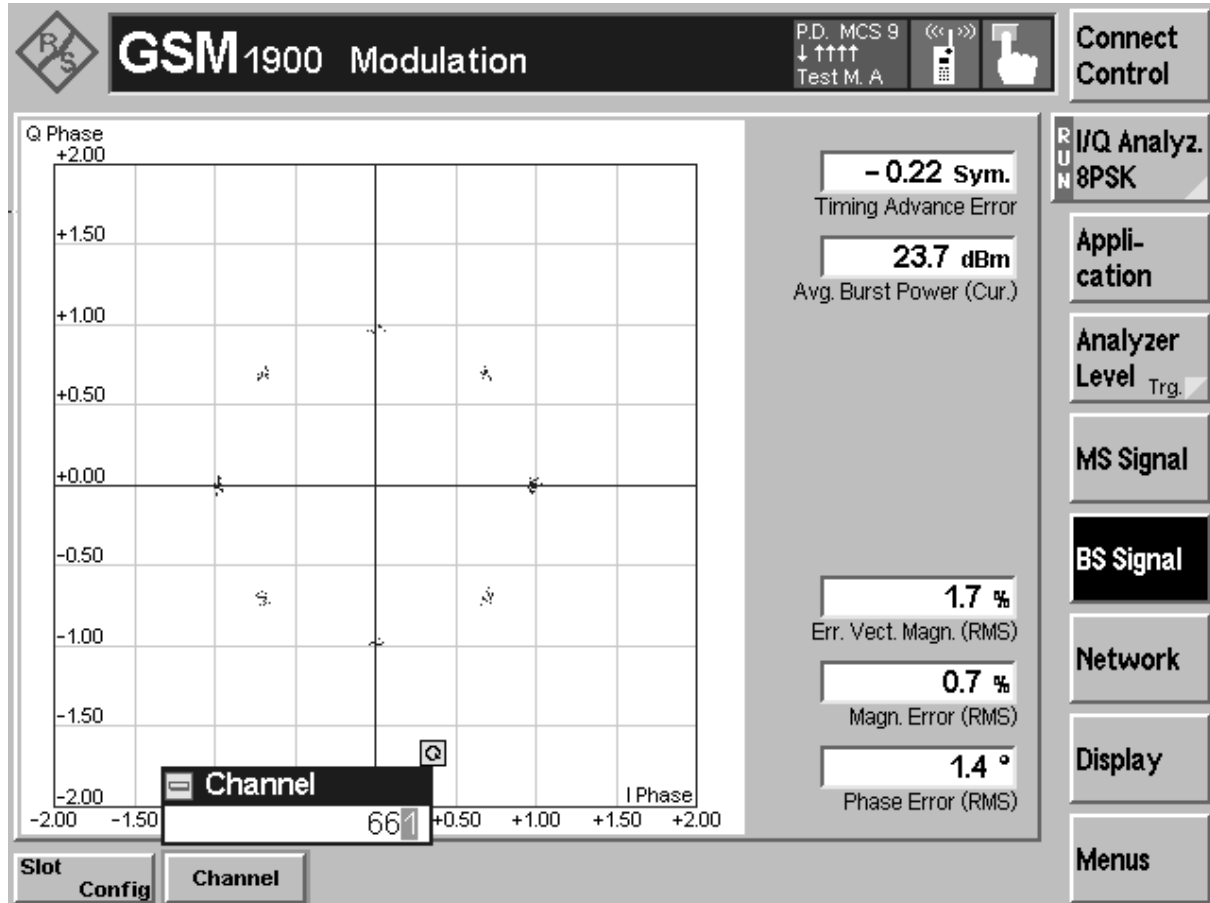
3.1.2.1.1 Test Channel = MCH





3.1.2.2 Test Mode = GSM/TM2

3.1.2.2.1 Test Channel = MCH



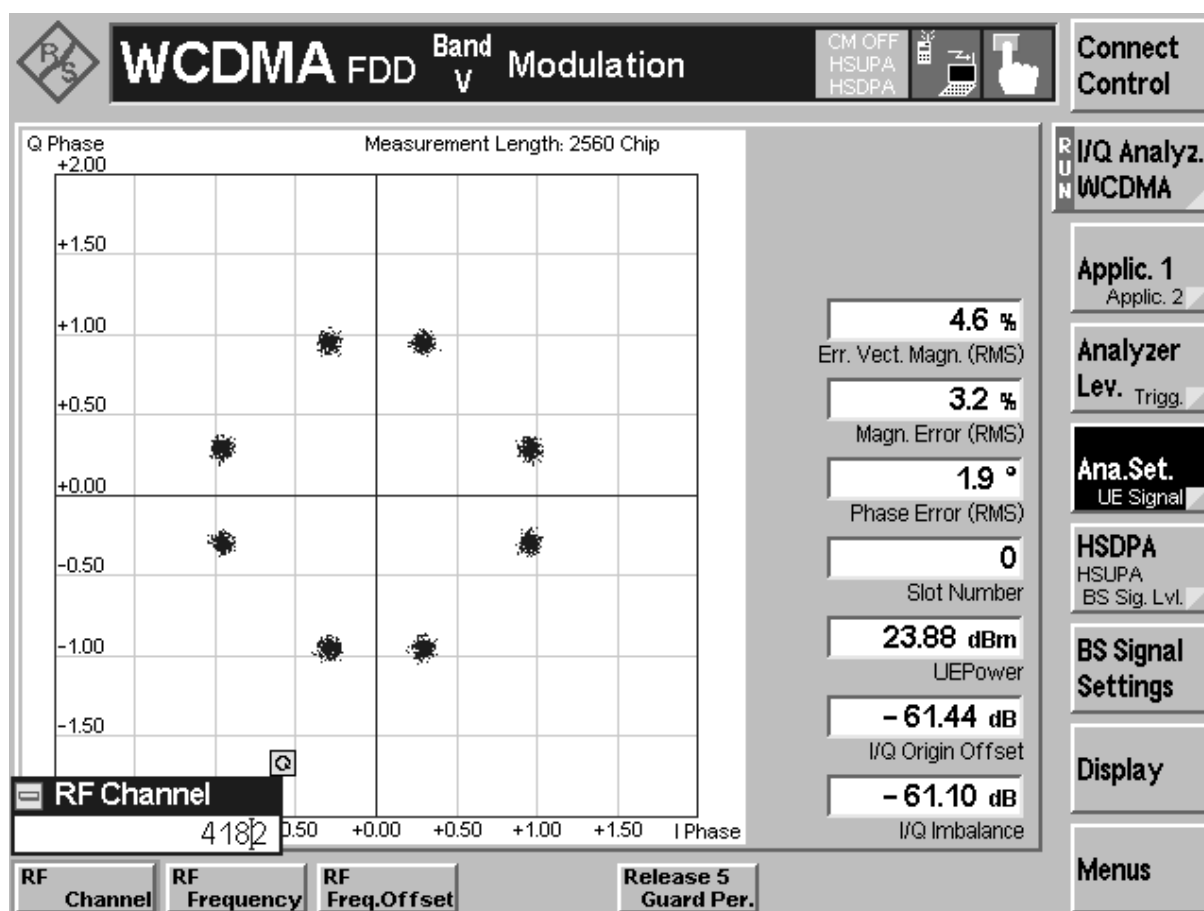


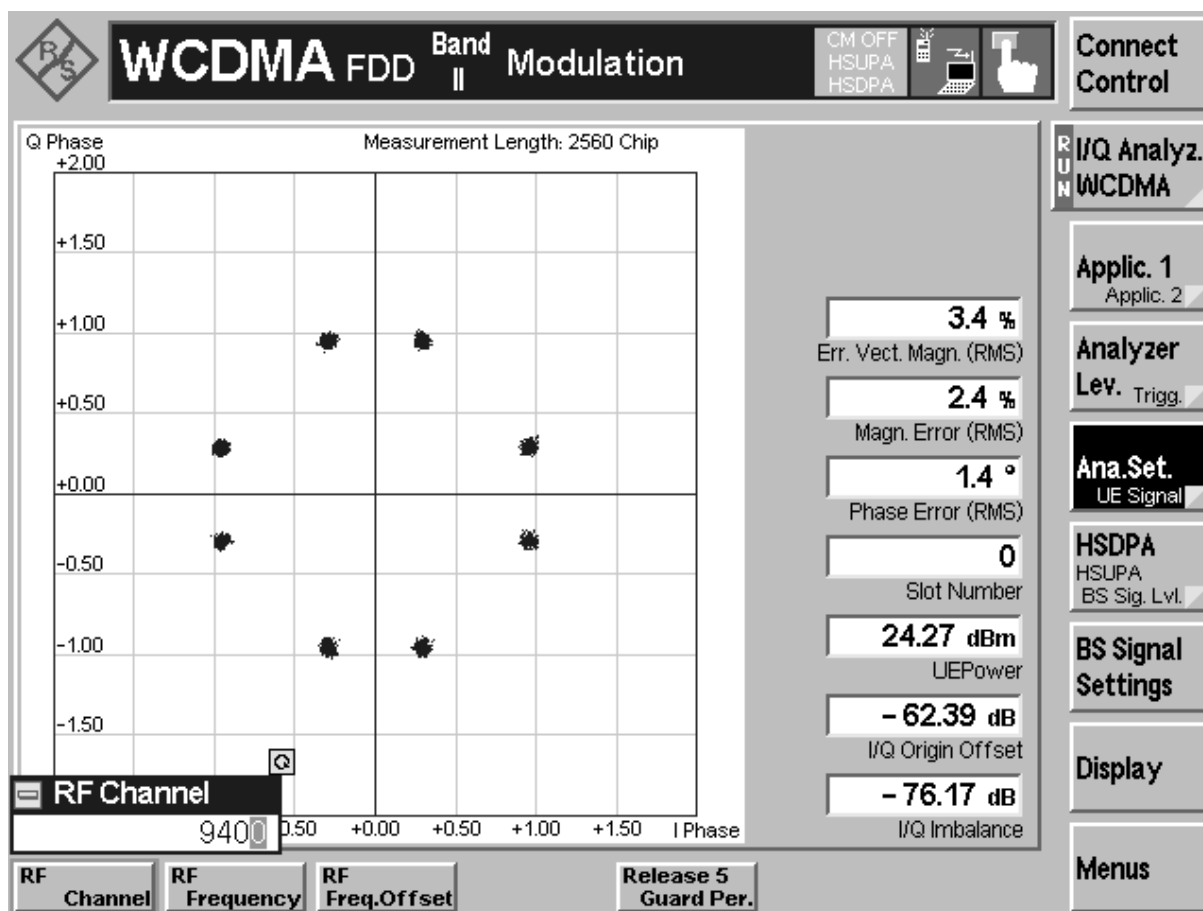
3.2 FOR UMTS

3.2.1 TEST BAND = WCDMA850

3.2.1.1 Test Mode = UMTS/TM1

3.2.1.1.1 Test Channel = MCH



**3.2.2 TEST BAND = WCDMA1900****3.2.2.1 Test Mode = UMTS/TM1****3.2.2.1.1 Test Channel = MCH**

**4 APPENDIX_D: BANDWIDTH****Part I - Test Results**

Test Band	Test Mode	Test Channel	Occupied Bandwidth [kHz]	Emission Bandwidth [kHz]	Verdict
GSM850	GSM/TM1	LCH	243.9	317.0	PASS
		MCH	241.1	318.9	PASS
		HCH	241.4	319.2	PASS
	GSM/TM2	LCH	234.8	302.6	PASS
		MCH	244.1	321.6	PASS
		HCH	235.8	299.6	PASS
GSM1900	GSM/TM1	LCH	242.0	314.1	PASS
		MCH	241.9	318.0	PASS
		HCH	243.1	315.7	PASS
	GSM/TM2	LCH	240.46	317.3	PASS
		MCH	239.58	306.9	PASS
		HCH	241.2	316.0	PASS
Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
WCDMA850	UMTS/TM ₁	LCH	4.149	4.726	PASS
		MCH	4.169	4.735	PASS
		HCH	4.162	4.728	PASS
WCDMA1900	UMTS/TM ₁	LCH	4.165	4.746	PASS
		MCH	4.163	4.746	PASS
		HCH	4.164	4.373	PASS

