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Appendix for Test Report

Authorized Signature:

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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.

2 Content

3 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	33.16	30.41	38.5	PASS
		MCH	33.37	30.62	38.5	PASS
		HCH	33.52	30.77	38.5	PASS
	GSM/TM2	LCH	25.84	23.09	38.5	PASS
		MCH	25.99	23.24	38.5	PASS
		HCH	26.06	23.31	38.5	PASS
WCDMA850	UMTS/TM1	LCH	23.48	20.73	38.5	PASS
		MCH	23.49	20.74	38.5	PASS
		HCH	23.53	20.78	38.5	PASS

Note1:

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

ERP [dBm] = SGP [dBm] – Cable Loss [dB] + 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	29.86	31.16	33	PASS
		MCH	29.74	31.04	33	PASS
		HCH	29.64	30.94	33	PASS
	GSM/TM2	LCH	24.80	26.10	33	PASS
		MCH	24.91	26.21	33	PASS
		HCH	24.84	26.14	33	PASS
WCDMA1900	UMTS/TM1	LCH	24.15	25.45	33	PASS
		MCH	23.63	24.93	33	PASS
		HCH	23.63	24.93	33	PASS

Note1:

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

EIRP [dBm] = SGP [dBm] – Cable Loss [dB] + Gain [dBi]

b. SGP=Signal Generator Level

Note2:

RBW > emission bandwidth, VBW > 3 x RBW.

Detector: RMS

4 Appendix_B: Peak-to-Average Ratio

Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
GSM850	GSM/TM1	LCH	0.08	13	PASS
		MCH	0.15	13	PASS
		HCH	0.16	13	PASS
	GSM/TM2	LCH	2.89	13	PASS
		MCH	3.14	13	PASS
		HCH	3.21	13	PASS
GSM1900	GSM/TM1	LCH	0.13	13	PASS
		MCH	0.17	13	PASS
		HCH	0.09	13	PASS
	GSM/TM2	LCH	3.12	13	PASS
		MCH	3.09	13	PASS
		HCH	3.11	13	PASS
Test Band	**Test Mode**	**Test Channel**	**Measured[dB]**	**Limit [dB]**	**Verdict**
WCDMA850	UMTS/TM1	LCH	3.24	13	PASS
		MCH	3.13	13	PASS
		HCH	3.14	13	PASS
WCDMA1900	UMTS/TM1	LCH	2.95	13	PASS
		MCH	3.01	13	PASS
		HCH	3.08	13	PASS

5 Appendix_C: Modulation Characteristics

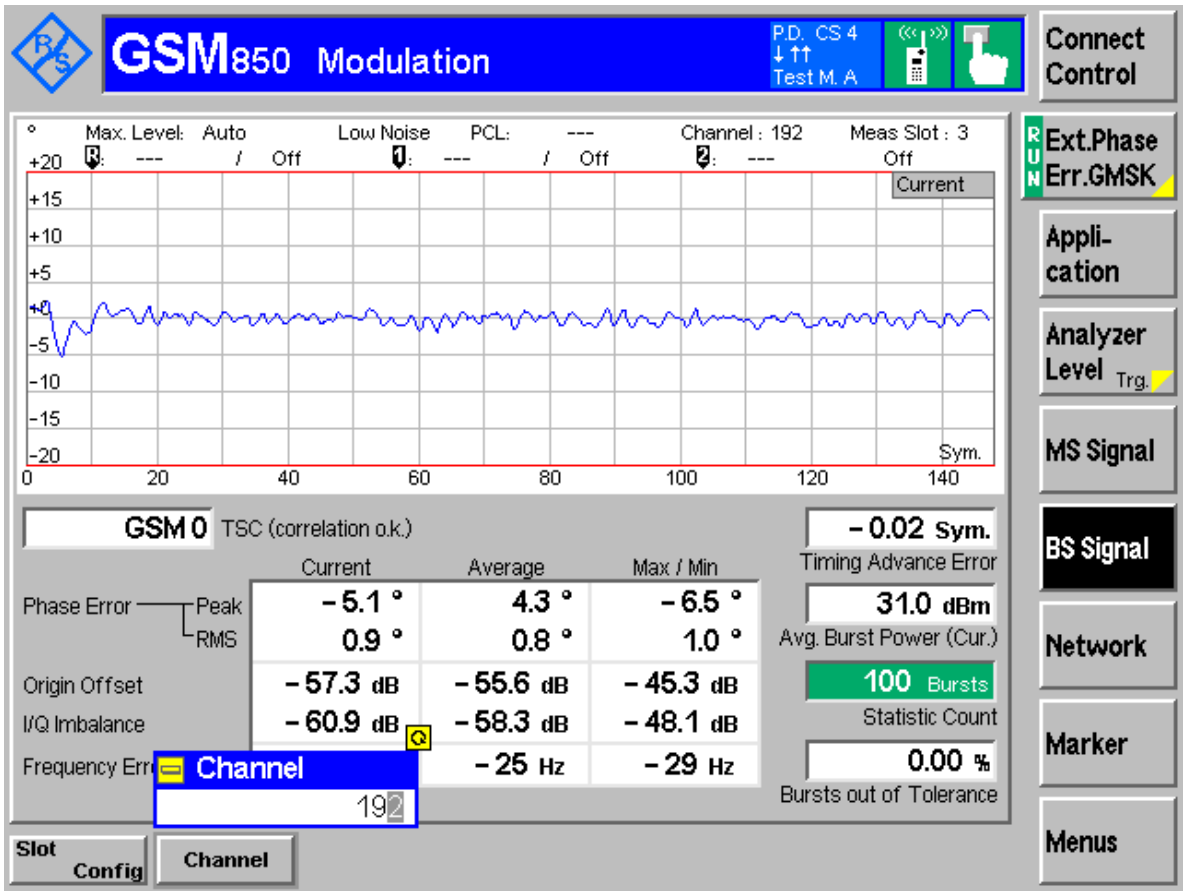
Part I - Test Plots

5.1 For GSM

5.1.1 Test Band = GSM850

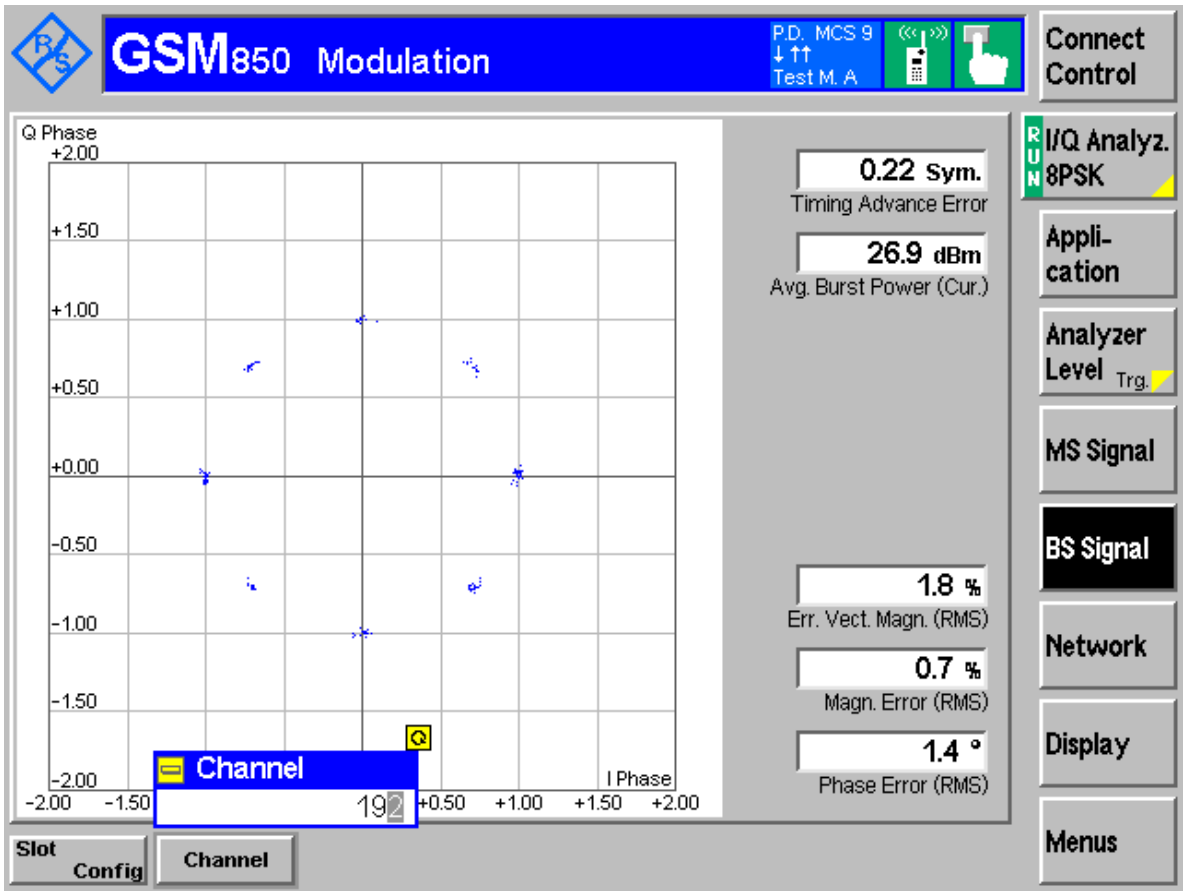
5.1.1.1 Test Mode = GSM/TM1

5.1.1.1.1 Test Channel = MCH



5.1.1.2 Test Mode = GSM/TM2

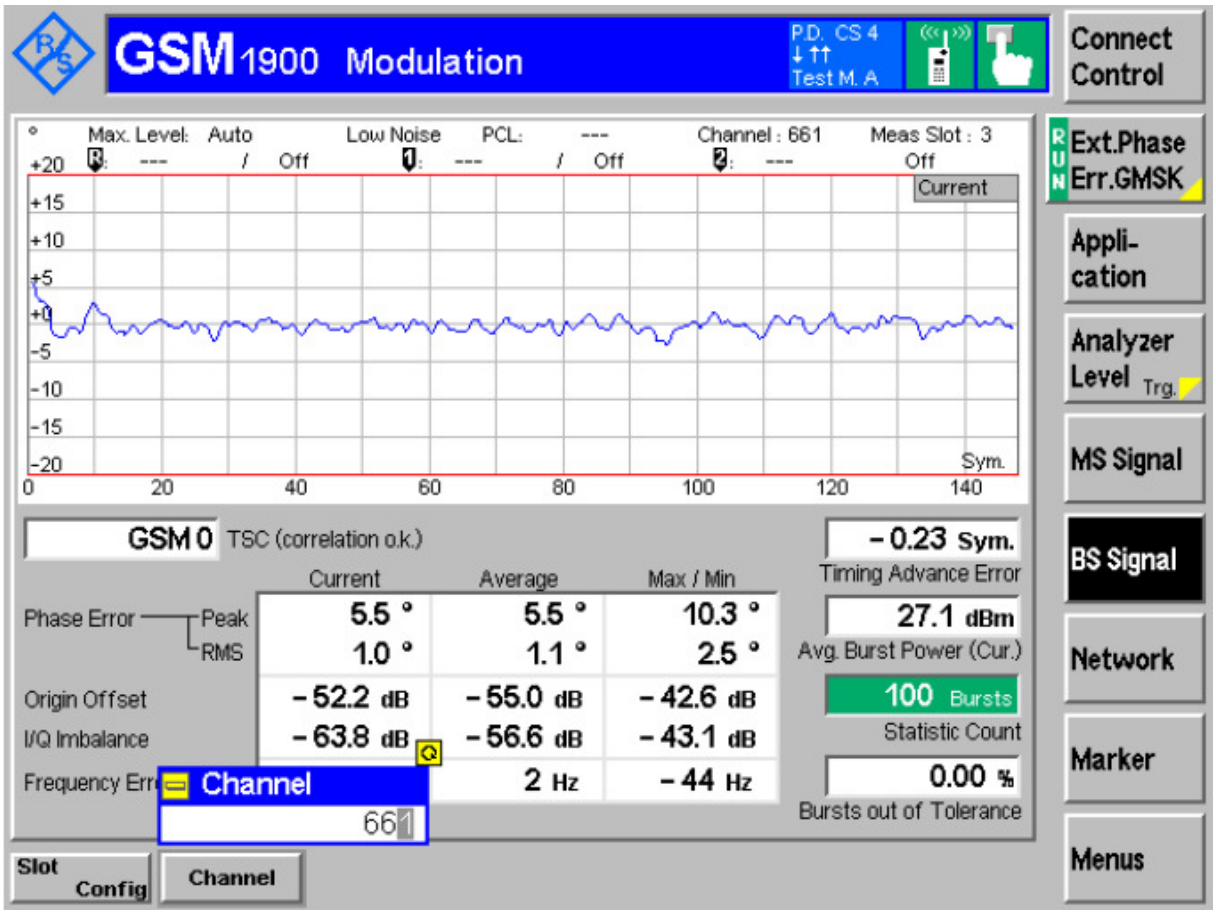
5.1.1.2.1 Test Channel = MCH



5.1.2 Test Band = GSM1900

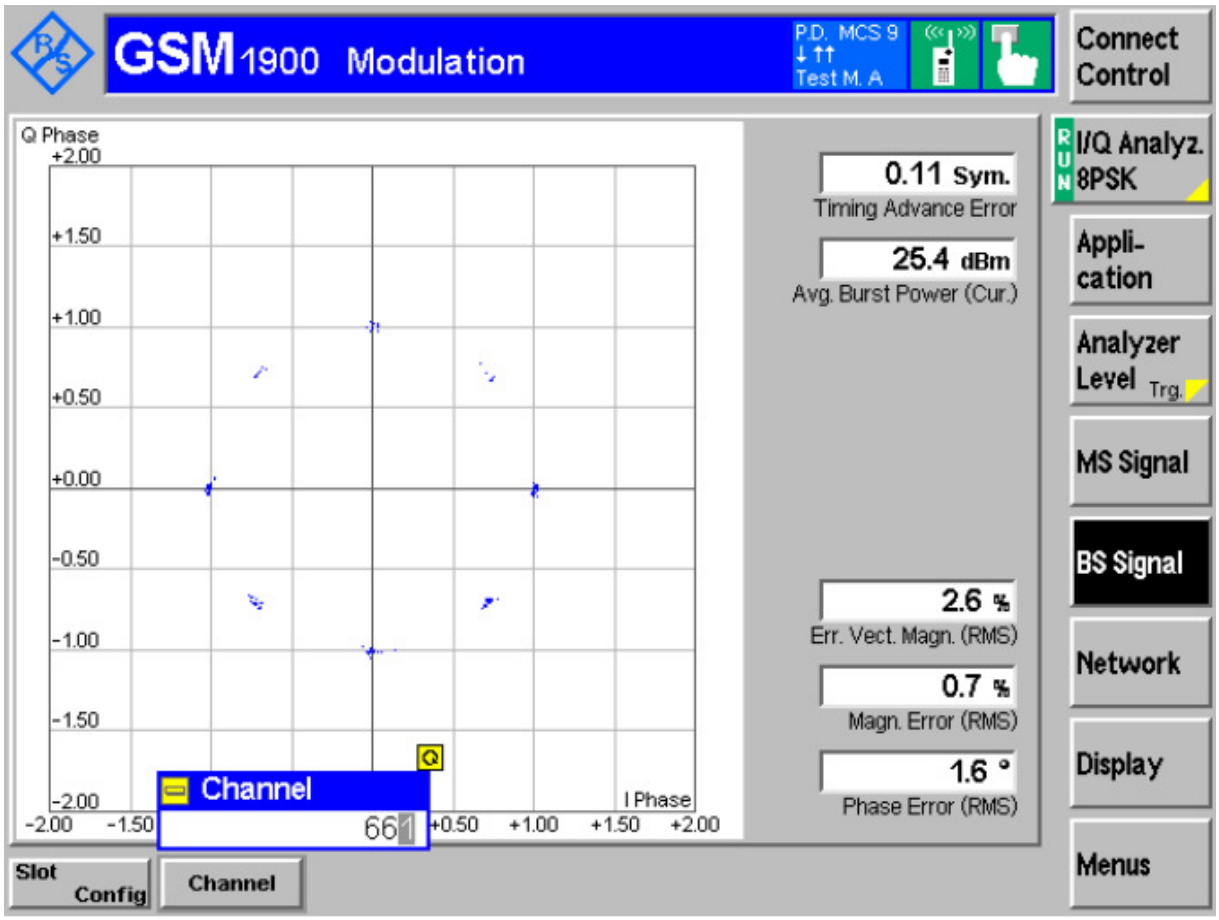
5.1.2.1 Test Mode = GSM/TM1

5.1.2.1.1 Test Channel = MCH



5.1.2.2 Test Mode = GSM/TM2

5.1.2.2.1 Test Channel = MCH

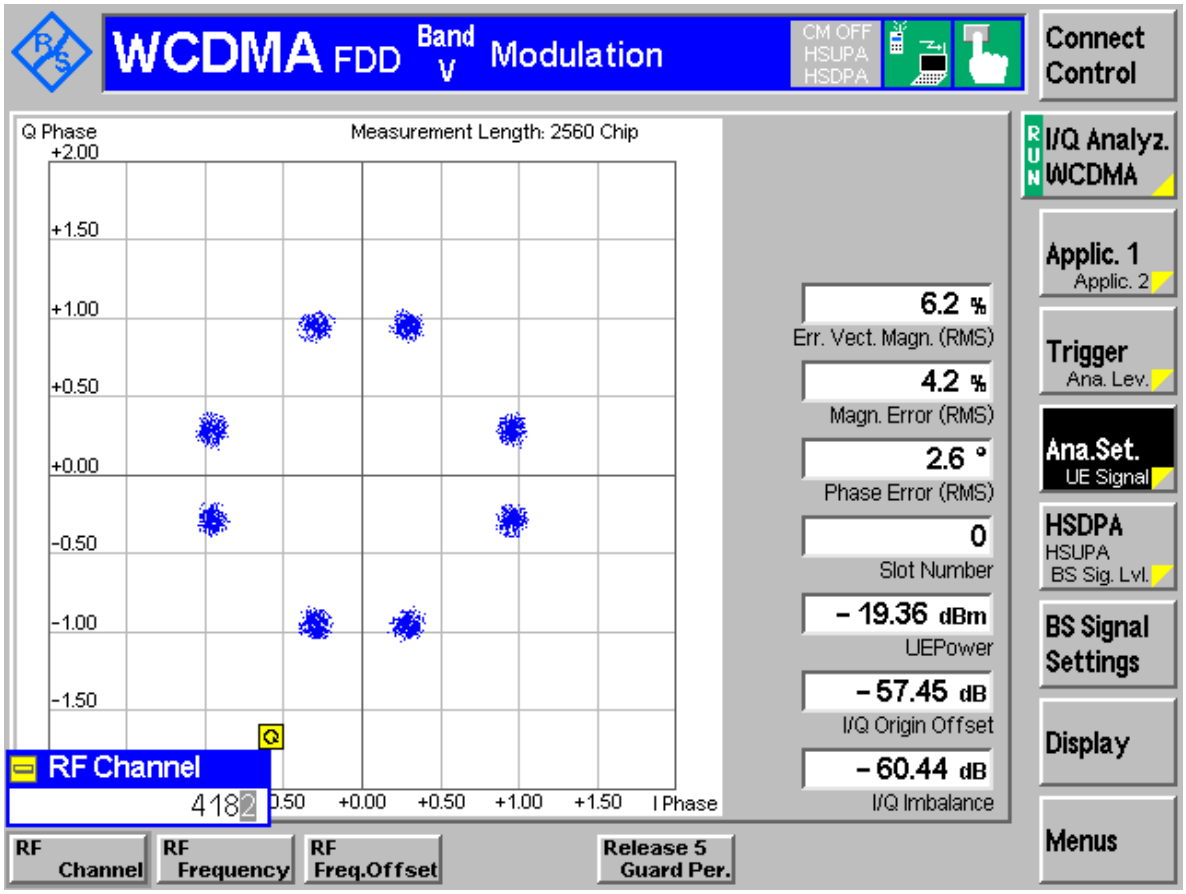


5.2 For UMTS

5.2.1 Test Band = WCDMA850

5.2.1.1 Test Mode = UMTS/TM1

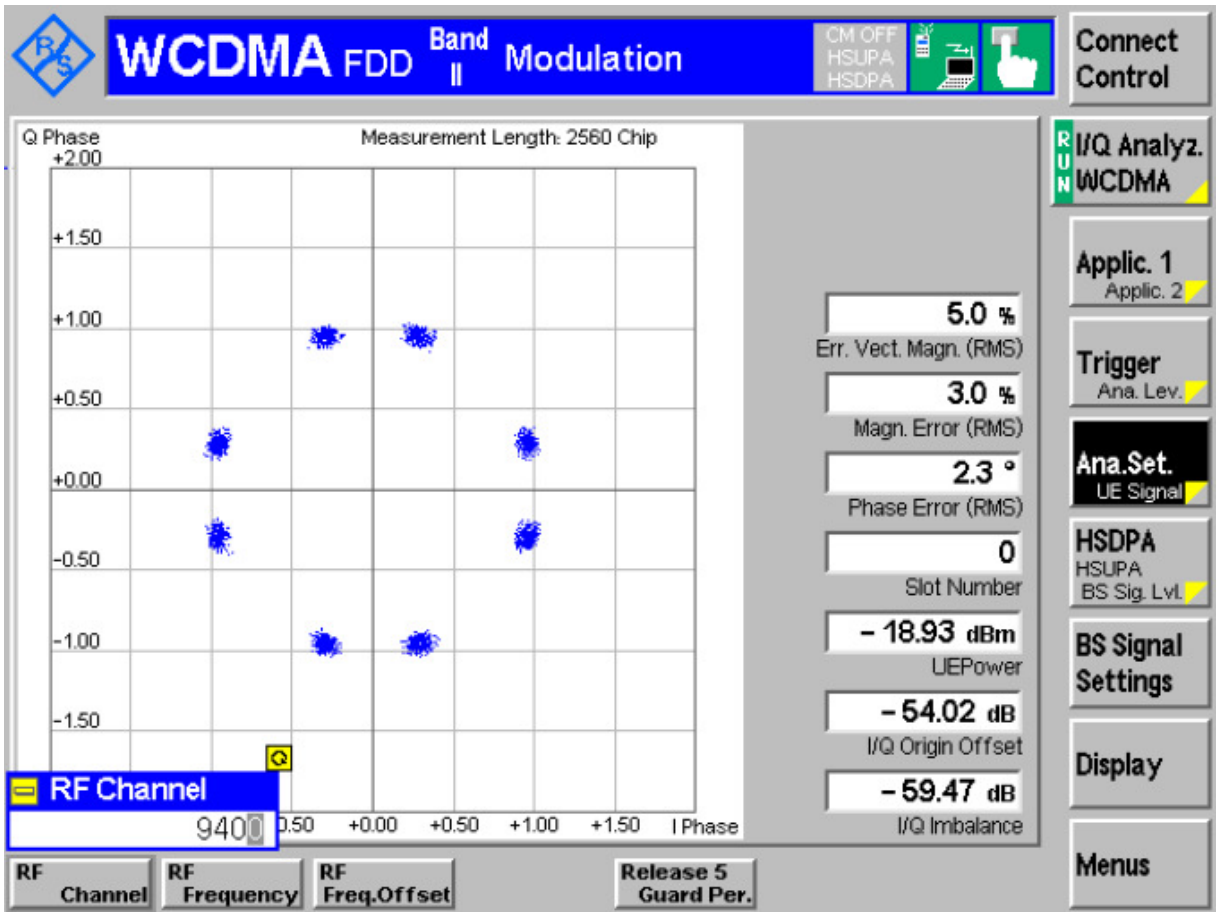
5.2.1.1.1 Test Channel = MCH



5.2.2 TEST BAND = WCDMA1900

5.2.2.1 Test Mode = UMTS/TM1

5.2.2.1.1 Test Channel = MCH



6 Appendix_D: Bandwidth

Part I - Test Results

Test Band	Test Mode	Test Channel	Occupied Bandwidth [kHz]	Emission Bandwidth [kHz]	Verdict
GSM850	GSM/TM1	LCH	243.6	318.0	PASS
		MCH	240.8	313.6	PASS
		HCH	243.2	313.1	PASS
	GSM/TM2	LCH	241.3	321.3	PASS
		MCH	241.8	305.2	PASS
		HCH	238.5	317.4	PASS
GSM1900	GSM/TM1	LCH	244.6	315.8	PASS
		MCH	244.3	314.3	PASS
		HCH	242.9	318.6	PASS
	GSM/TM2	LCH	239.5	318.4	PASS
		MCH	237.4	294.9	PASS
		HCH	242.4	318.3	PASS
Test Band	**Test Mode**	**Test Channel**	**Occupied Bandwidth [MHz]**	**Emission Bandwidth [MHz]**	**Verdict**
WCDMA850	UMTS/TM1	LCH	4.148	4.726	PASS
		MCH	4.158	4.727	PASS
		HCH	4.164	4.711	PASS
WCDMA1900	UMTS/TM1	LCH	4.161	4.744	PASS
		MCH	4.162	4.725	PASS
		HCH	4.166	4.761	PASS

