Appendix for test report

1Appendix_A: Effective (Isotropic) Radiated Power Output Data

Part I - Test Results

Test Band	Test Mode	Test Channel	Conducted Power[dBm]	EIRP [dBm]	Limit [dBm]	Verdict
WCDMA1900	UMTS/TM1	LCH	23.9	23.8	33	PASS
		MCH	23.8	23.7	33	PASS
		HCH	23.83	23.73	33	PASS

Test Band	Test Mode	Test Channel	Conducted Power[dBm]	EIRP [dBm]	Limit [dBm]	Verdict
WCDMA1700	UMTS/TM1	LCH	23.83	24.33	30	PASS
		MCH	23.79	24.29	30	PASS
		HCH	23.87	24.37	30	PASS

Test Band	Test Mode	Test Channel	Conducted Power[dBm]	EIRP [dBm]	Limit [dBm]	Verdict
WCDMA850	UMTS/TM1	LCH	23.73	18.88	38.5	PASS
		MCH	23.66	18.81	38.5	PASS
		HCH	23.75	18.9	38.5	PASS

Note1:

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

ERP [dBm] = SGP [dBm] - Cable Loss [dB] + Gain [dBd]

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

b, SGP=Signal Generator Level

Note2:

SET Span=1.5*OBW

SET RBW=1%of the OBW,not to exceed 1MHz

SET VBW>= 3*RBW

SET Sweep time=auto-couple.

Detector:RMS

2Appendix_B: Peak-to-Average Ratio

Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
WCDMA1900	UMTS/TM1	LCH	9.4	13	PASS
		MCH	3.05	13	PASS
		HCH	3.27	13	PASS
Test Band	**Test Mode**	**Test Channel**	**Measured[dB]**	**Limit [dB]**	**Verdict**
WCDMA1700	UMTS/TM1	LCH	2.7	13	PASS
		MCH	2.8	13	PASS
		HCH	3.03	13	PASS