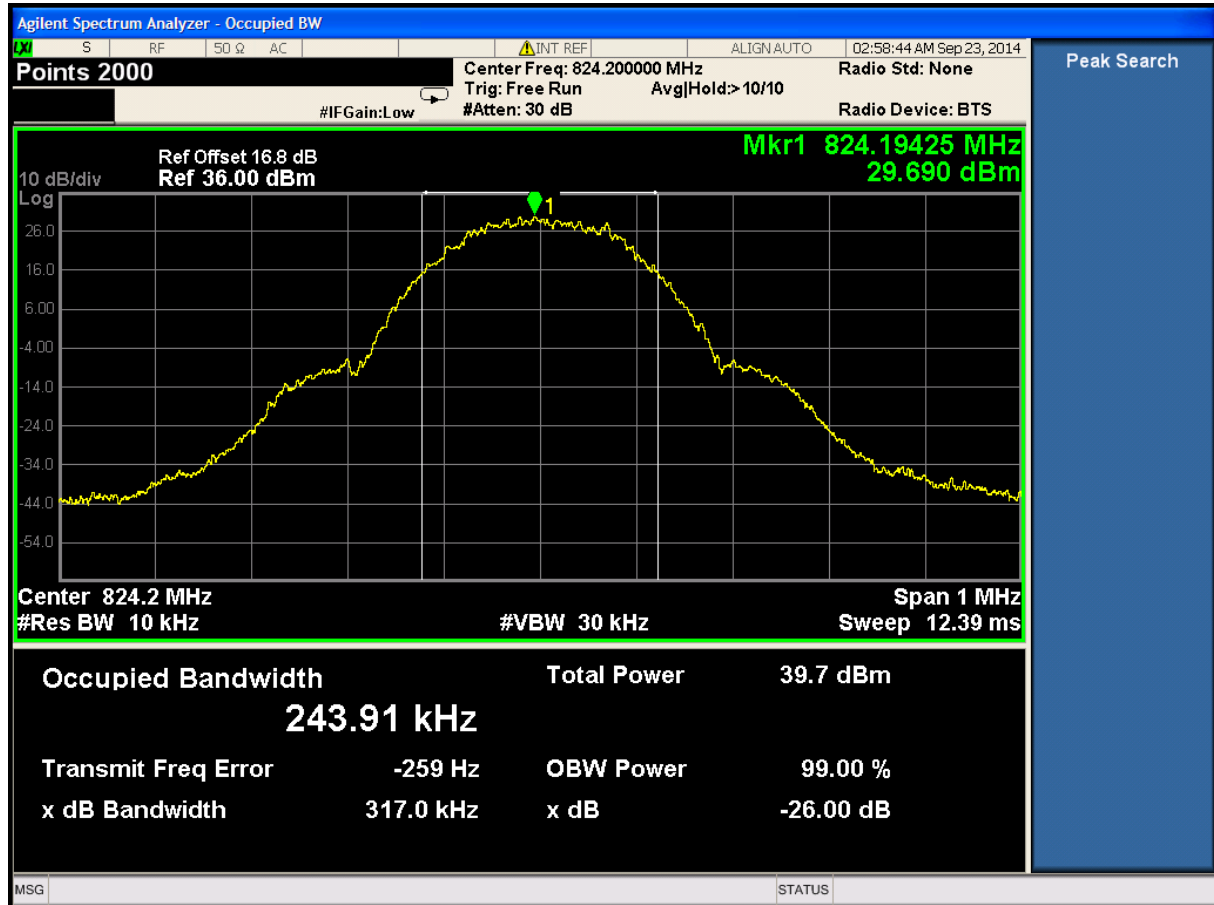
Part II - Test Plots



4.1.1 TEST BAND = GSM850

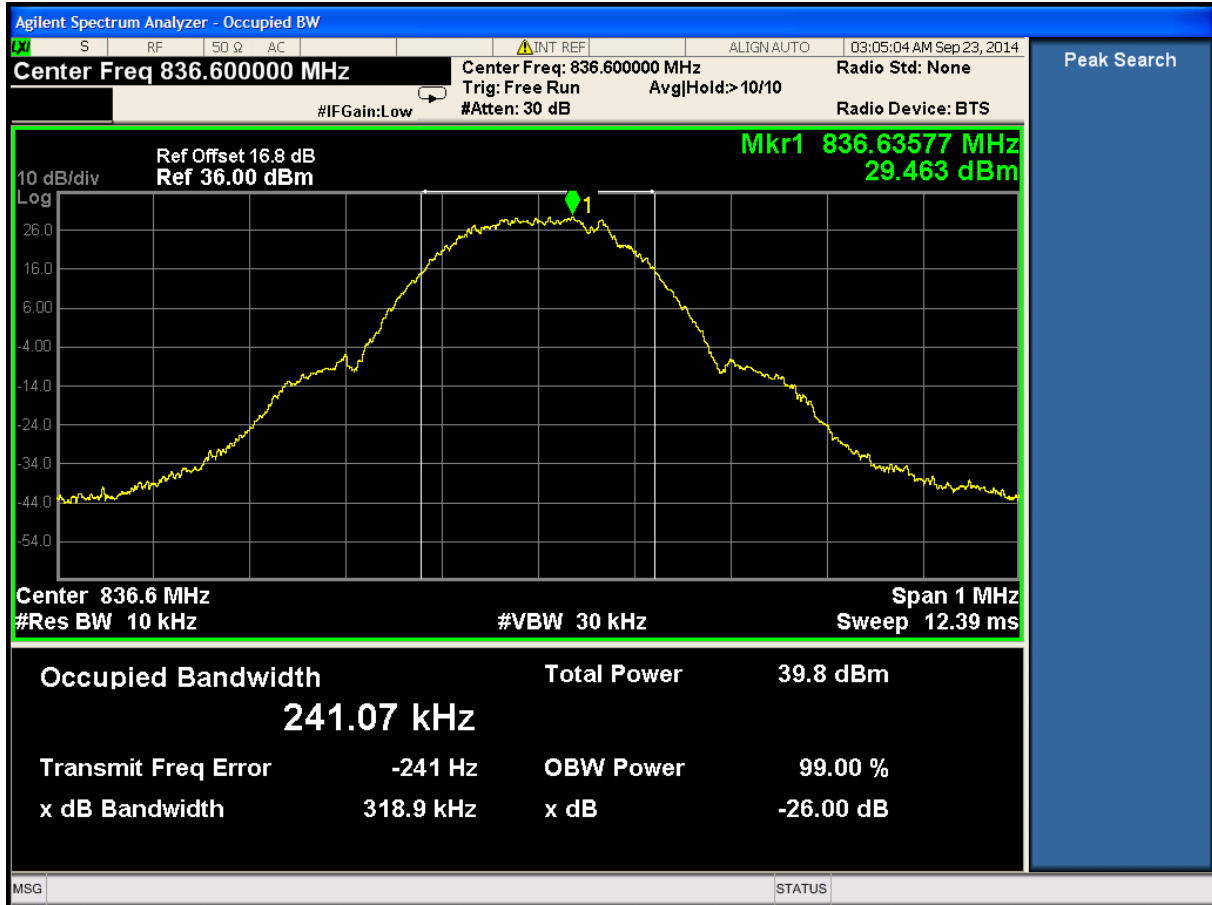
4.1.1.1 Test Mode = GSM/TM1

4.1.1.1.1 Test Channel = LCH



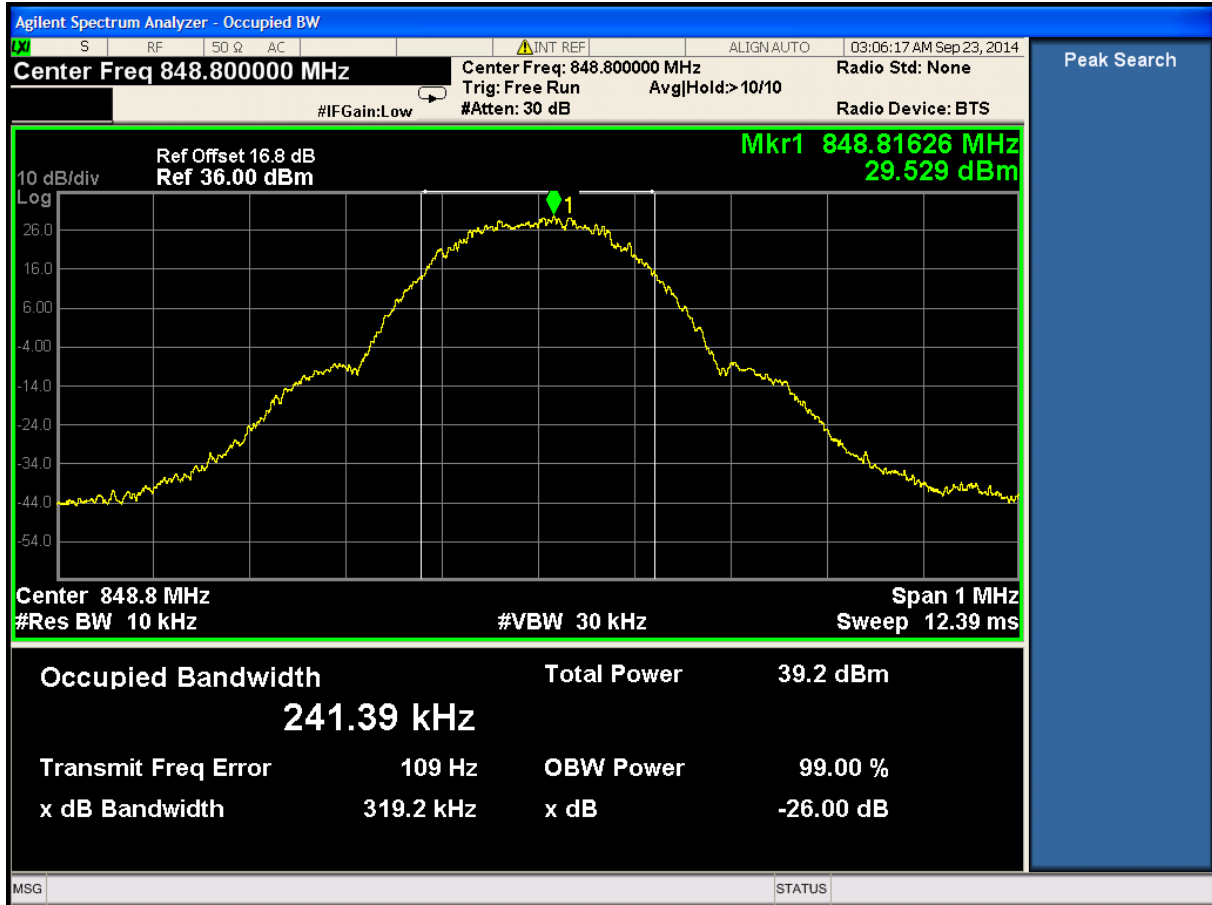


4.1.1.1.2 Test Channel = MCH





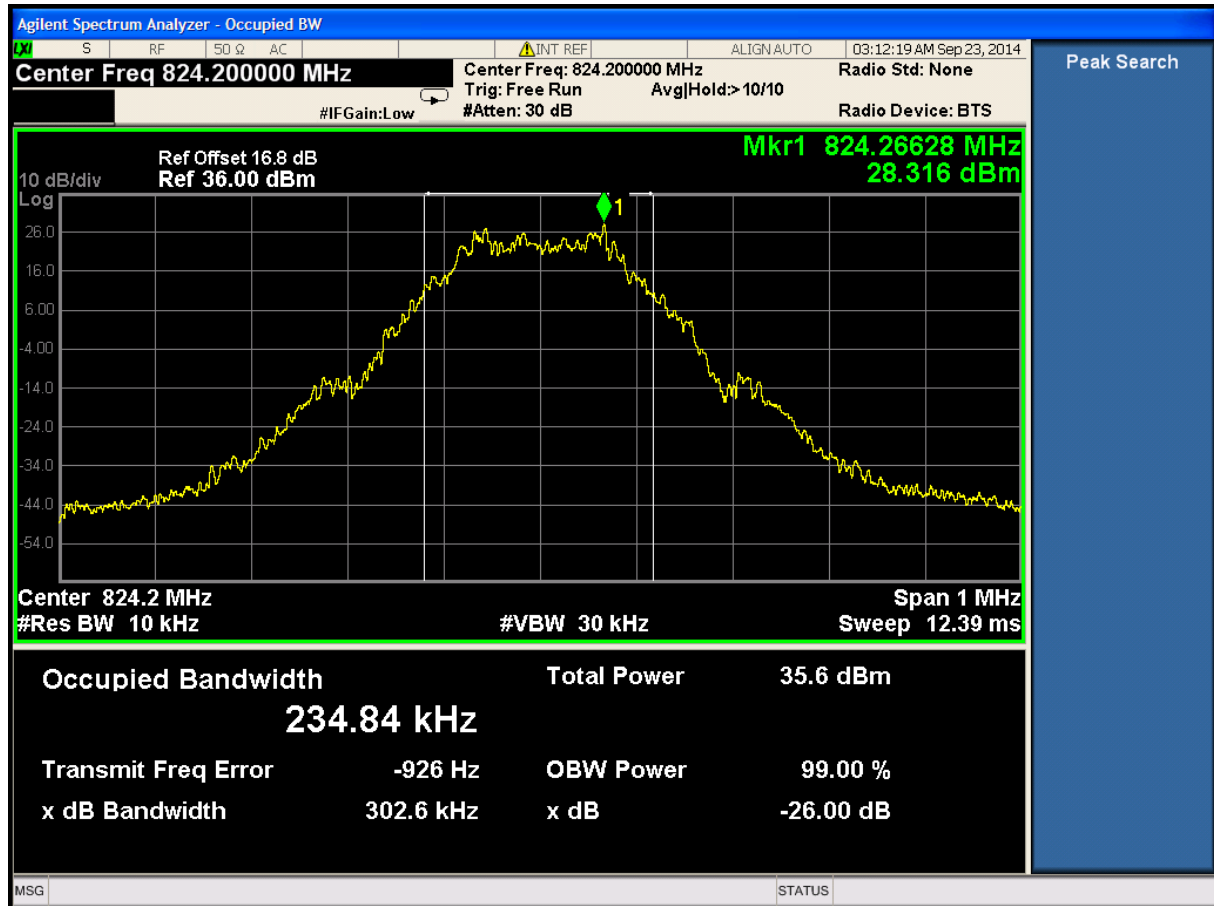
4.1.1.1.3 Test Channel = HCH





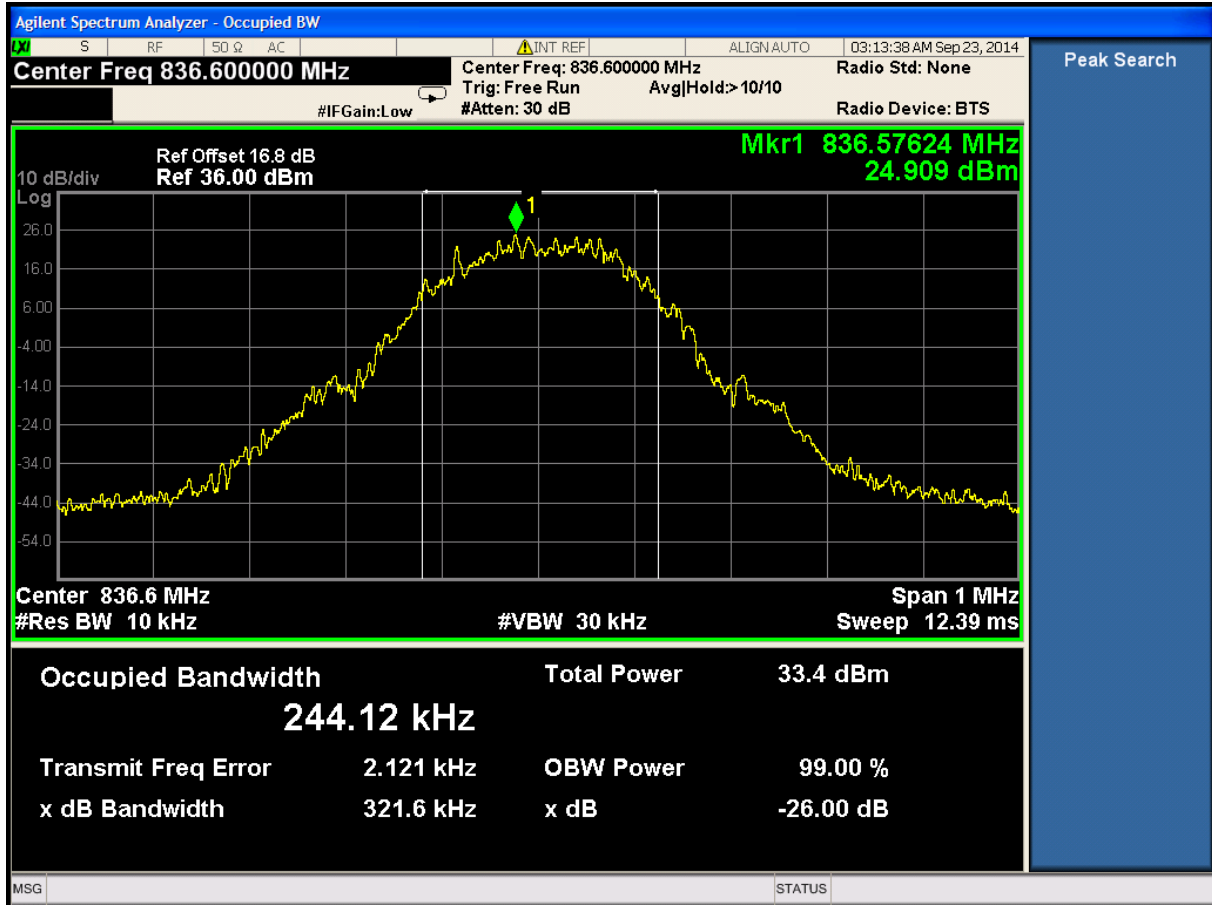
4.1.1.2 Test Mode = GSM/TM2

4.1.1.2.1 Test Channel = LCH



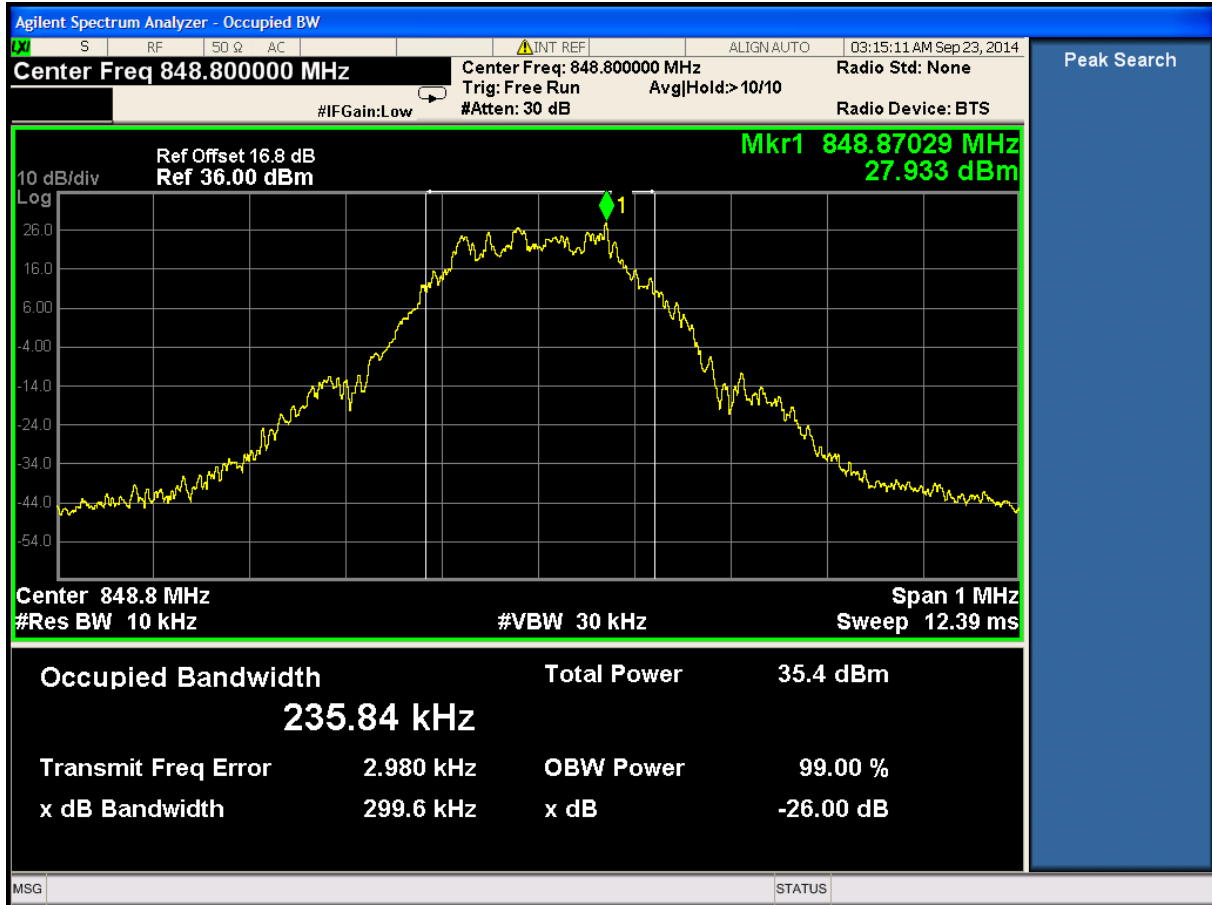


4.1.1.2.2 Test Channel = MCH





4.1.1.2.3 Test Channel = HCH

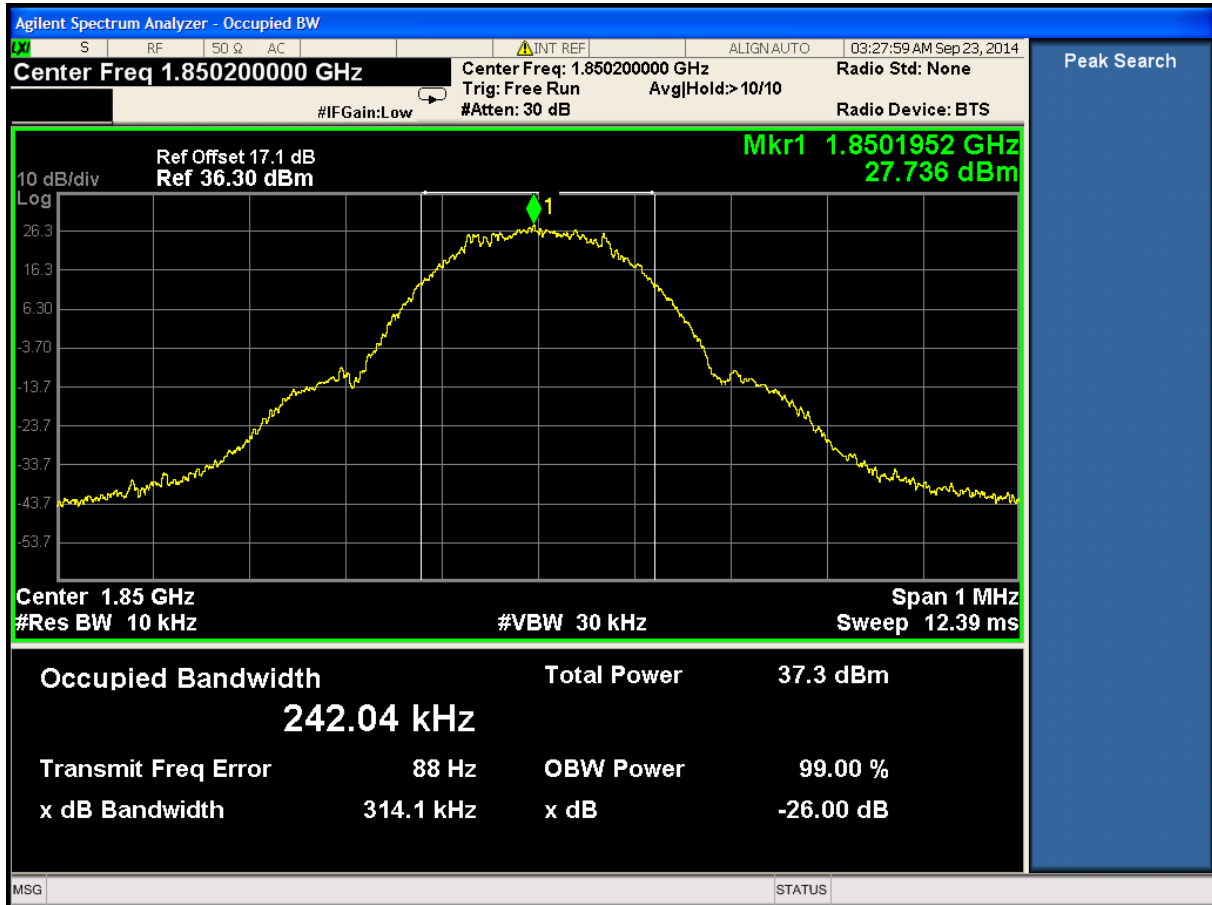




4.1.2 TEST BAND = GSM1900

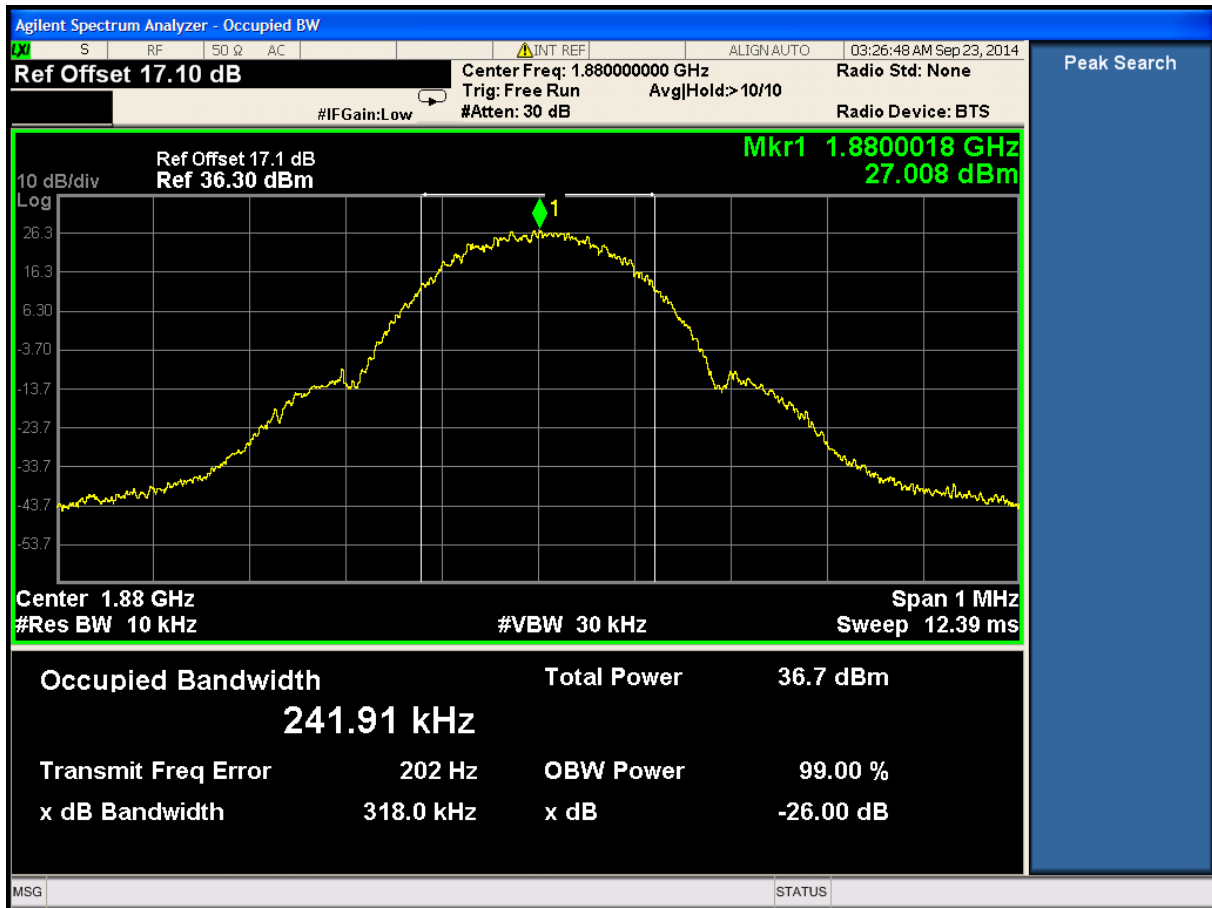
4.1.2.1 Test Mode = GSM/TM1

4.1.2.1.1 Test Channel = LCH



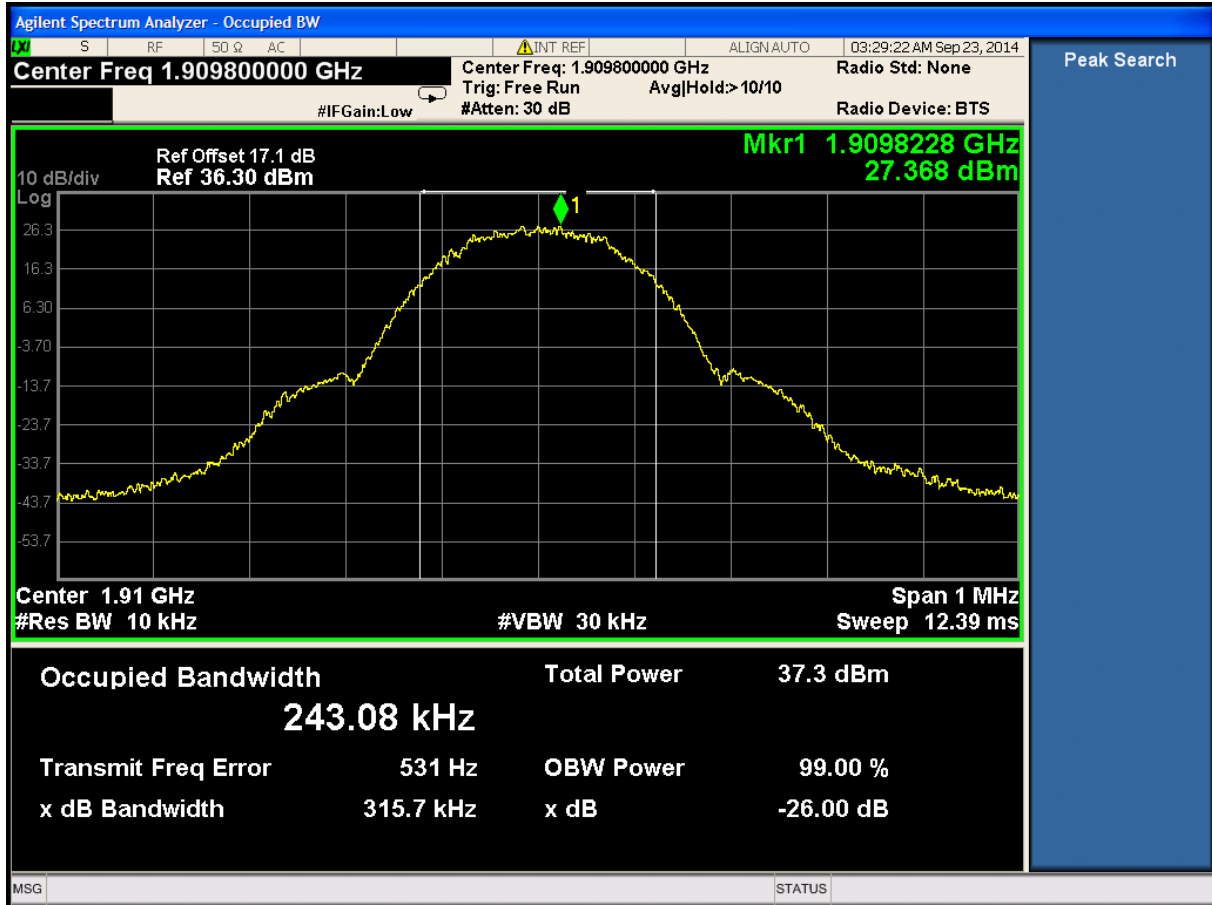