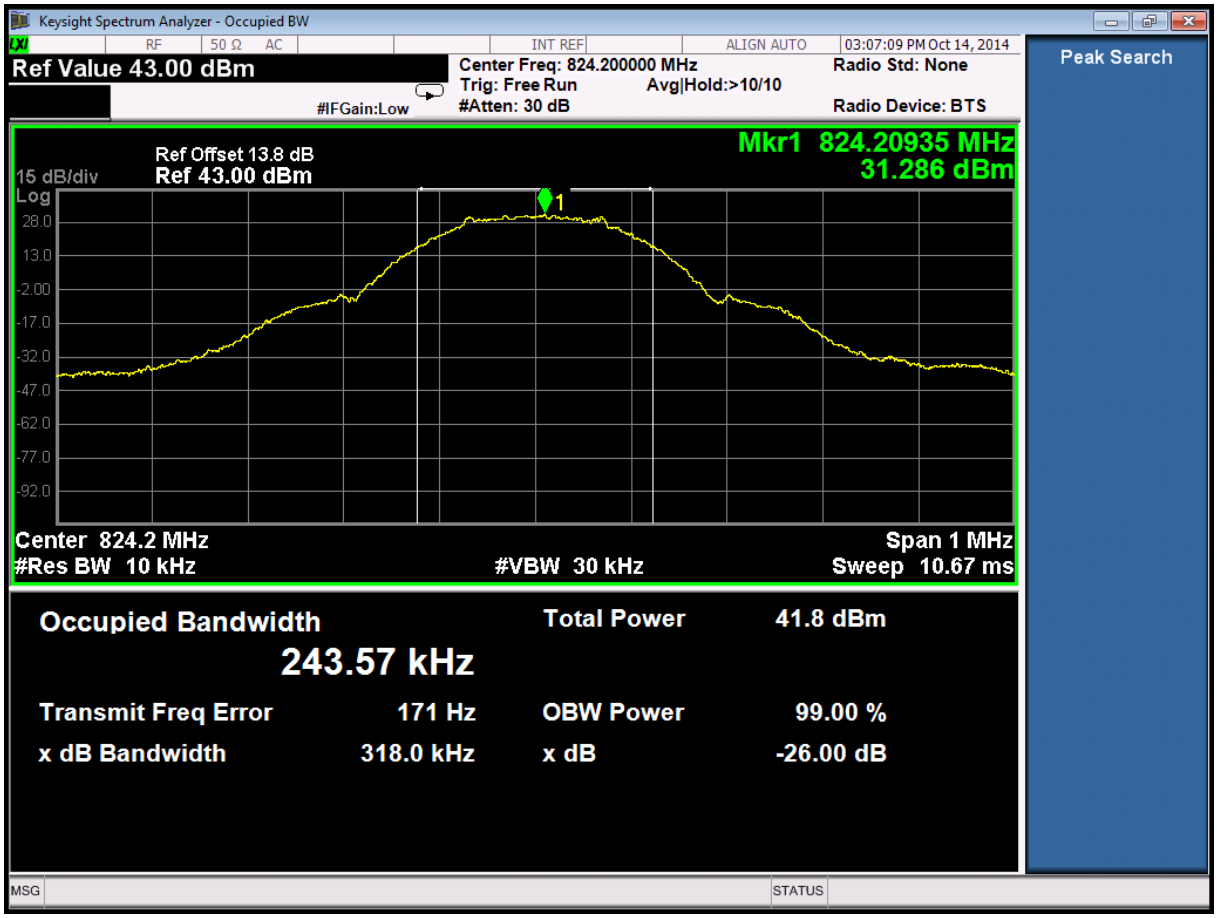
Part II - Test Plots

6.1 For GSM

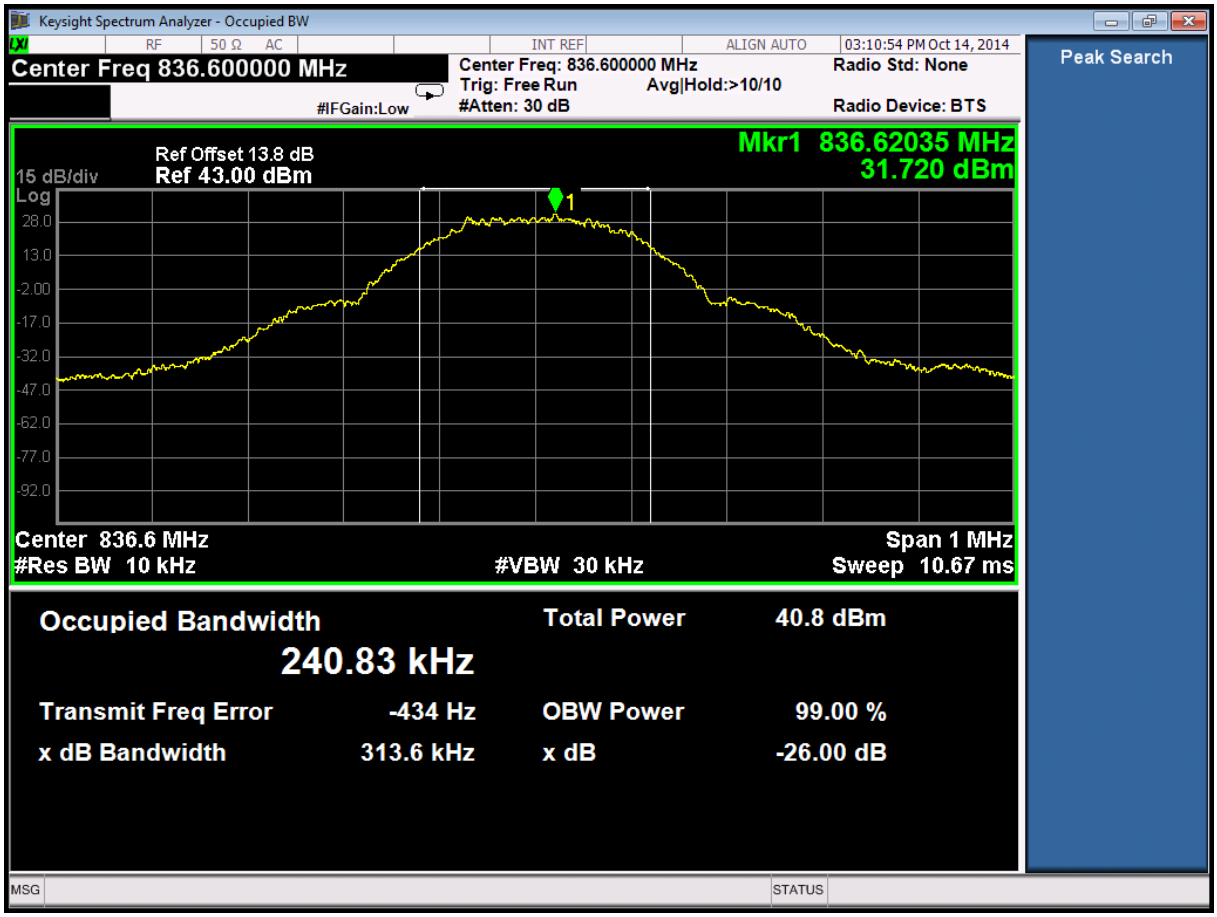
6.1.1 Test Band = GSM850

6.1.1.1 Test Mode = GSM/TM1

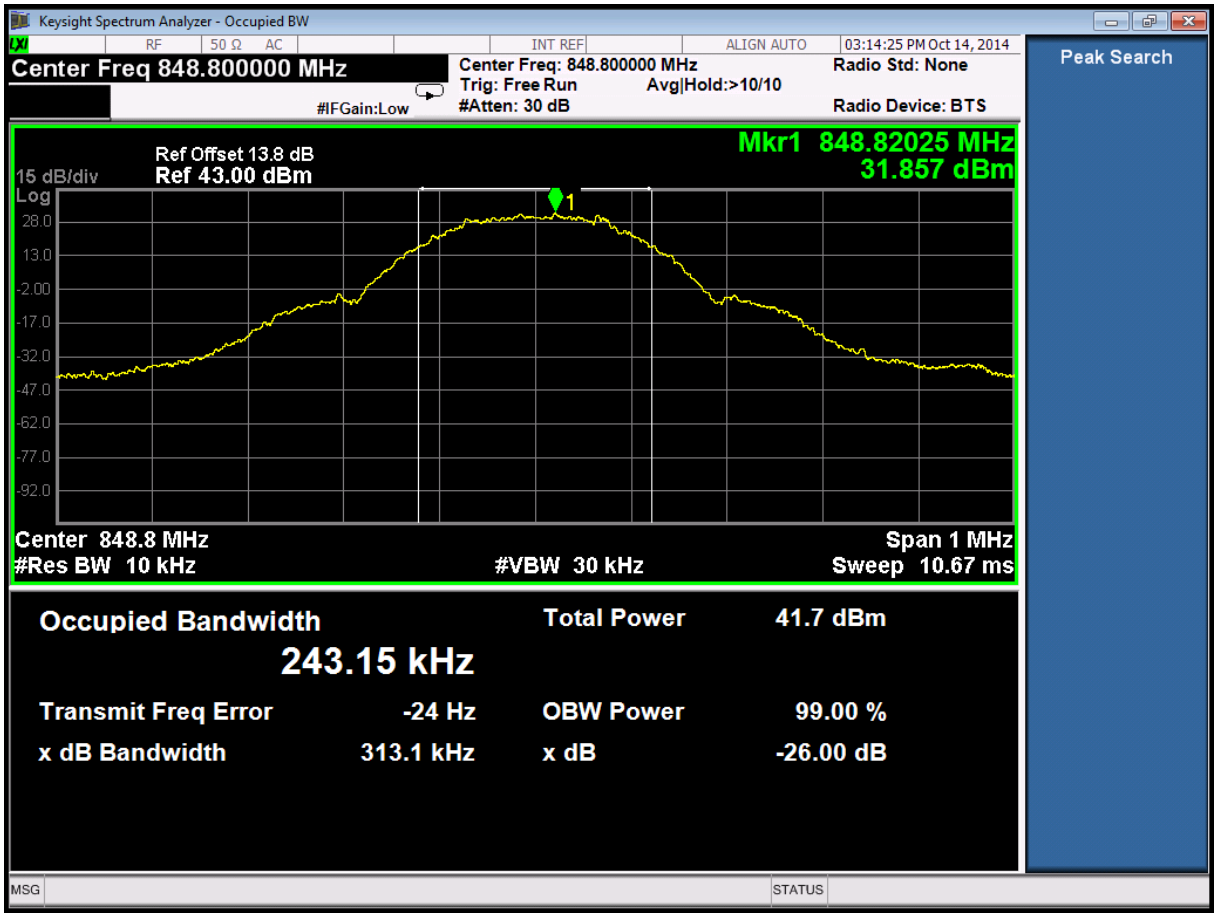
6.1.1.1.1 Test Channel = LCH



6.1.1.1.2 Test Channel = MCH

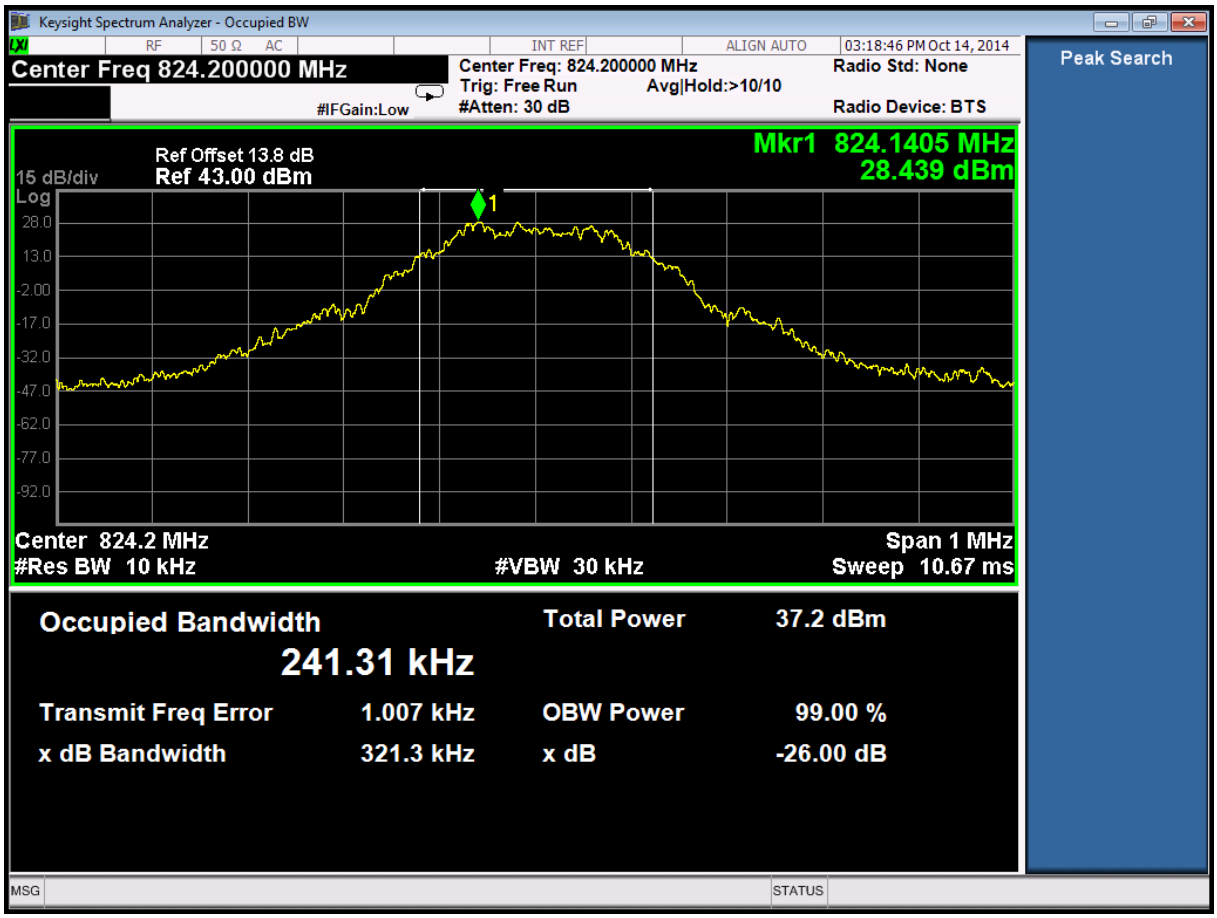


6.1.1.1.3 Test Channel = HCH

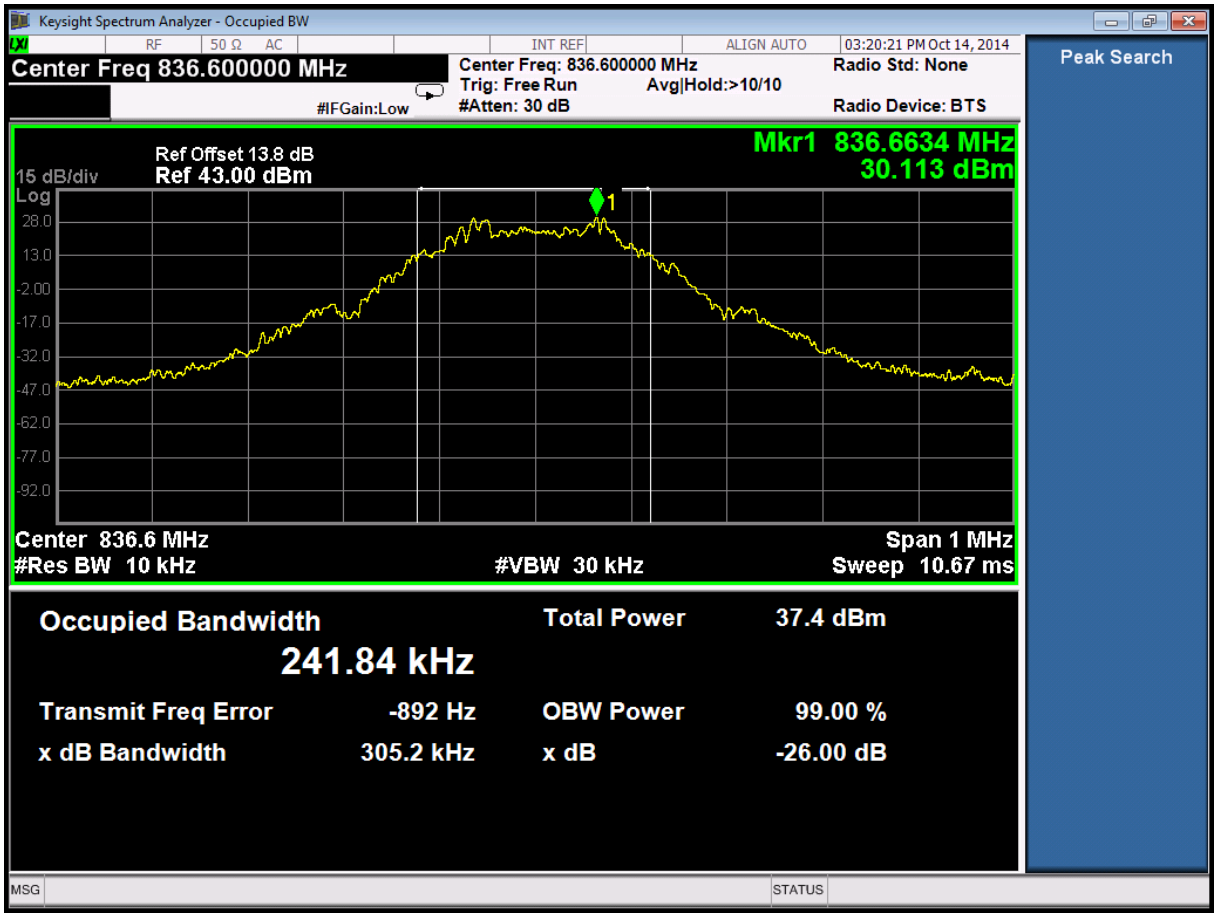


6.1.1.2 Test Mode = GSM/TM2

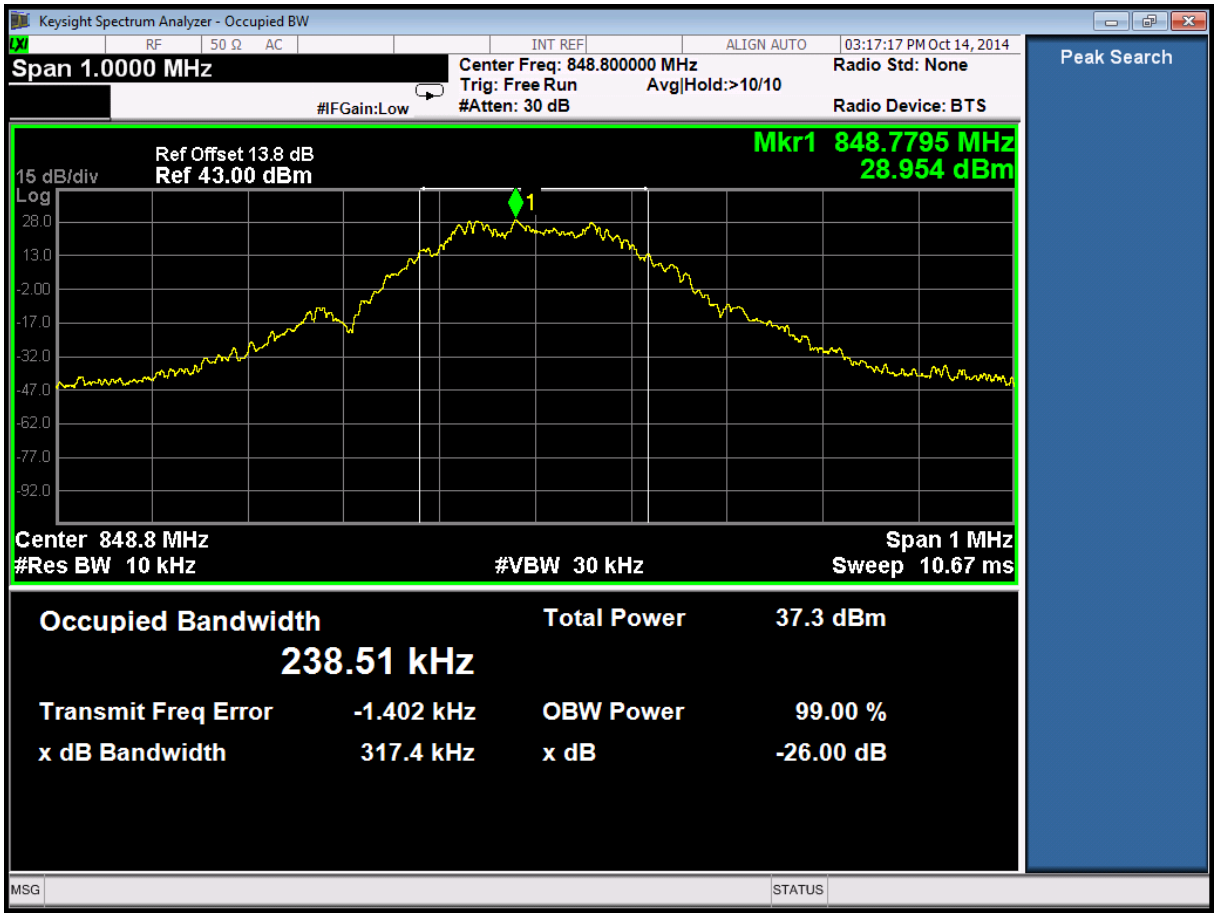
6.1.1.2.1 Test Channel = LCH



6.1.1.2.2 Test Channel = MCH



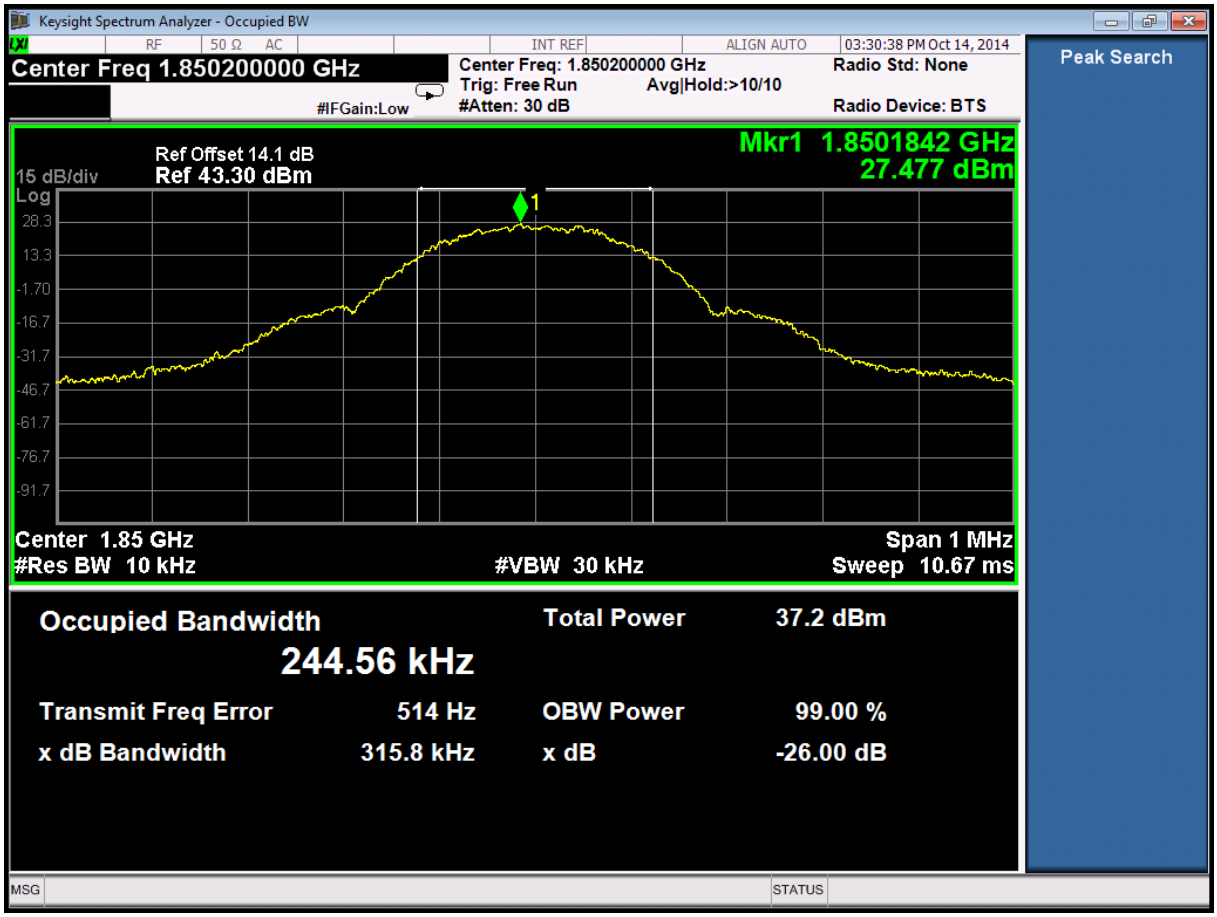
6.1.1.2.3 Test Channel = HCH



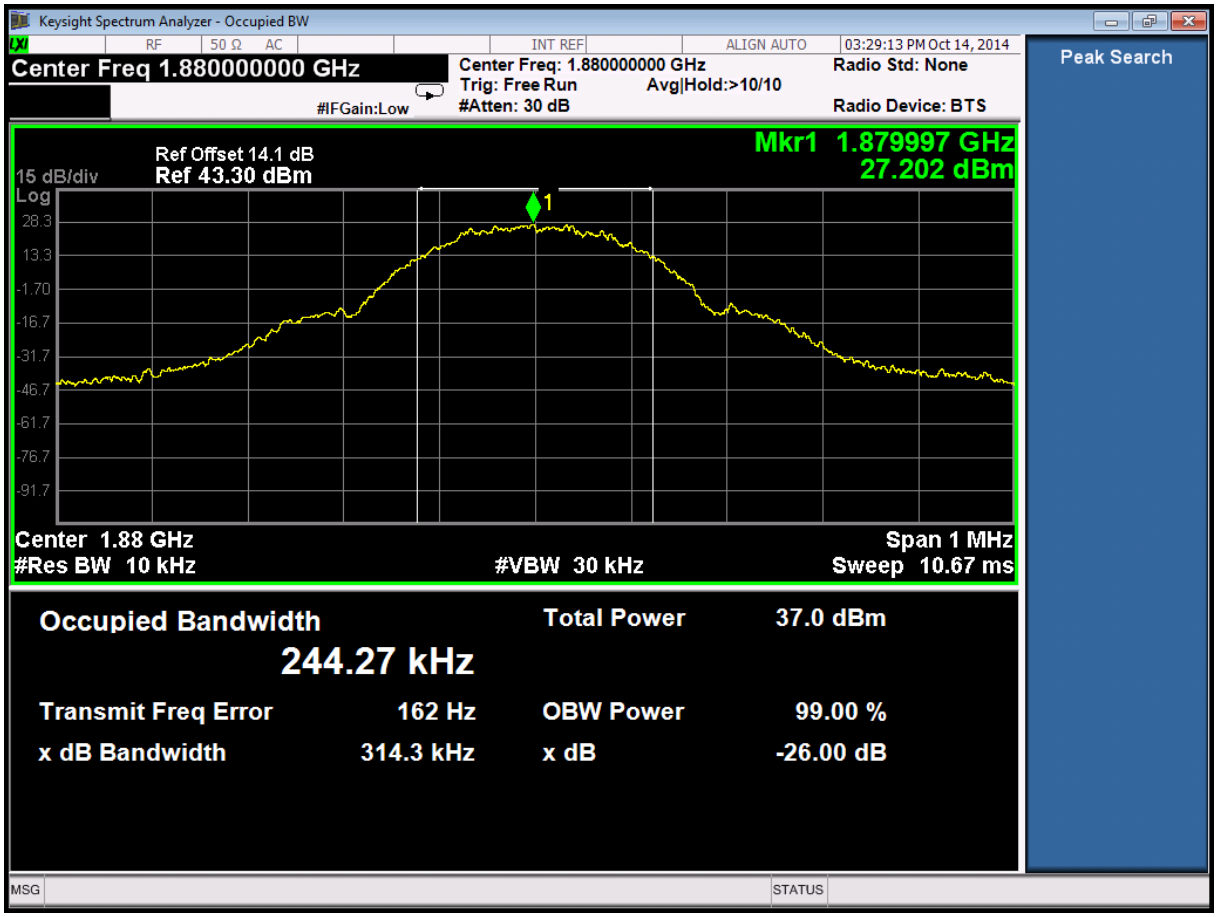
6.1.2 Test Band = GSM1900

6.1.2.1 Test Mode = GSM/TM1