3Appendix_C: Modulation Characteristics

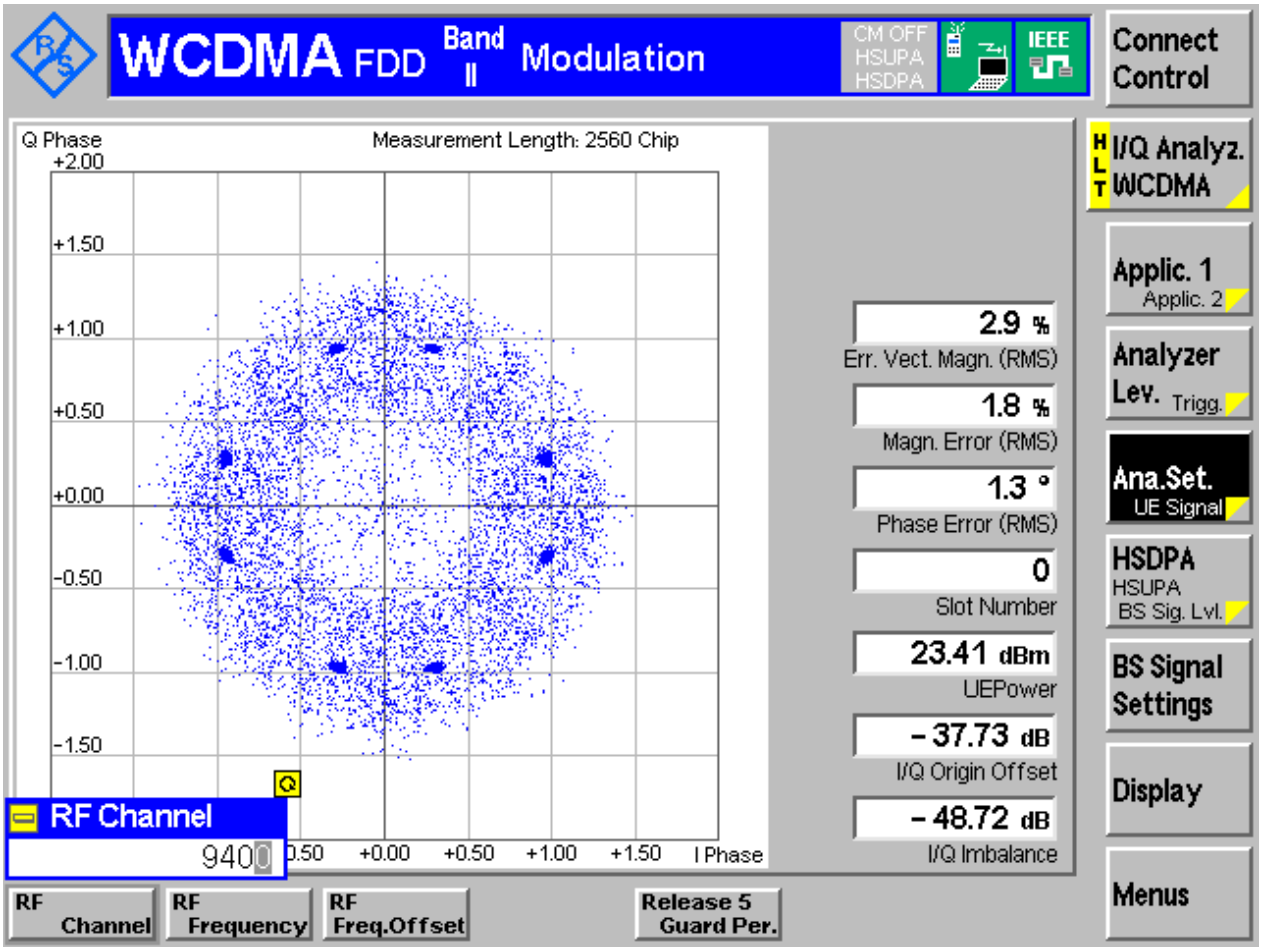
Part I - Test Plots

3.1 For UMTS

3.1.1 Test Band = WCDMA1900

3.1.1.1 Test Mode = UMTS/TM1

3.1.1.1.1 Test Channel = MCH

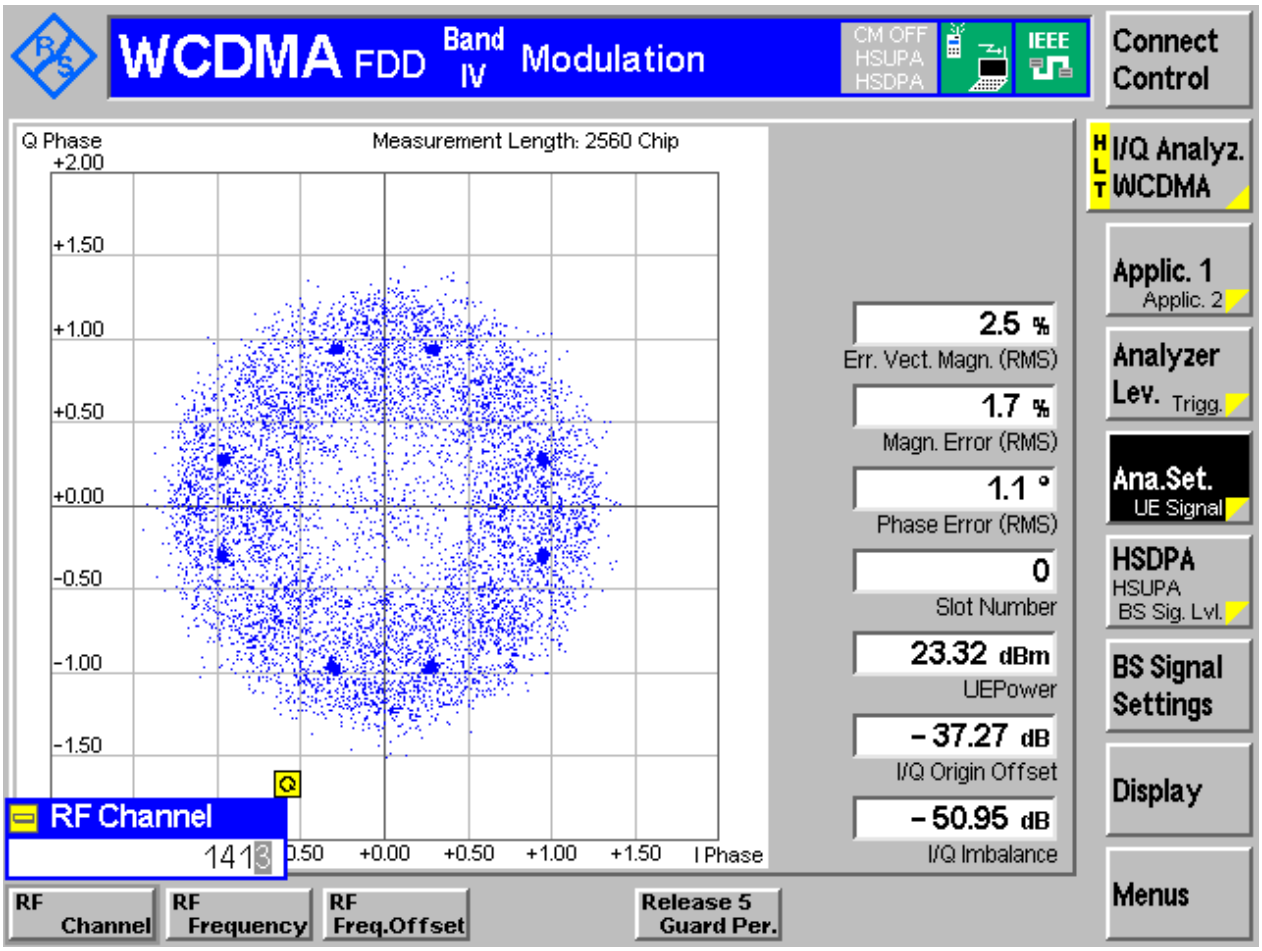


3.2 For UMTS

3.2.1 Test Band = WCDMA1700

3.2.1.1 Test Mode = UMTS/TM1