4.1.2.1.2 Test Channel = MCH





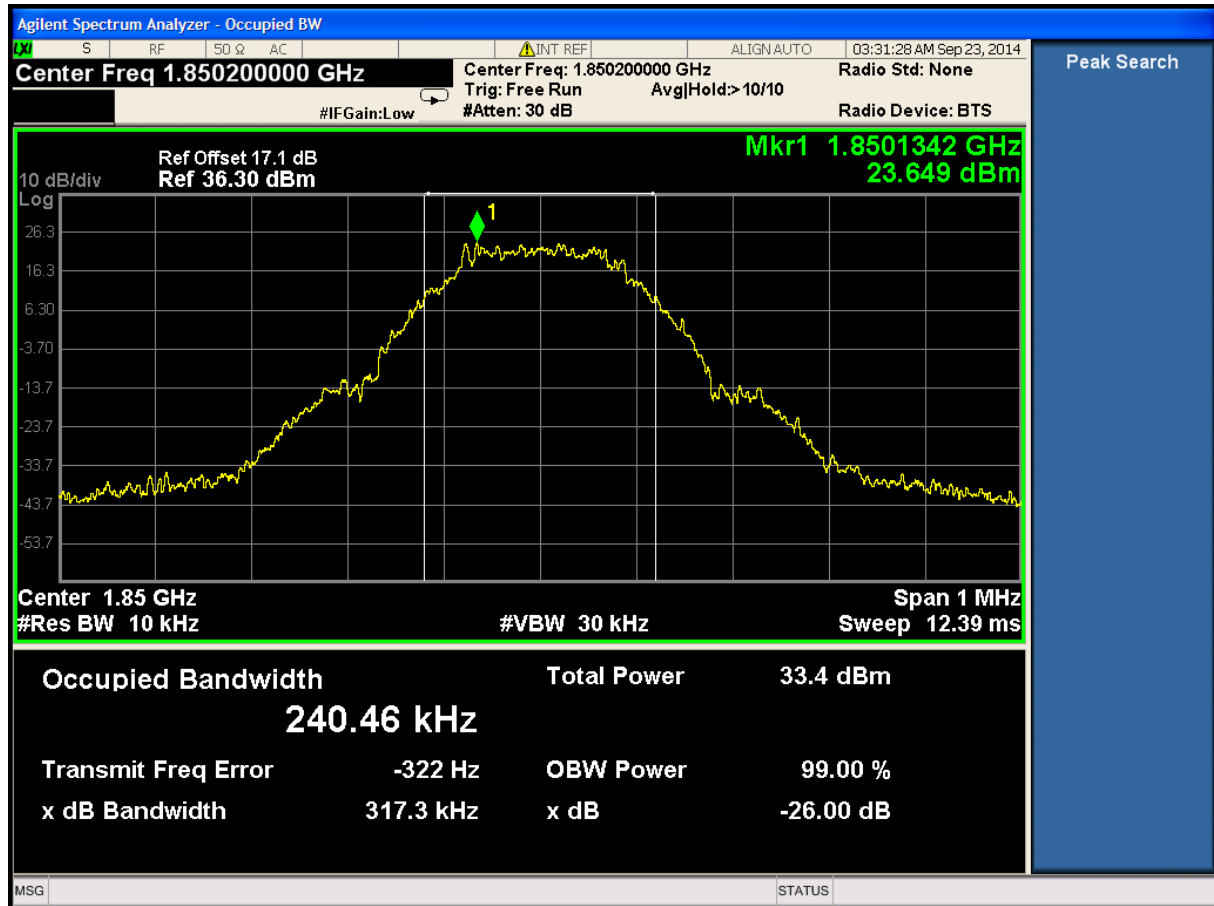
4.1.2.1.3 Test Channel = HCH





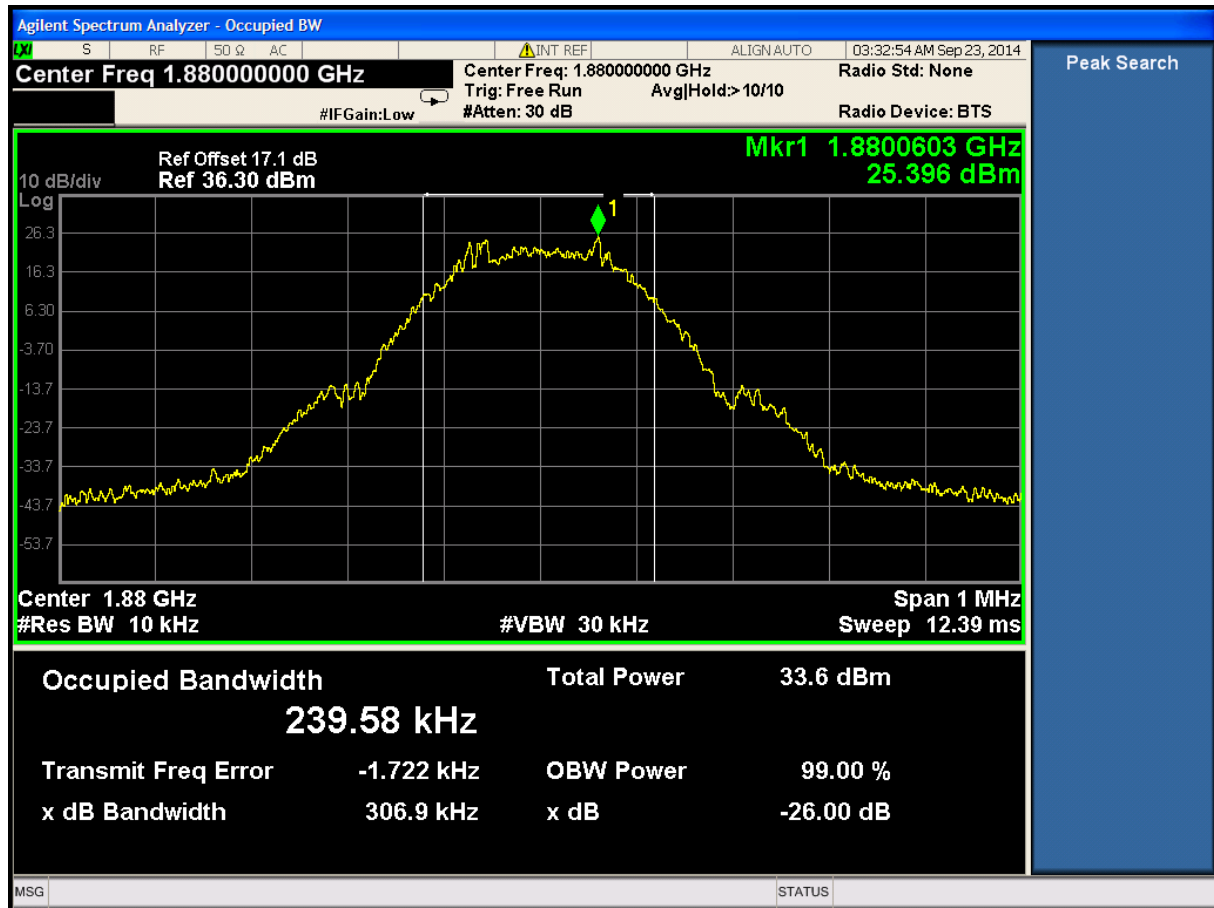
4.1.2.2 Test Mode = GSM/TM2

4.1.2.2.1 Test Channel = LCH



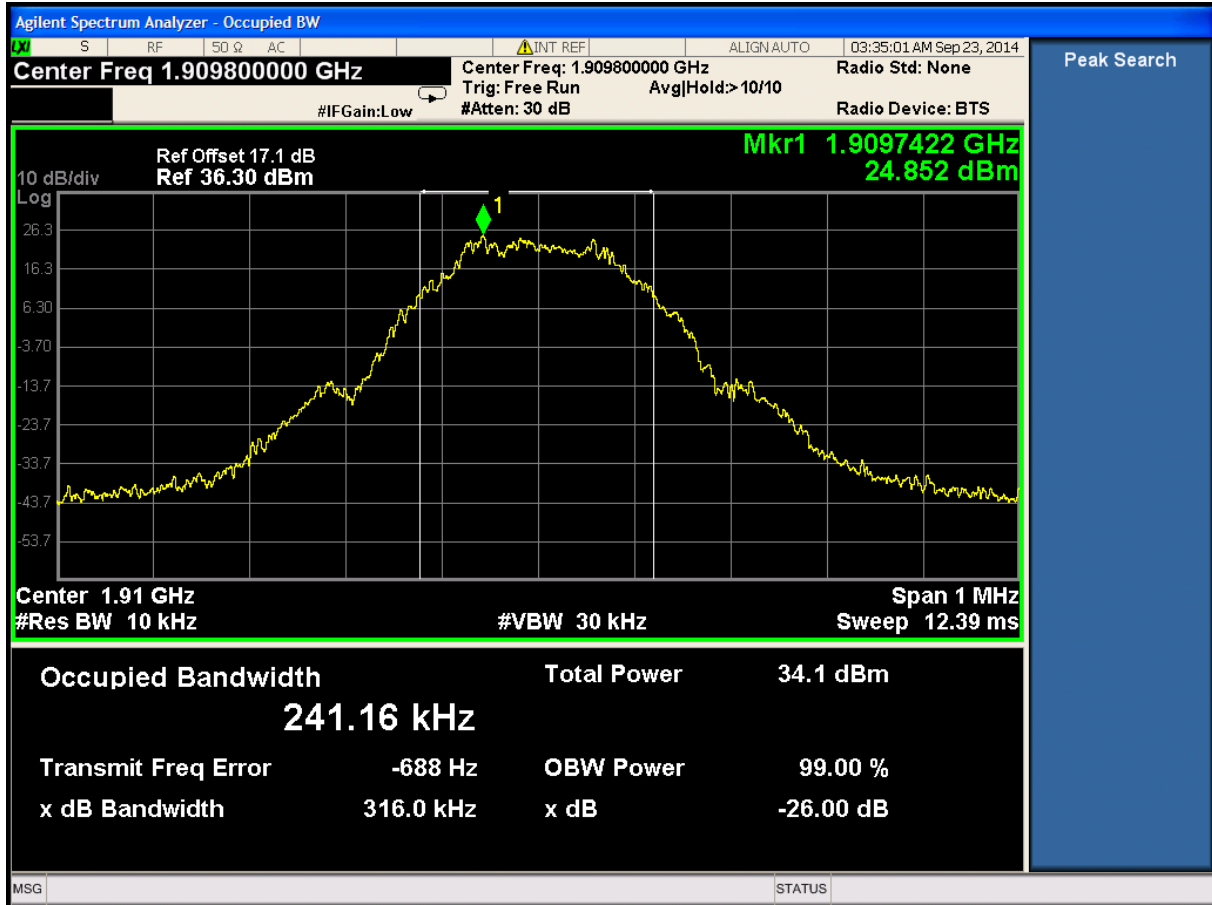


4.1.2.2.2 Test Channel = MCH





4.1.2.2.3 Test Channel = HCH



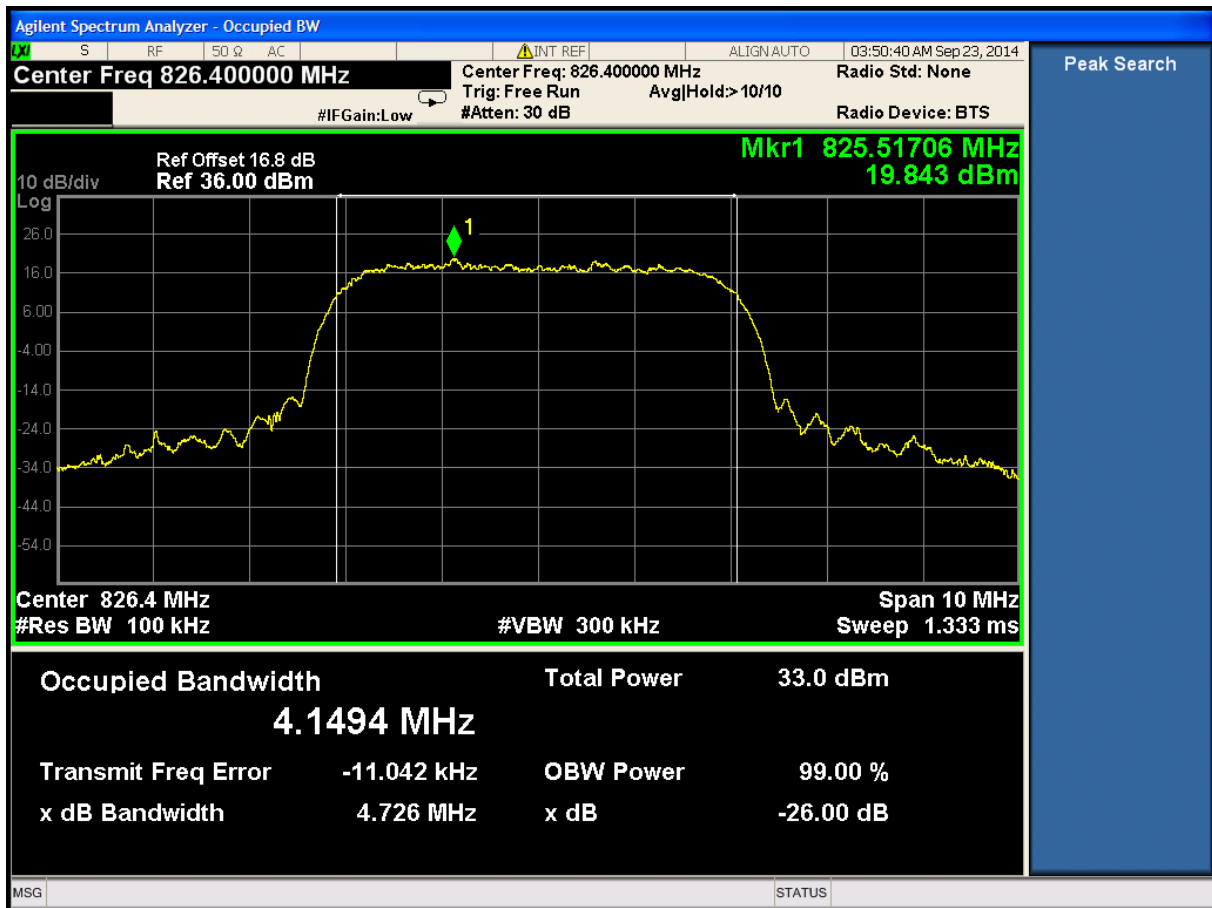


4.2 FOR UMTS

4.2.1 TEST BAND = WCDMA850

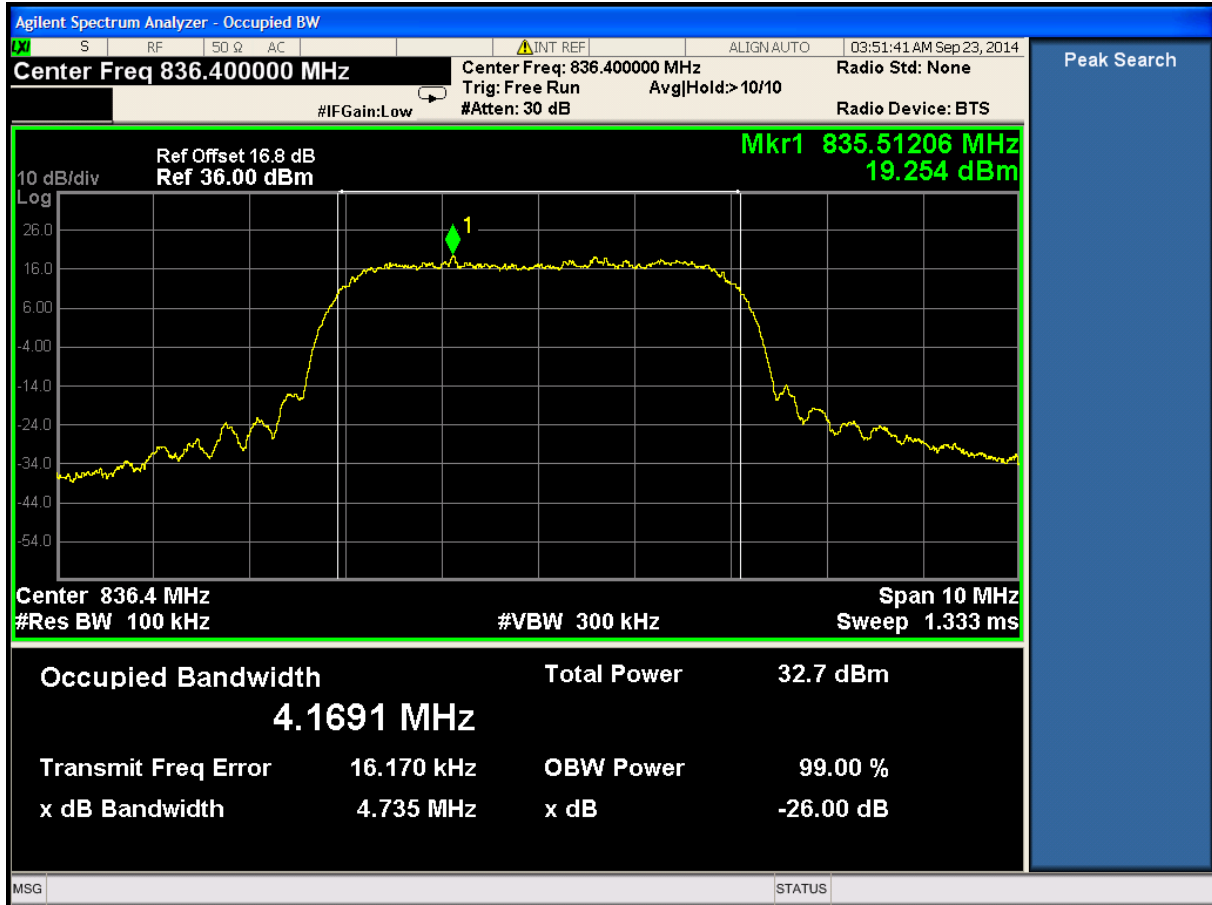
4.2.1.1 Test Mode = UMTS/TM1

4.2.1.1.1 Test Channel = LCH



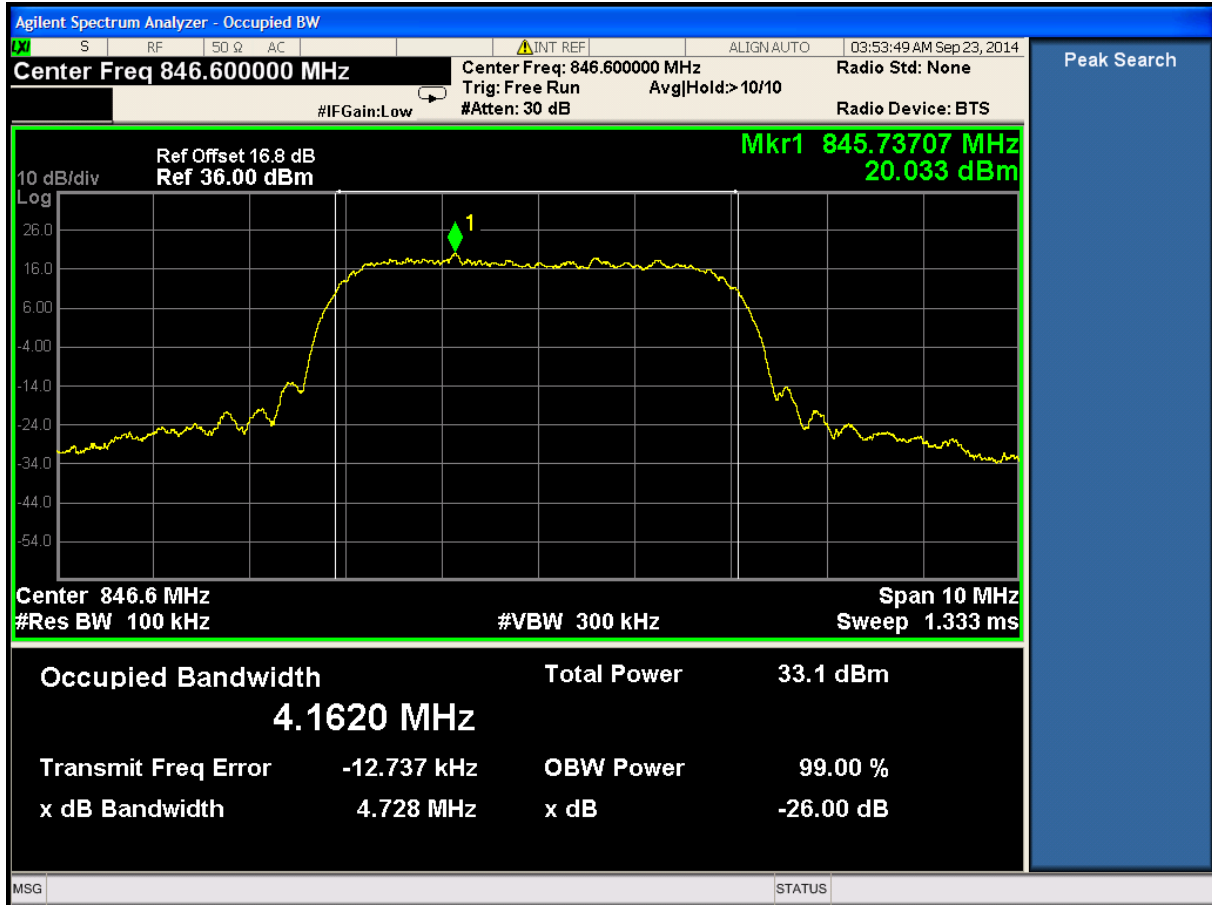


4.2.1.1.2 Test Channel = MCH





4.2.1.1.3 Test Channel = HCH

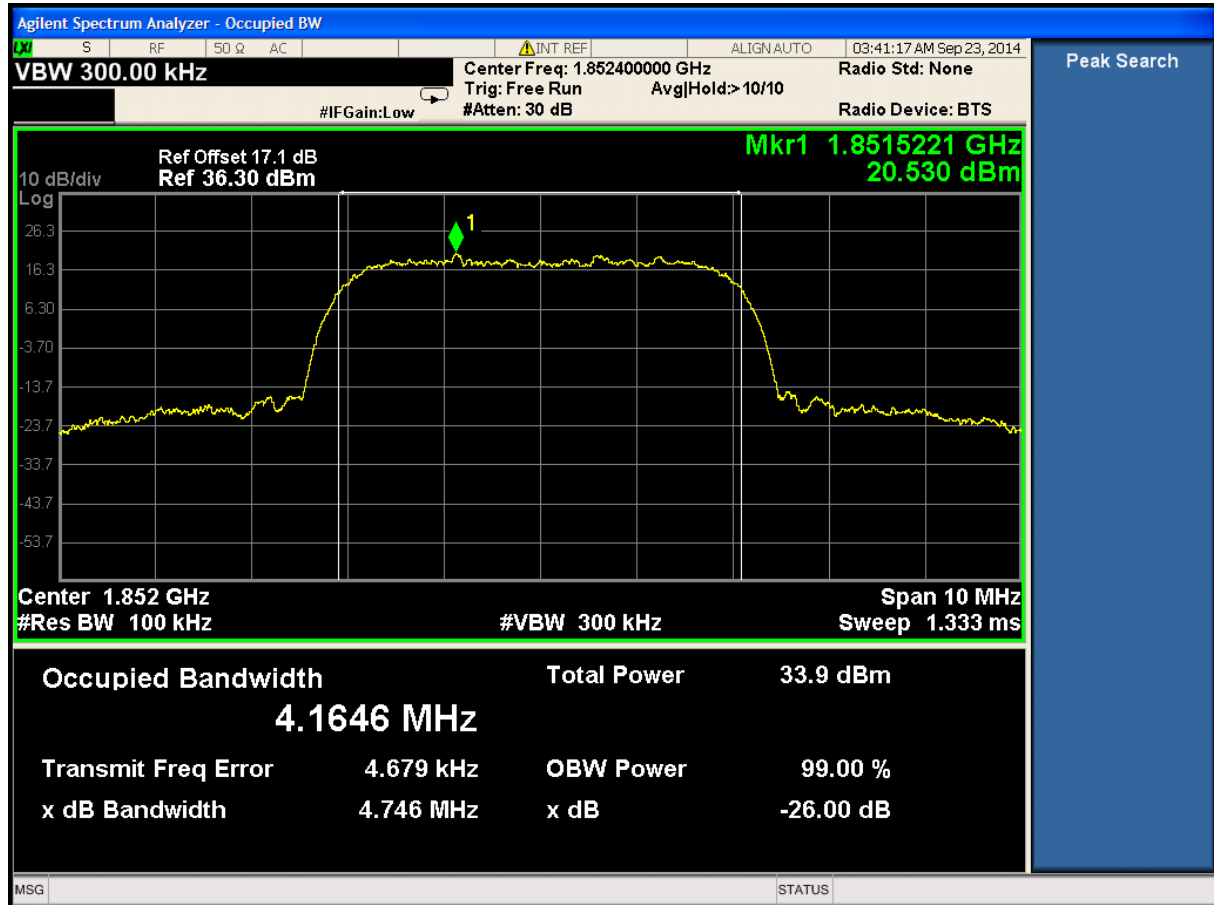




4.2.2 TEST BAND = WCDMA1900

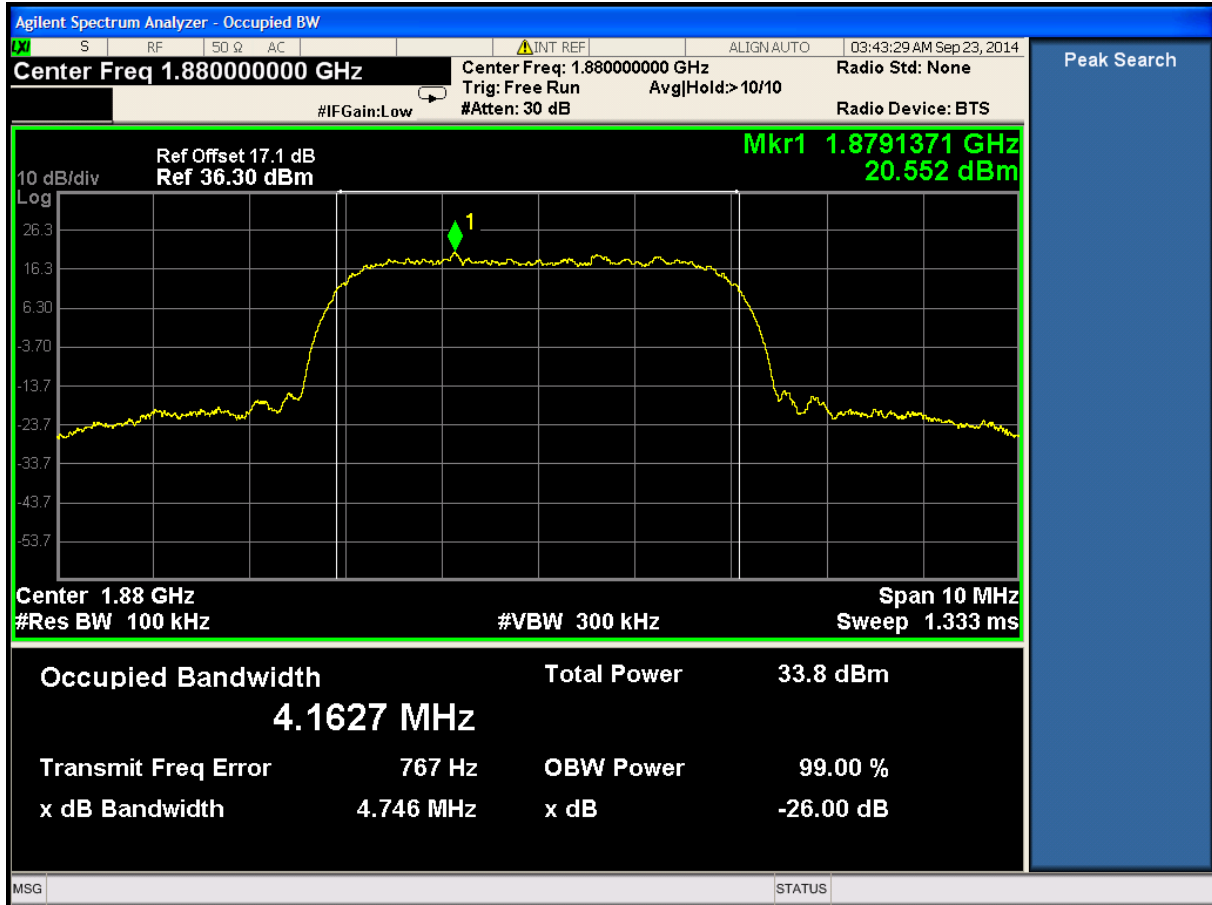
4.2.2.1 Test Mode = UMTS/TM1

4.2.2.1.1 Test Channel = LCH