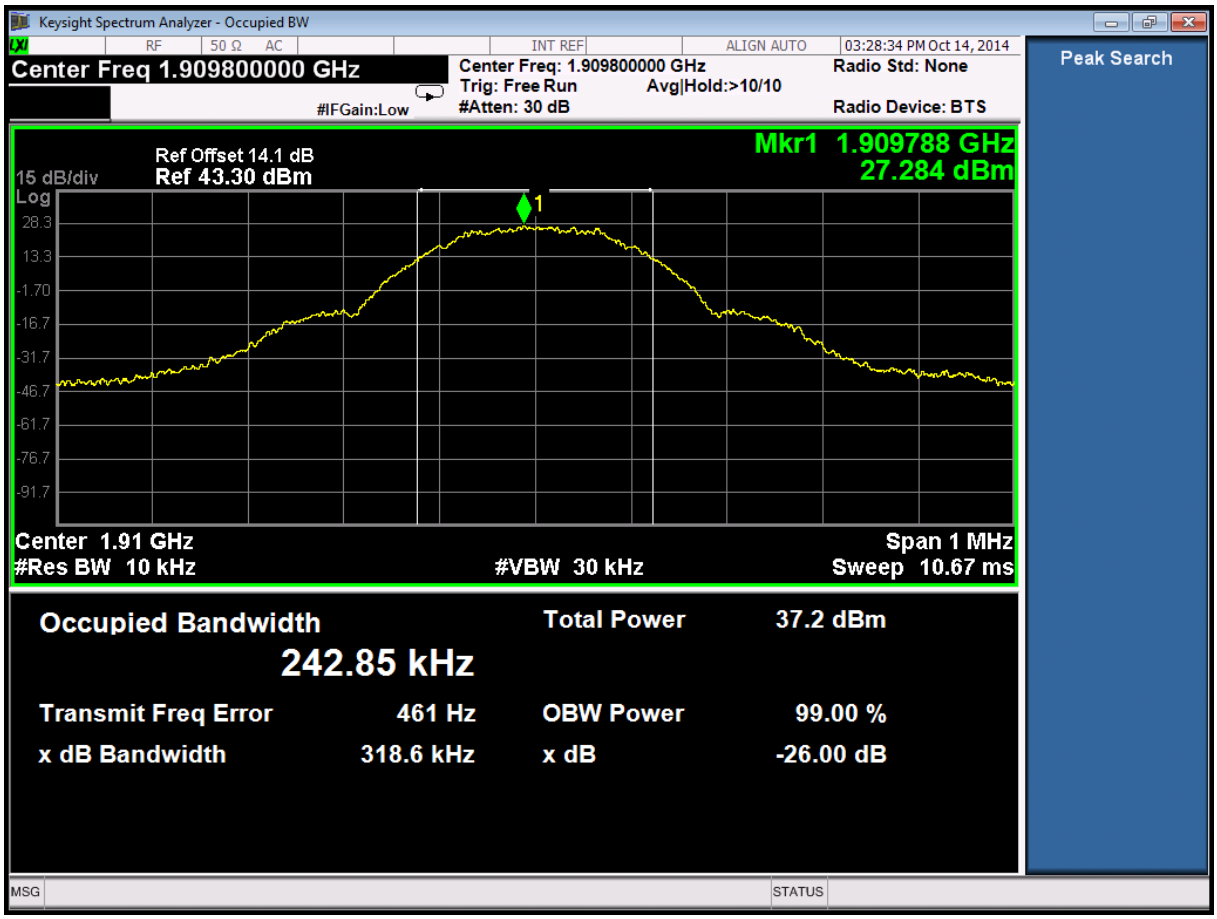
6.1.2.1.1 Test Channel = LCH



6.1.2.1.2 Test Channel = MCH

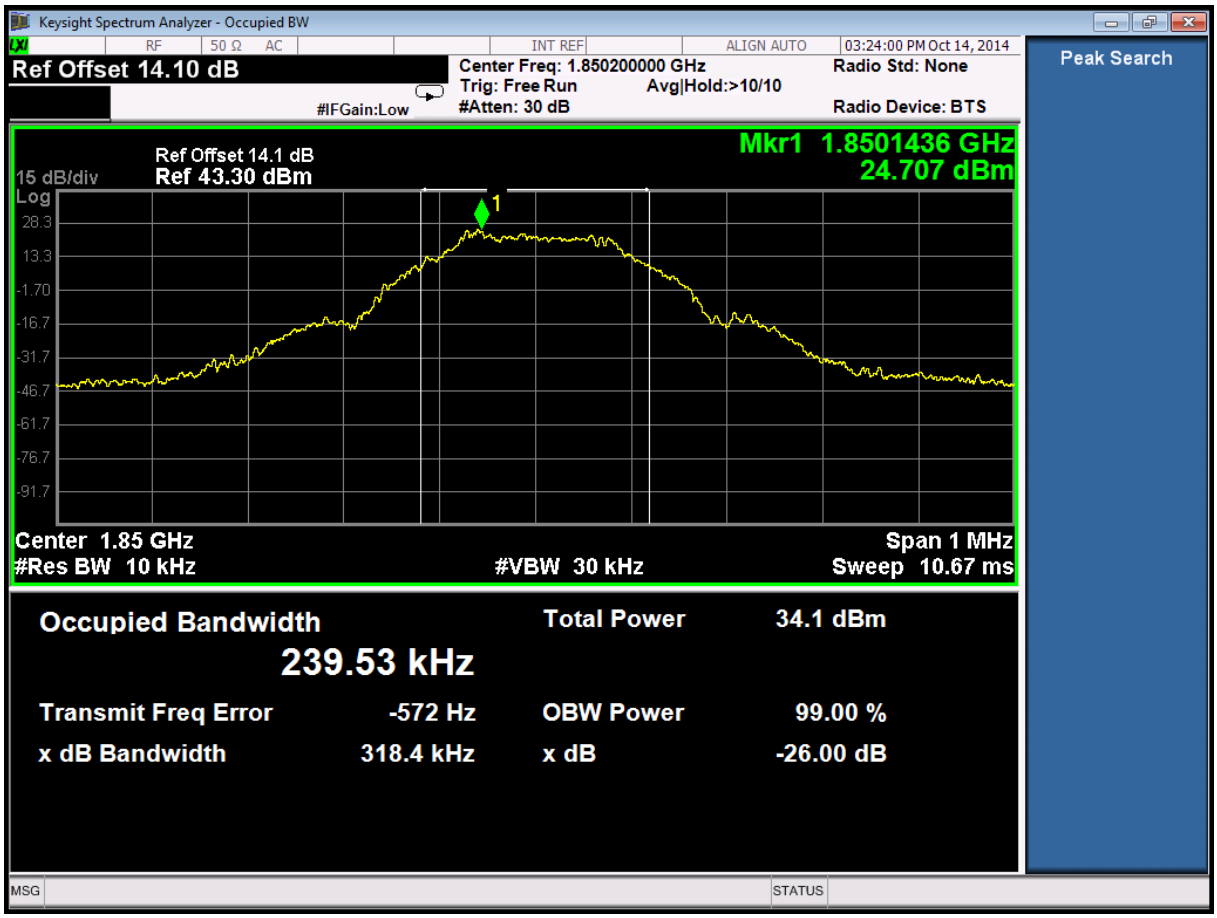


6.1.2.1.3 Test Channel = HCH

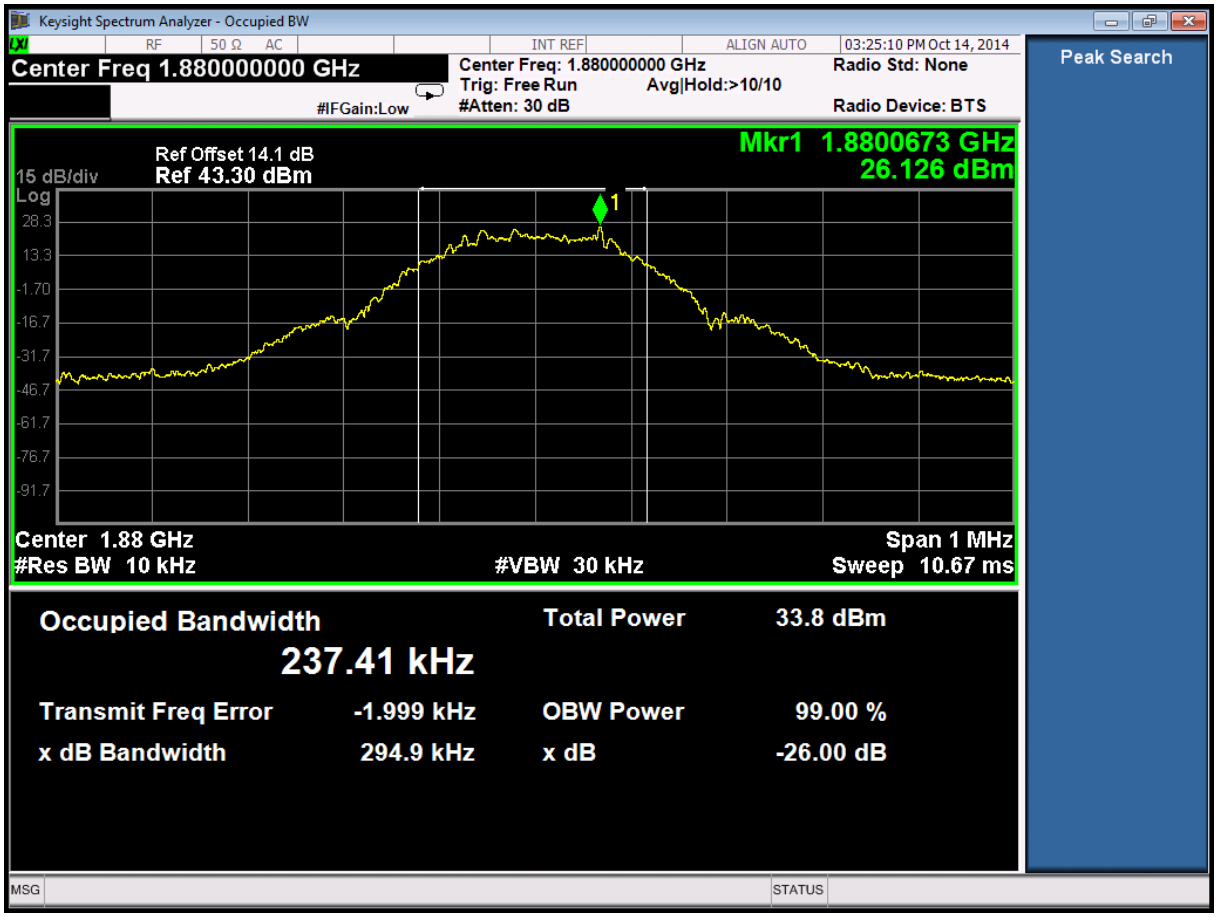


6.1.2.2 Test Mode = GSM/TM2

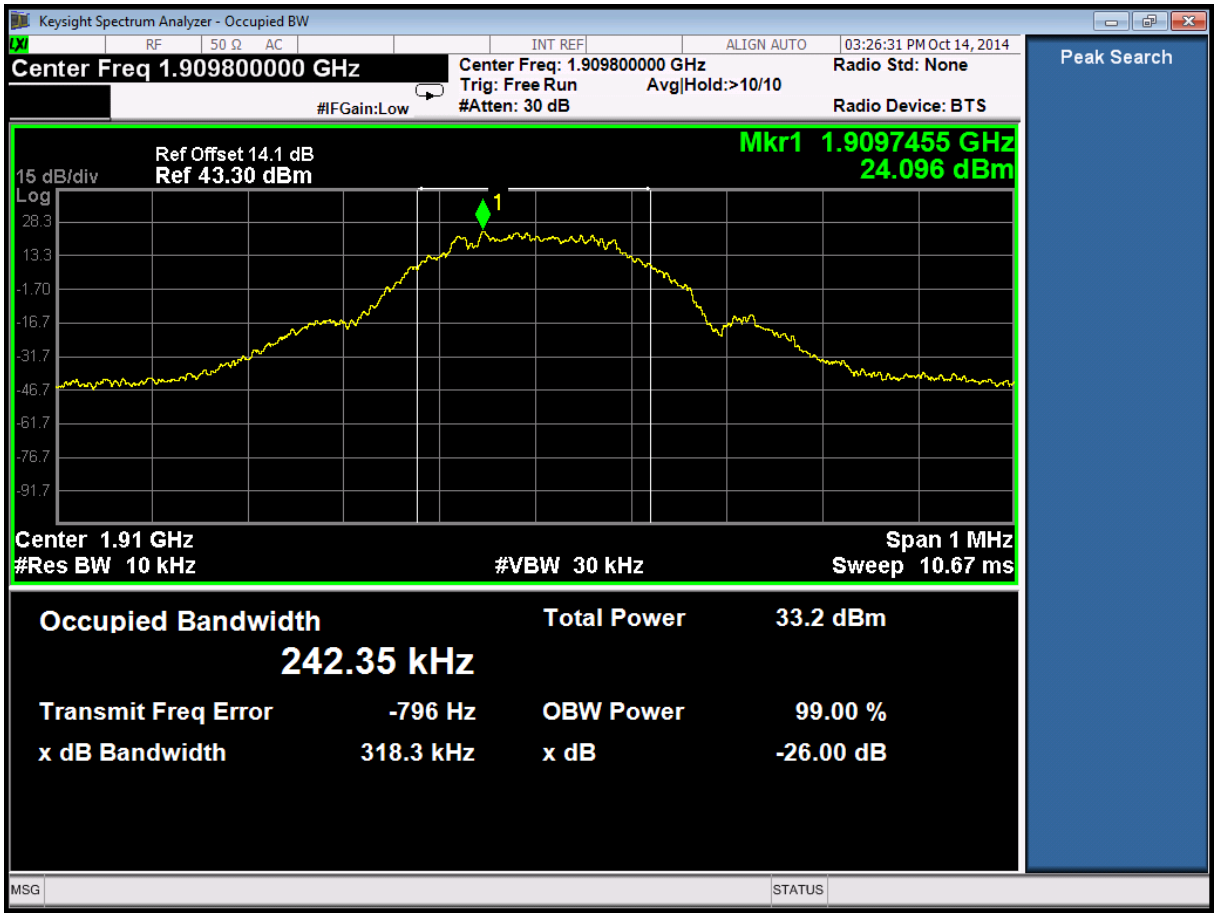
6.1.2.2.1 Test Channel = LCH



6.1.2.2.2 Test Channel = MCH



6.1.2.2.3 Test Channel = HCH

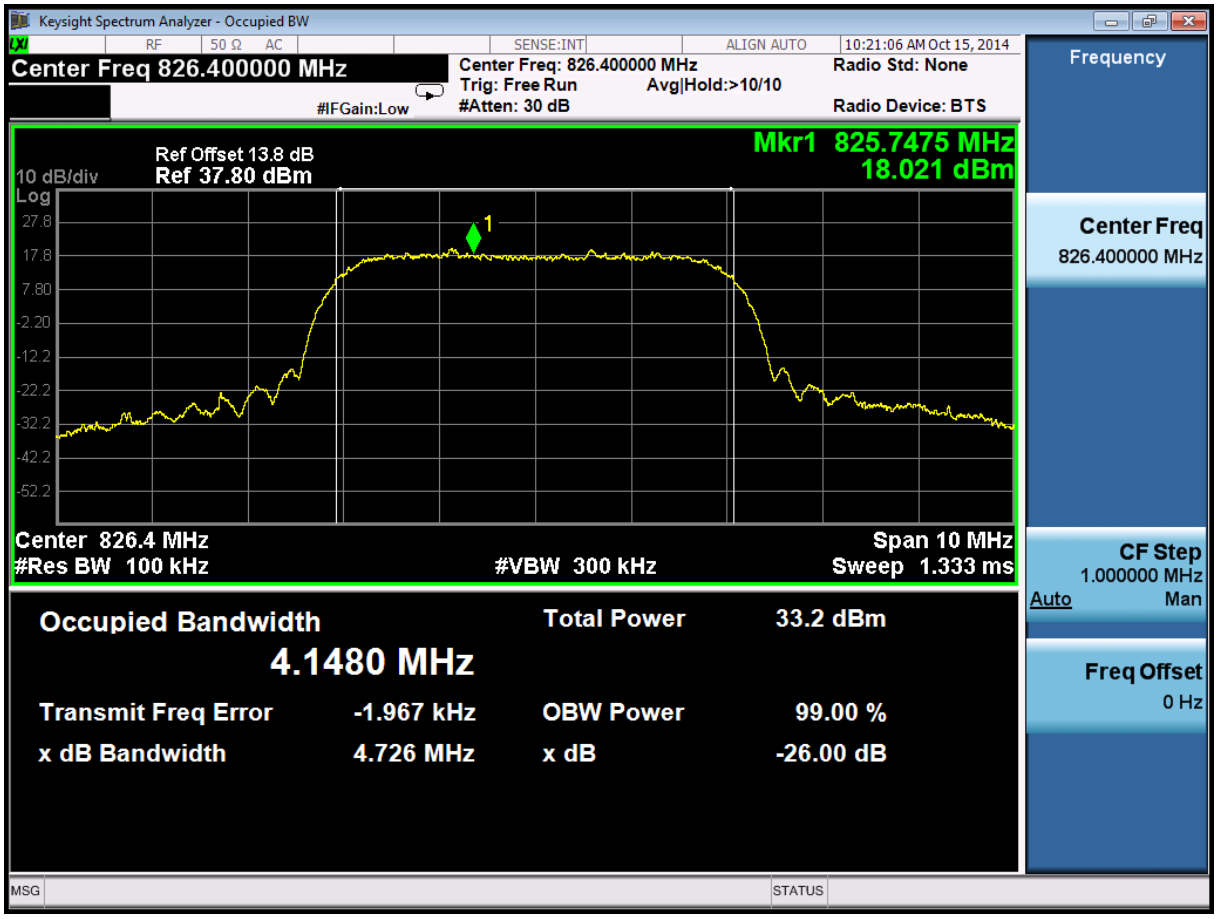


6.2 For UMTS

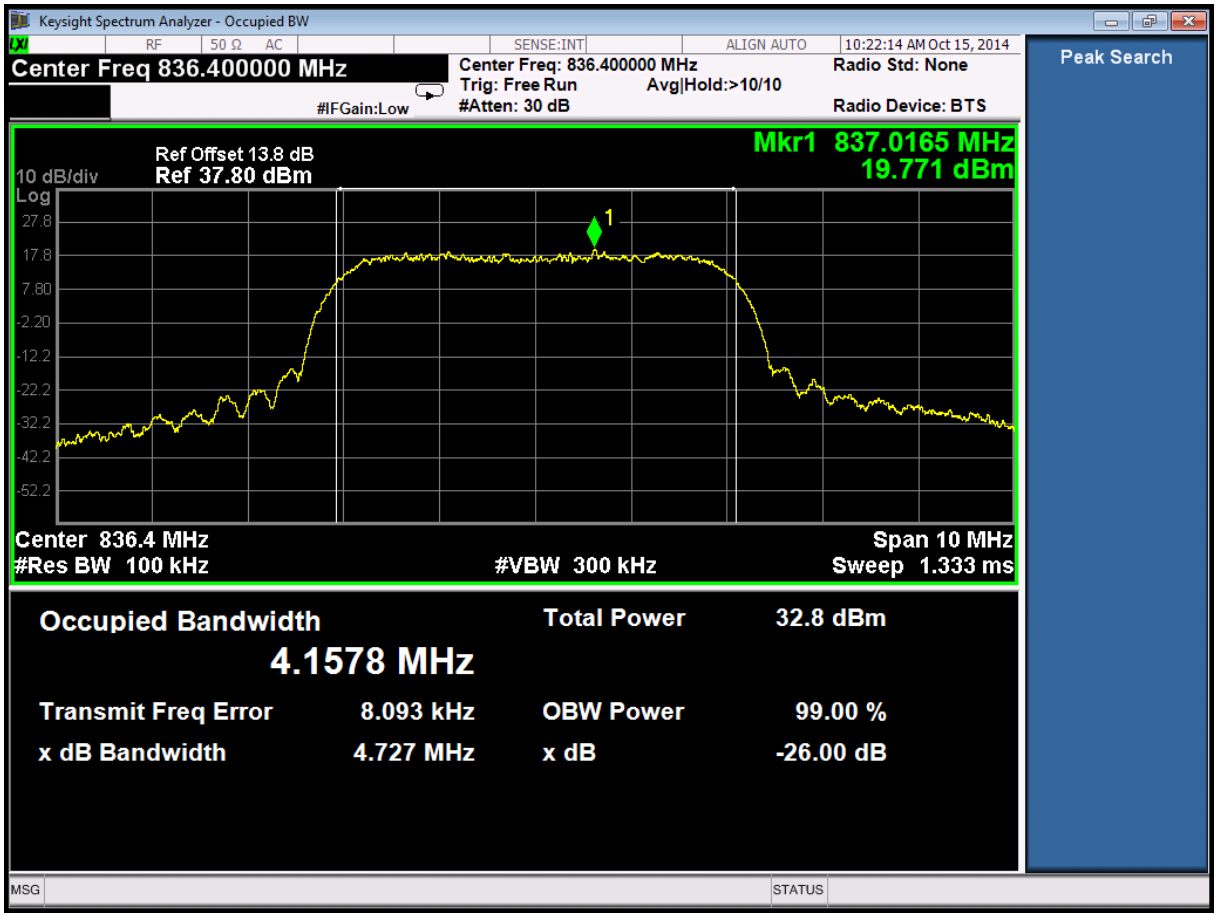
6.2.1 Test Band = WCDMA850

6.2.1.1 Test Mode = UMTS/TM1

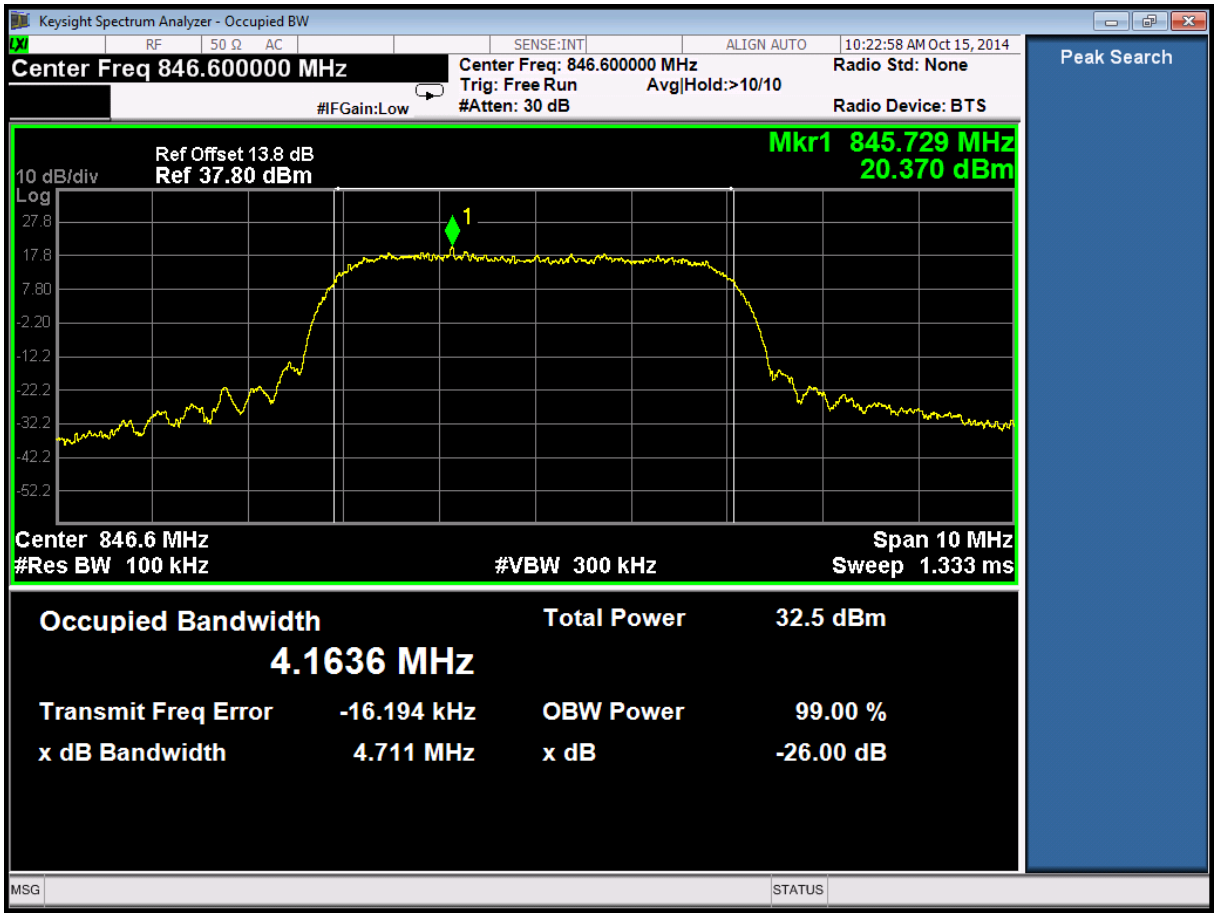
6.2.1.1.1 Test Channel = LCH



6.2.1.1.2 Test Channel = MCH



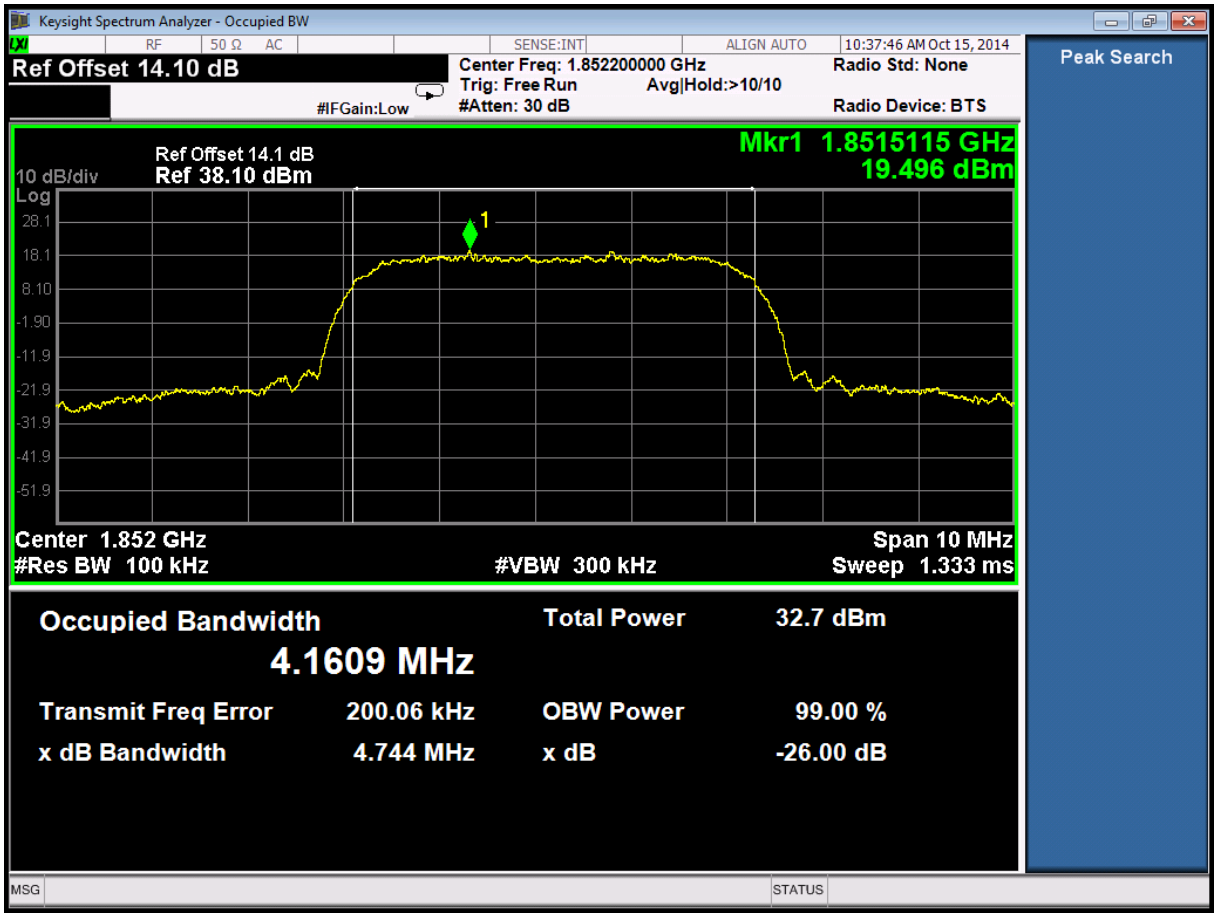