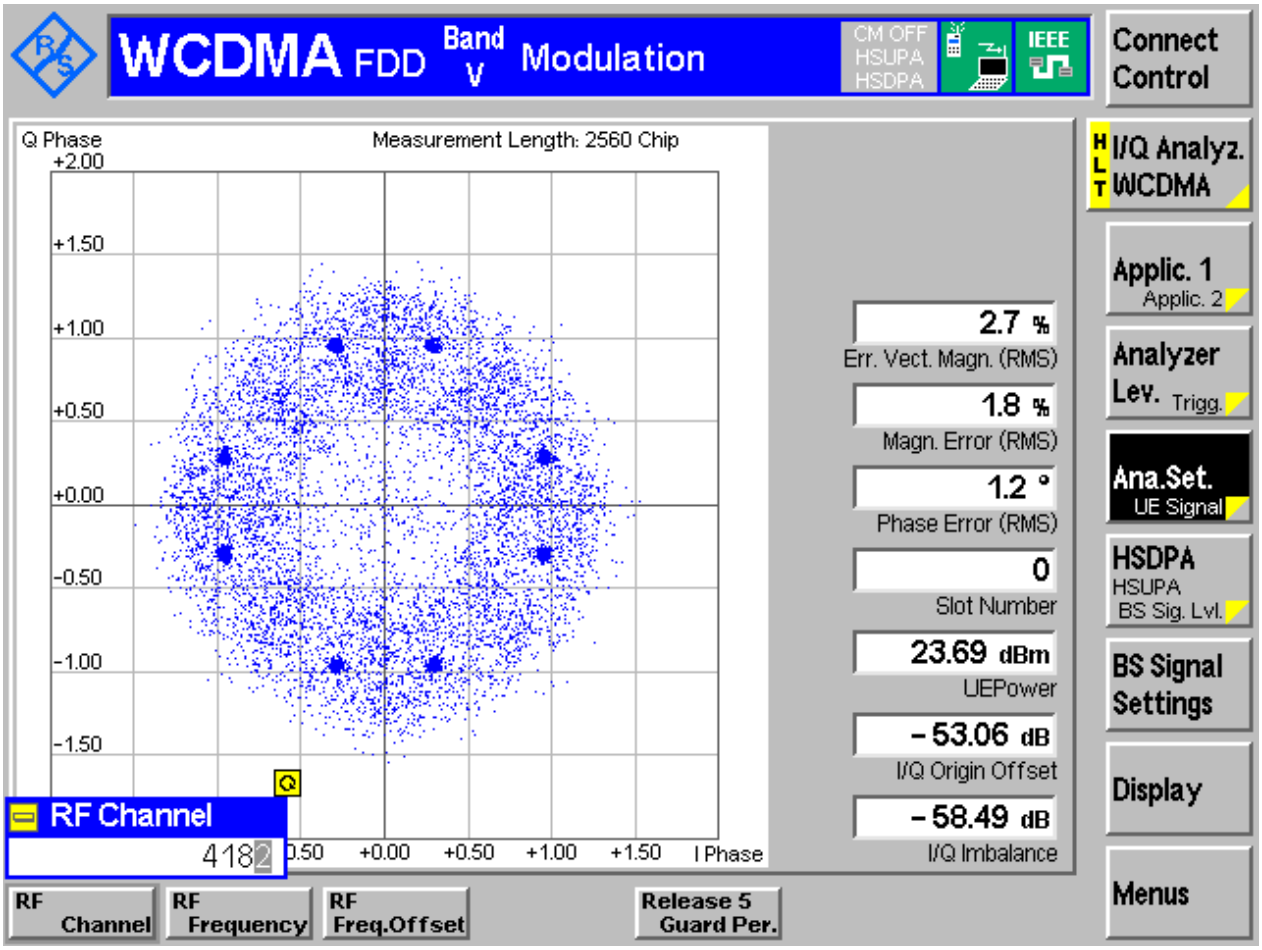
3.2.1.1.1 Test Channel = MCH



3.2.2 Test Band = WCDMA850

3.2.2.1 Test Mode = UMTS/TM1

3.2.2.1.1 Test Channel = MCH



4Appendix_D: Bandwidth

Part I - Test Results

Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
WCDMA1900	UMTS/TM1	LCH	4.18	4.69	Pass
		MCH	4.17	4.69	Pass
		HCH	4.18	4.71	Pass
Test Band	**Test Mode**	**Test Channel**	**Occupied Bandwidth [MHz]**	**Emission Bandwidth [MHz]**	**Verdict**
WCDMA1700	UMTS/TM1	LCH	4.16	4.70	Pass
		MCH	4.18	4.69	Pass
		HCH	4.19	4.68	Pass
WCDMA850	UMTS/TM1	LCH	4.16	4.67	Pass
		MCH	4.16	4.68	Pass
		HCH	4.14	4.67	Pass