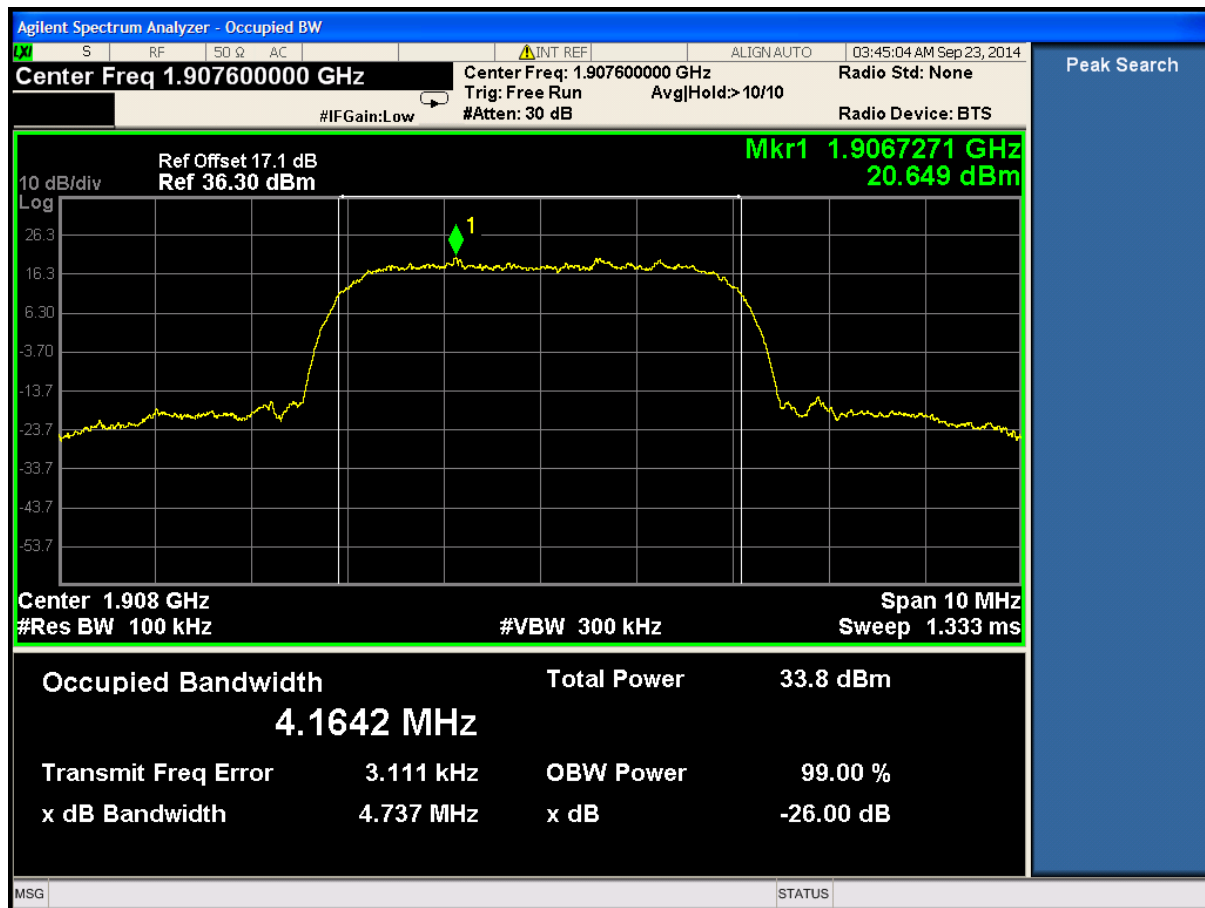


4.2.2.1.2 Test Channel = MCH





4.2.2.1.3 Test Channel = HCH





5 APPENDIX_E: BAND EDGES COMPLIANCE

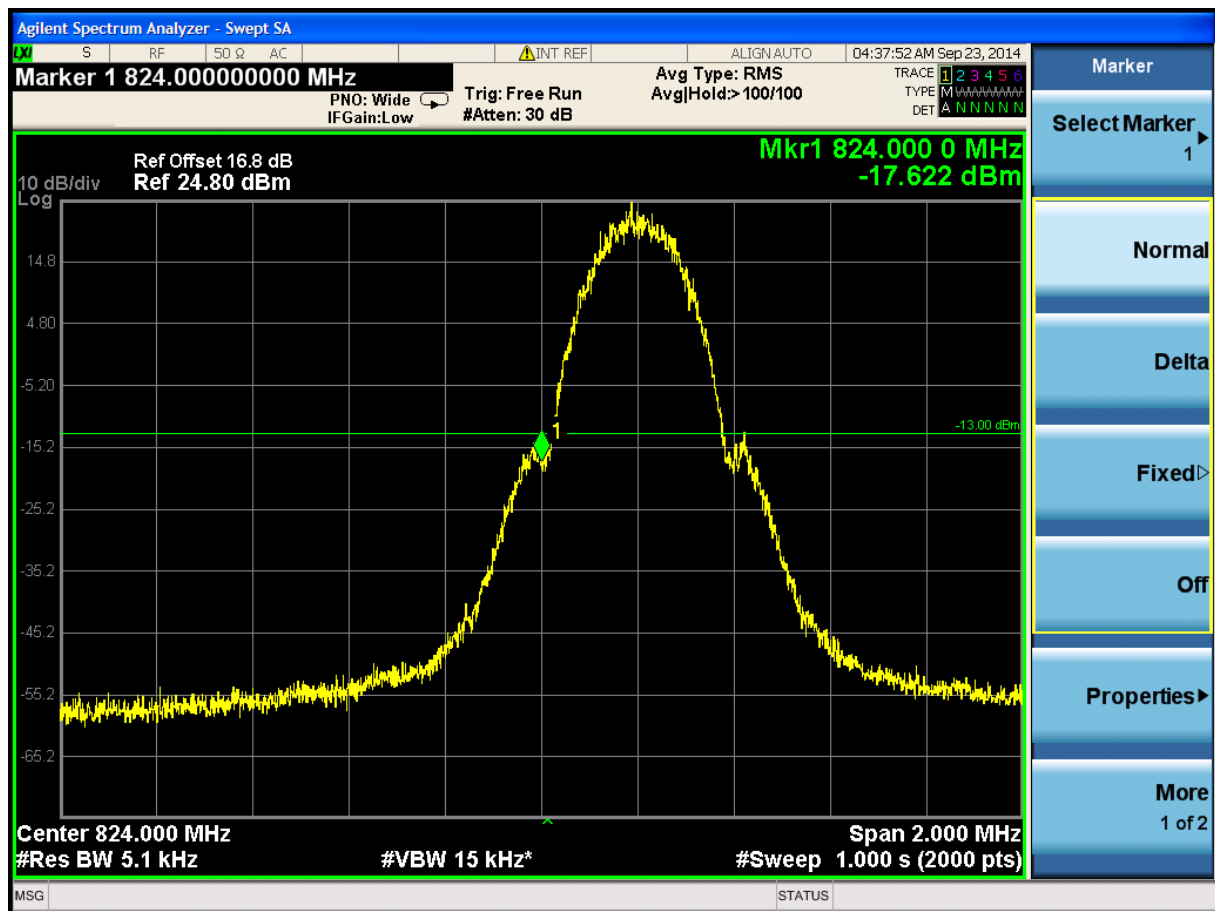
Part I - Test Plots

5.1 FOR GSM

5.1.1 TEST BAND = GSM850

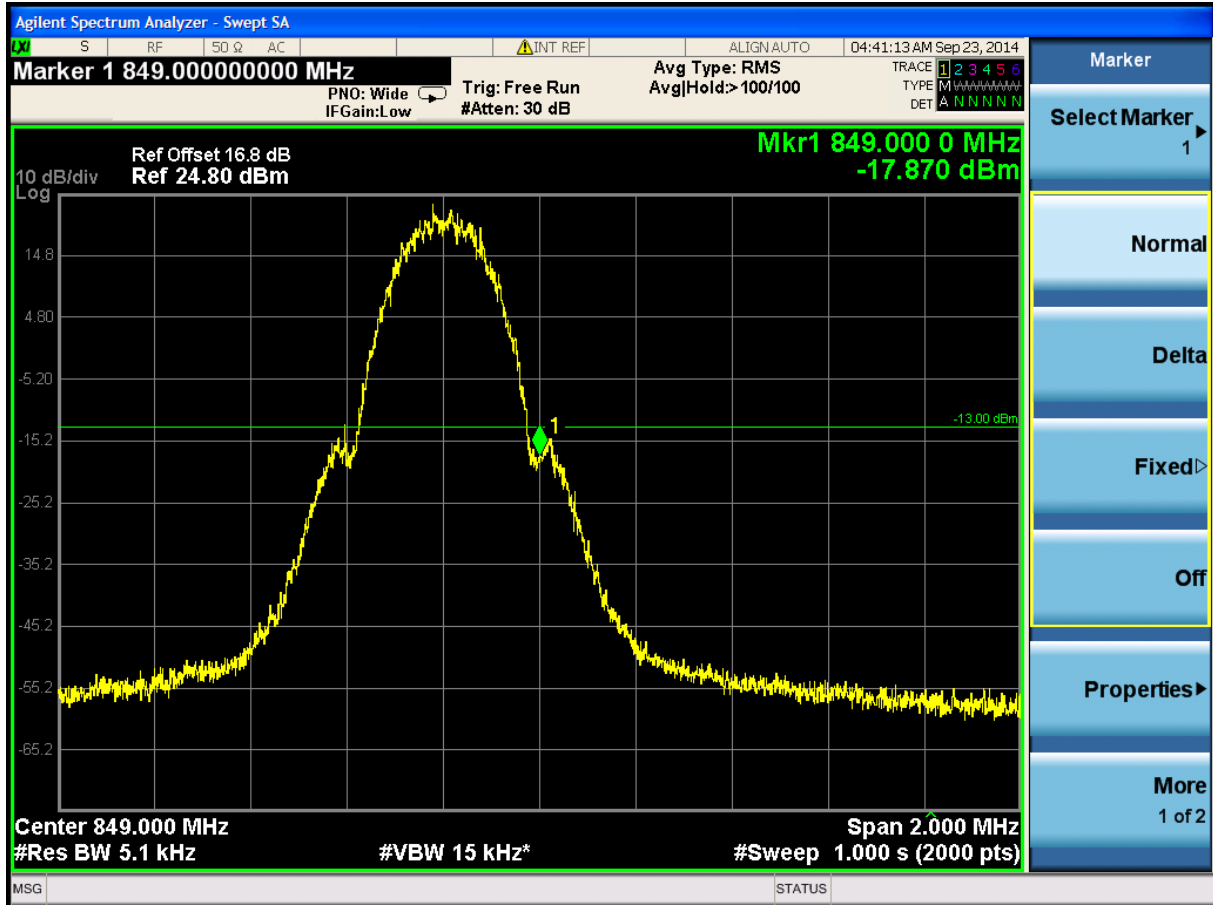
5.1.1.1 Test Mode = GSM/TM1

5.1.1.1.1 Test Channel = LCH





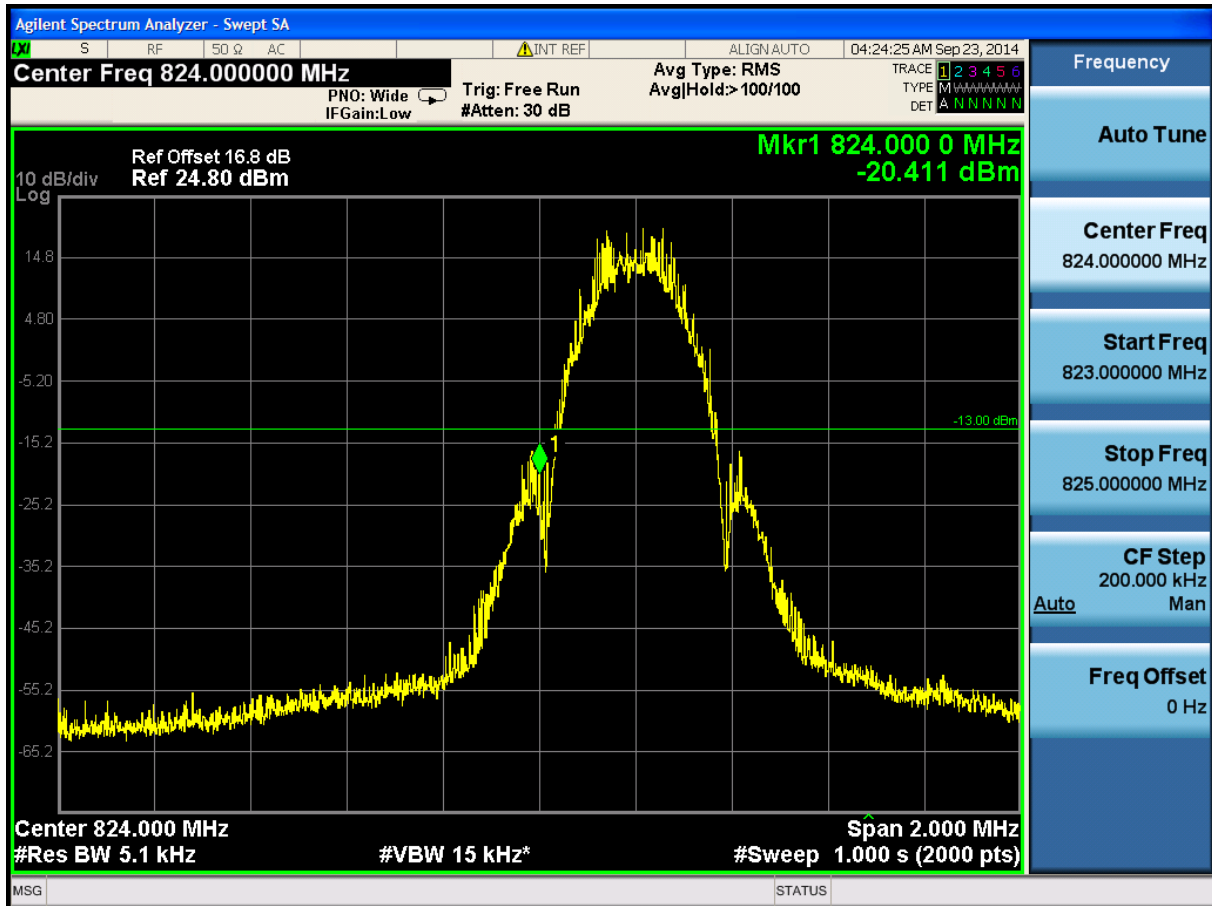
5.1.1.1.2 Test Channel = HCH





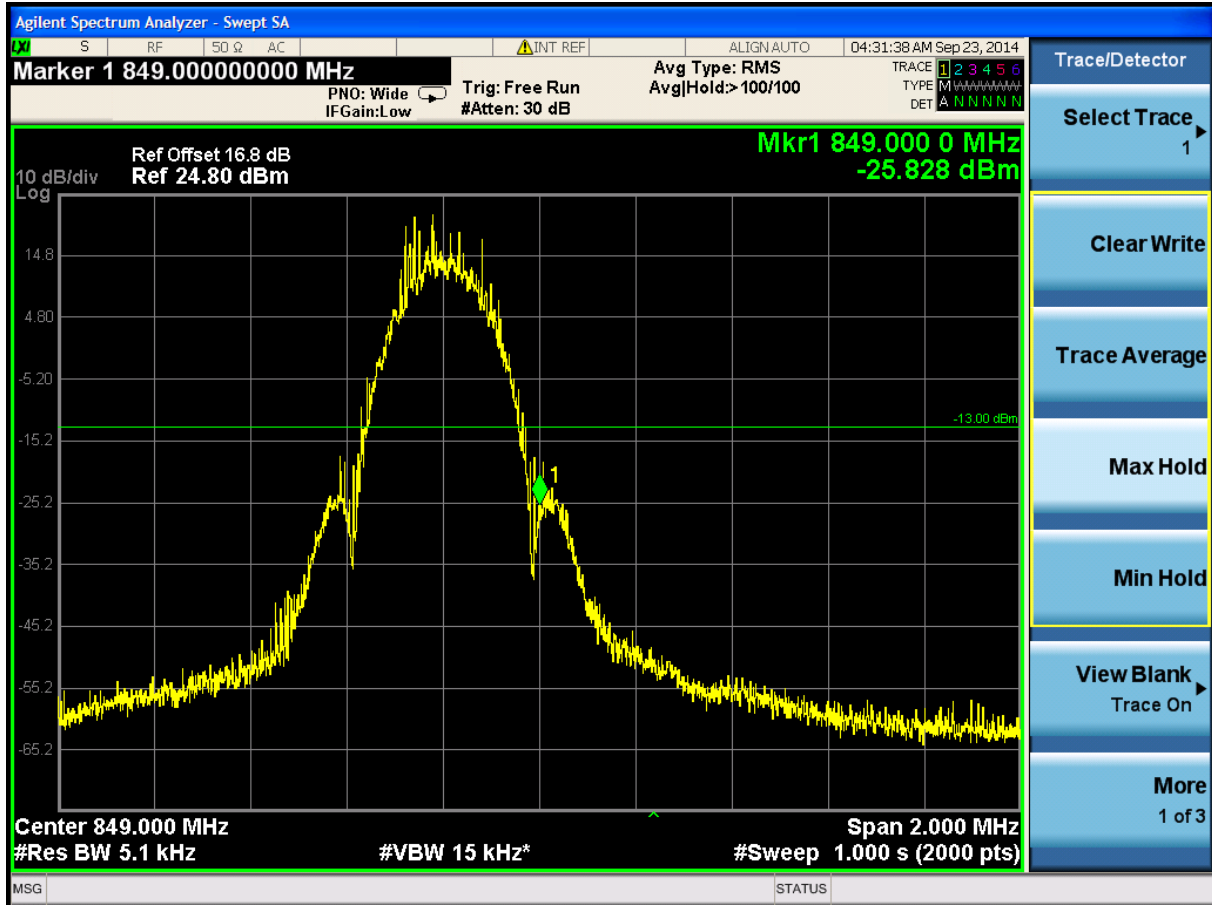
5.1.1.2 Test Mode = GSM/TM2

5.1.1.2.1 Test Channel = LCH





5.1.1.2.2 Test Channel = HCH

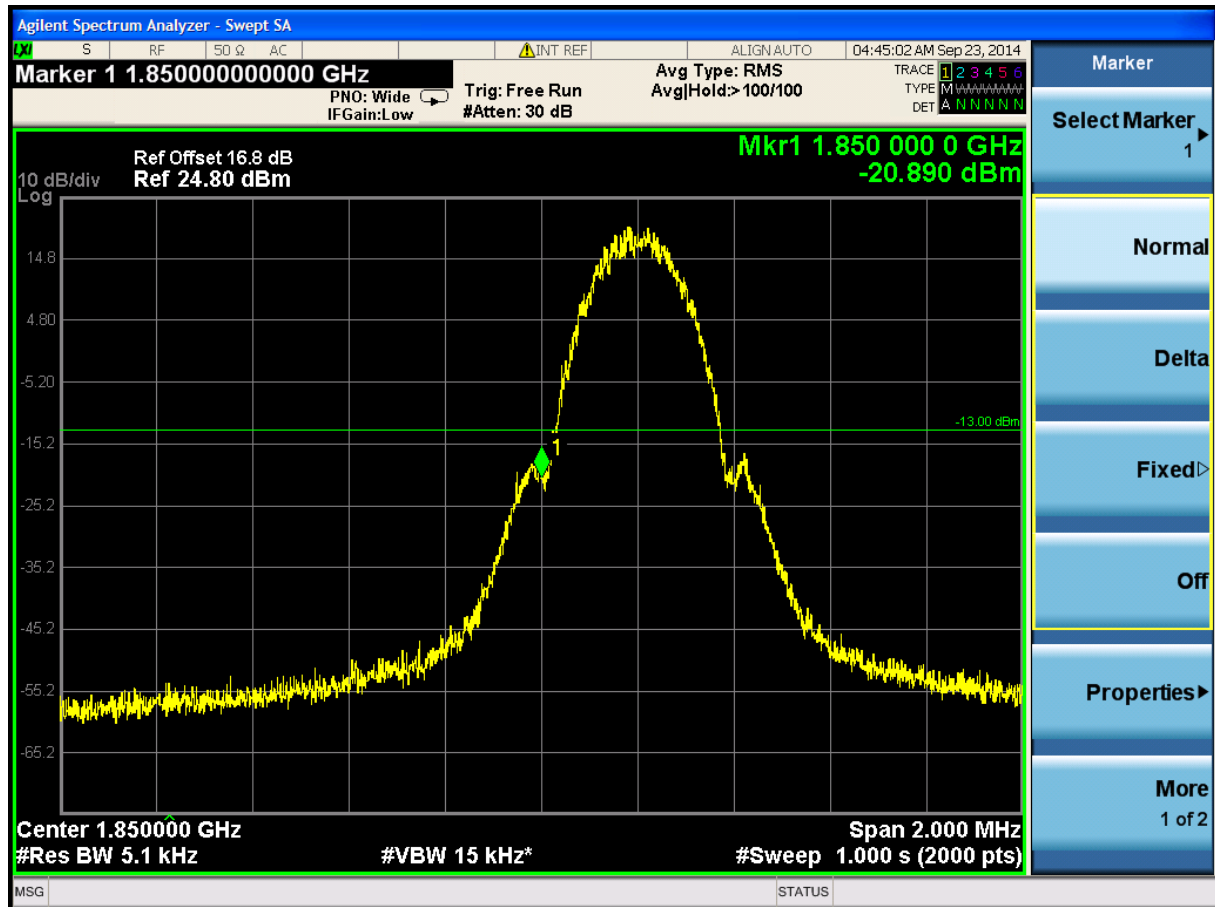




5.1.2 TEST BAND = GSM1900

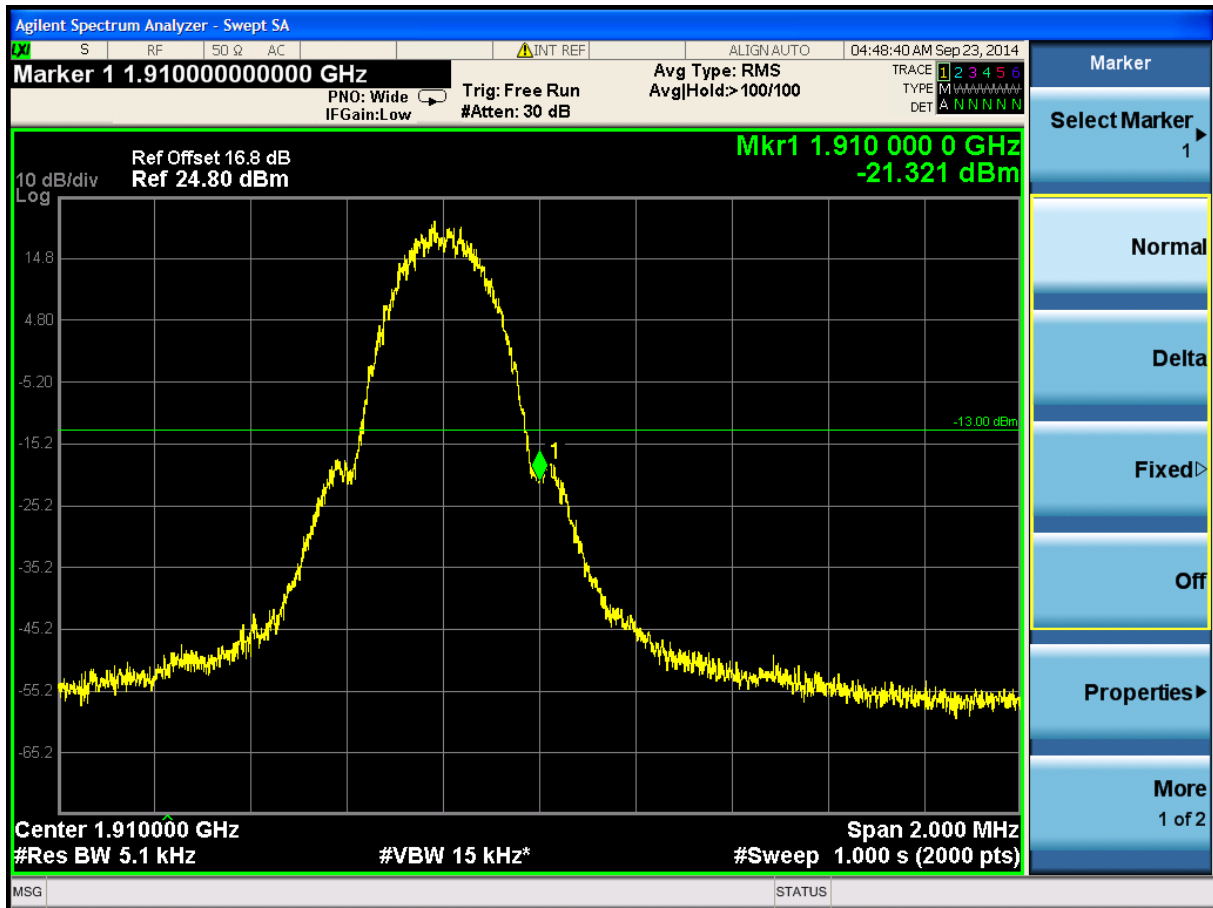
5.1.2.1 Test Mode = GSM/TM1

5.1.2.1.1 Test Channel = LCH





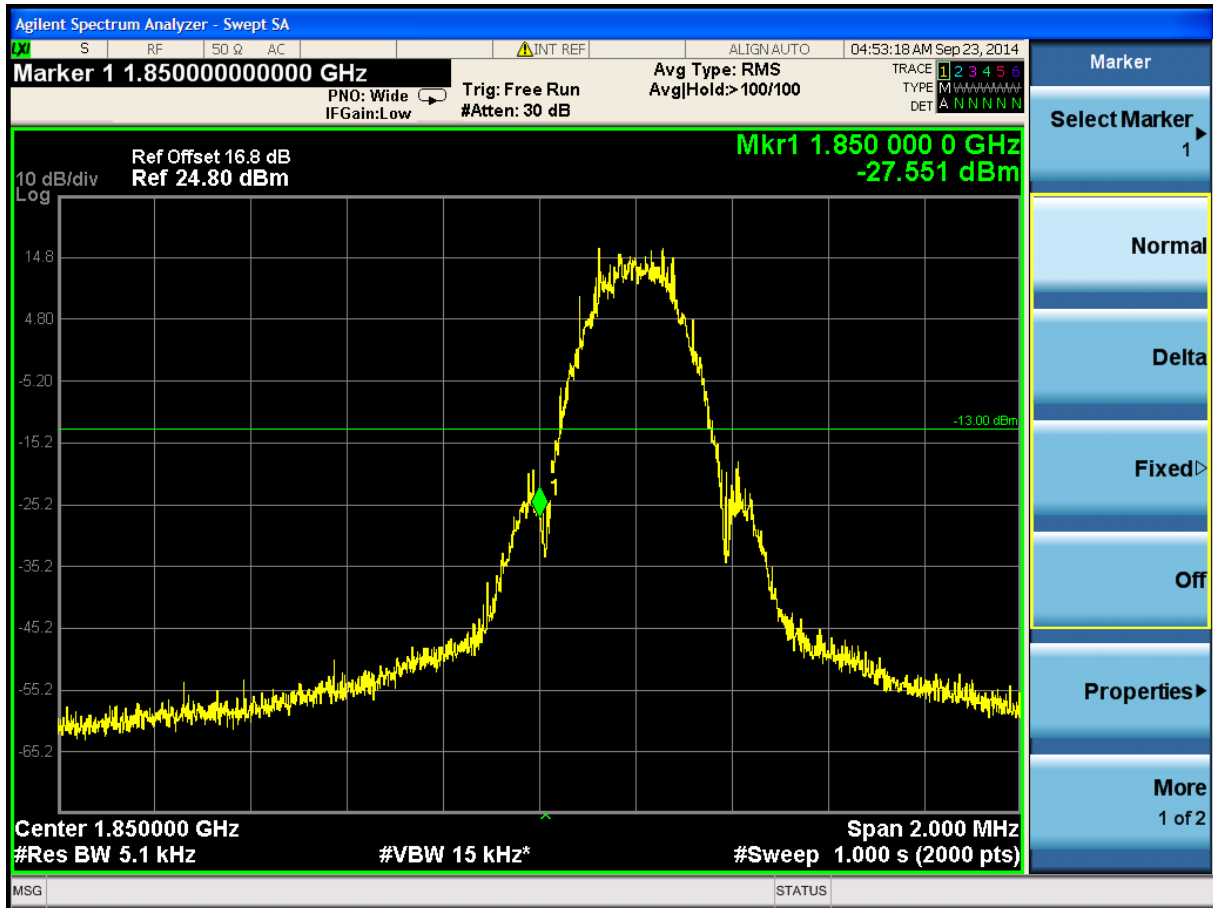