6.2.1.1.3 Test Channel = HCH



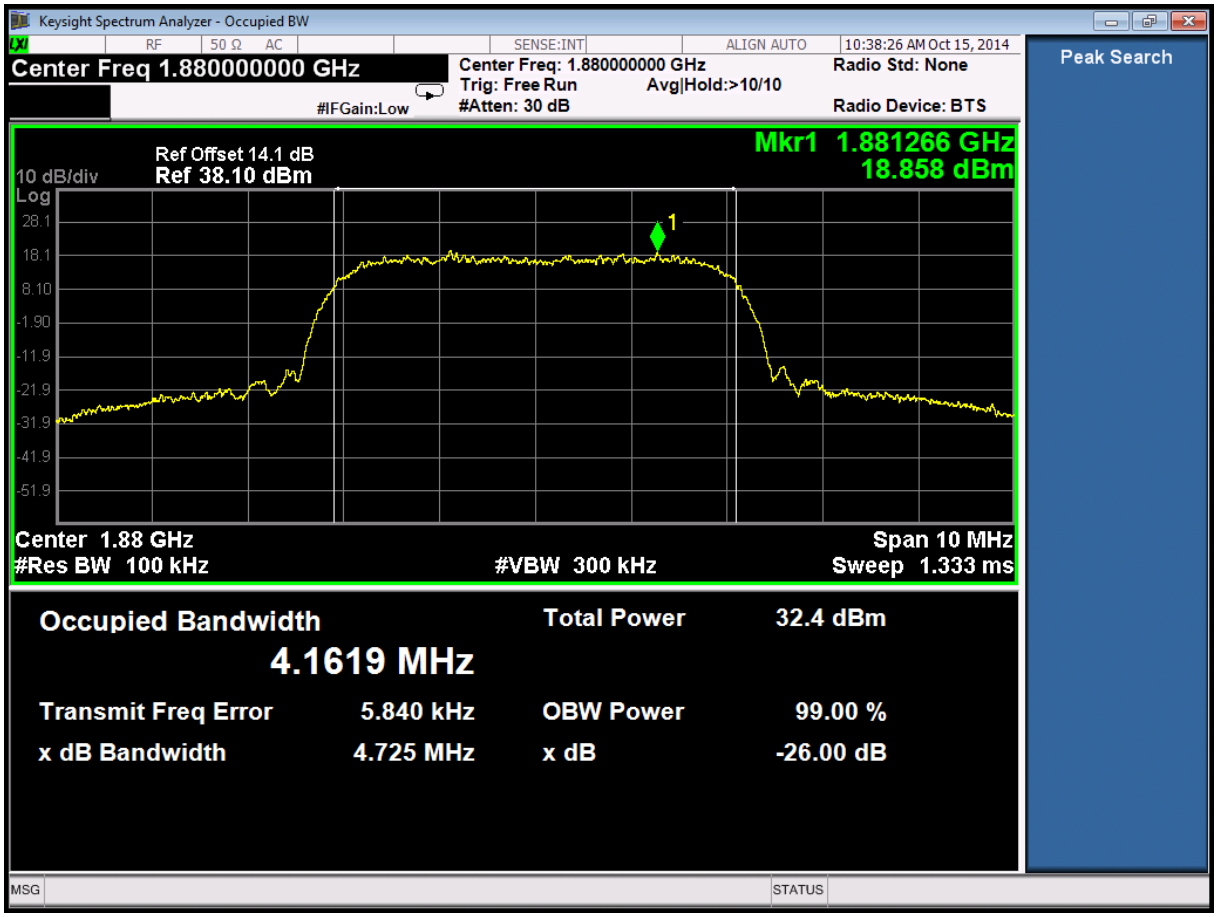
6.2.2 Test Band = WCDMA1900

6.2.2.1 Test Mode = UMTS/TM1

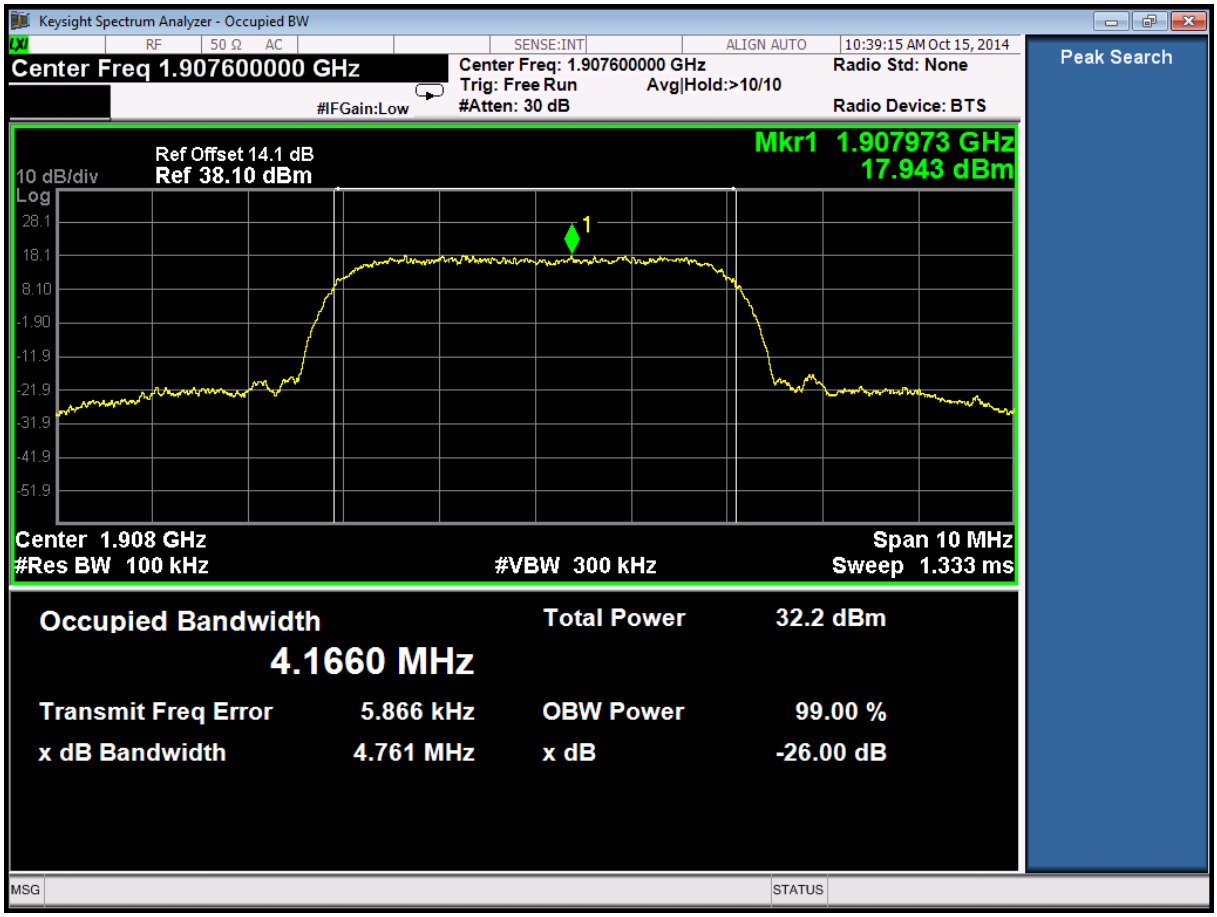
6.2.2.1.1 Test Channel = LCH



6.2.2.1.2 Test Channel = MCH



6.2.2.1.3 Test Channel = HCH



7 Appendix_E: Band Edges Compliance

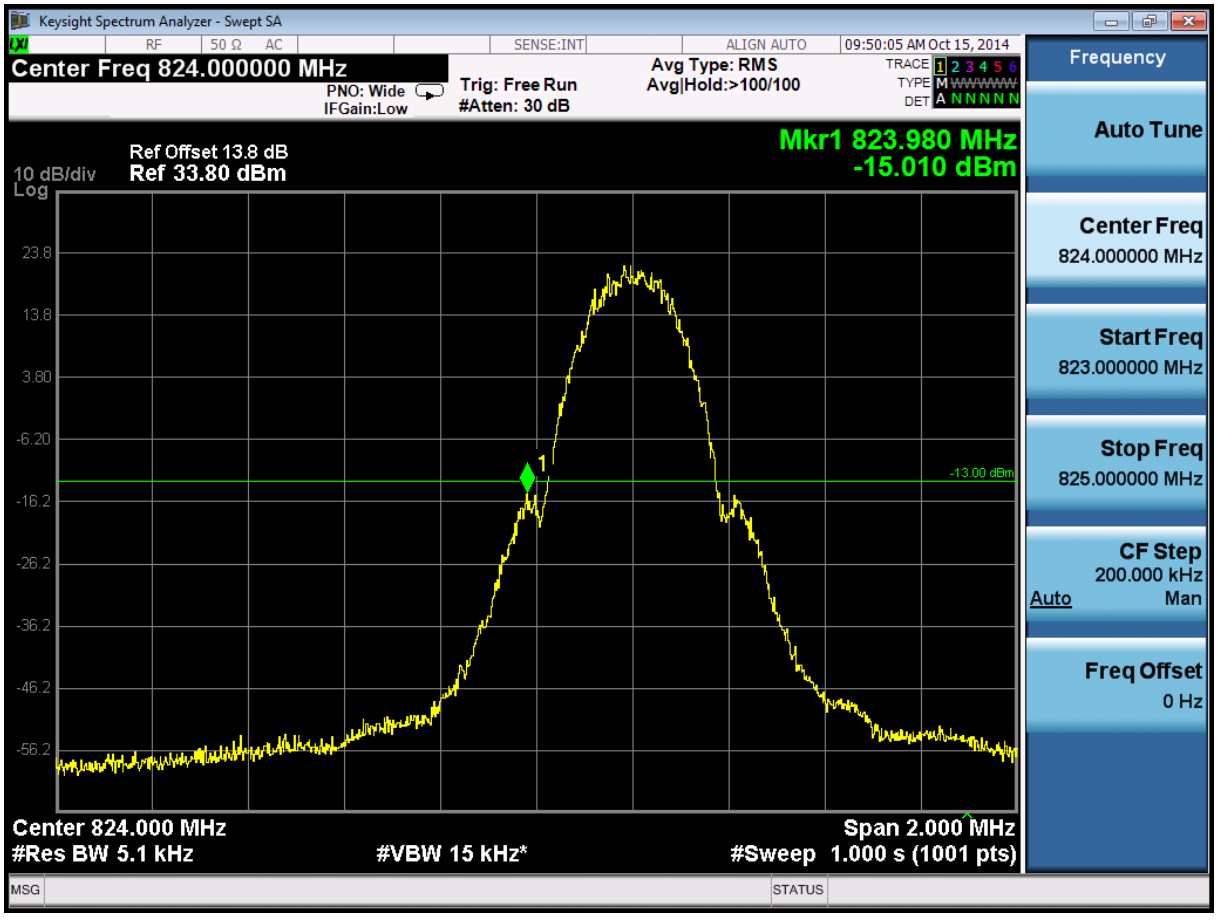
Part I - Test Plots

7.1 For GSM

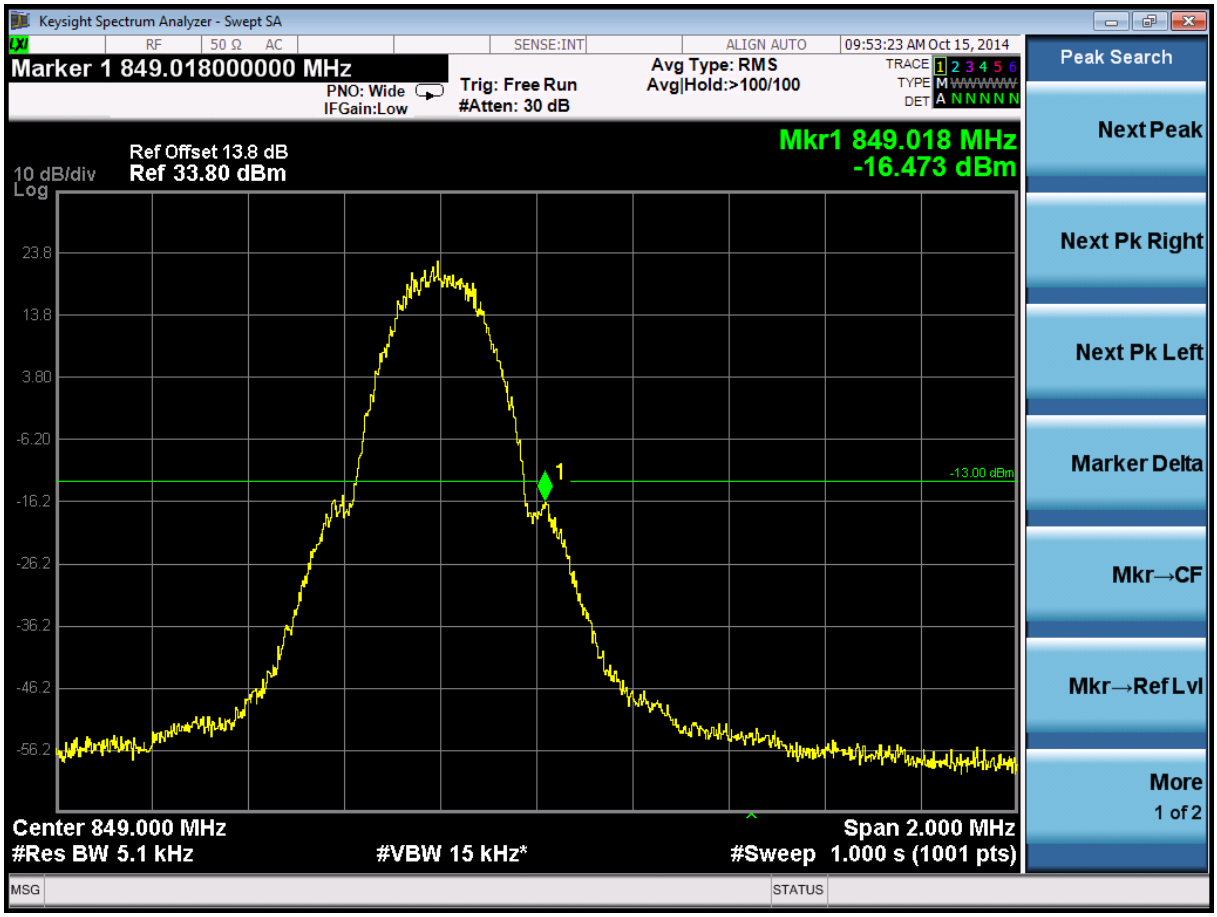
7.1.1 Test Band = GSM850

7.1.1.1 Test Mode = GSM/TM1

7.1.1.1.1 Test Channel = LCH

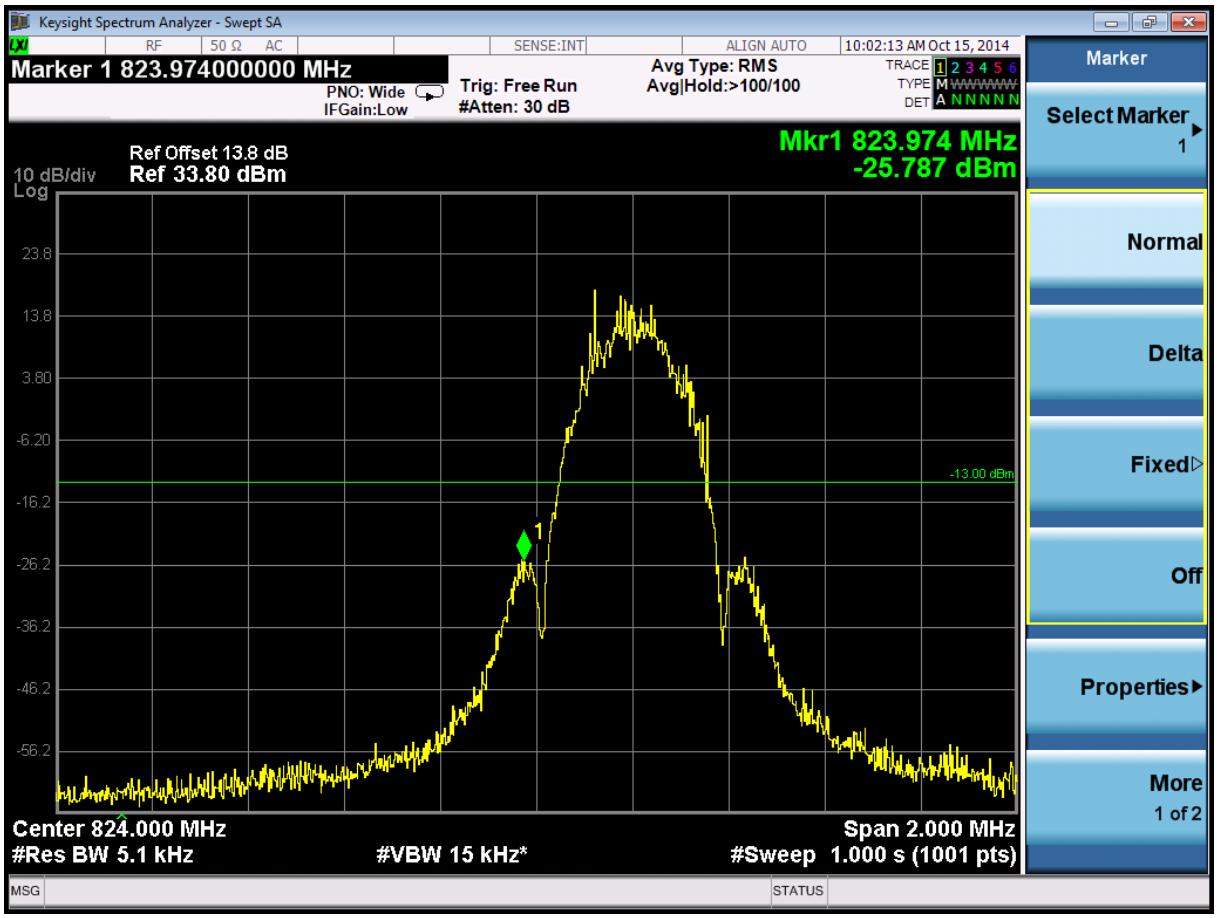


7.1.1.1.2 Test Channel = HCH

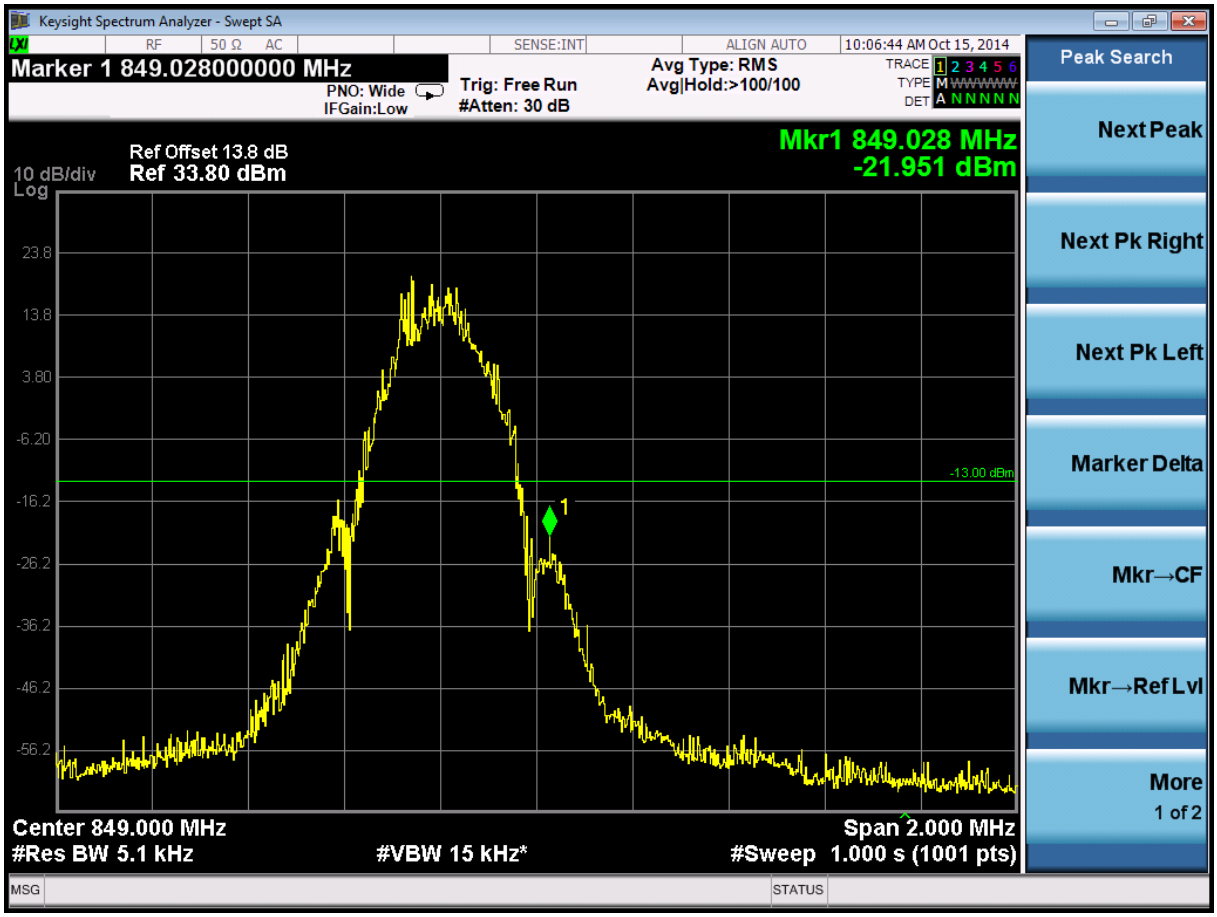


7.1.1.2 Test Mode = GSM/TM2

7.1.1.2.1 Test Channel = LCH



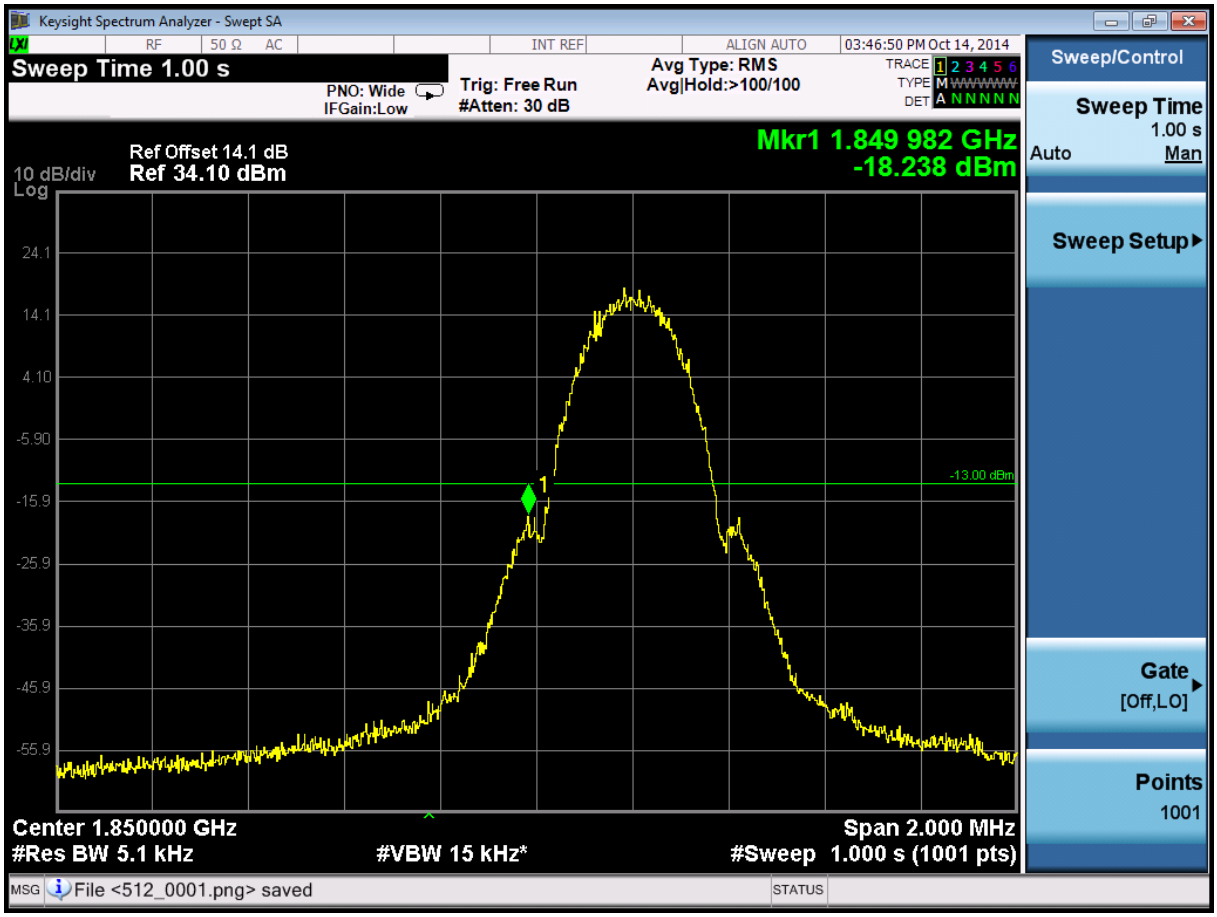