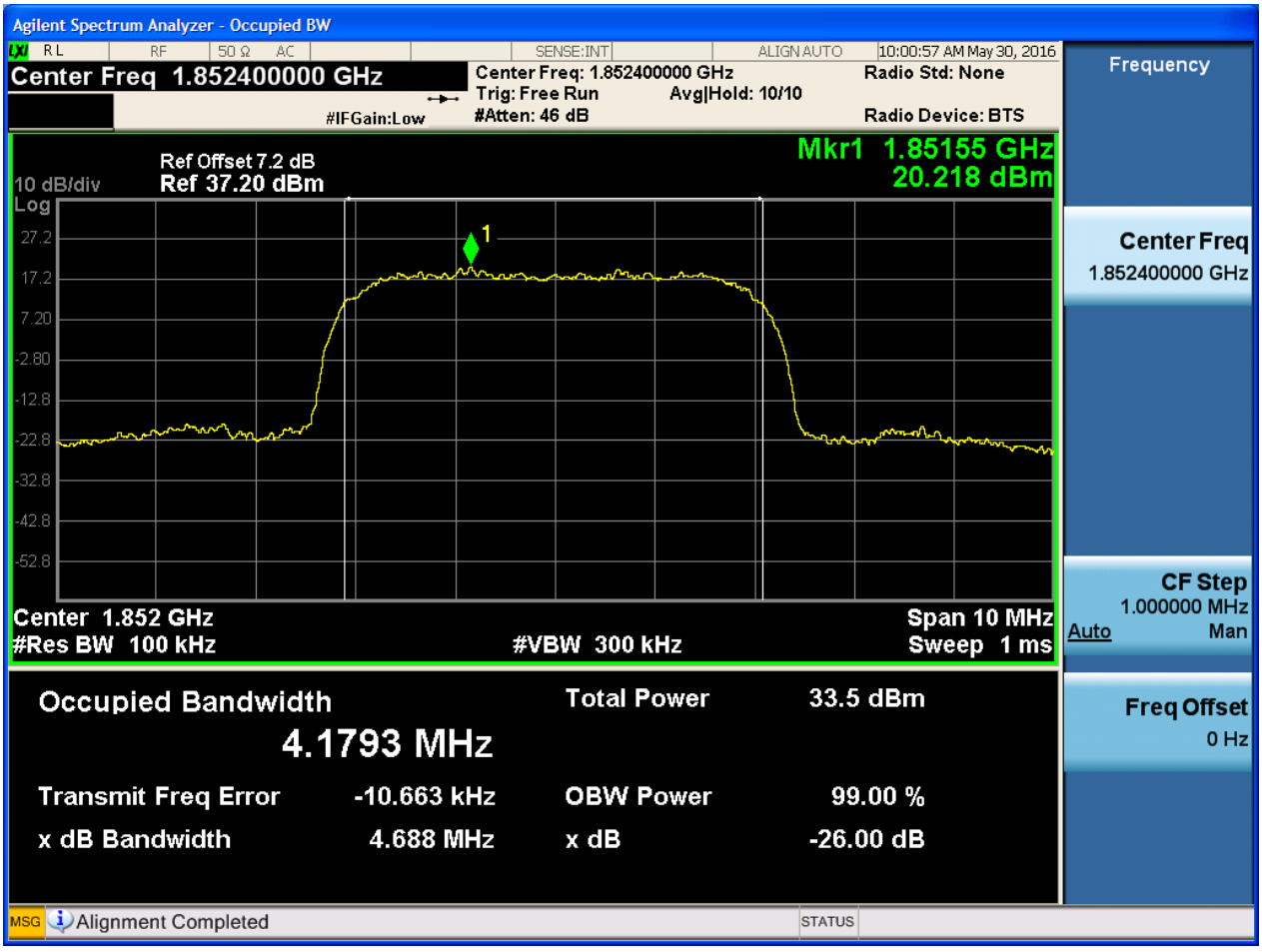
Part II - Test Plots

4.1 For UMTS

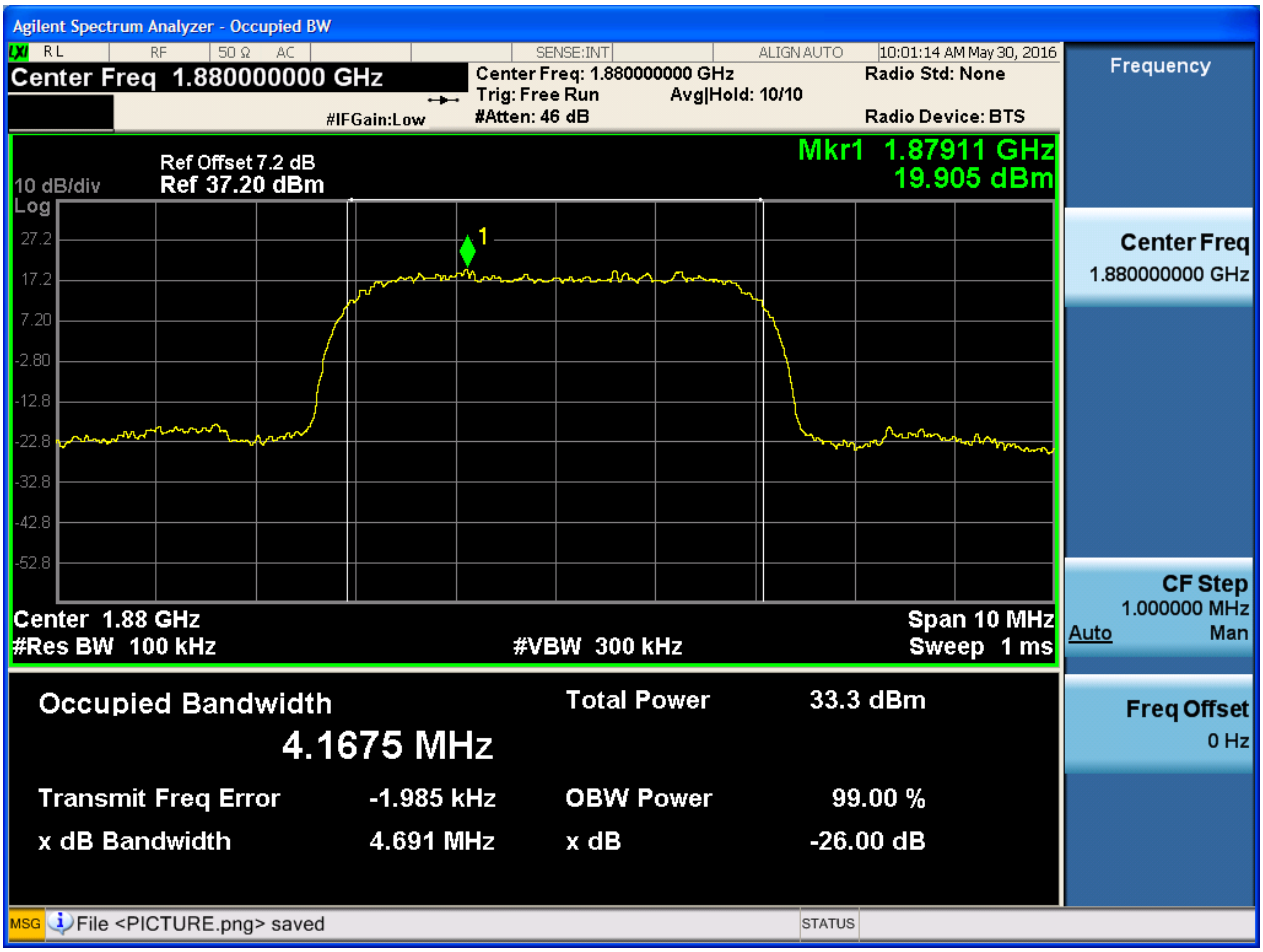