5.1.2.1.2 Test Channel = HCH





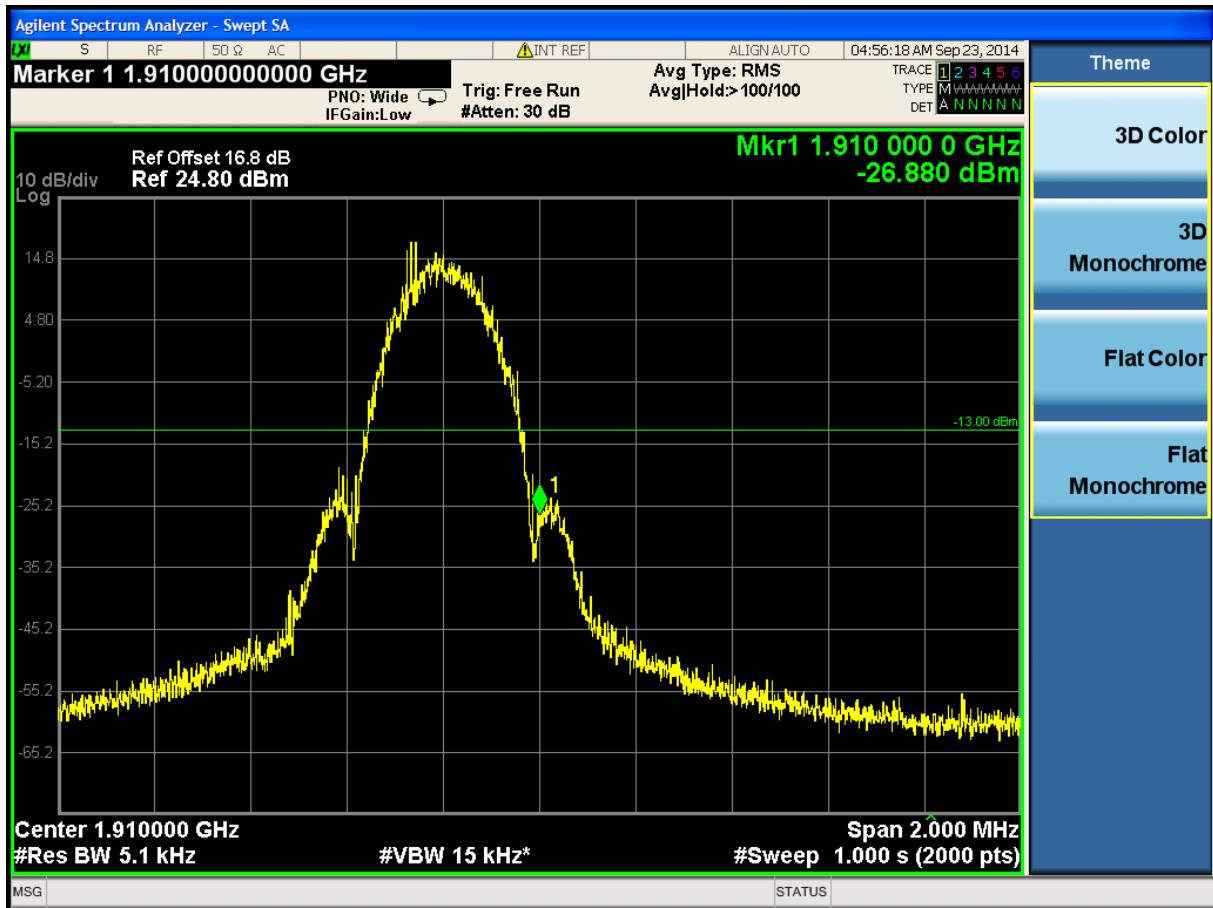
5.1.2.2 Test Mode = GSM/TM2

5.1.2.2.1 Test Channel = LCH





5.1.2.2.2 Test Channel = HCH





5.2 FOR UMTS

5.2.1 TEST BAND = WCDMA850

5.2.1.1 Test Mode = UMTS/TM1

5.2.1.1.1 Test Channel = LCH





5.2.1.1.2 Test Channel = HCH

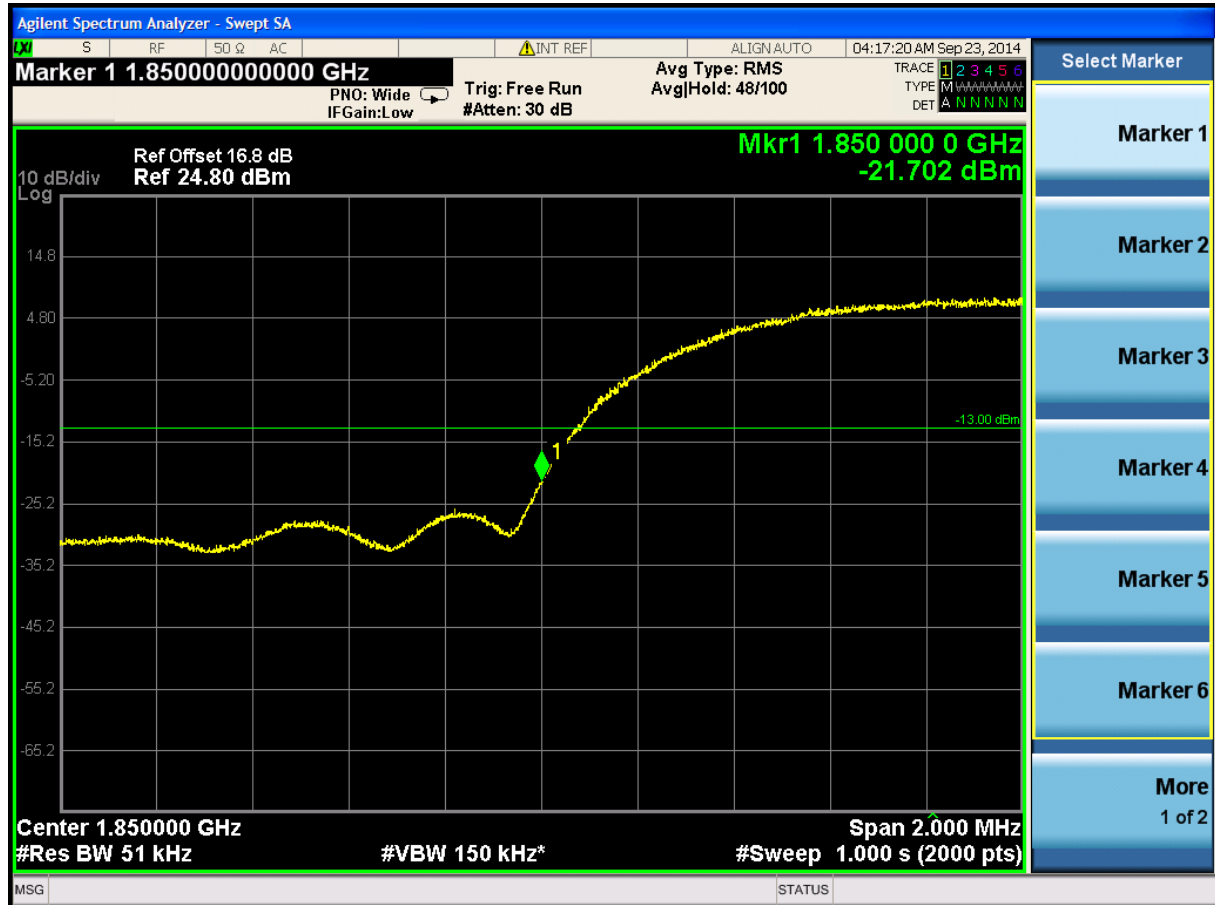




5.2.2 TEST BAND = WCDMA1900

5.2.2.1 Test Mode = UMTS/TM1

5.2.2.1.1 Test Channel = LCH





5.2.2.1.2 Test Channel = HCH





6 APPENDIX_F: SPURIOUS EMISSION AT ANTENNA TERMINAL

NOTE: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of $< RBW/2$ so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points = $k * (Span / RBW)$ " with k between 4 and 5, which results in an acceptable level error of less than 0.5 dB.