7.1.1.2.2 Test Channel = HCH



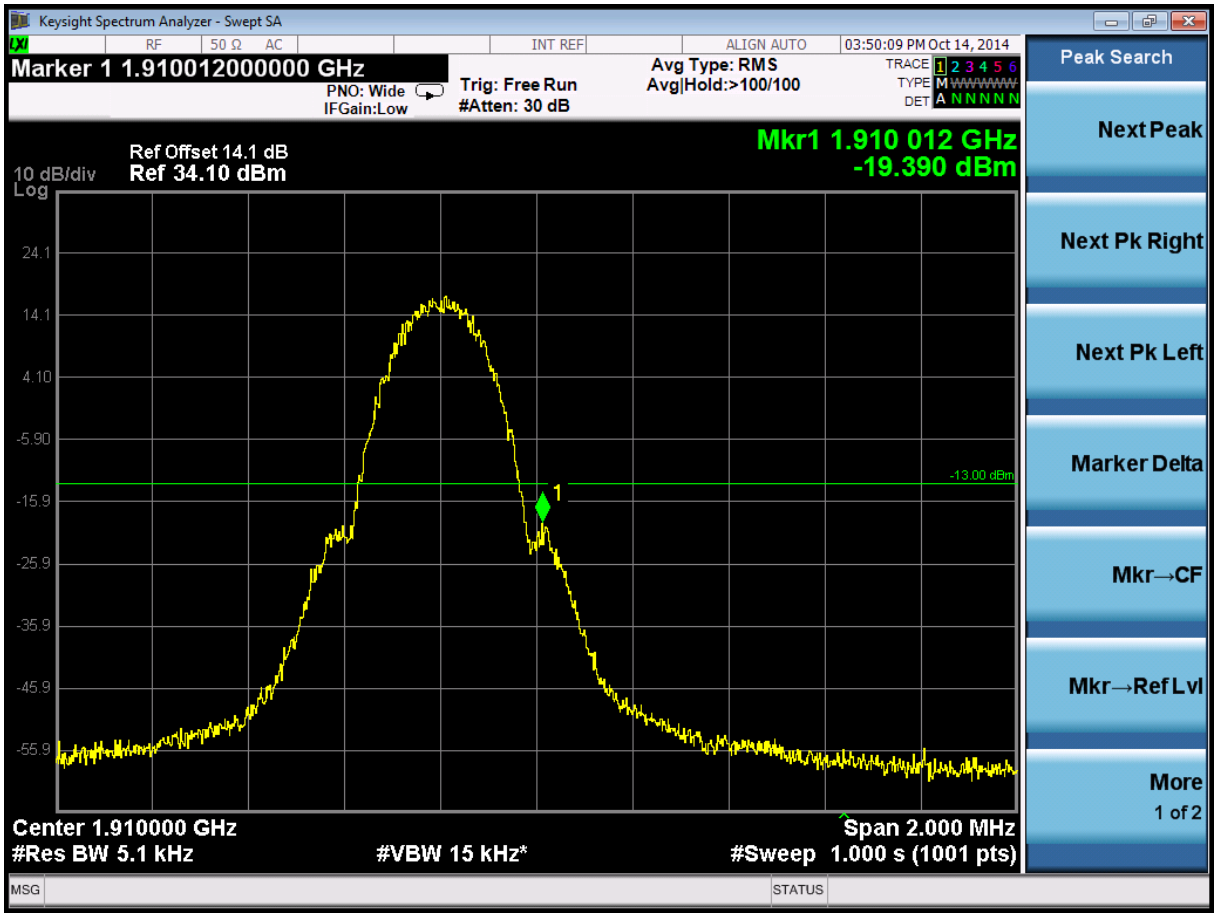
7.1.2 Test Band = GSM1900

7.1.2.1 Test Mode = GSM/TM1

7.1.2.1.1 Test Channel = LCH

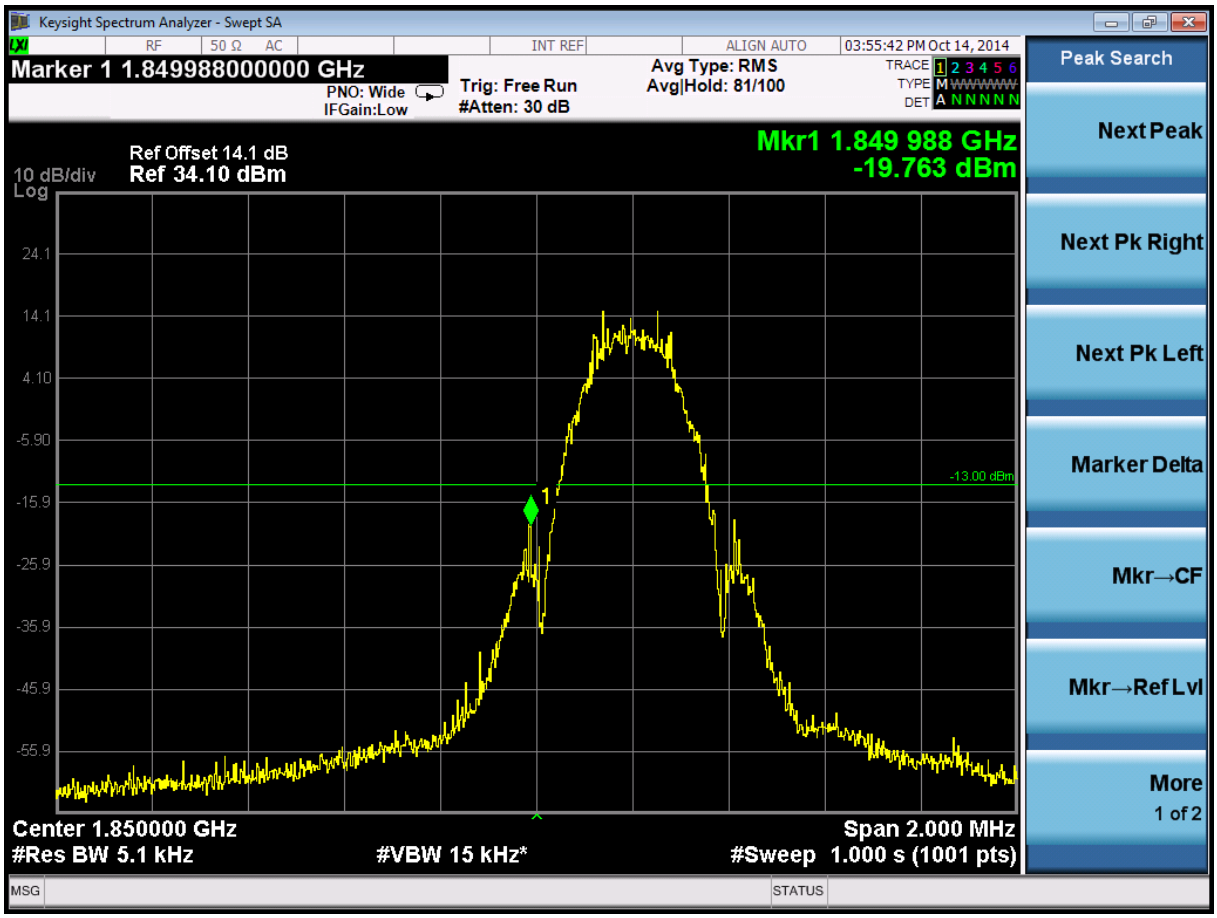


7.1.2.1.2 Test Channel = HCH

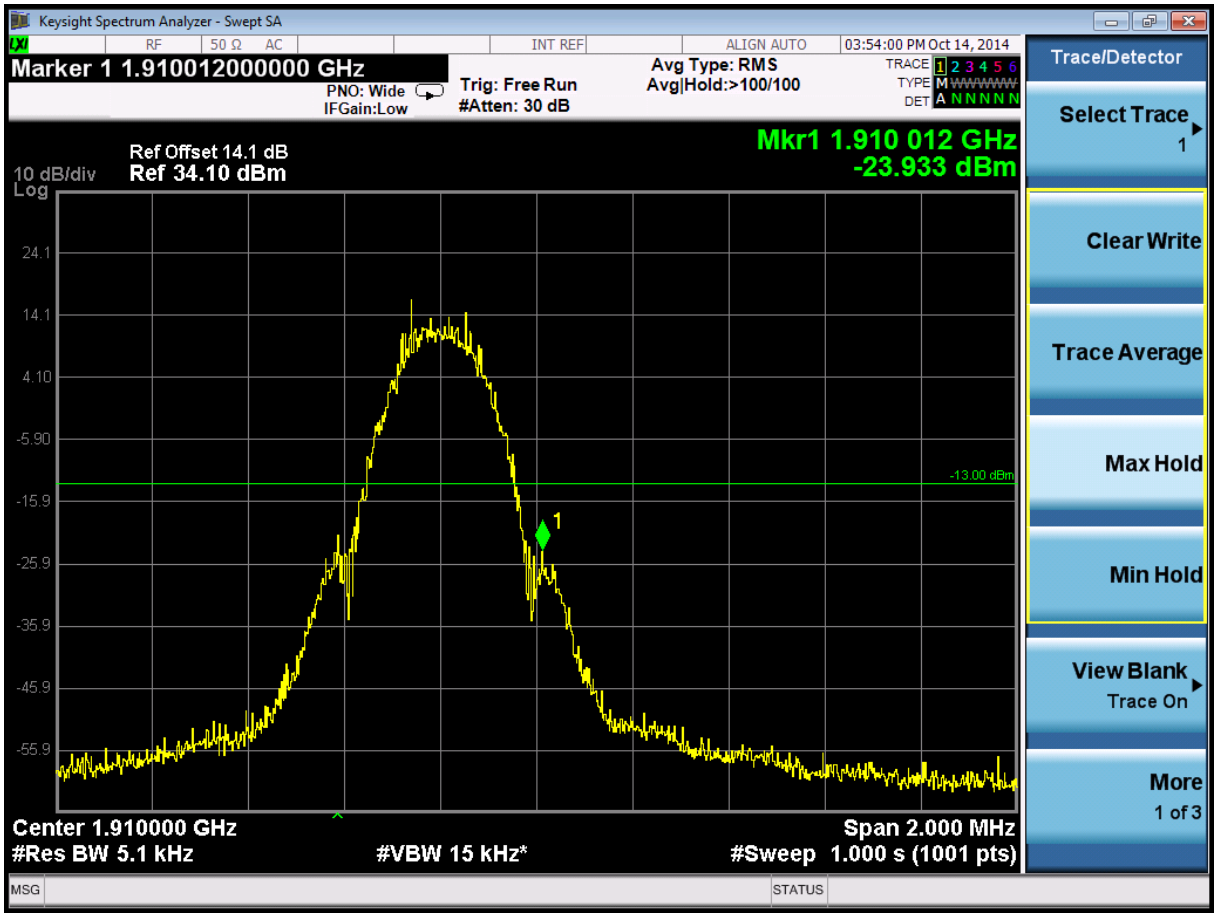


7.1.2.2 Test Mode = GSM/TM2

7.1.2.2.1 Test Channel = LCH



7.1.2.2.2 Test Channel = HCH



7.2 For UMTS

7.2.1 Test Band = WCDMA850

7.2.1.1 Test Mode = UMTS/TM1

7.2.1.1.1 Test Channel = LCH

7.2.1.1.2 Test Channel = HCH

7.2.2 Test Band = WCDMA1900

7.2.2.1 Test Mode = UMTS/TM1

7.2.2.1.1 Test Channel = LCH

7.2.2.1.2 Test Channel = HCH

8 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.