4.1.1 Test Band = WCDMA1900

4.1.1.1 Test Mode = UMTS/TM1

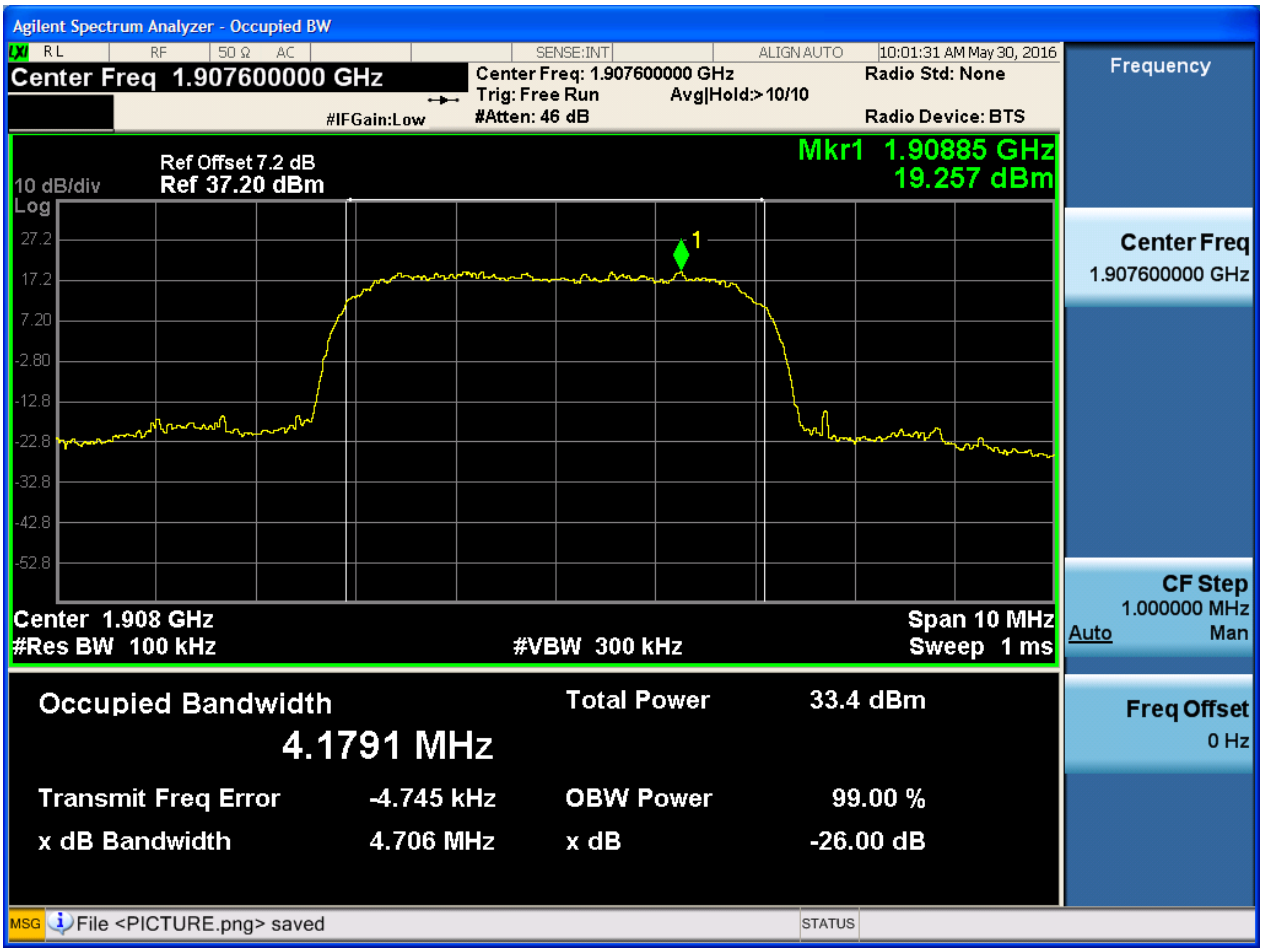
4.1.1.1.1 Test Channel = LCH