Part I - Test Plots

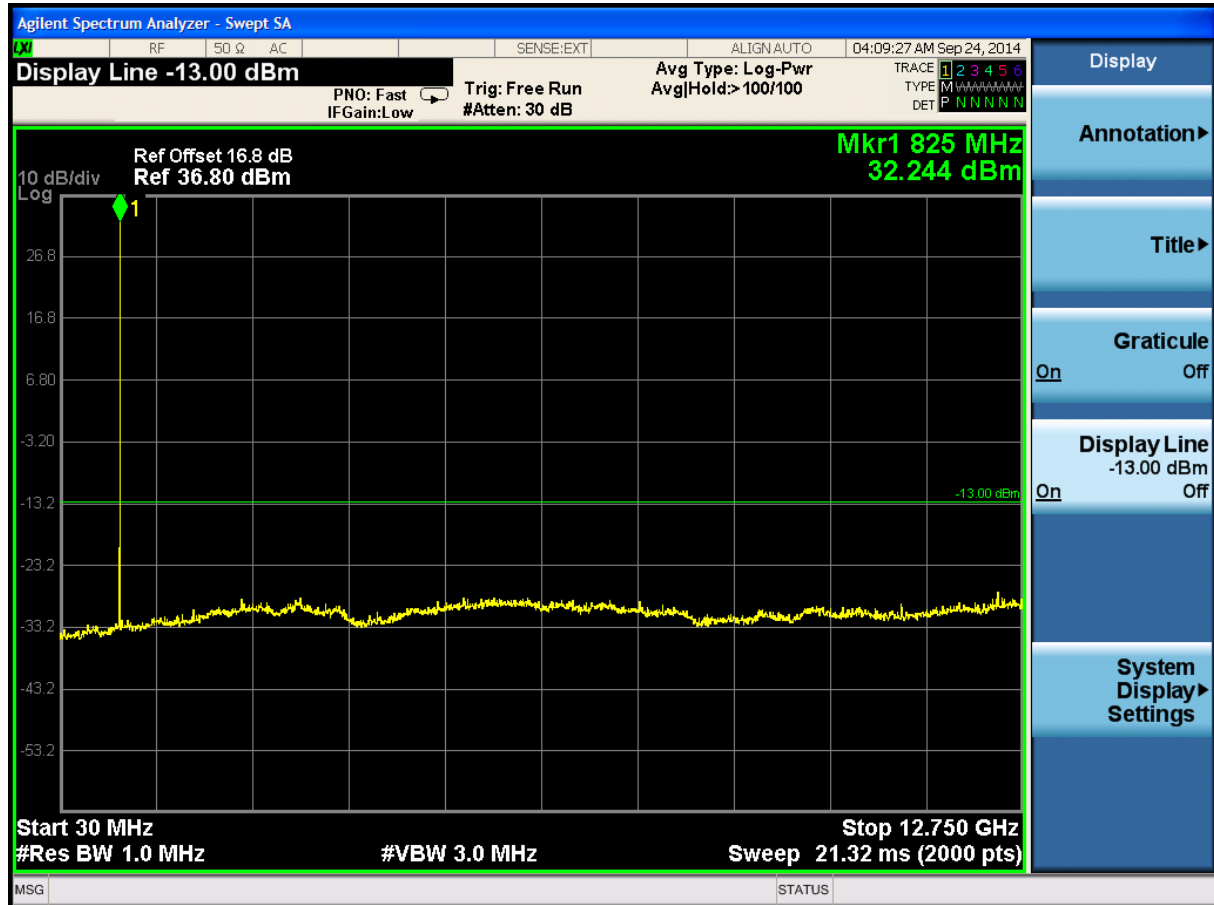
6.1 FOR GSM



6.1.1 TEST BAND = GSM850

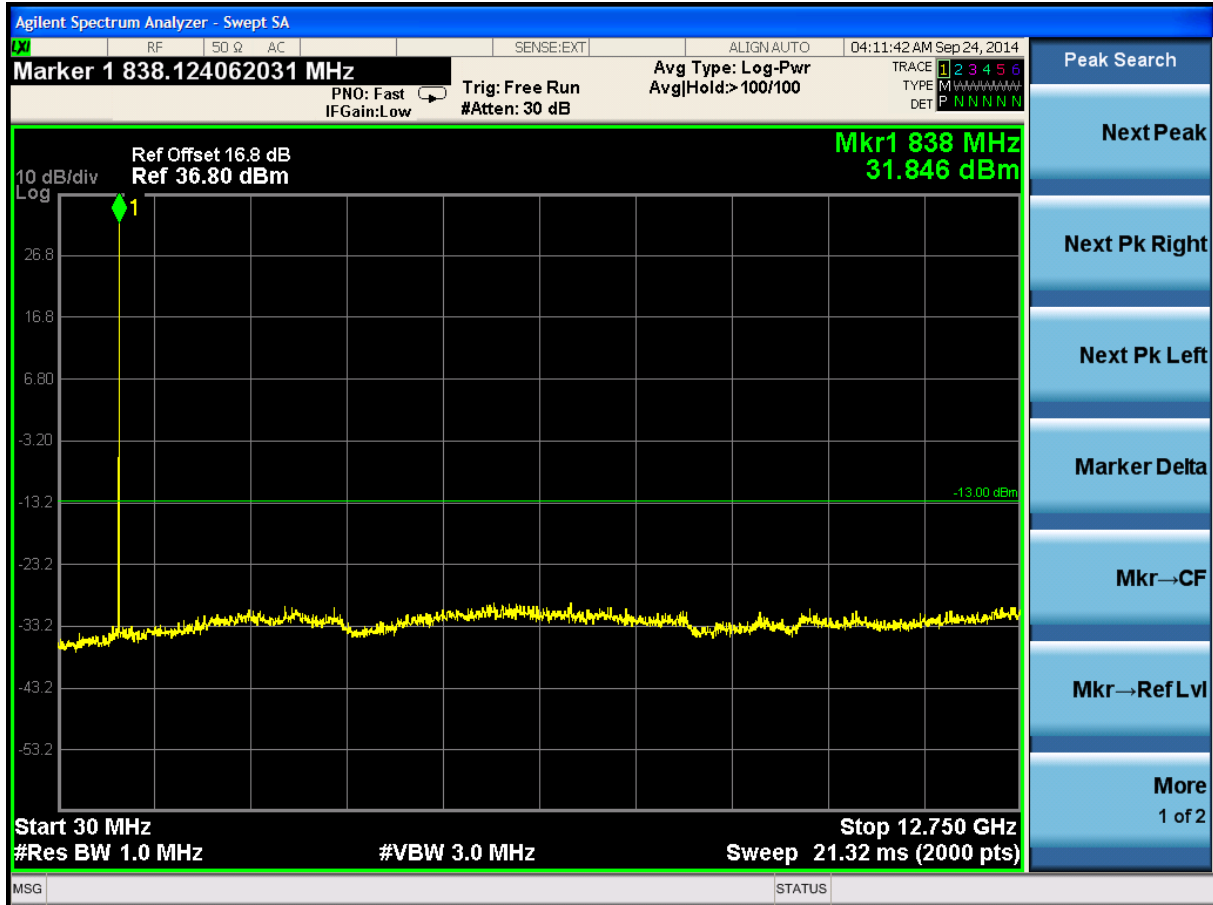
6.1.1.1 Test Mode = GSM/TM1

6.1.1.1.1 Test Channel = LCH



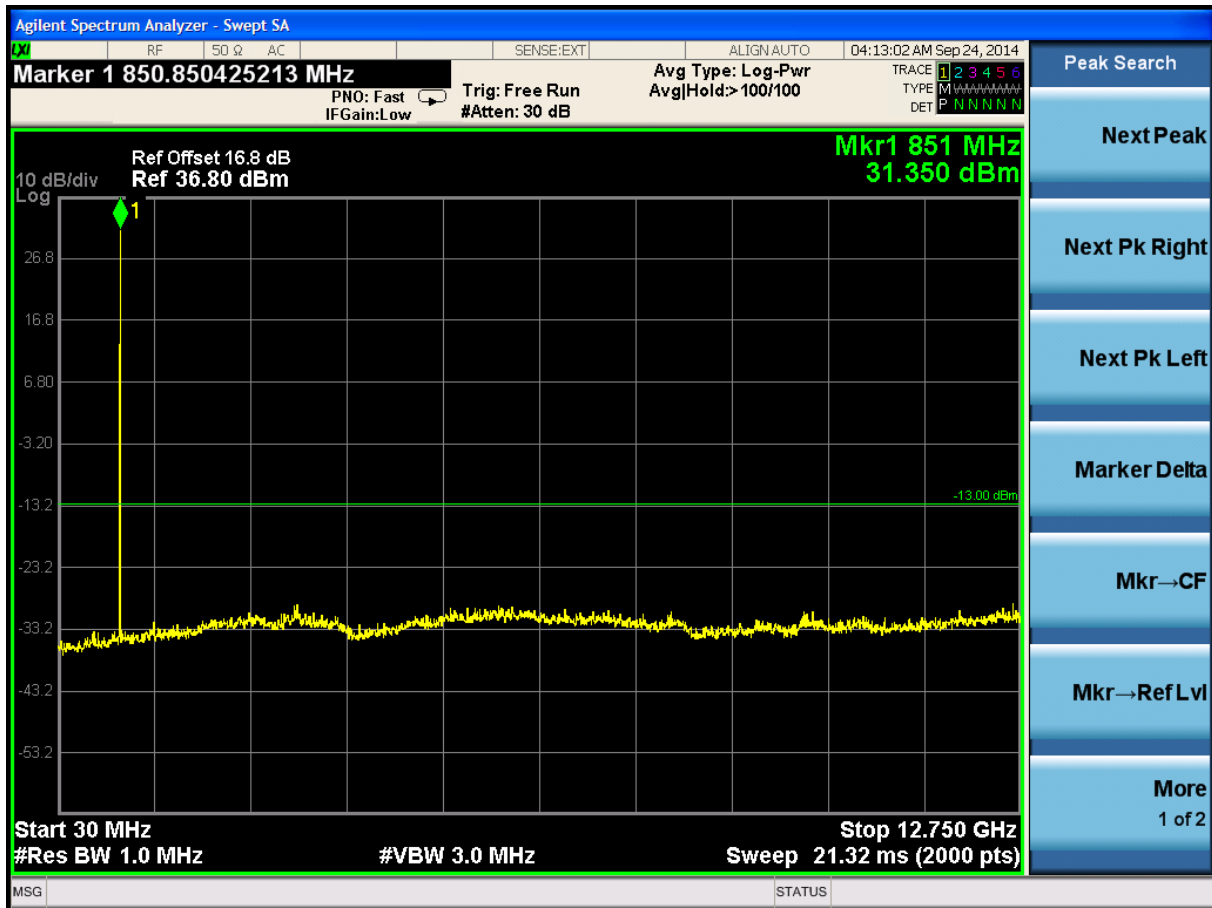


6.1.1.1.2 Test Channel = MCH





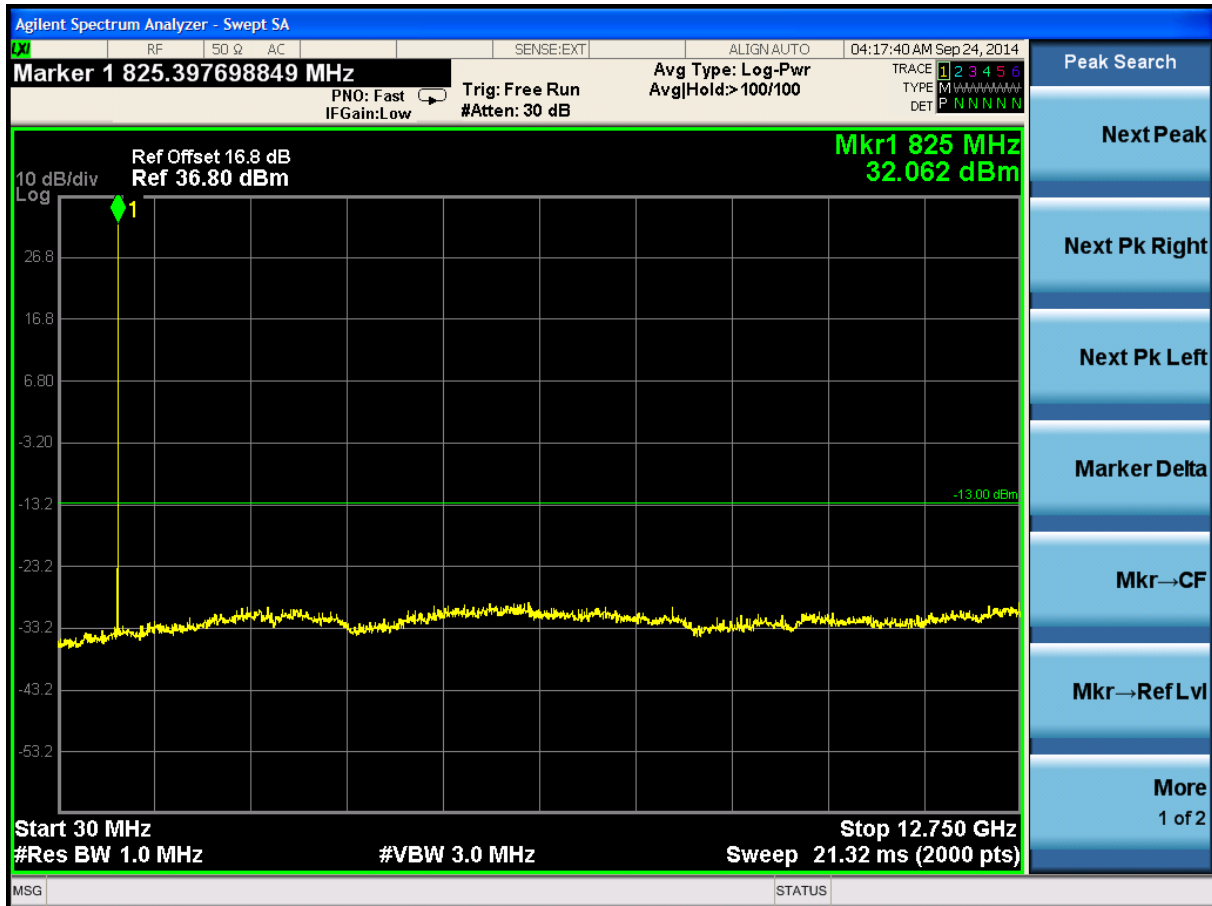
6.1.1.1.3 Test Channel = HCH





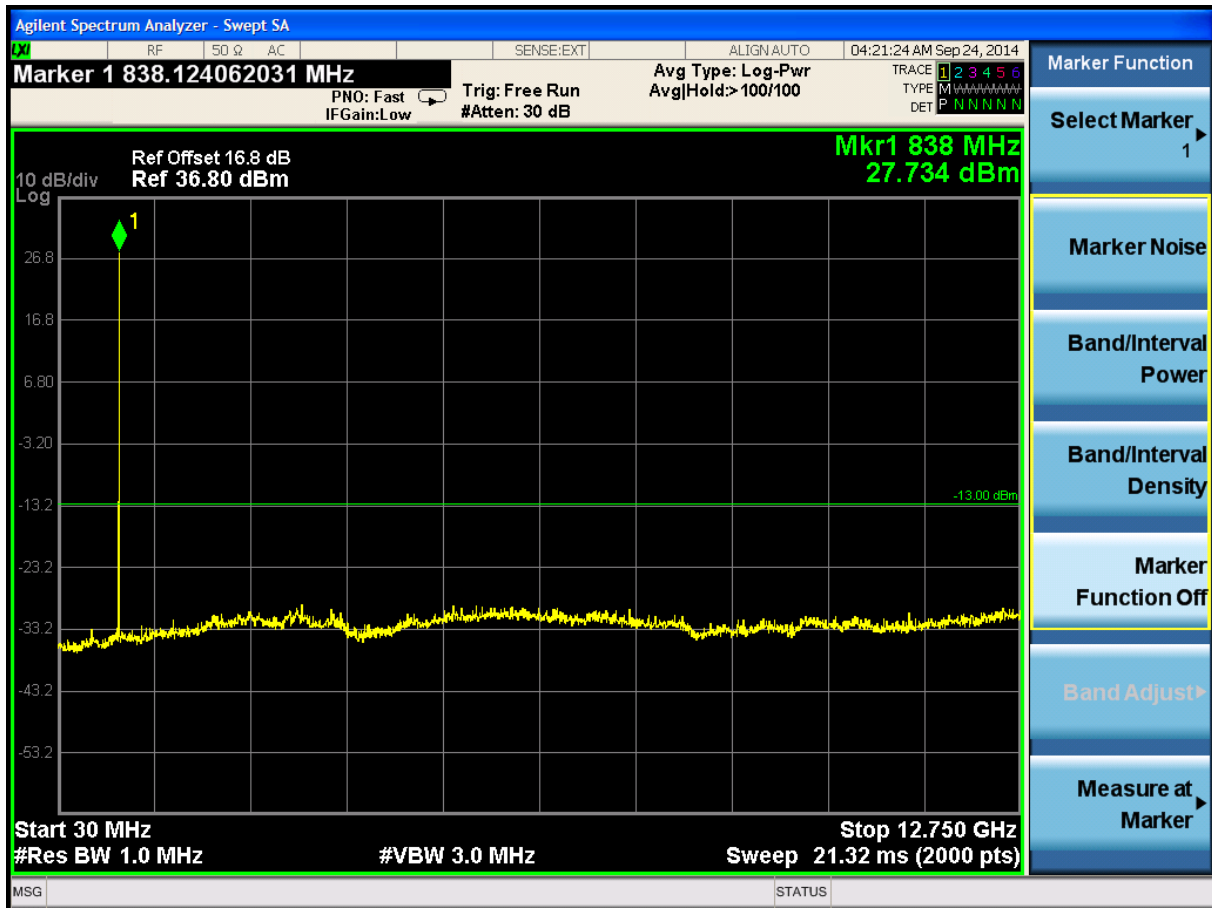
6.1.1.2 Test Mode = GSM/TM2

6.1.1.2.1 Test Channel = LCH



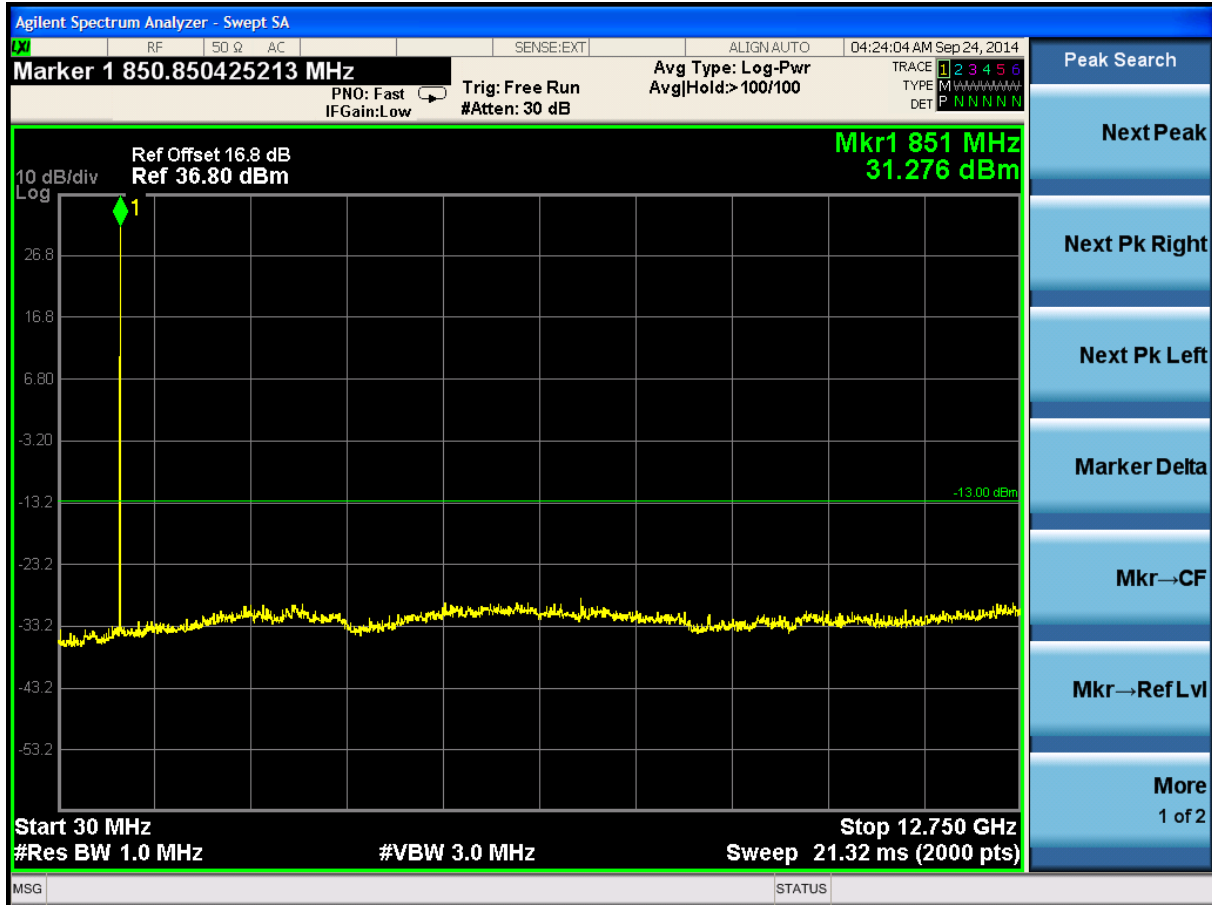


6.1.1.2.2 Test Channel = MCH





6.1.1.2.3 Test Channel = HCH

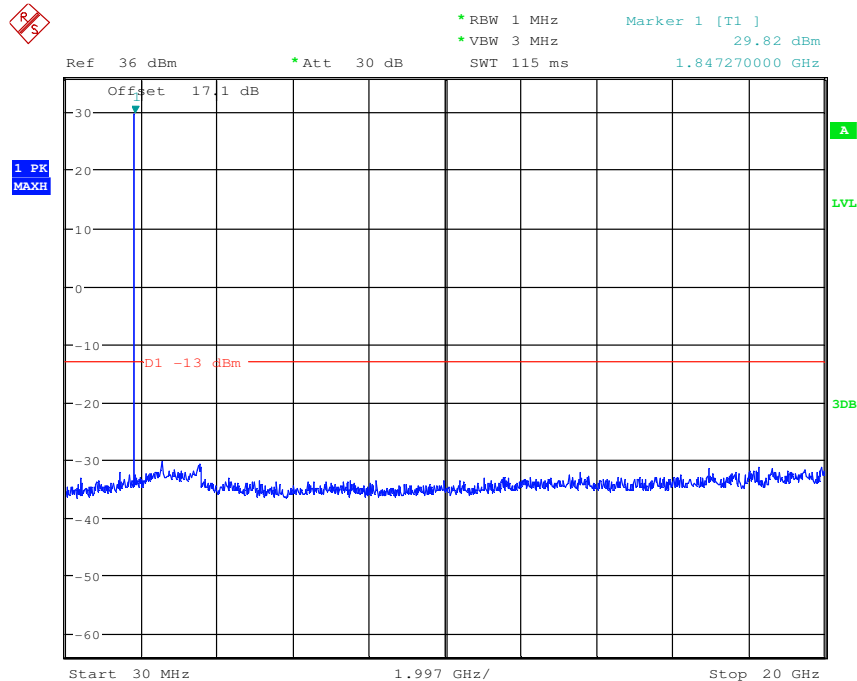




6.1.2 TEST BAND = GSM1900

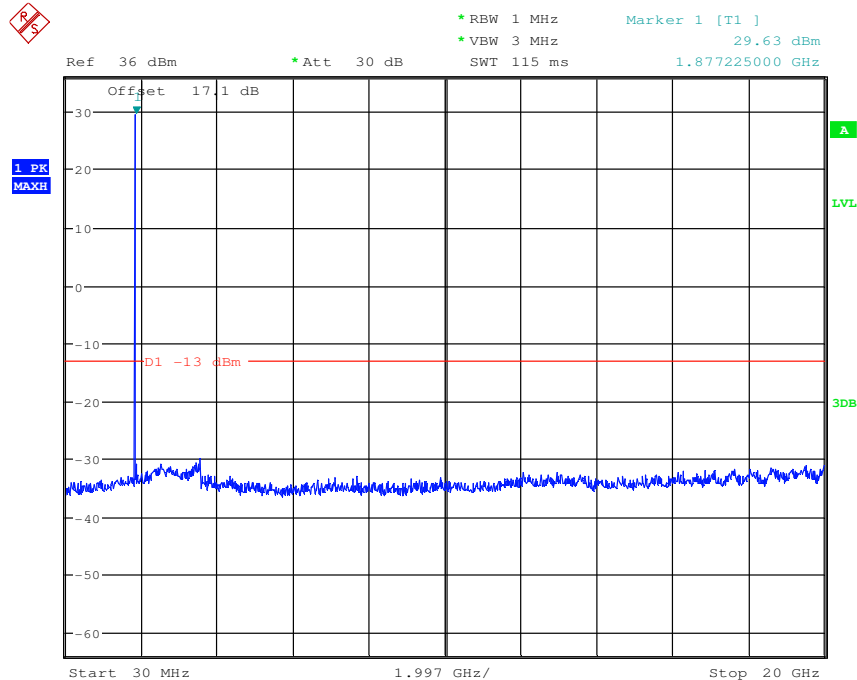
6.1.2.1 Test Mode = GSM/TM1

6.1.2.1.1 Test Channel = LCH

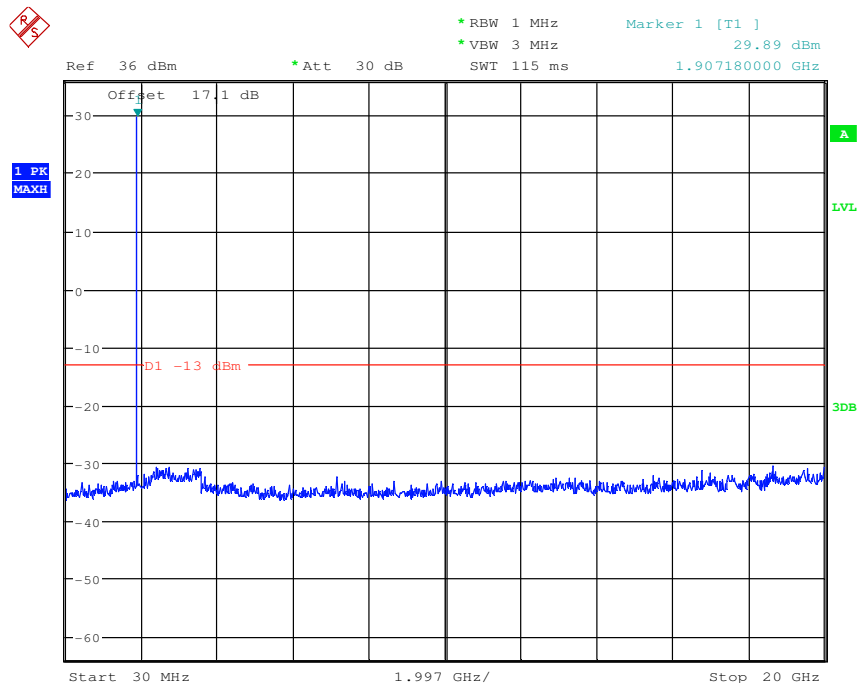




6.1.2.1.2 Test Channel = MCH



6.1.2.1.3 Test Channel = HCH

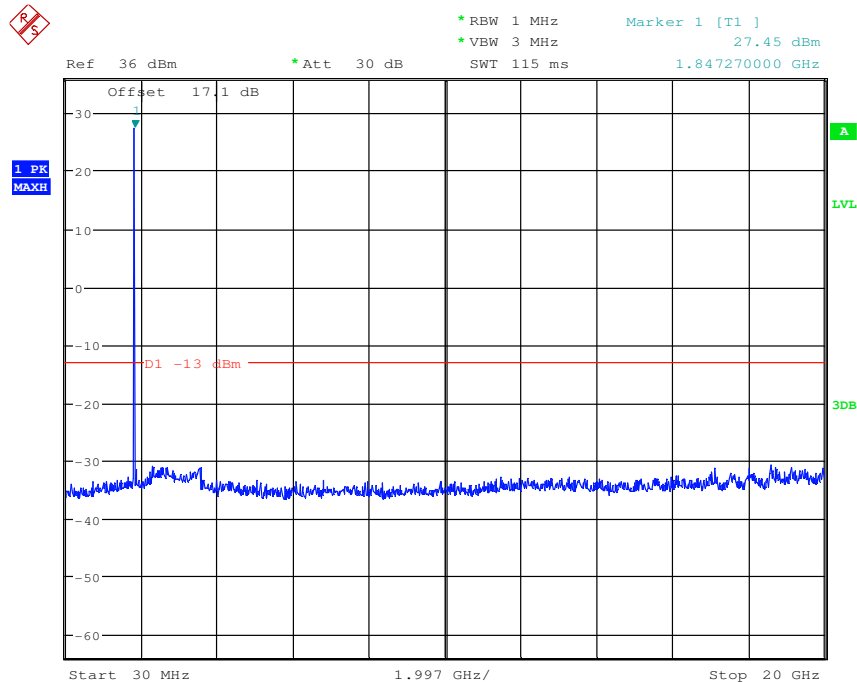


"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

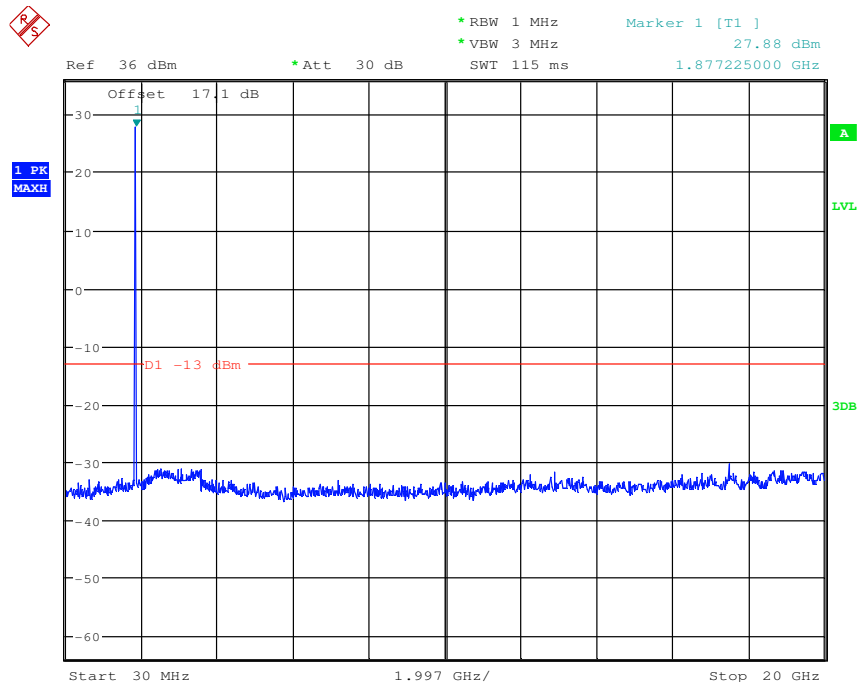


6.1.2.2 Test Mode = GSM/TM2

6.1.2.2.1 Test Channel = LCH



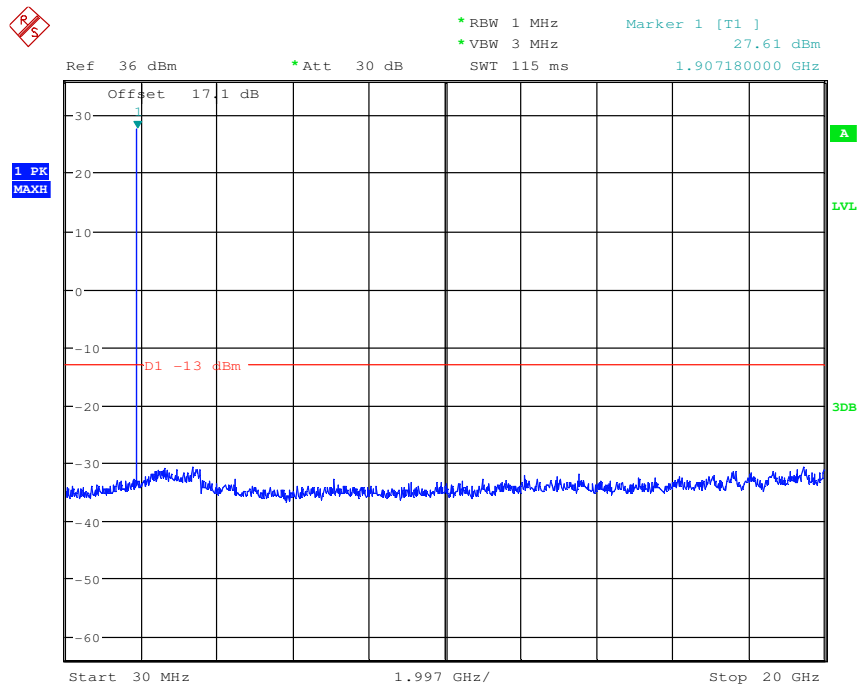
6.1.2.2.2 Test Channel = MCH



"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."