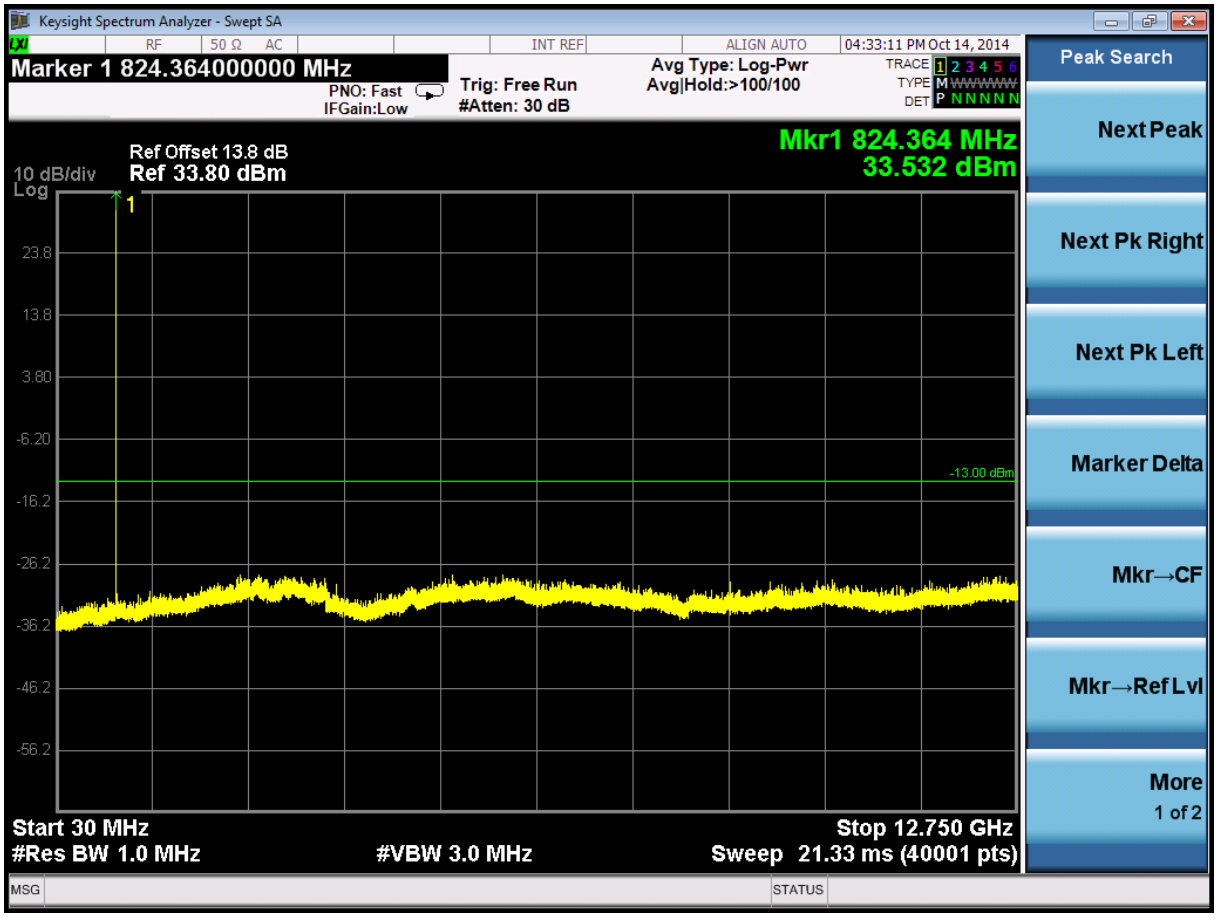
Part I - Test Plots

8.1 For GSM

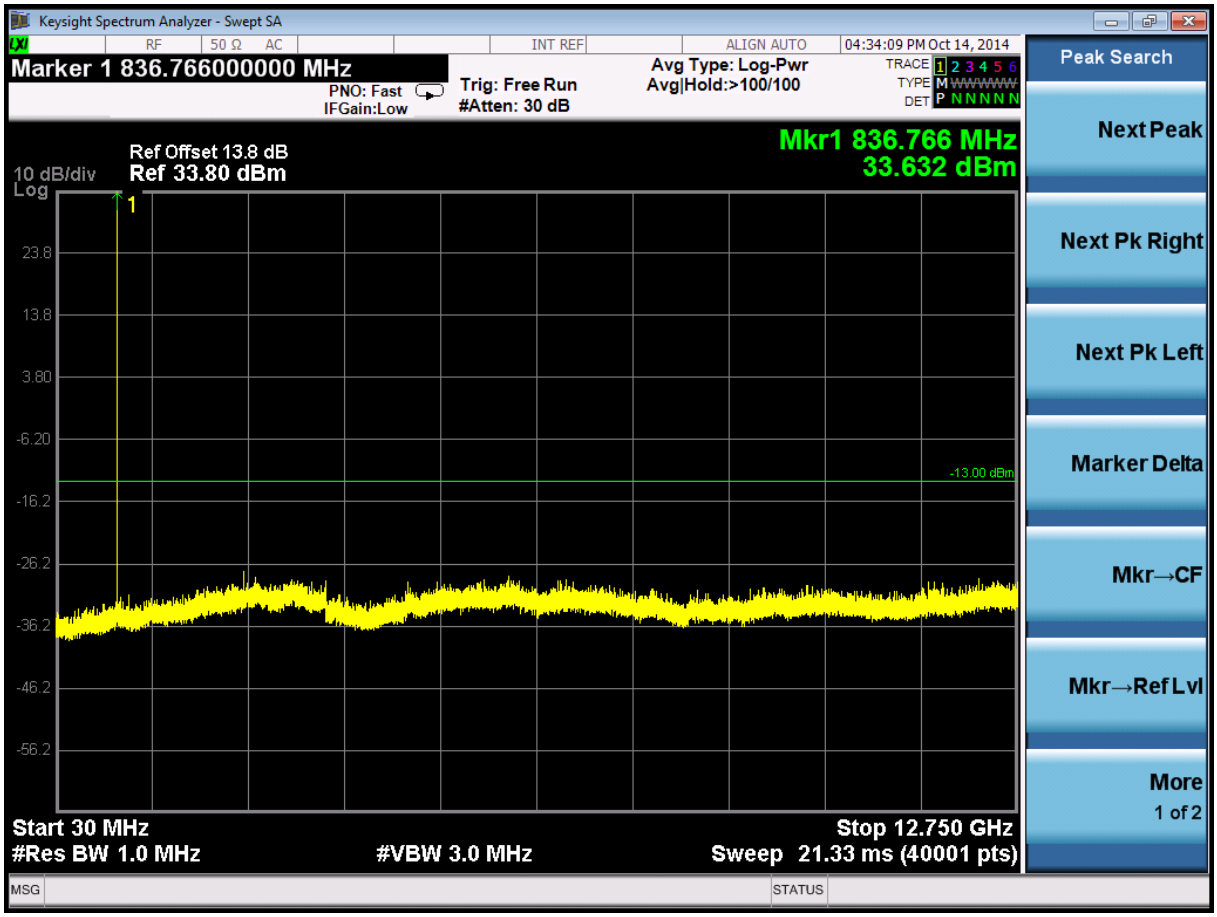
8.1.1 Test Band = GSM850

8.1.1.1 Test Mode = GSM/TM1

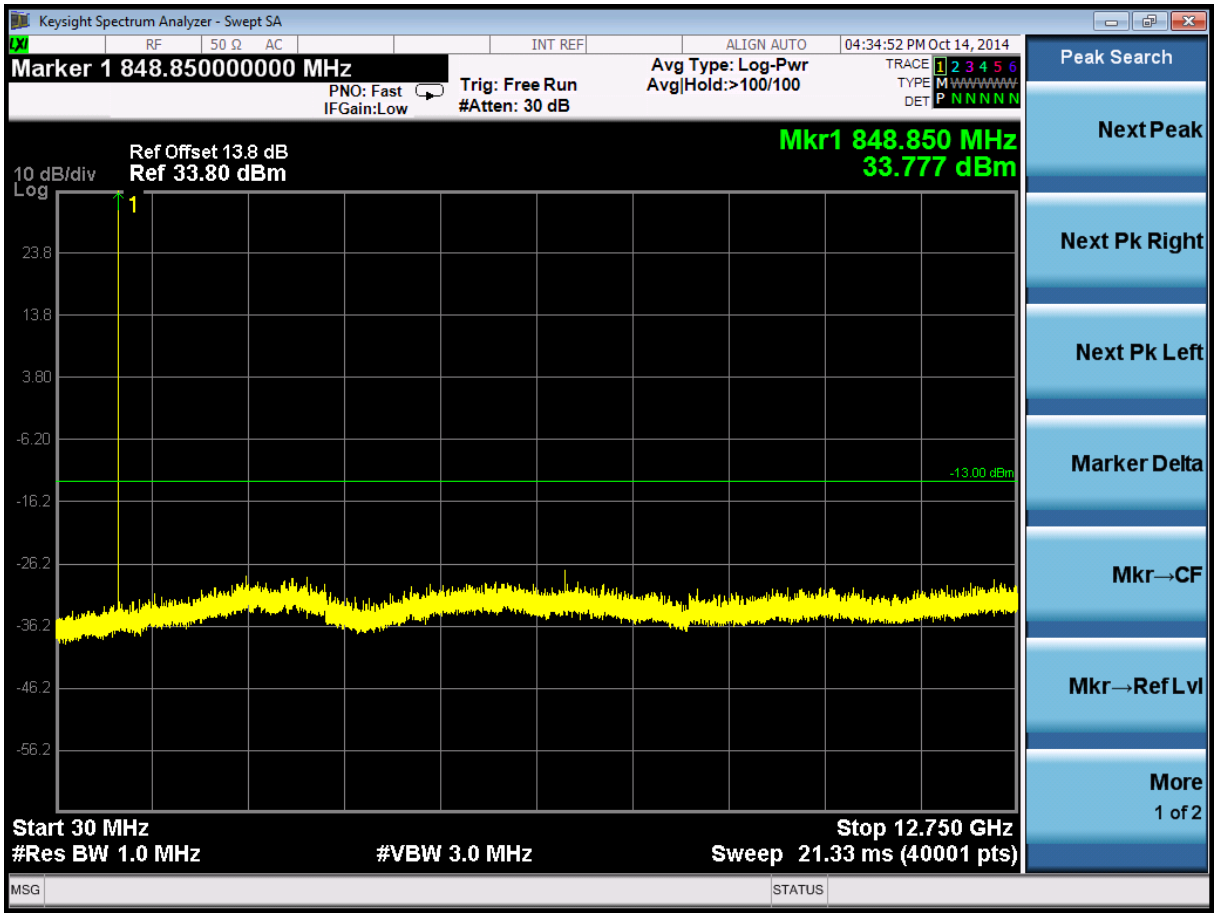
8.1.1.1.1 Test Channel = LCH



8.1.1.1.2 Test Channel = MCH

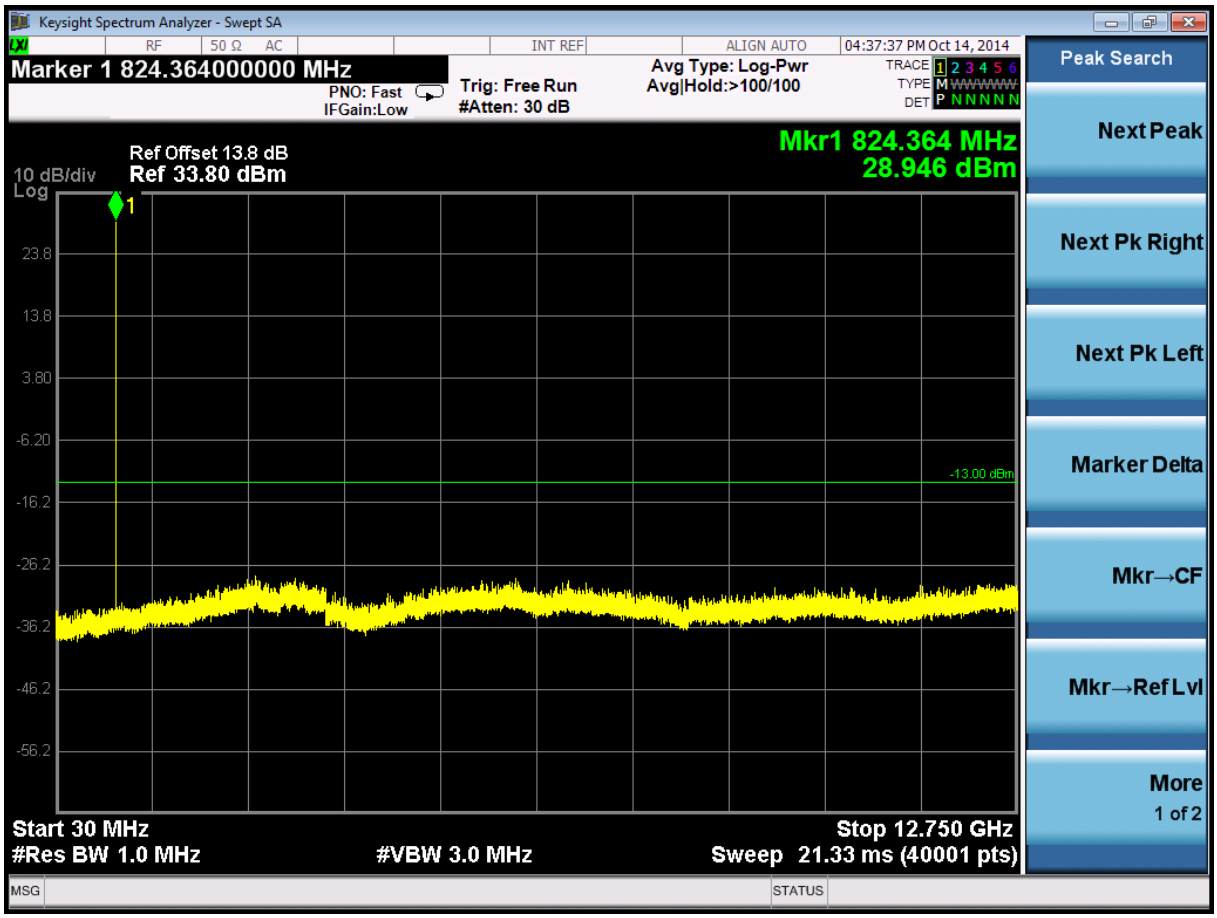


8.1.1.1.3 Test Channel = HCH

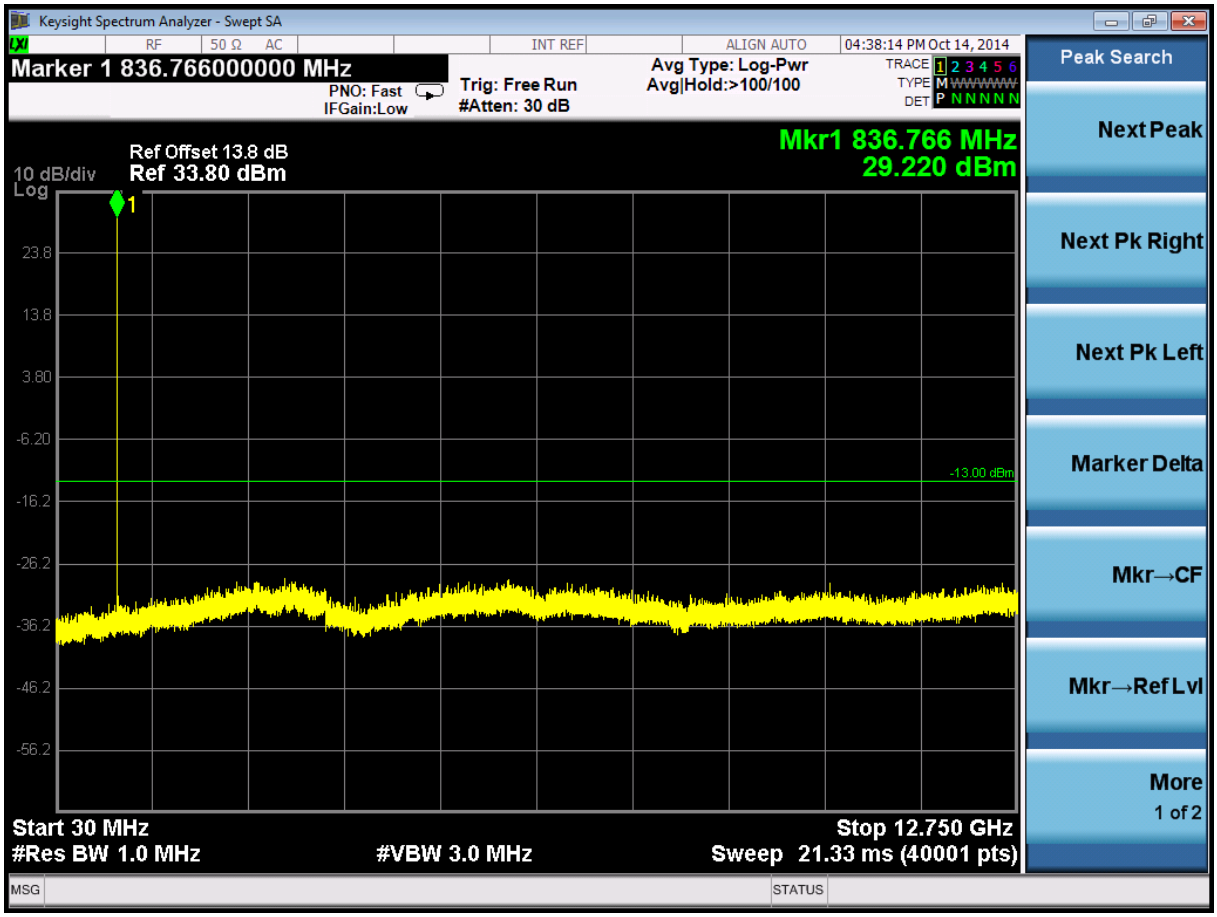


8.1.1.2 Test Mode = GSM/TM2

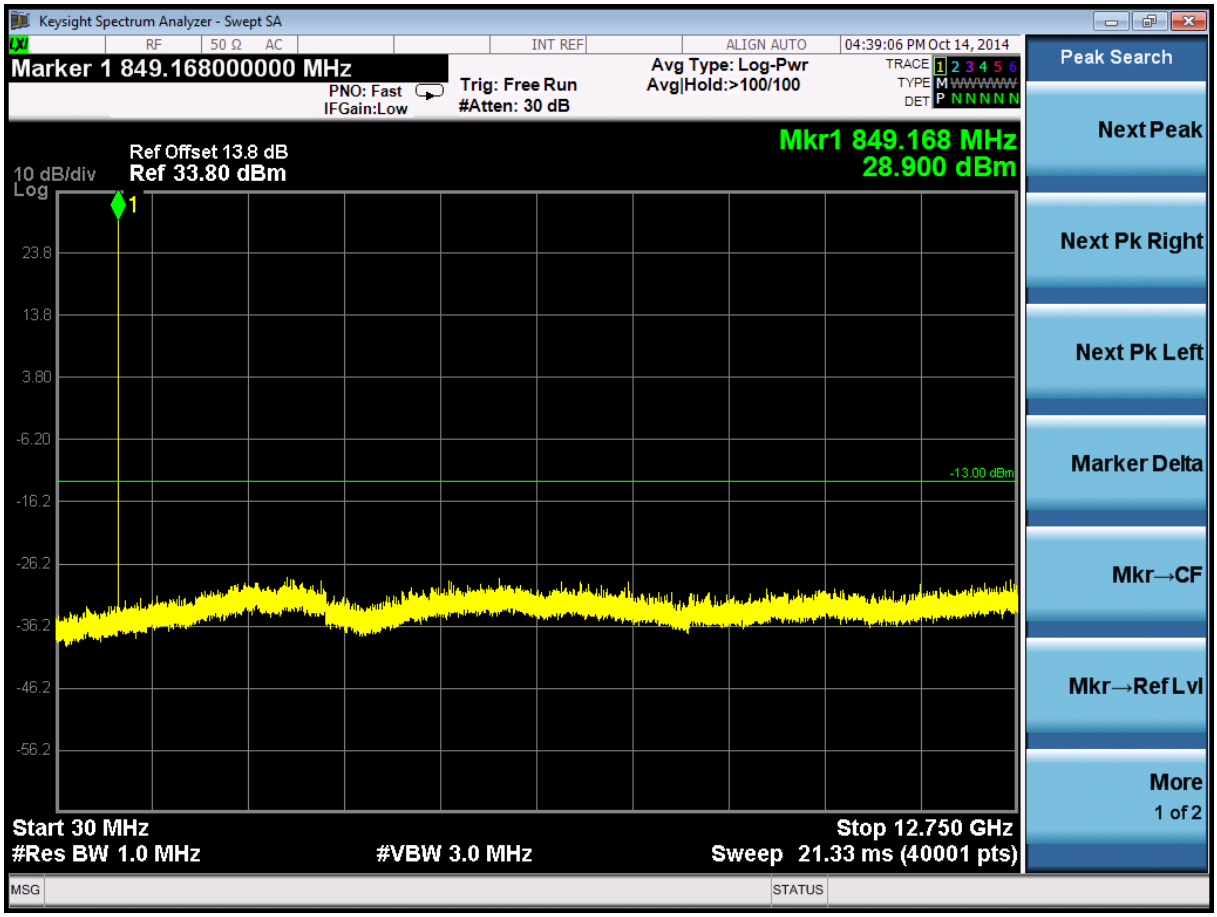
8.1.1.2.1 Test Channel = LCH



8.1.1.2.2 Test Channel = MCH



8.1.1.2.3 Test Channel = HCH

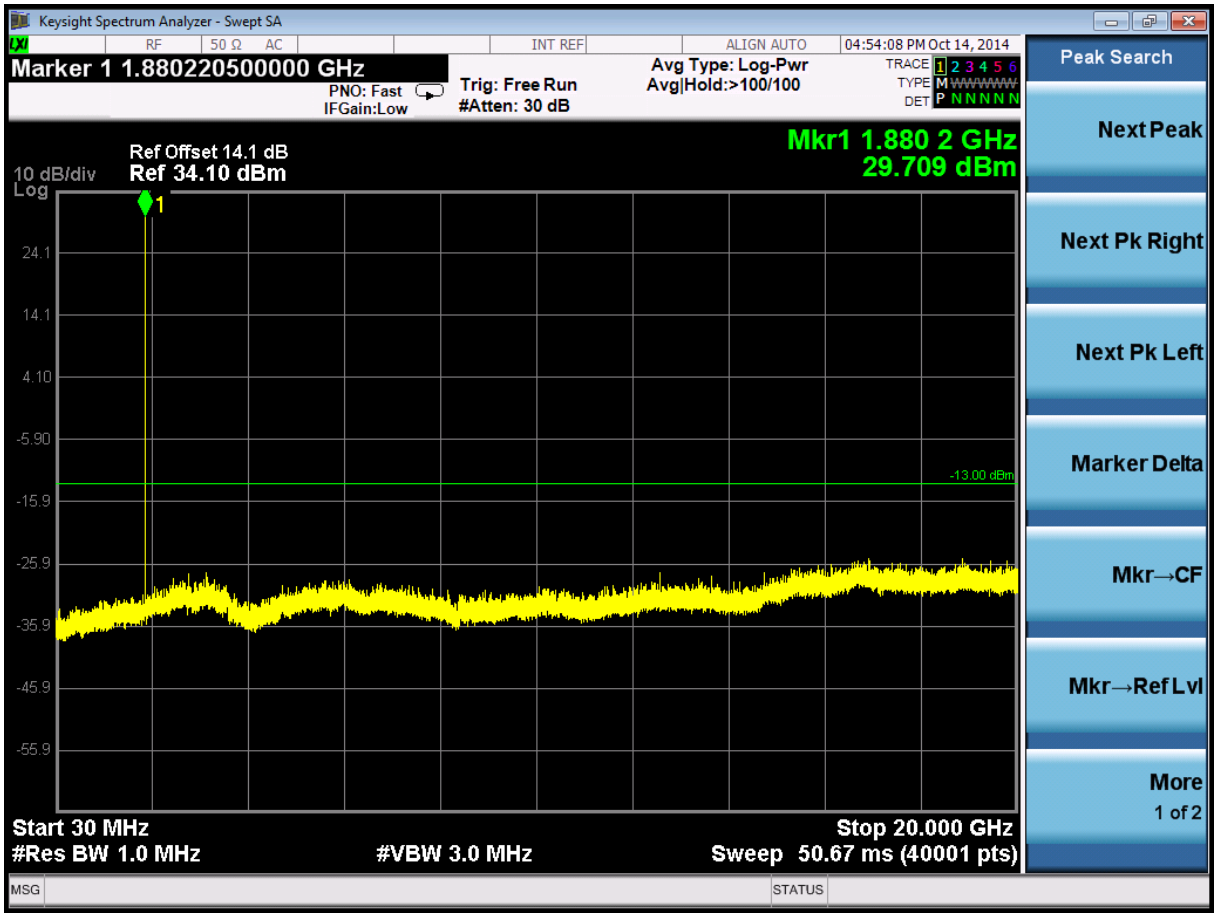


8.1.2 Test Band = GSM1900

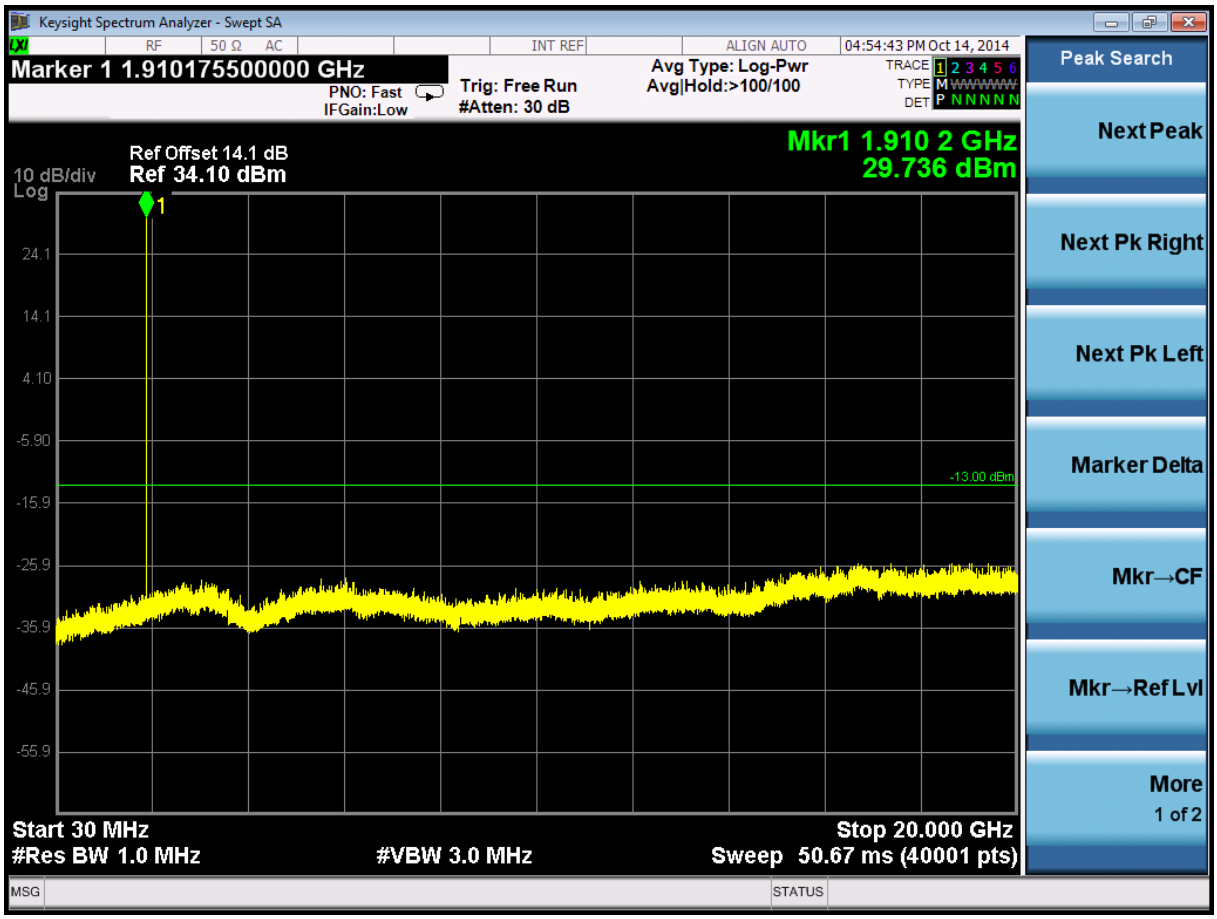
8.1.2.1 Test Mode = GSM/TM1

8.1.2.1.1 Test Channel = LCH

8.1.2.1.2 Test Channel = MCH



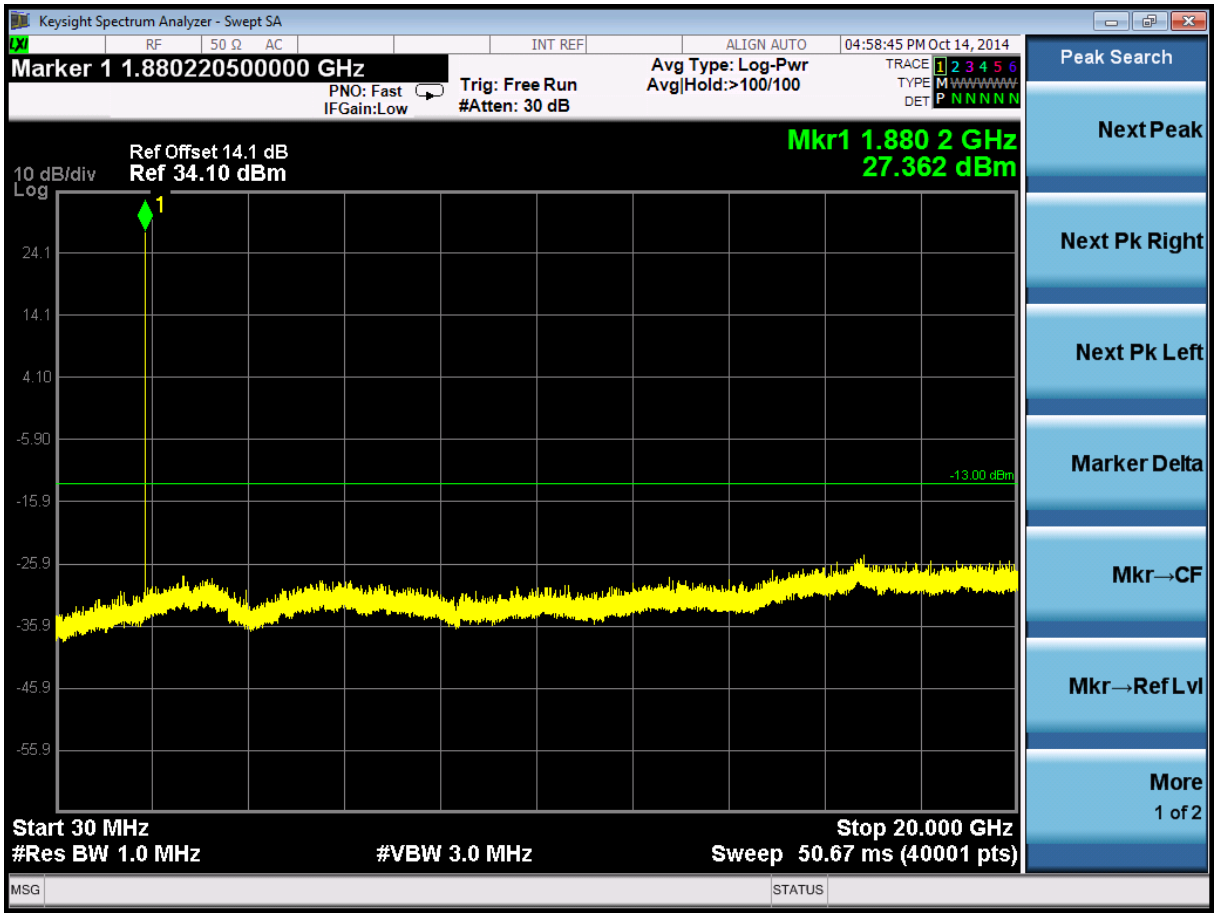
8.1.2.1.3 Test Channel = HCH



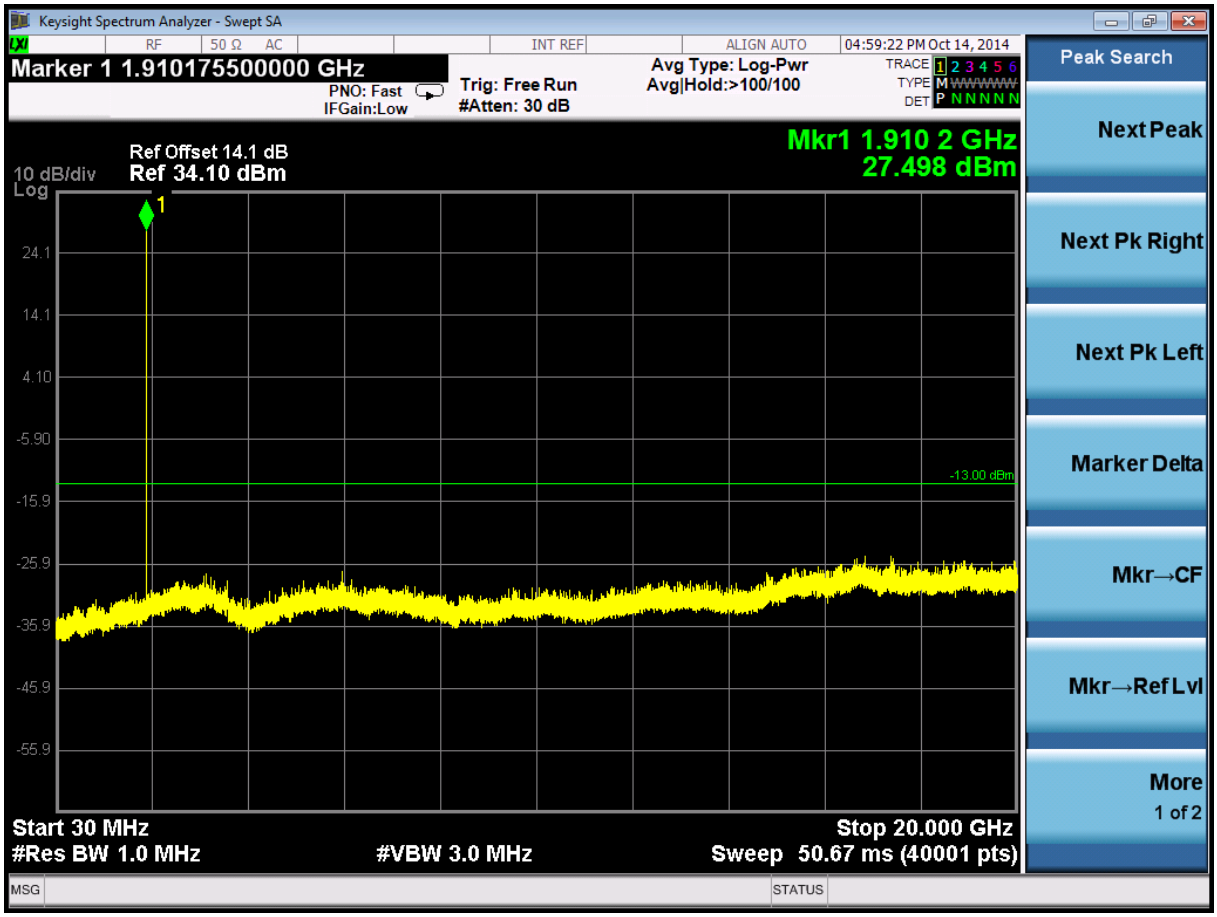
8.1.2.2 Test Mode = GSM/TM2

8.1.2.2.1 Test Channel = LCH

8.1.2.2.2 Test Channel = MCH



8.1.2.2.3 Test Channel = HCH

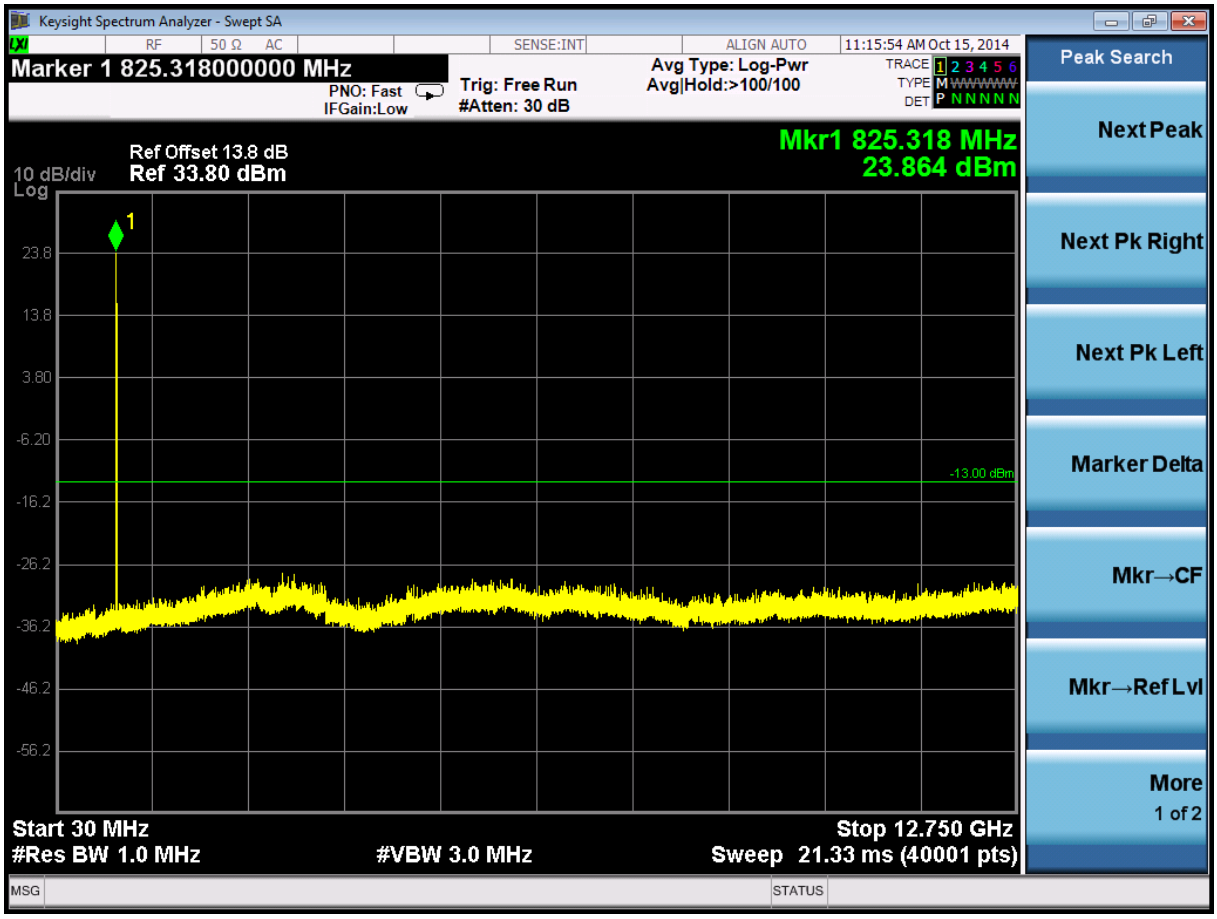


8.2 For UMTS

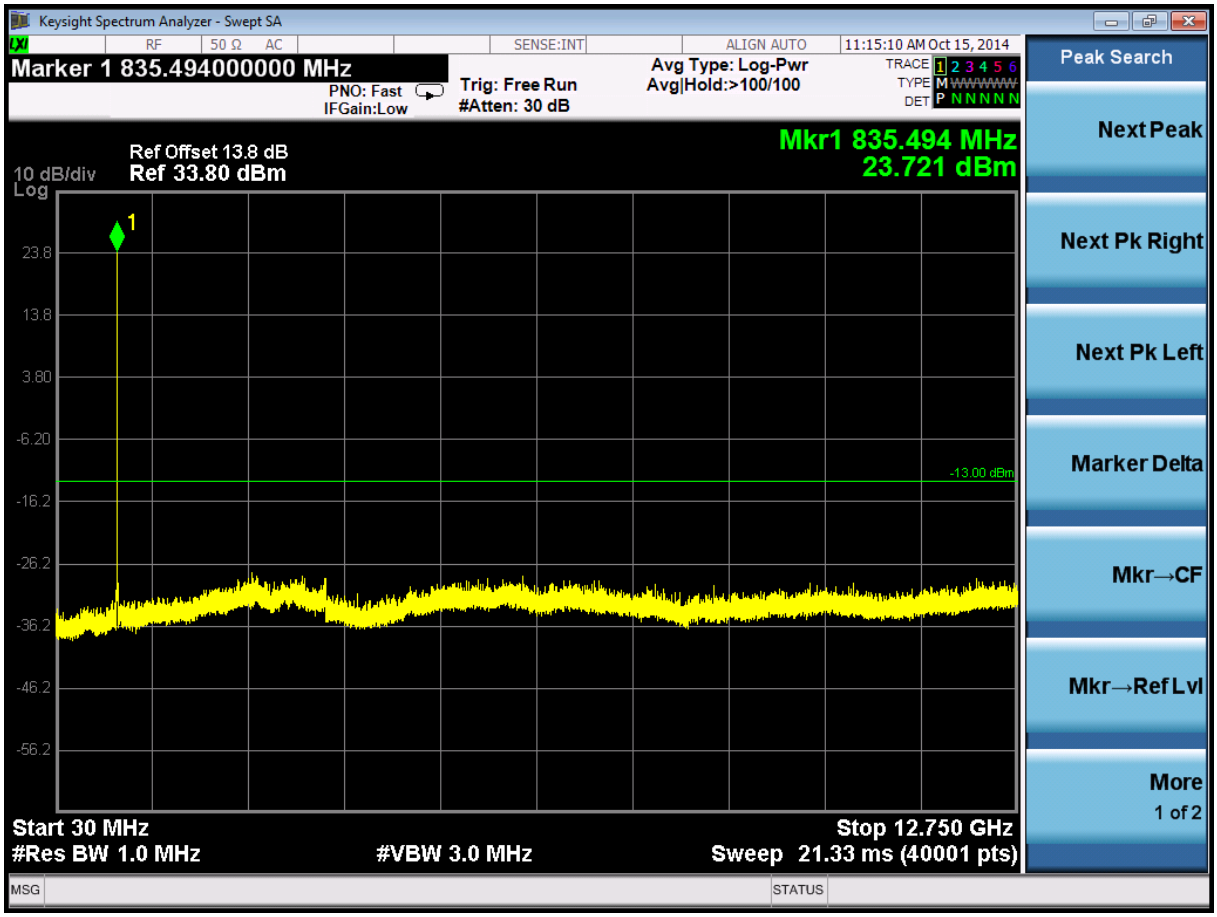
8.2.1 Test Band = WCDMA850

8.2.1.1 Test Mode = UMTS/TM1

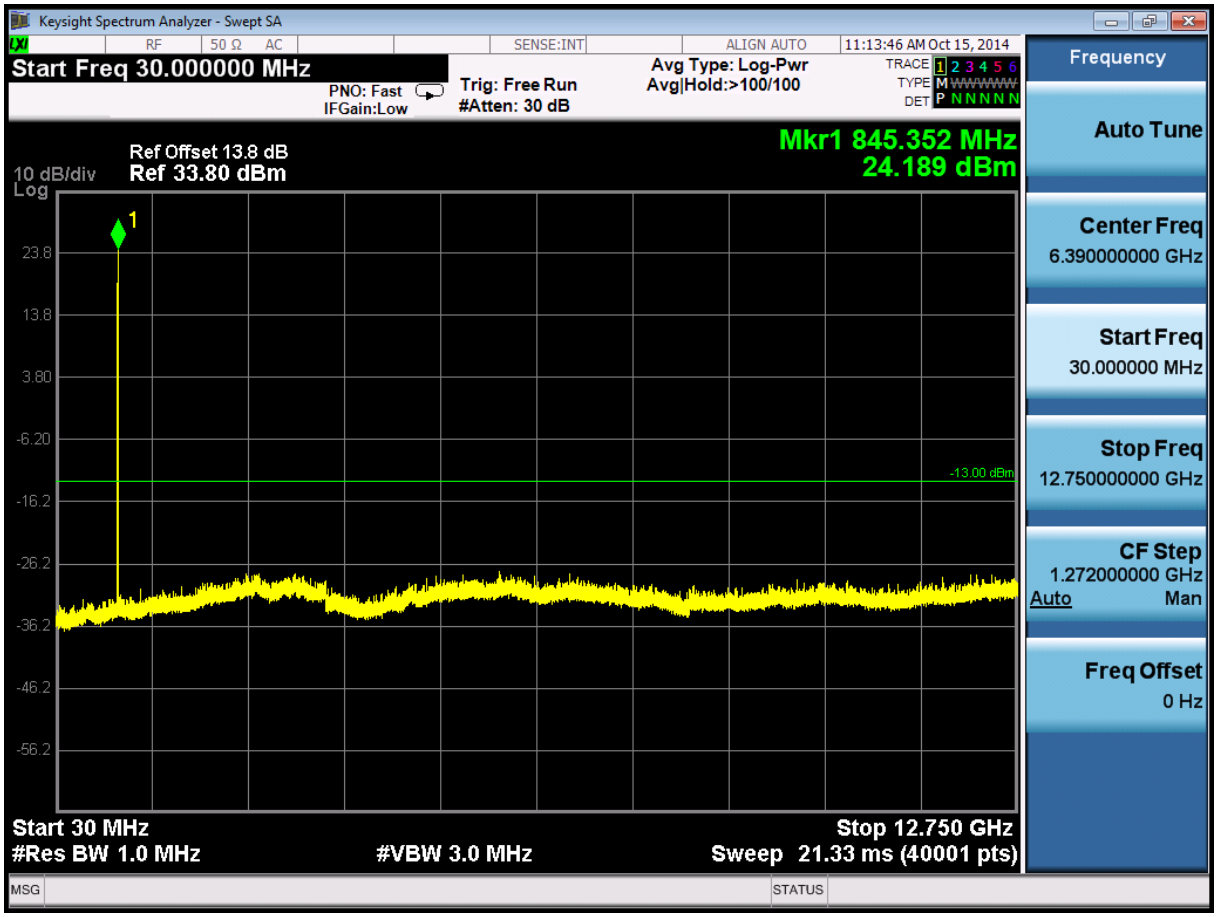
8.2.1.1.1 Test Channel = LCH



8.2.1.1.2 Test Channel = MCH



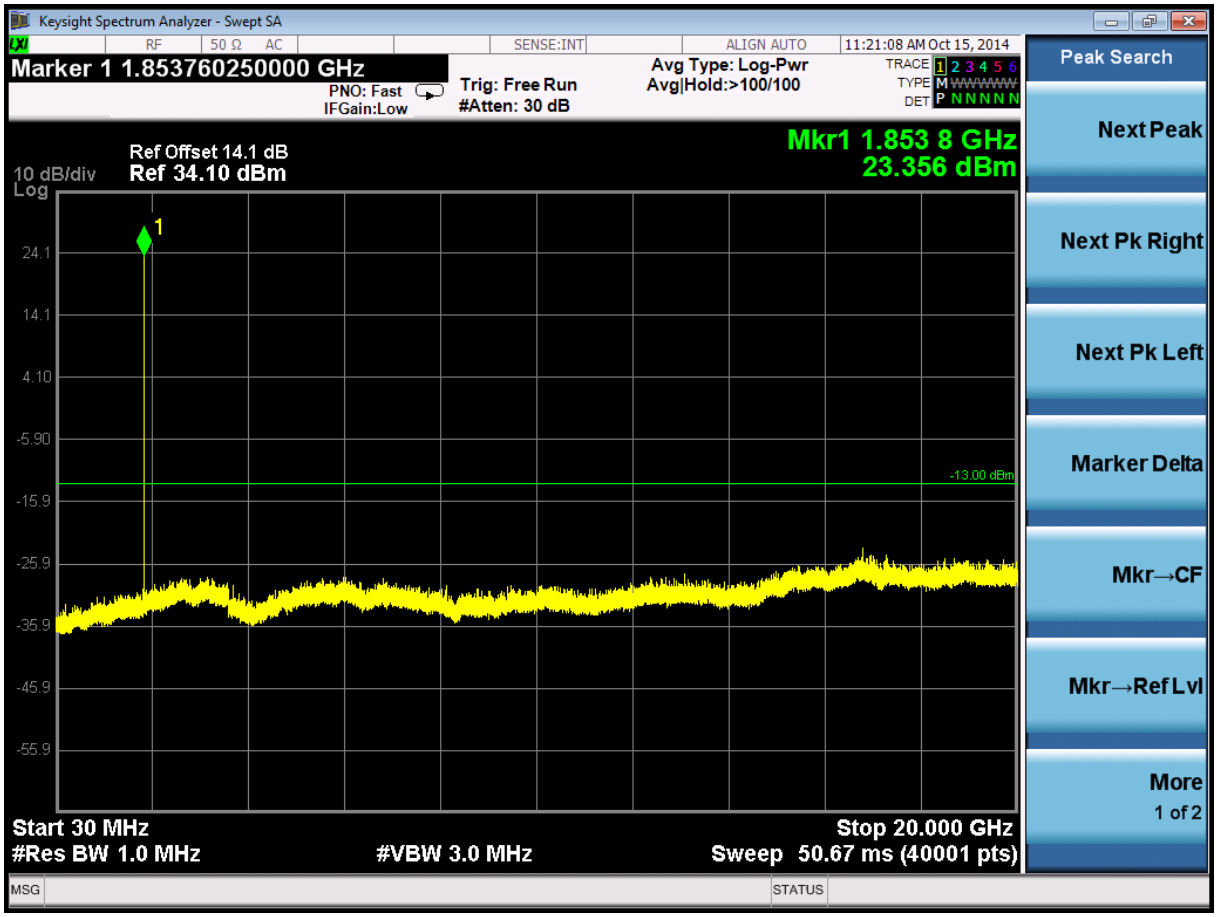
8.2.1.1.3 Test Channel = HCH



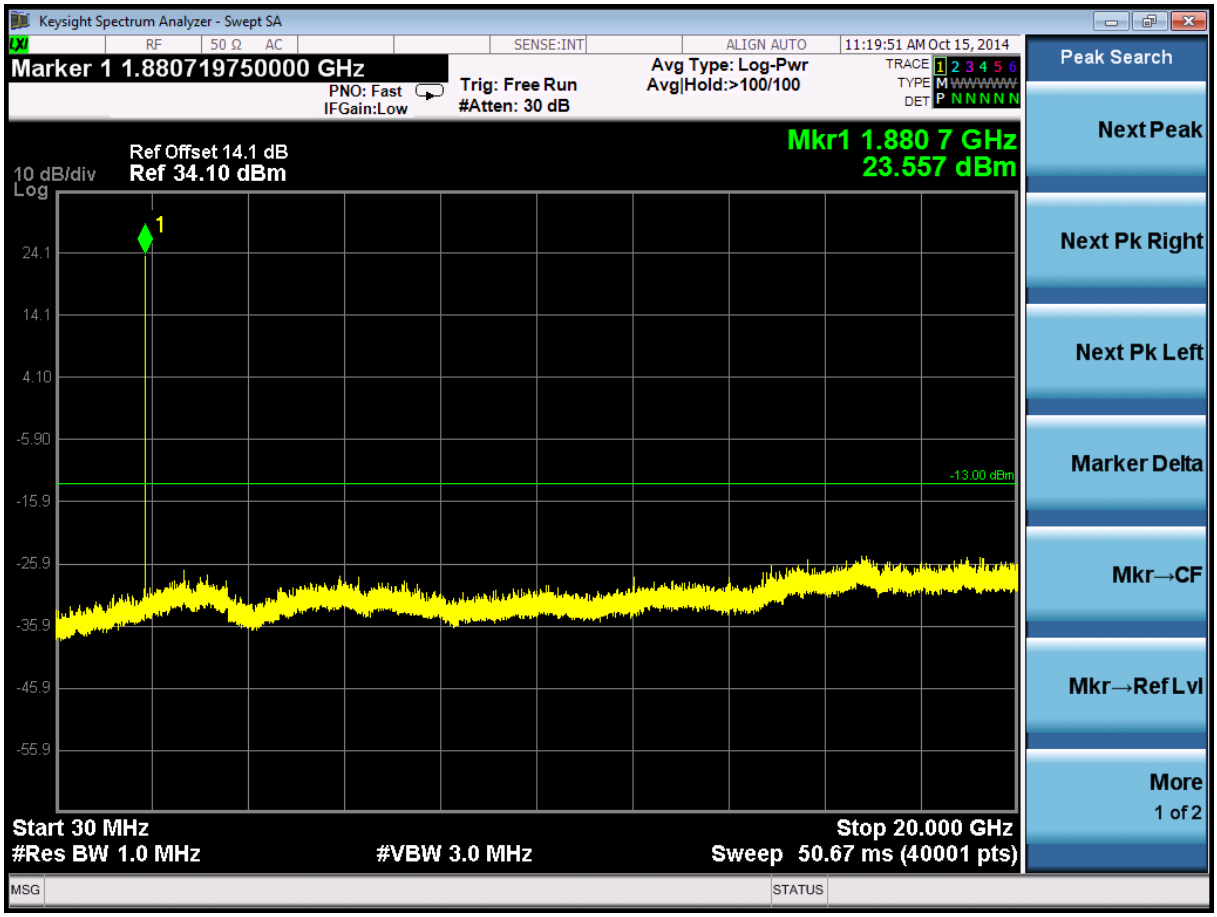
8.2.2 Test Band = WCDMA1900

8.2.2.1 Test Mode = UMTS/TM1

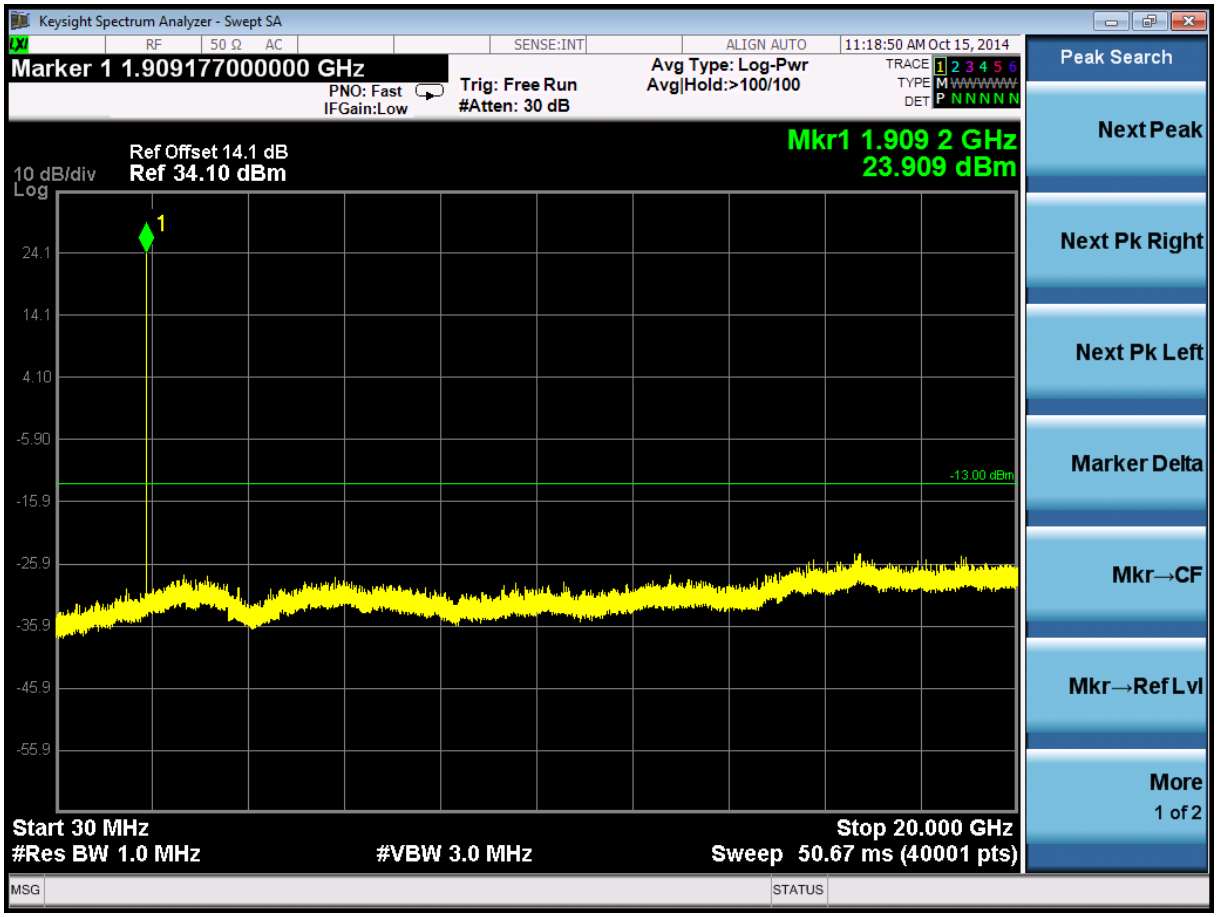
8.2.2.1.1 Test Channel = LCH



8.2.2.1.2 Test Channel = MCH



8.2.2.1.3 Test Channel = HCH



9 Appendix_G: Field Strength of Spurious Radiation

Part I - Test Plots

9.1 For GSM