4.1.1.1.2 Test Channel = MCH



4.1.1.1.3 Test Channel = HCH

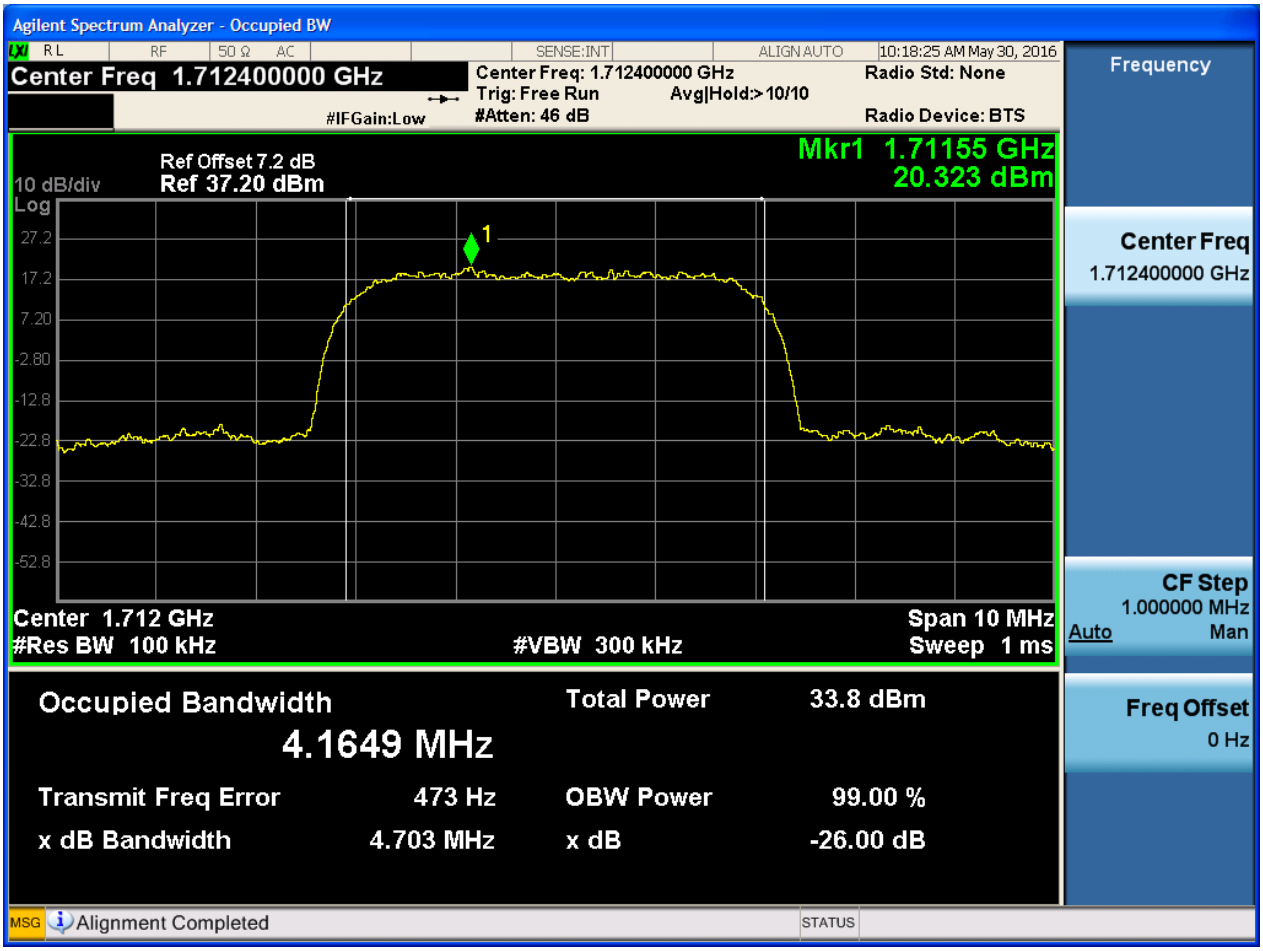