6.1.2.2.3 Test Channel = HCH



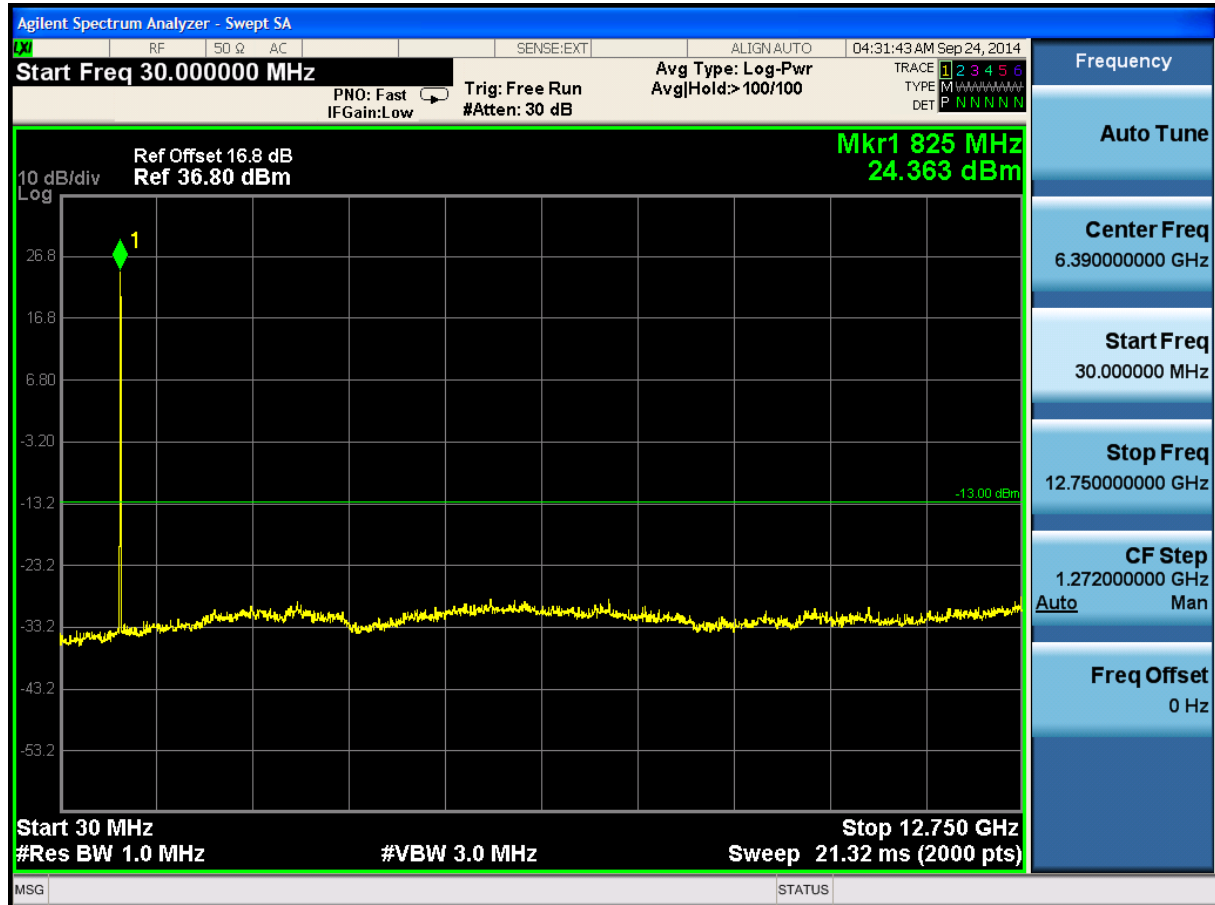
6.2 FOR UMTS



6.2.1 TEST BAND = WCDMA850

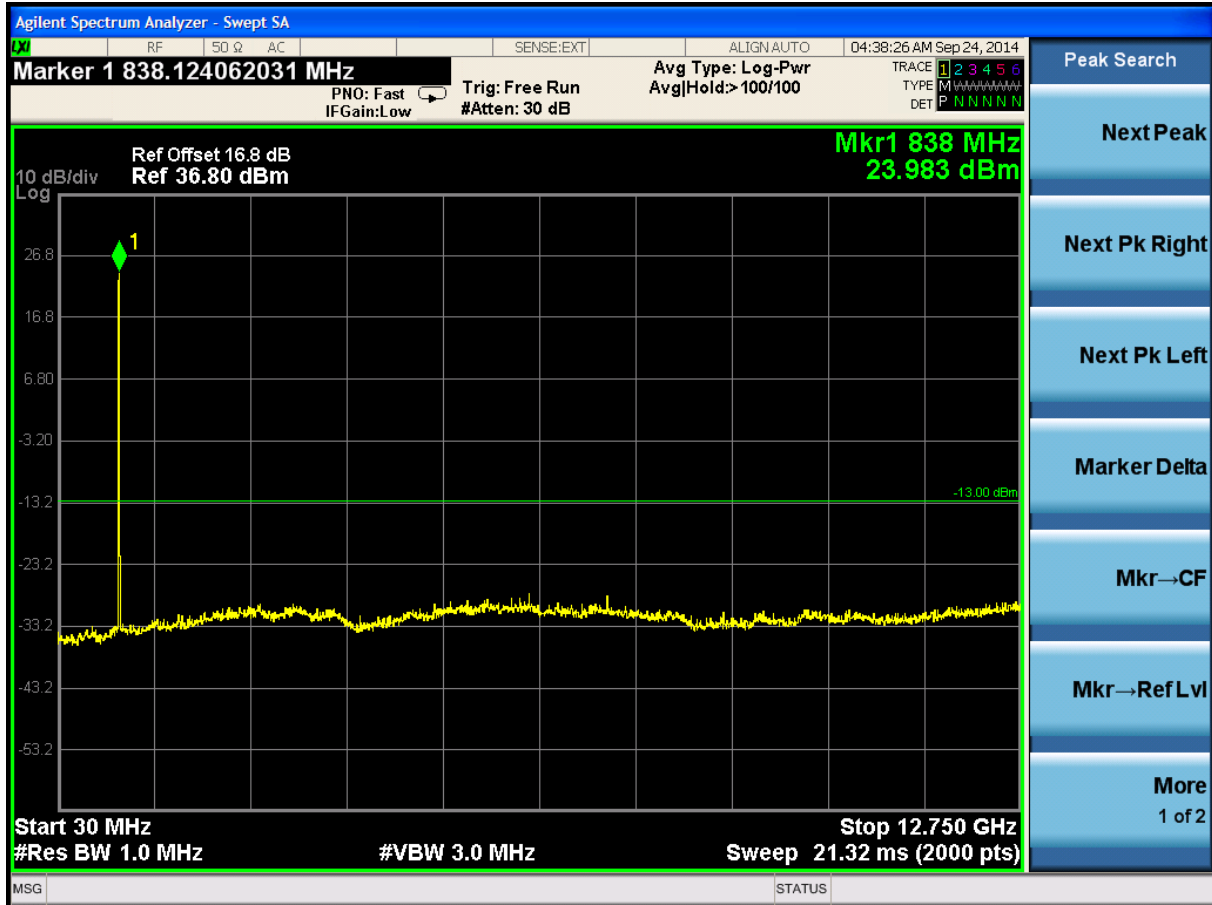
6.2.1.1 Test Mode = UMTS/TM1

6.2.1.1.1 Test Channel = LCH



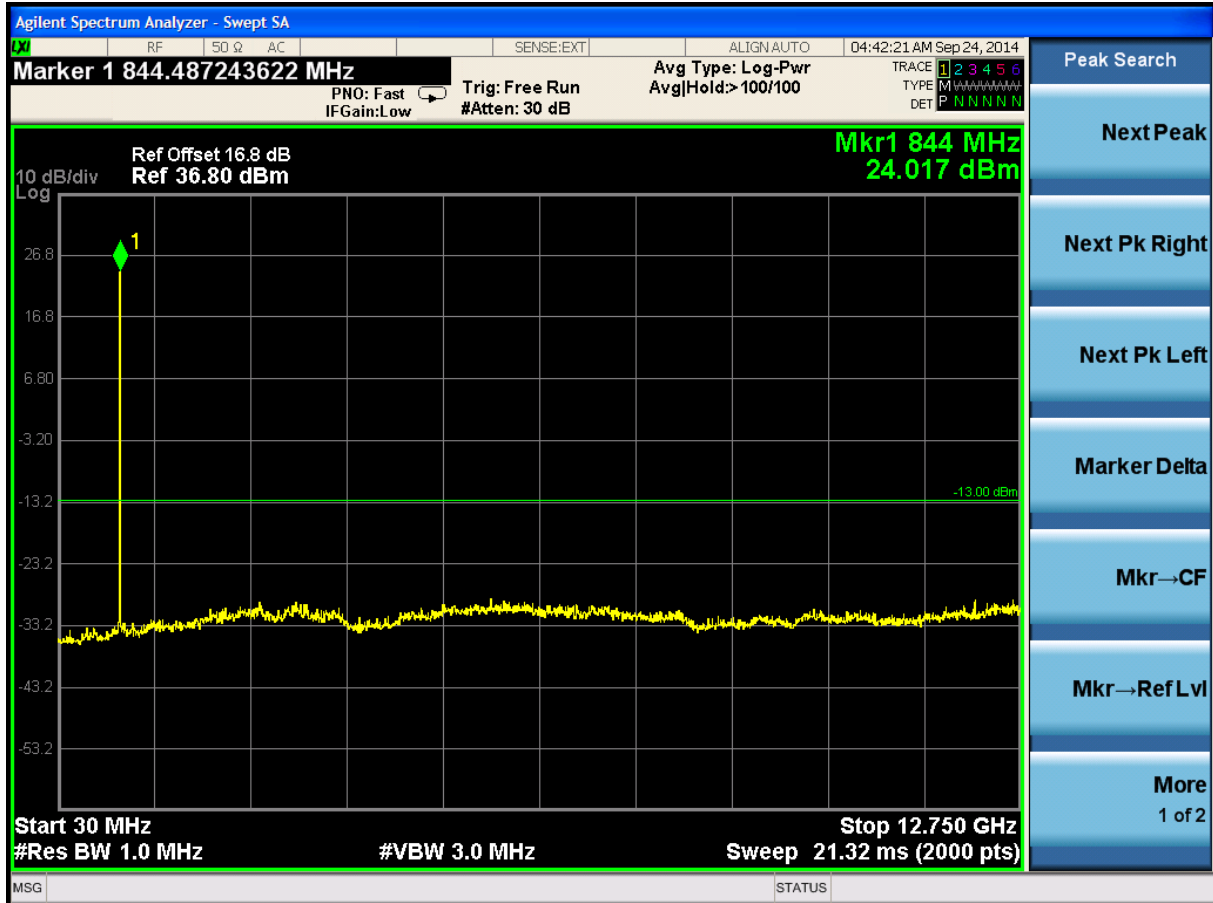


6.2.1.1.2 Test Channel = MCH





6.2.1.1.3 Test Channel = HCH

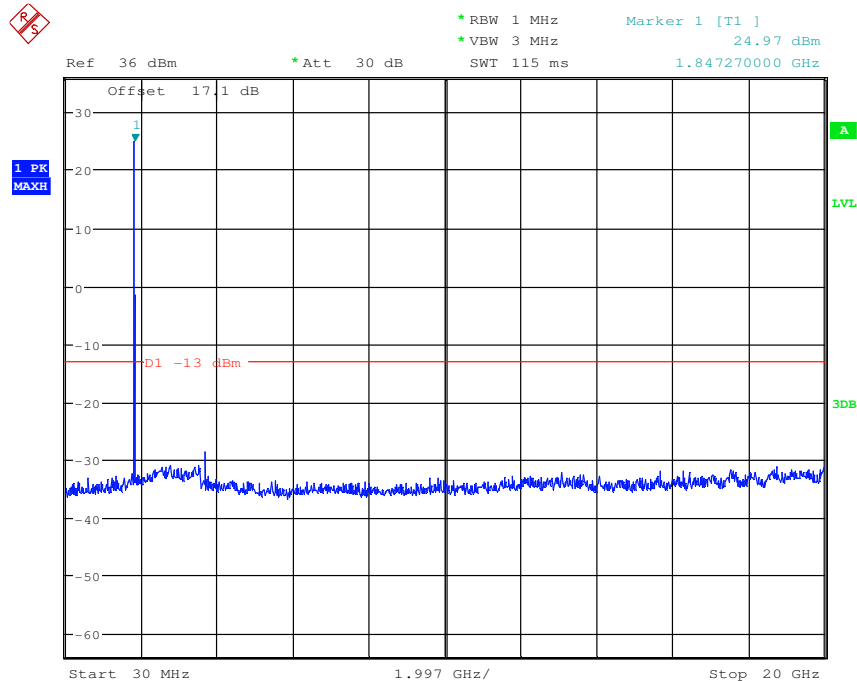




6.2.2 TEST BAND = WCDMA1900

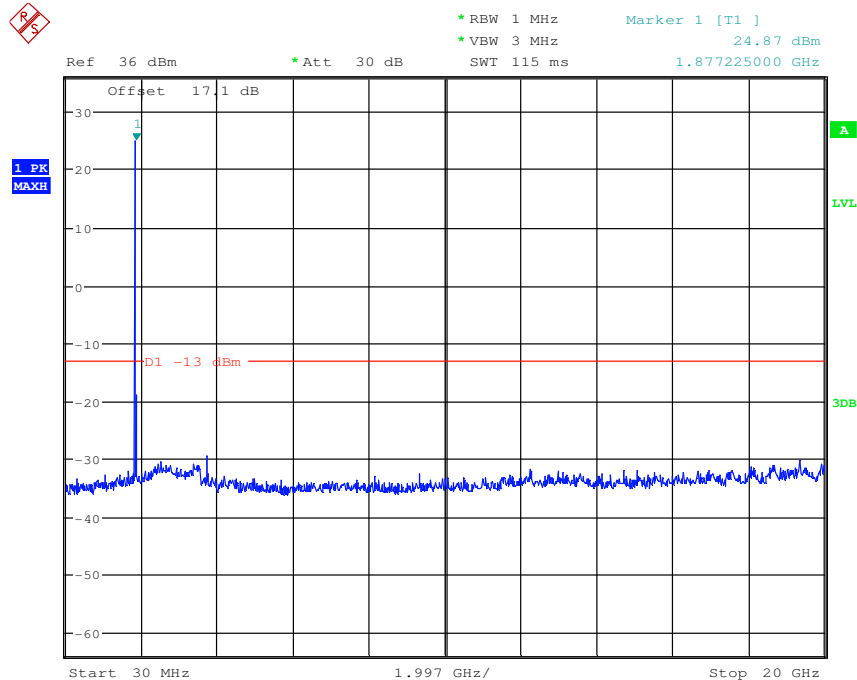
6.2.2.1 Test Mode = UMTS/TM1

6.2.2.1.1 Test Channel = LCH



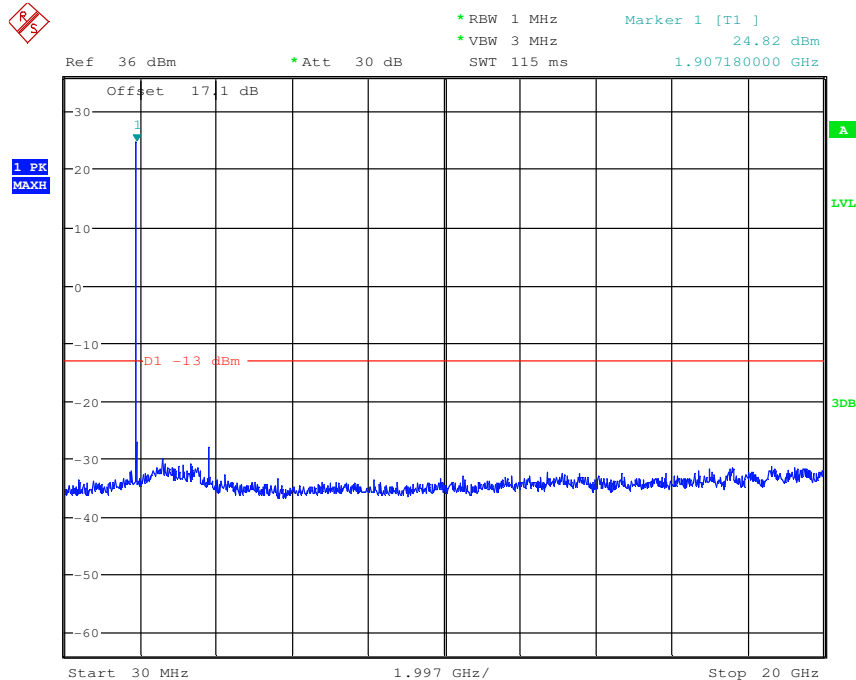


6.2.2.1.2 Test Channel = MCH





6.2.2.1.3 Test Channel = HCH



**7 APPENDIX_G: FIELD STRENGTH OF SPURIOUS RADIATION****Part I - Test Plots****7.1 FOR GSM****7.1.1 TEST BAND = GSM850****7.1.1.1 Test Mode = GSM/TM1****Below 1GHz Low channel**

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
31.620	-63.40	-13	-50.41	Vertical
37.812	-71.79	-13	-58.80	Vertical
80.644	-70.71	-13	-57.72	Vertical
184.490	-70.15	-13	-57.16	Vertical
457.507	-68.50	-13	-55.51	Vertical
709.182	-68.31	-13	-55.32	Vertical
35.749	-81.88	-13	-68.89	Horizontal
51.301	-79.26	-13	-66.27	Horizontal
87.112	-73.26	-13	-60.27	Horizontal
143.326	-68.84	-13	-55.85	Horizontal
226.894	-75.61	-13	-62.62	Horizontal
689.565	-68.01	-13	-55.02	Horizontal

Above 1GHz Low channel

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1673.200	-21.75	-13	-8.75	Vertical
2509.800	-41.08	-13	-28.08	Vertical
3346.400	-47.68	-13	-34.68	Vertical
4183.000	-48.64	-13	-35.64	Vertical
5019.600	-46.26	-13	-33.26	Vertical
5856.200	-44.93	-13	-31.93	Vertical
1673.200	-27.75	-13	-14.75	Horizontal
2509.800	-46.97	-13	-33.97	Horizontal
3346.400	-47.47	-13	-34.47	Horizontal
4183.000	-46.21	-13	-33.21	Horizontal
5019.600	-44.97	-13	-31.97	Horizontal
5856.200	-43.87	-13	-30.87	Horizontal





Below 1GHz middle channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
43.05	-78.85	-13	-65.87	Vertical
86.503	-73.54	-13	-60.56	Vertical
159.225	-70.53	-13	-57.55	Vertical
255.623	-74.74	-13	-61.76	Vertical
381.249	-71.91	-13	-58.93	Vertical
776.878	-66.94	-13	-53.96	Vertical
30.853	-52.86	-13	-39.86	Horizontal
39.854	-66.25	-13	-53.25	Horizontal
67.438	-71.14	-13	-58.14	Horizontal
167.824	-64.57	-13	-51.57	Horizontal
425.028	-67.17	-13	-54.17	Horizontal
842.13	-66.49	-13	-53.49	Horizontal

Above 1GHz middle channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1648.4	-31.45	-13	-18.45	Vertical
2472.6	-50.14	-13	-37.14	Vertical
3296.8	-50.4	-13	-37.4	Vertical
4121	-50.68	-13	-37.68	Vertical
4945.2	-49.12	-13	-36.12	Vertical
5769.4	-47.12	-13	-34.12	Vertical
1648.4	-35.43	-13	-22.43	Horizontal
2472.6	-45.85	-13	-32.85	Horizontal
3296.8	-49.39	-13	-36.39	Horizontal
4121	-49.75	-13	-36.75	Horizontal
4945.2	-48.41	-13	-35.41	Horizontal
5769.4	-47.65	-13	-34.65	Horizontal



Below 1GHz High channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
43.659	-76.84	-13	-63.86	Vertical
71.581	-68.62	-13	-55.64	Vertical
99.528	-73.31	-13	-60.33	Vertical
152.664	-69.36	-13	-56.38	Vertical
396.242	-73.01	-13	-60.03	Vertical
785.093	-67.75	-13	-54.77	Vertical
36.254	-77.52	-13	-64.54	Horizontal
73.359	-72.31	-13	-59.33	Horizontal
145.861	-62.13	-13	-49.15	Horizontal
248.552	-72.69	-13	-59.71	Horizontal
359.186	-68.31	-13	-55.33	Horizontal
839.182	-66.25	-13	-53.27	Horizontal

Above 1GHz High channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1267.104	-69.09	-13	-56.09	Vertical
2055.225	-64.04	-13	-51.04	Vertical
2818.011	-60.32	-13	-47.32	Vertical
3672.11	-60.05	-13	-47.05	Vertical
5617.407	-55.41	-13	-42.41	Vertical
8334.7	-52.58	-13	-39.58	Vertical
1364.182	-68.61	-13	-55.61	Horizontal
2162.567	-64.17	-13	-51.17	Horizontal
3283.018	-47.75	-13	-34.75	Horizontal
5560.5	-57.31	-13	-44.31	Horizontal
7508.688	-53.69	-13	-40.69	Horizontal
9960.375	-51.03	-13	-38.03	Horizontal

**7.1.1.2 Test Mode = GSM/TM2**

Below 1GHz Low channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
31.399	-59.18	-13	-46.19	Vertical
35.875	-77.17	-13	-64.18	Vertical
50.942	-67.28	-13	-54.29	Vertical
100.229	-68.61	-13	-55.62	Vertical
296.184	-71.42	-13	-58.43	Vertical
836.244	-66.15	-13	-53.16	Vertical
32.979	-76.36	-13	-63.37	Horizontal
46.340	-76.12	-13	-63.13	Horizontal
75.977	-69.64	-13	-56.65	Horizontal
107.510	-76.56	-13	-63.57	Horizontal
284.977	-69.79	-13	-56.80	Horizontal
747.483	-68.02	-13	-55.03	Horizontal

Above 1GHz Low channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1673.200	-34.62	-13	-21.62	Vertical
2509.800	-43.13	-13	-30.13	Vertical
3346.400	-48.63	-13	-35.63	Vertical
4183.000	-49.07	-13	-36.07	Vertical
5019.600	-47.39	-13	-34.39	Vertical
5856.200	-46.71	-13	-33.71	Vertical
1673.200	-29.94	-13	-16.94	Horizontal
2509.800	-45.88	-13	-32.88	Horizontal
3346.400	-48.78	-13	-35.78	Horizontal
4183.000	-48.85	-13	-35.85	Horizontal
5019.600	-47.29	-13	-34.29	Horizontal
5856.200	-45.69	-13	-32.69	Horizontal



Below 1GHz Middle channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
41.567	-75.53	-13	-62.55	Vertical
54.643	-82.65	-13	-69.67	Vertical
97.115	-72.89	-13	-59.91	Vertical
209.313	-79.09	-13	-66.11	Vertical
447.982	-70.17	-13	-57.19	Vertical
968.934	-63.54	-13	-50.56	Vertical
30.638	-53.77	-13	-40.79	Horizontal
38.481	-66.89	-13	-53.91	Horizontal
55.805	-75.94	-13	-62.96	Horizontal
132.685	-64.23	-13	-51.25	Horizontal
307.831	-69.51	-13	-56.53	Horizontal
729.358	-67.66	-13	-54.68	Horizontal

Above 1GHz Middle channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1648.4	-30.45	-13	-17.45	Vertical
2472.6	-50.64	-13	-37.64	Vertical
3296.8	-49.4	-13	-36.4	Vertical
4121.4	-51.68	-13	-38.68	Vertical
4945.2	-48.82	-13	-35.82	Vertical
5769.4	-47.52	-13	-34.52	Vertical
1648.4	-34.43	-13	-21.43	Horizontal
2472.6	-46.35	-13	-33.35	Horizontal
3296.8	-48.39	-13	-35.39	Horizontal
4121.2	-50.75	-13	-37.75	Horizontal
4945.2	-48.11	-13	-35.11	Horizontal
5769.4	-48.05	-13	-35.05	Horizontal

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."



Below 1GHz Highest channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
38.888	-77.97	-13	-64.99	Vertical
67.202	-68.53	-13	-55.55	Vertical
87.725	-72.79	-13	-59.81	Vertical
128.563	-70.8	-13	-57.82	Vertical
333.687	-76.25	-13	-63.27	Vertical
737.071	-68.41	-13	-55.43	Vertical
44.587	-65	-13	-52.02	Horizontal
71.581	-72.79	-13	-59.81	Horizontal
111.738	-68.92	-13	-55.94	Horizontal
189.739	-69.16	-13	-56.18	Horizontal
275.157	-72.14	-13	-59.16	Horizontal
776.878	-67.76	-13	-54.78	Horizontal

Above 1GHz Highest channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1360.714	-68.9	-13	-55.9	Vertical
1948.245	-65.11	-13	-52.11	Vertical
3384.85	-51.33	-13	-38.33	Vertical
5660.469	-56.56	-13	-43.56	Vertical
7604.867	-53.72	-13	-40.72	Vertical
8419.999	-53.59	-13	-40.59	Vertical
1326.513	-69.28	-13	-56.28	Horizontal
2184.699	-62.99	-13	-49.99	Horizontal
3384.85	-46.73	-13	-33.73	Horizontal
4501.492	-57.25	-13	-44.25	Horizontal
6594.518	-55.11	-13	-42.11	Horizontal
7820.819	-52.54	-13	-39.54	Horizontal

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

**7.1.2 TEST BAND = GSM1900****7.1.2.1 Test Mode = GSM/TM1**

Below 1GHz Lowest channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
38.752	-66.79	-13	-53.80	Vertical
64.433	-75.35	-13	-62.36	Vertical
112.131	-68.38	-13	-55.39	Vertical
154.821	-68.30	-13	-55.31	Vertical
281.995	-70.53	-13	-57.54	Vertical
552.883	-69.87	-13	-56.88	Vertical
42.007	-78.34	-13	-65.35	Horizontal
64.433	-80.60	-13	-67.61	Horizontal
127.665	-70.96	-13	-57.97	Horizontal
188.413	-73.33	-13	-60.34	Horizontal
332.519	-75.16	-13	-62.17	Horizontal
747.483	-68.02	-13	-55.03	Horizontal

Above 1GHz Lowest channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
3760.000	-42.09	-13	-29.09	Vertical
5640.000	-42.35	-13	-29.35	Vertical
7520.000	-43.60	-13	-30.60	Vertical
9400.000	-40.75	-13	-27.75	Vertical
11280.000	-37.85	-13	-24.85	Vertical
13917.240	-33.44	-13	-20.44	Vertical
3760.000	-39.89	-13	-26.89	Horizontal
5640.000	-44.59	-13	-31.59	Horizontal
7520.000	-43.63	-13	-30.63	Horizontal
9400.000	-41.44	-13	-28.44	Horizontal
11280.000	-37.72	-13	-24.72	Horizontal
13757.270	-33.45	-13	-20.45	Horizontal

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."



Below 1GHz Middle channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
45.058	-75.29	-13	-62.29	Vertical
148.963	-72.25	-13	-59.25	Vertical
230.099	-69.47	-13	-56.47	Vertical
300.367	-71.44	-13	-58.44	Vertical
375.939	-72.94	-13	-59.94	Vertical
629.477	-69.79	-13	-56.79	Vertical
104.903	-81.85	-13	-68.85	Horizontal
165.487	-72.55	-13	-59.55	Horizontal
250.301	-67.66	-13	-54.66	Horizontal
350.477	-63.2	-13	-50.2	Horizontal
452.72	-69.61	-13	-56.61	Horizontal
755.387	-66.64	-13	-53.64	Horizontal

Above 1GHz Middle channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1150.279	-66.29	-13	-53.29	Vertical
2468.631	-36.87	-13	-23.87	Vertical
4138.802	-58.08	-13	-45.08	Vertical
7547.013	-52.54	-13	-39.54	Vertical
9834.406	-51.4	-13	-38.4	Vertical
11027.98	-49.74	-13	-36.74	Vertical
1336.682	-67.23	-13	-54.23	Horizontal
2013.795	-53.35	-13	-40.35	Horizontal
3700.26	-54.63	-13	-41.63	Horizontal
5910.798	-54.81	-13	-41.81	Horizontal
7489.599	-52.67	-13	-39.67	Horizontal
11029.98	-49.59	-13	-36.59	Horizontal

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."