9.1.1 Test Band = GSM850

9.1.1.1 Test Mode = GSM/TM1

Below 1GHz

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
39.299	11.82	13.49	27.32	-64.32	-66.33	-13	-53.33	Vertical
48.672	15.88	9.28	27.29	-64.31	-66.44	-13	-53.44	Vertical
67.913	11.75	6.96	27.25	-58.60	-67.14	-13	-54.14	Vertical
129.468	12.98	7.71	27.01	-53.24	-59.56	-13	-46.56	Vertical
535.707	11.49	18.67	27.64	-64.01	-61.49	-13	-48.49	Vertical
935.546	11.35	23.30	26.61	-72.05	-64.01	-13	-51.01	Vertical
36.127	8.69	15.27	27.33	-78.82	-82.19	-13	-69.19	Horizontal
70.832	11.24	6.97	27.25	-63.24	-72.28	-13	-59.28	Horizontal
136.939	14.31	7.98	26.97	-63.12	-67.80	-13	-54.80	Horizontal
214.514	11.31	10.95	26.65	-68.61	-73.00	-13	-60.00	Horizontal
520.888	11.48	18.38	27.66	-62.66	-60.46	-13	-47.46	Horizontal
586.844	11.42	19.43	27.56	-71.01	-67.72	-13	-54.72	Horizontal

Above 1GHz

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
1673.200	3.42	29.54	38.39	-30.45	-20.75	-13	-7.75	Vertical
2509.800	4.27	32.45	38.47	-51.85	-41.58	-13	-28.58	Vertical
3346.400	4.65	32.64	38.67	-55.92	-46.68	-13	-33.68	Vertical
4183.000	5.18	33.94	39.02	-60.03	-49.64	-13	-36.64	Vertical
5019.600	5.53	34.90	39.30	-56.25	-45.96	-13	-32.96	Vertical
5856.200	5.86	36.02	39.20	-58.28	-45.33	-13	-32.33	Vertical
1673.200	3.42	29.54	38.39	-33.45	-26.75	-13	-13.75	Horizontal
2509.800	4.27	32.45	38.47	-59.17	-47.47	-13	-34.47	Horizontal
3346.400	4.65	32.64	38.67	-58.10	-46.47	-13	-33.47	Horizontal
4183.000	5.18	33.94	39.02	-59.39	-47.21	-13	-34.21	Horizontal
5019.600	5.53	34.90	39.30	-56.52	-44.67	-13	-31.67	Horizontal
5856.200	5.86	36.02	39.20	-56.63	-44.27	-13	-31.27	Horizontal

9.1.1.2 Test Mode = GSM/TM2

Below 1GHz

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
42.007	14.14	12.22	27.31	-67.52	-68.47	-13	-55.47	Vertical
66.034	11.88	7.02	27.25	-61.08	-69.43	-13	-56.43	Vertical
124.569	12.30	7.81	27.04	-56.61	-63.54	-13	-50.54	Vertical
242.525	11.22	12.06	26.56	-74.01	-77.29	-13	-64.29	Vertical
545.183	11.12	18.82	27.63	-64.61	-62.30	-13	-49.30	Vertical
827.493	10.36	22.40	27.13	-72.99	-67.36	-13	-54.36	Vertical
50.232	15.05	8.67	27.29	-78.86	-82.43	-13	-69.43	Horizontal
96.436	10.58	8.96	27.21	-75.37	-83.04	-13	-70.04	Horizontal
163.755	13.71	9.56	26.84	-65.49	-69.06	-13	-56.06	Horizontal
226.099	11.16	11.54	26.61	-70.01	-73.92	-13	-60.92	Horizontal
411.824	9.90	16.35	27.21	-64.76	-65.72	-13	-52.72	Horizontal
942.131	11.26	23.30	26.58	-72.04	-64.06	-13	-51.06	Horizontal

Above 1GHz

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
1673.200	3.42	29.54	38.39	-40.32	-33.62	-13	-20.62	Vertical
2509.800	4.27	32.45	38.47	-55.33	-43.63	-13	-30.63	Vertical
3346.400	4.65	32.64	38.67	-59.26	-47.63	-13	-34.63	Vertical
4183.000	5.18	33.94	39.02	-62.25	-50.07	-13	-37.07	Vertical
5019.600	5.53	34.90	39.30	-58.94	-47.09	-13	-34.09	Vertical
5856.200	5.86	36.02	39.20	-59.47	-47.11	-13	-34.11	Vertical
1673.200	3.42	29.54	38.39	-38.64	-28.94	-13	-15.94	Horizontal
2509.800	4.27	32.45	38.47	-56.65	-46.38	-13	-33.38	Horizontal
3346.400	4.65	32.64	38.67	-57.02	-47.78	-13	-34.78	Horizontal
4183.000	5.18	33.94	39.02	-60.24	-49.85	-13	-36.85	Horizontal
5019.600	5.53	34.90	39.30	-57.28	-46.99	-13	-33.99	Horizontal
5856.200	5.86	36.02	39.20	-59.04	-46.09	-13	-33.09	Horizontal

9.1.2 Test Band = GSM1900

9.1.2.1 Test Mode = GSM/TM1

Below 1GHz

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
42.302	14.10	12.09	27.31	-67.03	-68.15	-13	-55.15	Vertical
69.845	11.62	6.90	27.25	-60.22	-68.95	-13	-55.95	Vertical
130.837	13.22	7.73	27.01	-53.46	-59.52	-13	-46.52	Vertical
203.523	11.58	10.38	26.69	-65.90	-70.63	-13	-57.63	Vertical
291.036	10.55	13.51	26.42	-71.90	-74.26	-13	-61.26	Vertical
755.387	10.57	21.76	27.35	-73.28	-68.30	-13	-55.30	Vertical
40.988	14.28	12.67	27.32	-77.57	-77.94	-13	-64.94	Horizontal
72.084	10.60	7.07	27.24	-65.17	-74.74	-13	-61.74	Horizontal
200.688	11.63	10.24	26.70	-67.67	-72.50	-13	-59.50	Horizontal
524.554	11.57	18.49	27.65	-62.28	-59.87	-13	-46.87	Horizontal
584.790	11.35	19.37	27.57	-71.20	-68.05	-13	-55.05	Horizontal
942.131	11.26	23.30	26.58	-72.04	-64.06	-13	-51.06	Horizontal

Above 1GHz

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3760.000	4.97	33.12	38.85	-52.86	-41.09	-13	-28.09	Vertical
5640.000	6.13	35.52	39.22	-55.54	-42.85	-13	-29.85	Vertical
7520.000	6.79	35.46	39.04	-58.22	-42.60	-13	-29.60	Vertical
9400.000	8.43	36.94	38.06	-61.89	-41.75	-13	-28.75	Vertical
11280.000	9.74	38.13	38.36	-60.26	-37.55	-13	-24.55	Vertical
13917.240	9.36	39.11	40.23	-58.06	-33.84	-13	-20.84	Vertical
3760.000	4.97	33.12	38.85	-49.30	-38.89	-13	-25.89	Horizontal
5640.000	6.13	35.52	39.22	-56.97	-45.09	-13	-32.09	Horizontal
7520.000	6.79	35.46	39.04	-58.54	-42.63	-13	-29.63	Horizontal
9400.000	8.43	36.94	38.06	-62.70	-42.44	-13	-29.44	Horizontal
11280.000	9.74	38.13	38.36	-60.78	-37.42	-13	-24.42	Horizontal
13757.270	9.13	39.10	40.11	-56.94	-33.85	-13	-20.85	Horizontal

9.1.2.2 Test Mode = GSM/TM2

Below 1GHz

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
38.078	10.60	14.18	27.33	-69.44	-71.99	-13	-58.99	Vertical
51.843	13.55	8.42	27.29	-71.74	-77.06	-13	-64.06	Vertical
87.418	9.30	8.44	27.22	-71.71	-81.19	-13	-68.19	Vertical
197.200	11.78	10.17	26.71	-65.39	-70.15	-13	-57.15	Vertical
497.677	10.94	17.80	27.70	-67.38	-66.34	-13	-53.34	Vertical
893.857	11.35	23.15	26.82	-72.74	-65.06	-13	-52.06	Vertical
53.882	11.87	8.12	27.28	-78.02	-85.31	-13	-72.31	Horizontal
80.362	8.75	7.74	27.23	-68.29	-79.03	-13	-66.03	Horizontal
140.342	14.83	8.13	26.95	-65.39	-69.38	-13	-56.38	Horizontal
265.676	10.97	12.61	26.49	-65.26	-68.17	-13	-55.17	Horizontal
359.186	10.91	14.67	26.85	-64.33	-65.60	-13	-52.60	Horizontal
535.707	11.49	18.67	27.64	-63.60	-61.08	-13	-48.08	Horizontal

Above 1GHz

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3760.000	4.97	33.12	38.85	-55.69	-43.92	-13	-30.92	Vertical
5640.000	6.13	35.52	39.22	-59.46	-46.77	-13	-33.77	Vertical
7520.000	6.79	35.46	39.04	-59.15	-43.53	-13	-30.53	Vertical
9400.000	8.43	36.94	38.06	-62.35	-42.21	-13	-29.21	Vertical
11100.000	9.48	38.11	38.27	-61.81	-39.21	-13	-26.21	Vertical
13917.240	9.36	39.11	40.23	-57.67	-33.45	-13	-20.45	Vertical
3760.000	4.97	33.12	38.85	-37.45	-27.04	-13	-14.04	Horizontal
5640.000	6.13	35.52	39.22	-60.16	-48.28	-13	-35.28	Horizontal
7520.000	6.79	35.46	39.04	-59.22	-43.31	-13	-30.31	Horizontal
9400.000	8.43	36.94	38.06	-62.28	-42.02	-13	-29.02	Horizontal
11280.000	9.74	38.13	38.36	-62.16	-38.80	-13	-25.80	Horizontal
15003.420	9.27	39.40	41.00	-57.96	-33.44	-13	-20.44	Horizontal

9.2 For UMTS

9.2.1 Test Band = WCDMA850

9.2.1.1 Test Mode = UMTS/TM1

Below 1GHz

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
37.945	10.46	14.25	27.33	-70.12	-72.74	-13	-59.75	Vertical
54.071	11.71	8.09	27.28	-71.59	-79.07	-13	-66.08	Vertical
106.385	11.15	8.78	27.15	-63.99	-71.21	-13	-58.22	Vertical
219.845	11.20	11.23	26.63	-72.08	-76.28	-13	-63.29	Vertical
460.727	10.27	17.29	27.50	-70.66	-70.60	-13	-57.61	Vertical
887.610	11.20	23.10	26.85	-73.34	-65.89	-13	-52.90	Vertical
42.451	14.08	12.02	27.31	-77.77	-78.98	-13	-65.99	Horizontal
62.431	12.45	7.13	27.26	-74.40	-82.08	-13	-69.09	Horizontal
148.441	14.50	8.86	26.91	-69.00	-72.55	-13	-59.56	Horizontal
428.019	10.27	16.46	27.31	-65.27	-65.85	-13	-52.86	Horizontal
549.020	11.04	18.88	27.62	-64.96	-62.66	-13	-49.67	Horizontal
890.728	11.28	23.13	26.82	-72.84	-65.25	-13	-52.26	Horizontal

Above 1GHz

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
1648.400	3.39	29.43	38.39	-39.73	-33.43	-13	-20.43	Vertical
2472.600	4.22	32.44	38.46	-56.67	-45.35	-13	-32.35	Vertical
3296.800	4.67	32.51	38.65	-59.35	-47.39	-13	-34.39	Vertical
4121.000	5.19	33.79	39.00	-61.71	-49.75	-13	-36.75	Vertical
4945.200	5.60	34.85	39.28	-58.81	-47.11	-13	-34.11	Vertical
5769.400	5.63	35.84	39.21	-59.27	-47.05	-13	-34.05	Vertical
1648.400	3.39	29.43	38.39	-38.99	-29.45	-13	-16.45	Horizontal
2472.600	4.22	32.44	38.46	-59.77	-49.64	-13	-36.64	Horizontal
3296.800	4.67	32.51	38.65	-57.78	-48.40	-13	-35.40	Horizontal
4121.000	5.19	33.79	39.00	-60.86	-50.68	-13	-37.68	Horizontal
4945.200	5.60	34.85	39.28	-58.14	-47.82	-13	-34.82	Horizontal
5769.400	5.63	35.84	39.21	-59.19	-46.52	-13	-33.52	Horizontal

9.2.2 Test Band = WCDMA1900

9.2.2.1 Test Mode = UMTS/TM1

Below 1GHz

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
39.854	12.23	13.18	27.32	-67.83	-69.74	-13	-56.75	Vertical
67.913	11.75	6.96	27.25	-58.60	-67.14	-13	-54.15	Vertical
118.601	11.95	8.00	27.07	-59.62	-66.74	-13	-53.75	Vertical
166.068	13.73	9.54	26.83	-65.40	-68.96	-13	-55.97	Vertical
364.260	11.09	15.10	26.89	-67.95	-68.65	-13	-55.66	Vertical
884.503	11.13	23.08	26.85	-73.20	-65.84	-13	-52.85	Vertical
64.433	12.04	7.07	27.26	-74.86	-83.01	-13	-70.02	Horizontal
71.080	11.11	6.99	27.25	-63.74	-72.89	-13	-59.90	Horizontal
90.220	9.51	8.71	27.21	-72.05	-81.04	-13	-68.05	Horizontal
140.342	14.83	8.13	26.95	-65.39	-69.38	-13	-56.39	Horizontal
311.087	10.99	14.30	26.48	-63.22	-64.41	-13	-51.42	Horizontal
539.478	11.34	18.73	27.63	-63.36	-60.92	-13	-47.93	Horizontal

Above 1GHz

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3819.600	4.96	33.19	38.88	-54.77	-44.49	-13	-31.49	Vertical
5726.400	5.80	35.73	39.21	-59.98	-47.57	-13	-34.57	Vertical
7636.200	6.86	35.51	39.03	-58.56	-42.35	-13	-29.35	Vertical
9546.000	8.80	37.20	37.97	-61.71	-41.47	-13	-28.47	Vertical
11455.800	9.88	38.19	38.45	-60.88	-37.78	-13	-24.78	Vertical
14873.890	9.35	39.46	40.91	-57.64	-33.73	-13	-20.73	Vertical
3819.600	4.96	33.19	38.88	-56.45	-44.81	-13	-31.81	Horizontal
5726.400	5.80	35.73	39.21	-59.10	-46.72	-13	-33.72	Horizontal
7636.200	6.86	35.51	39.03	-58.53	-42.57	-13	-29.57	Horizontal
9546.000	8.80	37.20	37.97	-61.05	-41.17	-13	-28.17	Horizontal
11455.800	9.88	38.19	38.45	-60.62	-37.98	-13	-24.98	Horizontal
13917.240	9.36	39.11	40.23	-57.59	-33.37	-13	-20.37	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.

10 Appendix_H: Frequency Stability

10.1 For GSM

10.1.1 Frequency Error VS. Voltage:

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Limit [ppm]	Verdict
GSM850	GSM/TM1	LCH	TN	VL	-2.91	-0.00353	±2.5	PASS
				VN	-7.81	-0.00948	±2.5	PASS
				VH	0.71	0.00086	±2.5	PASS
		MCH	TN	VL	-7.55	-0.00902	±2.5	PASS
				VN	-6.33	-0.00757	±2.5	PASS
				VH	-4.97	-0.00594	±2.5	PASS
		HCH	TN	VL	-1.03	-0.00121	±2.5	PASS
				VN	-5.75	-0.00677	±2.5	PASS
				VH	-9.17	-0.0108	±2.5	PASS
	GSM/TM2	LCH	TN	VL	-5.65	-0.00686	±2.5	PASS
				VN	-11.11	-0.01348	±2.5	PASS
				VH	-4.04	-0.0049	±2.5	PASS
		MCH	TN	VL	-7.10	-0.00849	±2.5	PASS
				VN	-15.37	-0.01837	±2.5	PASS
				VH	-7.81	-0.00934	±2.5	PASS
		HCH	TN	VL	-7.94	-0.00935	±2.5	PASS
				VN	-3.36	-0.00396	±2.5	PASS
				VH	-10.62	-0.01251	±2.5	PASS
GSM1900	GSM/TM1	LCH	TN	VL	-12.79	-0.00691	±2.5	PASS
				VN	-10.14	-0.00548	±2.5	PASS
				VH	-8.59	-0.00464	±2.5	PASS
		MCH	TN	VL	-2.45	-0.0013	±2.5	PASS
				VN	-1.74	-0.00093	±2.5	PASS
				VH	-7.43	-0.00395	±2.5	PASS
		HCH	TN	VL	-1.10	-0.00058	±2.5	PASS
				VN	-8.33	-0.00436	±2.5	PASS
				VH	-18.98	-0.00994	±2.5	PASS
	GSM/TM2	LCH	TN	VL	3.78	0.00204	±2.5	PASS
				VN	-5.52	-0.00298	±2.5	PASS
				VH	-7.78	-0.0042	±2.5	PASS
		MCH	TN	VL	-18.76	-0.00998	±2.5	PASS
				VN	-1.94	-0.00103	±2.5	PASS
				VH	-14.37	-0.00764	±2.5	PASS
		HCH	TN	VL	-6.88	-0.0036	±2.5	PASS
				VN	-10.69	-0.0056	±2.5	PASS
				VH	-9.43	-0.00494	±2.5	PASS

10.1.2 Frequency Error VS. Temperature:

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Limit [ppm]	Verdict
GSM850	GSM/TM1	LCH	VN	-30	-1.81	-0.00220	±2.5	PASS
				-20	-1.10	-0.00133	±2.5	PASS
				-10	-1.42	-0.00172	±2.5	PASS
				0	-3.36	-0.00408	±2.5	PASS
				10	1.42	0.00172	±2.5	PASS
				20	2.65	0.00322	±2.5	PASS
				30	2.32	0.00281	±2.5	PASS
				40	0.84	0.00102	±2.5	PASS
				50	5.94	0.00721	±2.5	PASS
		MCH	VN	-30	0.00	0.00000	±2.5	PASS
				-20	2.71	0.00324	±2.5	PASS
				-10	-0.52	-0.00062	±2.5	PASS
				0	-1.87	-0.00224	±2.5	PASS
				10	0.52	0.00062	±2.5	PASS
				20	-1.03	-0.00123	±2.5	PASS
				30	1.03	0.00123	±2.5	PASS
				40	1.61	0.00192	±2.5	PASS
				50	2.45	0.00293	±2.5	PASS
		HCH	VN	-30	0.26	0.00031	±2.5	PASS
				-20	4.91	0.00578	±2.5	PASS
				-10	-0.71	-0.00084	±2.5	PASS
				0	-1.16	-0.00137	±2.5	PASS
				10	-0.90	-0.00106	±2.5	PASS
				20	-1.16	-0.00137	±2.5	PASS
				30	-1.36	-0.00160	±2.5	PASS
				40	-2.26	-0.00266	±2.5	PASS
				50	-0.19	-0.00022	±2.5	PASS

GSM850	GSM/TM2	LCH	VN	-30	-4.49	-0.00545	±2.5	PASS
				-20	-1.23	-0.00149	±2.5	PASS
				-10	-5.23	-0.00635	±2.5	PASS
				0	-4.04	-0.00490	±2.5	PASS
				10	-3.20	-0.00388	±2.5	PASS
				20	-1.90	-0.00231	±2.5	PASS
				30	-10.04	-0.01218	±2.5	PASS
				40	0.81	0.00098	±2.5	PASS
				50	1.03	0.00125	±2.5	PASS
		MCH	VN	-30	0.29	0.00035	±2.5	PASS
				-20	-0.36	-0.00043	±2.5	PASS
				-10	-8.52	-0.01018	±2.5	PASS
				0	-2.13	-0.00255	±2.5	PASS
				10	-1.87	-0.00224	±2.5	PASS
				20	-3.68	-0.00440	±2.5	PASS
				30	0.19	0.00023	±2.5	PASS
				40	-5.55	-0.00663	±2.5	PASS
				50	-6.26	-0.00748	±2.5	PASS
		HCH	VN	-30	-5.59	-0.00659	±2.5	PASS
				-20	-7.07	-0.00833	±2.5	PASS
				-10	-4.94	-0.00582	±2.5	PASS
				0	-3.68	-0.00434	±2.5	PASS
				10	-10.11	-0.01191	±2.5	PASS
				20	-9.52	-0.01122	±2.5	PASS
				30	-1.39	-0.00164	±2.5	PASS
				40	-8.46	-0.00997	±2.5	PASS
				50	-3.52	-0.00415	±2.5	PASS

GSM1900	GSM/TM1	LCH	VN	-30	-14.85	-0.00803	±2.5	PASS
				-20	-8.78	-0.00475	±2.5	PASS
				-10	-13.95	-0.00754	±2.5	PASS
				0	-2.13	-0.00115	±2.5	PASS
				10	1.74	0.00094	±2.5	PASS
				20	-4.97	-0.00269	±2.5	PASS
				30	-13.75	-0.00743	±2.5	PASS
				40	-10.33	-0.00558	±2.5	PASS
				50	1.42	0.00077	±2.5	PASS
		MCH	VN	-30	-5.68	-0.00302	±2.5	PASS
				-20	-7.30	-0.00388	±2.5	PASS
				-10	-13.04	-0.00694	±2.5	PASS
				0	-0.58	-0.00031	±2.5	PASS
				10	-15.24	-0.00811	±2.5	PASS
				20	-7.55	-0.00402	±2.5	PASS
				30	2.52	0.00134	±2.5	PASS
				40	-8.78	-0.00467	±2.5	PASS
				50	-11.82	-0.00629	±2.5	PASS
		HCH	VN	-30	-14.59	-0.00764	±2.5	PASS
				-20	-5.10	-0.00267	±2.5	PASS
				-10	-6.65	-0.00348	±2.5	PASS
				0	-11.62	-0.00608	±2.5	PASS
				10	1.16	0.00061	±2.5	PASS
				20	2.71	0.00142	±2.5	PASS
				30	-6.20	-0.00325	±2.5	PASS
				40	-13.50	-0.00707	±2.5	PASS
				50	-2.07	-0.00108	±2.5	PASS

GSM1900	GSM/TM2	LCH	VN	-30	-12.17	-0.00658	±2.5	PASS
				-20	-10.30	-0.00557	±2.5	PASS
				-10	-11.95	-0.00646	±2.5	PASS
				0	-15.17	-0.00820	±2.5	PASS
				10	-12.62	-0.00682	±2.5	PASS
				20	-15.69	-0.00848	±2.5	PASS
				30	-16.11	-0.00871	±2.5	PASS
				40	1.45	0.00078	±2.5	PASS
				50	-18.31	-0.00990	±2.5	PASS
		MCH	VN	-30	-6.55	-0.00348	±2.5	PASS
				-20	-16.27	-0.00865	±2.5	PASS
				-10	-0.16	-0.00009	±2.5	PASS
				0	-5.42	-0.00288	±2.5	PASS
				10	-4.81	-0.00256	±2.5	PASS
				20	-15.08	-0.00802	±2.5	PASS
				30	-23.12	-0.01230	±2.5	PASS
				40	-2.68	-0.00143	±2.5	PASS
				50	-20.47	-0.01089	±2.5	PASS
		HCH	VN	-30	-20.57	-0.01077	±2.5	PASS
				-20	-10.36	-0.00542	±2.5	PASS
				-10	-11.66	-0.00611	±2.5	PASS
				0	-16.69	-0.00874	±2.5	PASS
				10	-17.21	-0.00901	±2.5	PASS
				20	-20.89	-0.01094	±2.5	PASS
				30	-9.81	-0.00514	±2.5	PASS
				40	-7.10	-0.00372	±2.5	PASS
				50	-22.37	-0.01171	±2.5	PASS

10.2 For UMTS

10.2.1 Frequency Error VS. Voltage:

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Limit [ppm]	Verdict
WCDMA850	UMTS/TM1	LCH	TN	VL	0.47	0.00057	±2.5	PASS
				VN	3.20	0.00387	±2.5	PASS
				VH	0.93	0.00113	±2.5	PASS
		MCH	TN	VL	-0.93	-0.00111	±2.5	PASS
				VN	0.49	0.00059	±2.5	PASS
				VH	1.21	0.00145	±2.5	PASS
		HCH	TN	VL	-1.08	-0.00128	±2.5	PASS
				VN	-2.17	-0.00256	±2.5	PASS
				VH	-0.52	-0.00061	±2.5	PASS
WCDMA1900	UMTS/TM1	LCH	TN	VL	-7.22	-0.0039	±2.5	PASS
				VN	-4.14	-0.00223	±2.5	PASS
				VH	-7.84	-0.00423	±2.5	PASS
		MCH	TN	VL	-6.47	-0.00344	±2.5	PASS
				VN	-9.43	-0.00502	±2.5	PASS
				VH	-5.72	-0.00304	±2.5	PASS
		HCH	TN	VL	-5.66	-0.00297	±2.5	PASS
				VN	-10.36	-0.00543	±2.5	PASS
				VH	-2.23	-0.00117	±2.5	PASS

10.2.2 Frequency Error VS. Temperature:

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Limit [ppm]	Verdict
WCDMA850	UMTS/TM1	LCH	VN	-30	2.79	0.00338	±2.5	PASS
				-20	1.56	0.00189	±2.5	PASS
				-10	0.70	0.00085	±2.5	PASS
				0	-2.61	-0.00316	±2.5	PASS
				10	0.64	0.00077	±2.5	PASS
				20	-1.77	-0.00214	±2.5	PASS
				30	1.71	0.00207	±2.5	PASS
				40	0.02	0.00002	±2.5	PASS
				50	-0.99	-0.0012	±2.5	PASS
		MCH	VN	-30	-1.74	-0.00208	±2.5	PASS
				-20	-1.01	-0.00121	±2.5	PASS
				-10	-0.27	-0.00032	±2.5	PASS
				0	-1.28	-0.00153	±2.5	PASS
				10	2.40	0.00287	±2.5	PASS
				20	1.82	0.00218	±2.5	PASS
				30	1.71	0.00204	±2.5	PASS
				40	0.17	0.0002	±2.5	PASS
				50	-0.29	-0.00035	±2.5	PASS
		HCH	VN	-30	-0.09	-0.00011	±2.5	PASS
				-20	0.73	0.00086	±2.5	PASS
				-10	0.64	0.00076	±2.5	PASS
				0	-1.46	-0.00172	±2.5	PASS
				10	1.63	0.00193	±2.5	PASS
				20	-2.75	-0.00325	±2.5	PASS
				30	2.73	0.00322	±2.5	PASS
				40	-0.50	-0.00059	±2.5	PASS
				50	-2.53	-0.00299	±2.5	PASS

WCDMA1900	UMTS/TM1	LCH	VN	-30	-5.36	-0.00289	±2.5	PASS
				-20	-8.83	-0.00477	±2.5	PASS
				-10	-5.84	-0.00315	±2.5	PASS
				0	-7.37	-0.00398	±2.5	PASS
				10	-5.52	-0.00298	±2.5	PASS
				20	-3.98	-0.00215	±2.5	PASS
				30	-9.83	-0.00531	±2.5	PASS
				40	-5.58	-0.00301	±2.5	PASS
				50	-4.61	-0.00249	±2.5	PASS
		MCH	VN	-30	-6.81	-0.00362	±2.5	PASS
				-20	-8.16	-0.00434	±2.5	PASS
				-10	-4.38	-0.00233	±2.5	PASS
				0	-7.80	-0.00415	±2.5	PASS
				10	-5.14	-0.00273	±2.5	PASS
				20	-6.47	-0.00344	±2.5	PASS
				30	-9.17	-0.00488	±2.5	PASS
				40	-8.04	-0.00428	±2.5	PASS
				50	-6.04	-0.00321	±2.5	PASS
		HCH	VN	-30	-6.29	-0.0033	±2.5	PASS
				-20	-6.58	-0.00345	±2.5	PASS
				-10	-7.81	-0.00409	±2.5	PASS
				0	-7.34	-0.00385	±2.5	PASS
				10	-7.11	-0.00373	±2.5	PASS
				20	-4.07	-0.00213	±2.5	PASS
				30	-7.26	-0.00381	±2.5	PASS
				40	-2.88	-0.00151	±2.5	PASS
				50	-5.11	-0.00268	±2.5	PASS

The End