Below 1GHz Highest channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
37.508	-78.79	-13	-65.79	Vertical
66.713	-81.30	-13	-68.30	Vertical
125.806	-66.84	-13	-53.84	Vertical
230.069	-61.35	-13	-48.35	Vertical
452.272	-70.69	-13	-57.69	Vertical
629.407	-64.14	-13	-51.14	Vertical
47.659	-70.63	-13	-57.63	Horizontal
92.462	-76.3	-13	-63.3	Horizontal
148.963	-71.82	-13	-58.82	Horizontal
350.477	-71.85	-13	-58.85	Horizontal
502.94	-72.62	-13	-59.62	Horizontal
755.387	-61.1	-13	-48.1	Horizontal

Above 1GHz Highest channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1706.7	-52.39	-13	-39.39	Vertical
2468.631	-39.37	-13	-26.37	Vertical
5631.725	-54.38	-13	-41.38	Vertical
7394.878	-51.43	-13	-38.43	Vertical
9370.083	-51.02	-13	-38.02	Vertical
12334.98	-47.57	-13	-34.57	Vertical
1326.513	-67.88	-13	-54.88	Horizontal
3747.656	-55.3	-13	-42.3	Horizontal
5631.725	-50.35	-13	-37.35	Horizontal
6478.053	-53.37	-13	-40.37	Horizontal
9441.913	-51.18	-13	-38.18	Horizontal
10587.85	-48.72	-13	-35.72	Horizontal

**7.1.2.2 Test Mode = GSM/TM2**

Below 1GHz Lowest channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
34.760	-77.08	-13	-64.09	Vertical
51.301	-68.35	-13	-55.36	Vertical
85.898	-71.78	-13	-58.79	Vertical
161.474	-65.26	-13	-52.27	Vertical
334.859	-76.17	-13	-63.18	Vertical
796.183	-67.10	-13	-54.11	Vertical
40.988	-78.14	-13	-65.15	Horizontal
45.695	-76.79	-13	-63.80	Horizontal
84.999	-74.81	-13	-61.82	Horizontal
194.453	-77.38	-13	-64.39	Horizontal
519.065	-69.79	-13	-56.80	Horizontal
962.162	-63.63	-13	-50.64	Horizontal

Above 1GHz Lowest channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
3760.000	-44.92	-13	-31.92	Vertical
5640.000	-46.27	-13	-33.27	Vertical
7520.000	-44.53	-13	-31.53	Vertical
9400.000	-41.21	-13	-28.21	Vertical
11100.000	-39.51	-13	-26.51	Vertical
13917.240	-33.05	-13	-20.05	Vertical
3760.000	-28.04	-13	-15.04	Horizontal
5640.000	-47.78	-13	-34.78	Horizontal
7520.000	-44.31	-13	-31.31	Horizontal
9400.000	-41.02	-13	-28.02	Horizontal
11280.000	-39.10	-13	-26.10	Horizontal
15003.420	-33.04	-13	-20.04	Horizontal

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."



Below 1GHz Middle channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
46.995	-78.6	-13	-65.6	Vertical
167.824	-74.21	-13	-61.21	Vertical
250.301	-73.63	-13	-60.63	Vertical
350.477	-63.06	-13	-50.06	Vertical
452.72	-72.69	-13	-59.69	Vertical
755.387	-69.32	-13	-56.32	Vertical
142.824	-76.68	-13	-63.68	Horizontal
182.559	-75.7	-13	-62.7	Horizontal
300.367	-75.83	-13	-62.83	Horizontal
375.939	-73.81	-13	-60.81	Horizontal
629.477	-70.22	-13	-57.22	Horizontal
912.862	-67.6	-13	-54.6	Horizontal

Above 1GHz Middle channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1170.959	-66.71	-13	-53.71	Vertical
3815.033	-54.26	-13	-41.26	Vertical
4676.696	-57.12	-13	-44.12	Vertical
6494.564	-53.18	-13	-40.18	Vertical
9441.913	-50.51	-13	-37.51	Vertical
10480.59	-49.35	-13	-36.35	Vertical
1728.561	-47.58	-13	-34.58	Horizontal
3184.25	-59.94	-13	-46.94	Horizontal
4455.89	-57.57	-13	-44.57	Horizontal
7643.683	-52.55	-13	-39.55	Horizontal
8882.347	-51.59	-13	-38.59	Horizontal
12055.6	-47.06	-13	-34.06	Horizontal





Below 1GHz Highest channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
44.743	-56.42	-13	-43.42	Vertical
115.726	-78.56	-13	-65.56	Vertical
166.651	-73.13	-13	-60.13	Vertical
250.301	-67.35	-13	-54.35	Vertical
656.53	-63.87	-13	-50.87	Vertical
782.345	-57.49	-13	-44.49	Vertical
31.289	-79.46	-13	-66.46	Horizontal
71.581	-88.77	-13	-75.77	Horizontal
141.826	-77.28	-13	-64.28	Horizontal
183.844	-72.21	-13	-59.21	Horizontal
452.72	-66.14	-13	-53.14	Horizontal
709.182	-63.28	-13	-50.28	Horizontal

Above 1GHz Highest channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1672.296	-52.2	-13	-39.2	Vertical
3241.498	-61.37	-13	-48.37	Vertical
3700.26	-54.29	-13	-41.29	Vertical
7604.867	-53.3	-13	-40.3	Vertical
10269.32	-50.17	-13	-37.17	Vertical
11963.89	-48.48	-13	-35.48	Vertical
1371.145	-67.65	-13	-54.65	Horizontal
3700.26	-53.34	-13	-40.34	Horizontal
5420.742	-56.66	-13	-43.66	Horizontal
7721.909	-53.43	-13	-40.43	Horizontal
8973.25	-51.03	-13	-38.03	Horizontal
11457.21	-49.55	-13	-36.55	Horizontal



7.2 FOR UMTS

7.2.1 TEST BAND = WCDMA850

7.2.1.1 Test Mode = UMTS/TM1

Below 1GHz Lowest channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
44.743	-63.17	-13	-50.18	Vertical
87.112	-72.01	-13	-59.02	Vertical
130.379	-64.60	-13	-51.61	Vertical
156.458	-69.14	-13	-56.15	Vertical
372.005	-66.21	-13	-53.22	Vertical
848.056	-66.86	-13	-53.87	Vertical
40.845	-77.81	-13	-64.82	Horizontal
54.261	-81.94	-13	-68.95	Horizontal
95.427	-72.82	-13	-59.83	Horizontal
149.486	-70.47	-13	-57.48	Horizontal
350.477	-73.10	-13	-60.11	Horizontal
774.158	-67.41	-13	-54.42	Horizontal

Above 1GHz Lowest channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1648.400	-34.43	-13	-21.43	Vertical
2472.600	-44.85	-13	-31.85	Vertical
3296.800	-48.39	-13	-35.39	Vertical
4121.000	-48.75	-13	-35.75	Vertical
4945.200	-47.41	-13	-34.41	Vertical
5769.400	-46.65	-13	-33.65	Vertical
1648.400	-30.45	-13	-17.45	Horizontal
2472.600	-49.14	-13	-36.14	Horizontal
3296.800	-49.40	-13	-36.40	Horizontal
4121.000	-49.68	-13	-36.68	Horizontal
4945.200	-48.12	-13	-35.12	Horizontal
5769.400	-46.12	-13	-33.12	Horizontal



Below 1GHz Middle channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
169.005	-72.05	-13	-59.05	Vertical
452.72	-69.68	-13	-56.68	Vertical
550.948	-71.63	-13	-58.63	Vertical
629.477	-63.58	-13	-50.58	Vertical
755.387	-60.35	-13	-47.35	Vertical
948.761	-65.77	-13	-52.77	Vertical
45.685	-67.48	-13	-54.48	Horizontal
375.919	-72.47	-13	-59.47	Horizontal
452.772	-70.96	-13	-57.96	Horizontal
535.767	-75.62	-13	-62.62	Horizontal
629.457	-70.03	-13	-57.03	Horizontal
952.384	-65.53	-13	-52.53	Horizontal

Above 1GHz Middle channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1353.804	-68.4	-13	-55.4	Vertical
1913.838	-62.84	-13	-49.84	Vertical
2468.631	-51.11	-13	-38.11	Vertical
3026.195	-59.9	-13	-46.9	Vertical
4971.316	-57.82	-13	-44.82	Vertical
5689.36	-56.3	-13	-43.3	Vertical
1138.626	-67.9	-13	-54.9	Horizontal
1913.838	-61.27	-13	-48.27	Horizontal
2468.631	-47.99	-13	-34.99	Horizontal
3625.669	-59.88	-13	-46.88	Horizontal
4641.118	-55.81	-13	-42.81	Horizontal
5674.896	-55.47	-13	-42.47	Horizontal



Below 1GHz Highest channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
165.487	-72.42	-13	-59.42	Vertical
230.099	-71.26	-13	-58.26	Vertical
452.72	-68.92	-13	-55.92	Vertical
629.477	-70.07	-13	-57.07	Vertical
755.387	-67.13	-13	-54.13	Vertical
945.44	-65.32	-13	-52.32	Vertical
92.462	-75.65	-13	-62.65	Horizontal
165.487	-72.89	-13	-59.89	Horizontal
350.477	-71.7	-13	-58.7	Horizontal
502.94	-70.99	-13	-57.99	Horizontal
651.942	-68.57	-13	-55.57	Horizontal
965.542	-65.84	-13	-52.84	Horizontal

Above 1GHz Highest channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1706.7	-64.17	-13	-51.17	Vertical
1988.327	-41.83	-13	-28.83	Vertical
2468.631	-40.52	-13	-27.52	Vertical
3241.498	-60.13	-13	-47.13	Vertical
4536	-56.13	-13	-43.13	Vertical
5791.646	-55.77	-13	-42.77	Vertical
1464.963	-66.46	-13	-53.46	Horizontal
1953.211	-42.44	-13	-29.44	Horizontal
2468.631	-42.28	-13	-29.28	Horizontal
3561.636	-60.04	-13	-47.04	Horizontal
4490.048	-56.51	-13	-43.51	Horizontal
5865.832	-55.19	-13	-42.19	Horizontal

**7.2.2 TEST BAND = WCDMA1900****7.2.2.1 Test Mode = UMTS/TM1**

Below 1GHz Lowest channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
37.812	-71.79	-13	-58.80	Vertical
59.859	-76.97	-13	-63.98	Vertical
115.726	-66.09	-13	-53.10	Vertical
183.201	-71.07	-13	-58.08	Vertical
300.367	-71.40	-13	-58.41	Vertical
776.878	-67.76	-13	-54.77	Vertical
36.637	-81.28	-13	-68.29	Horizontal
68.631	-69.10	-13	-56.11	Horizontal
139.851	-72.38	-13	-59.39	Horizontal
210.786	-79.05	-13	-66.06	Horizontal
322.189	-66.95	-13	-53.96	Horizontal
801.786	-66.27	-13	-53.28	Horizontal

Above 1GHz Lowest channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
3819.600	-45.49	-13	-32.49	Vertical
5726.400	-47.07	-13	-34.07	Vertical
7636.200	-43.35	-13	-30.35	Vertical
9546.000	-40.47	-13	-27.47	Vertical
11455.800	-38.08	-13	-25.08	Vertical
14873.890	-33.33	-13	-20.33	Vertical
3819.600	-45.81	-13	-32.81	Horizontal
5726.400	-46.22	-13	-33.22	Horizontal
7636.200	-43.57	-13	-30.57	Horizontal
9546.000	-40.17	-13	-27.17	Horizontal
11455.800	-38.28	-13	-25.28	Horizontal
13917.240	-32.97	-13	-19.97	Horizontal



Below 1GHz Middle channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
142.824	-73.69	-13	-60.69	Vertical
230.099	-72.82	-13	-59.82	Vertical
350.477	-61.96	-13	-48.96	Vertical
452.72	-70.83	-13	-57.83	Vertical
755.387	-66.79	-13	-53.79	Vertical
875.247	-65.67	-13	-52.67	Vertical
165.487	-71.63	-13	-58.63	Horizontal
230.099	-71.08	-13	-58.08	Horizontal
300.367	-71.47	-13	-58.47	Horizontal
452.72	-70.81	-13	-57.81	Horizontal
629.477	-69.53	-13	-56.53	Horizontal
755.387	-67.65	-13	-54.65	Horizontal

Above 1GHz Middle channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
2468.631	-51.15	-13	-38.15	Vertical
4594.102	-56.67	-13	-43.67	Vertical
6886.154	-53.29	-13	-40.29	Vertical
8527.851	-51.42	-13	-38.42	Vertical
10453.95	-49.31	-13	-36.31	Vertical
12334.98	-46.79	-13	-33.79	Vertical
1173.943	-68.15	-13	-55.15	Horizontal
2468.631	-49.85	-13	-36.85	Horizontal
4641.118	-56.43	-13	-43.43	Horizontal
5504.17	-56.26	-13	-43.26	Horizontal
7470.558	-51.81	-13	-38.81	Horizontal
9370.083	-51.25	-13	-38.25	Horizontal



Below 1GHz Highest channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
47.659	-69.73	-13	-56.73	Vertical
104.903	-74.2	-13	-61.2	Vertical
165.487	-73.45	-13	-60.45	Vertical
350.477	-72.32	-13	-59.32	Vertical
502.94	-71.64	-13	-58.64	Vertical
755.387	-60.17	-13	-47.17	Vertical
166.651	-71.5	-13	-58.5	Horizontal
300.367	-70.19	-13	-57.19	Horizontal
350.477	-63.02	-13	-50.02	Horizontal
452.72	-69.69	-13	-56.69	Horizontal
629.477	-70.81	-13	-57.81	Horizontal
919.287	-66.03	-13	-53.03	Horizontal

Above 1GHz Highest channel				
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
1147.354	-70.06	-13	-57.06	Vertical
2468.631	-54.92	-13	-41.92	Vertical
3184.25	-60.86	-13	-47.86	Vertical
5244.295	-57.17	-13	-44.17	Vertical
6561.03	-54.18	-13	-41.18	Vertical
8814.774	-53.48	-13	-40.48	Vertical
1150.279	-67.88	-13	-54.88	Horizontal
3747.656	-59.09	-13	-46.09	Horizontal
5850.919	-54.99	-13	-41.99	Horizontal
6956.627	-53.39	-13	-40.39	Horizontal
8725.477	-51.99	-13	-38.99	Horizontal
12303.62	-46.98	-13	-33.98	Horizontal

NOTE:

- 1) The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.
- 2) Pretest was performed at the EUT in low, middle, high channel, but only the worst test channel(Channel 192 for GSM850 and Channel 661 for GSM1900)and only the data of the worst case show in the test report.

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

**8 8Appendix_H: Frequency Stability****8.1 8.1 FOR GSM****8.1.1 8.1.1 FREQUENCY ERROR VS. VOLTAGE:**

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
GSM850	GSM/TM1	LCH	TN	VL	-3.05	-0.00370	PASS
				VN	-7.95	-0.00965	PASS
				VH	0.57	0.00069	PASS
		MCH	TN	VL	-7.69	-0.00919	PASS
				VN	-6.47	-0.00773	PASS
				VH	-5.11	-0.00611	PASS
		HCH	TN	VL	-1.17	-0.00138	PASS
				VN	-5.89	-0.00694	PASS
				VH	-9.31	-0.01097	PASS
	GSM/TM2	LCH	TN	VL	-5.79	-0.00702	PASS
				VN	-11.25	-0.01365	PASS
				VH	-4.18	-0.00507	PASS
		MCH	TN	VL	-7.24	-0.00865	PASS
				VN	-15.16	-0.01812	PASS
				VH	-7.60	-0.00908	PASS
		HCH	TN	VL	-7.73	-0.00911	PASS
				VN	-3.15	-0.00371	PASS
				VH	-10.41	-0.01226	PASS
GSM1900	GSM/TM1	LCH	TN	VL	-12.58	-0.00680	PASS
				VN	-9.93	-0.00537	PASS
				VH	-8.38	-0.00453	PASS
		MCH	TN	VL	-2.24	-0.00119	PASS
				VN	-1.53	-0.00081	PASS
				VH	-7.22	-0.00384	PASS
		HCH	TN	VL	-0.89	-0.00047	PASS
				VN	-8.39	-0.00439	PASS
				VH	-19.04	-0.00997	PASS
	GSM/TM2	LCH	TN	VL	3.72	0.00201	PASS
				VN	-5.58	-0.00302	PASS
				VH	-7.84	-0.00424	PASS
		MCH	TN	VL	-18.82	-0.01001	PASS
				VN	-2.04	-0.00106	PASS
				VH	-14.43	-0.00768	PASS
		HCH	TN	VL	-6.94	-0.00363	PASS
				VN	-10.75	-0.00563	PASS
				VH	-9.49	-0.00497	PASS

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."



8.1.2 8.1.2 FREQUENCY ERROR VS. TEMPERATURE:

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
GSM850	GSM/TM1	LCH	VN	-30	-1.95	-0.00237	PASS
				-20	-1.24	-0.00150	PASS
				-10	-1.56	-0.00189	PASS
				0	-3.5	-0.00425	PASS
				10	1.28	0.00155	PASS
				20	2.51	0.00305	PASS
				30	2.18	0.00264	PASS
				40	0.7	0.00085	PASS
				50	5.8	0.00704	PASS
		MCH	VN	-30	-0.14	-0.00017	PASS
				-20	2.57	0.00307	PASS
				-10	-0.66	-0.00079	PASS
				0	-2.01	-0.00240	PASS
				10	0.73	0.00087	PASS
				20	-0.82	-0.00098	PASS
				30	1.24	0.00148	PASS
				40	1.82	0.00218	PASS
				50	2.66	0.00318	PASS
		HCH	VN	-30	0.47	0.00055	PASS
				-20	5.12	0.00603	PASS
				-10	-0.5	-0.00059	PASS
				0	-0.95	-0.00112	PASS
				10	-0.69	-0.00081	PASS
				20	-0.95	-0.00112	PASS
				30	-1.15	-0.00135	PASS
				40	-2.32	-0.00273	PASS
				50	-0.25	-0.00029	PASS
	GSM/TM2	LCH	VN	-30	-4.55	-0.00552	PASS
				-20	-1.29	-0.00157	PASS
				-10	-5.29	-0.00642	PASS
				0	-4.1	-0.00497	PASS
				10	-3.26	-0.00396	PASS
				20	-1.96	-0.00238	PASS
				30	-10.1	-0.01225	PASS
				40	0.75	0.00091	PASS
				50	0.97	0.00118	PASS
		MCH	VN	-30	0.48	0.00057	PASS
				-20	-0.17	-0.00020	PASS
				-10	-8.33	-0.00996	PASS
				0	-1.94	-0.00232	PASS
				10	-1.68	-0.00201	PASS
				20	-3.49	-0.00417	PASS
				30	0.38	0.00045	PASS

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."



				40	-5.36	-0.00641	PASS
				50	-6.07	-0.00726	PASS
		HCH	VN	-30	-5.7	-0.00672	PASS
				-20	-7.18	-0.00846	PASS
				-10	-5.05	-0.00595	PASS
				0	-3.79	-0.00447	PASS
				10	-10.22	-0.01204	PASS
				20	-9.63	-0.01135	PASS
				30	-1.5	-0.00177	PASS
				40	-8.57	-0.01010	PASS
				50	-3.63	-0.00428	PASS
GSM1900	GSM/TM1	LCH	VN	-30	-14.99	-0.00810	PASS
				-20	-8.92	-0.00482	PASS
				-10	-14.09	-0.00762	PASS
				0	-2.27	-0.00123	PASS
				10	1.6	0.00086	PASS
				20	-5.11	-0.00276	PASS
				30	-13.89	-0.00751	PASS
				40	-10.47	-0.00566	PASS
				50	1.28	0.00069	PASS
		MCH	VN	-30	-5.82	-0.00310	PASS
				-20	-7.44	-0.00396	PASS
				-10	-13.18	-0.00701	PASS
				0	-0.72	-0.00038	PASS
				10	-15.03	-0.00799	PASS
				20	-7.34	-0.00390	PASS
				30	2.73	0.00145	PASS
				40	-8.57	-0.00456	PASS
				50	-11.61	-0.00618	PASS
	GSM/TM2	HCH	VN	-30	-14.38	-0.00753	PASS
				-20	-4.89	-0.00256	PASS
				-10	-6.44	-0.00337	PASS
				0	-11.41	-0.00597	PASS
				10	1.37	0.00072	PASS
				20	2.92	0.00153	PASS
				30	-5.99	-0.00314	PASS
				40	-13.56	-0.00710	PASS
				50	-2.13	-0.00112	PASS
		LCH	VN	-30	-12.23	-0.00661	PASS
				-20	-10.36	-0.00560	PASS
				-10	-12.01	-0.00649	PASS
				0	-15.23	-0.00823	PASS
				10	-12.68	-0.00685	PASS
				20	-15.75	-0.00851	PASS
				30	-16.17	-0.00874	PASS
				40	1.39	0.00075	PASS
				50	-18.37	-0.00993	PASS
		MCH	VN	-30	-6.36	-0.00338	PASS
				-20	-16.08	-0.00855	PASS
				-10	0.03	0.00002	PASS



"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."



				0	-5.23	-0.00278	PASS
				10	-4.62	-0.00246	PASS
				20	-14.89	-0.00792	PASS
				30	-22.93	-0.01220	PASS
				40	-2.49	-0.00132	PASS
				50	-20.28	-0.01079	PASS
		HCH	VN	-30	-20.68	-0.01083	PASS
				-20	-10.47	-0.00548	PASS
				-10	-11.77	-0.00616	PASS
				0	-16.8	-0.00880	PASS
				10	-17.32	-0.00907	PASS
				20	-21.00	-0.01100	PASS
				30	-9.92	-0.00519	PASS
				40	-7.21	-0.00378	PASS
				50	-22.48	-0.01177	PASS

**8.2 8.2 FOR UMTS****8.2.1 8.2.1 FREQUENCY ERROR VS. VOLTAGE:**

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
WCDMA850	UMTS/TM1	LCH	TN	VL	0.33	0.00040	PASS
				VN	3.06	0.00370	PASS
				VH	0.79	0.00096	PASS
		MCH	TN	VL	-1.07	-0.00128	PASS
				VN	0.35	0.00042	PASS
				VH	1.42	0.00170	PASS
		HCH	TN	VL	-0.87	-0.00103	PASS
				VN	-1.96	-0.00232	PASS
				VH	-0.31	-0.00037	PASS
WCDMA1900	UMTS/TM1	LCH	TN	VL	-7.01	-0.00378	PASS
				VN	-3.93	-0.00212	PASS
				VH	-7.63	-0.00412	PASS
		MCH	TN	VL	-6.26	-0.00333	PASS
				VN	-9.22	-0.00490	PASS
				VH	-5.51	-0.00293	PASS
		HCH	TN	VL	-5.45	-0.00286	PASS
				VN	-10.15	-0.00532	PASS
				VH	-2.29	-0.00120	PASS



8.2.2 8.2.2 FREQUENCY ERROR VS. TEMPERATURE:

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
WCDMA850	UMTS/TM1	LCH	VN	-30	-12.06	-0.00652	PASS
				-20	-7.22	-0.00390	PASS
				-10	-13.25	-0.00716	PASS
				0	-4.74	-0.00256	PASS
				10	2.38	0.00129	PASS
				20	-6.74	-0.00364	PASS
				30	-12.04	-0.00651	PASS
				40	-10.31	-0.00557	PASS
				50	0.43	0.00023	PASS
		MCH	VN	-30	-7.42	-0.00395	PASS
				-20	-8.31	-0.00442	PASS
				-10	-13.31	-0.00708	PASS
				0	-1.86	-0.00099	PASS
				10	-12.84	-0.00683	PASS
				20	-5.73	-0.00305	PASS
				30	4.23	0.00225	PASS
				40	-8.61	-0.00458	PASS
				50	-12.11	-0.00644	PASS
		HCH	VN	-30	-14.68	-0.00769	PASS
				-20	-4.37	-0.00229	PASS
				-10	-6.01	-0.00315	PASS
				0	-13.08	-0.00685	PASS
				10	2.79	0.00146	PASS
				20	-0.04	-0.00002	PASS
				30	-3.47	-0.00182	PASS
				40	-14	-0.00733	PASS
				50	-4.6	-0.00241	PASS
		LCH	VN	-30	-17.53	-0.00947	PASS
				-20	-19.13	-0.01034	PASS
				-10	-17.79	-0.00962	PASS
				0	-22.54	-0.01218	PASS
				10	-18.14	-0.00980	PASS
				20	-19.67	-0.01063	PASS
				30	-25.94	-0.01402	PASS
				40	-4.13	-0.00223	PASS
				50	-22.92	-0.01239	PASS
		MCH	VN	-30	-13.36	-0.00711	PASS
				-20	-24.43	-0.01299	PASS
				-10	-4.54	-0.00241	PASS
				0	-13.22	-0.00703	PASS
				10	-9.95	-0.00529	PASS
				20	-21.55	-0.01146	PASS
				30	-32.29	-0.01718	PASS
				40	-10.72	-0.00570	PASS
				50	-26.51	-0.01410	PASS
		HCH	VN	-30	-26.86	-0.01406	PASS

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."



				-20	-16.94	-0.00887	PASS
				-10	-19.47	-0.01019	PASS
				0	-24.03	-0.01258	PASS
				10	-24.32	-0.01273	PASS
				20	-24.96	-0.01307	PASS
				30	-17.07	-0.00894	PASS
				40	-9.98	-0.00523	PASS
				50	-27.48	-0.01439	PASS

The
END