4.2 For UMTS

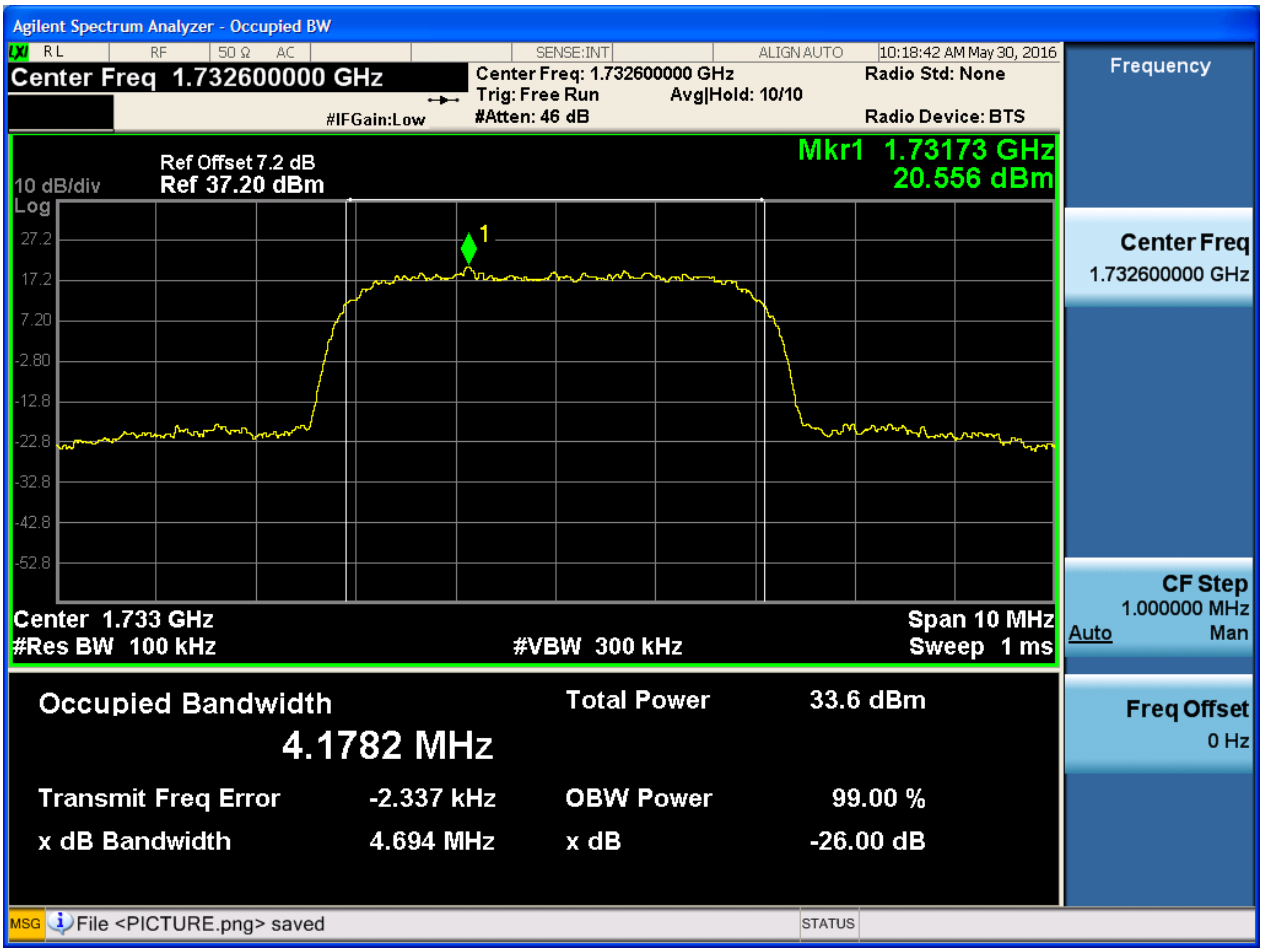
4.2.1 Test Band = WCDMA1700

4.2.1.1 Test Mode = UMTS/TM1

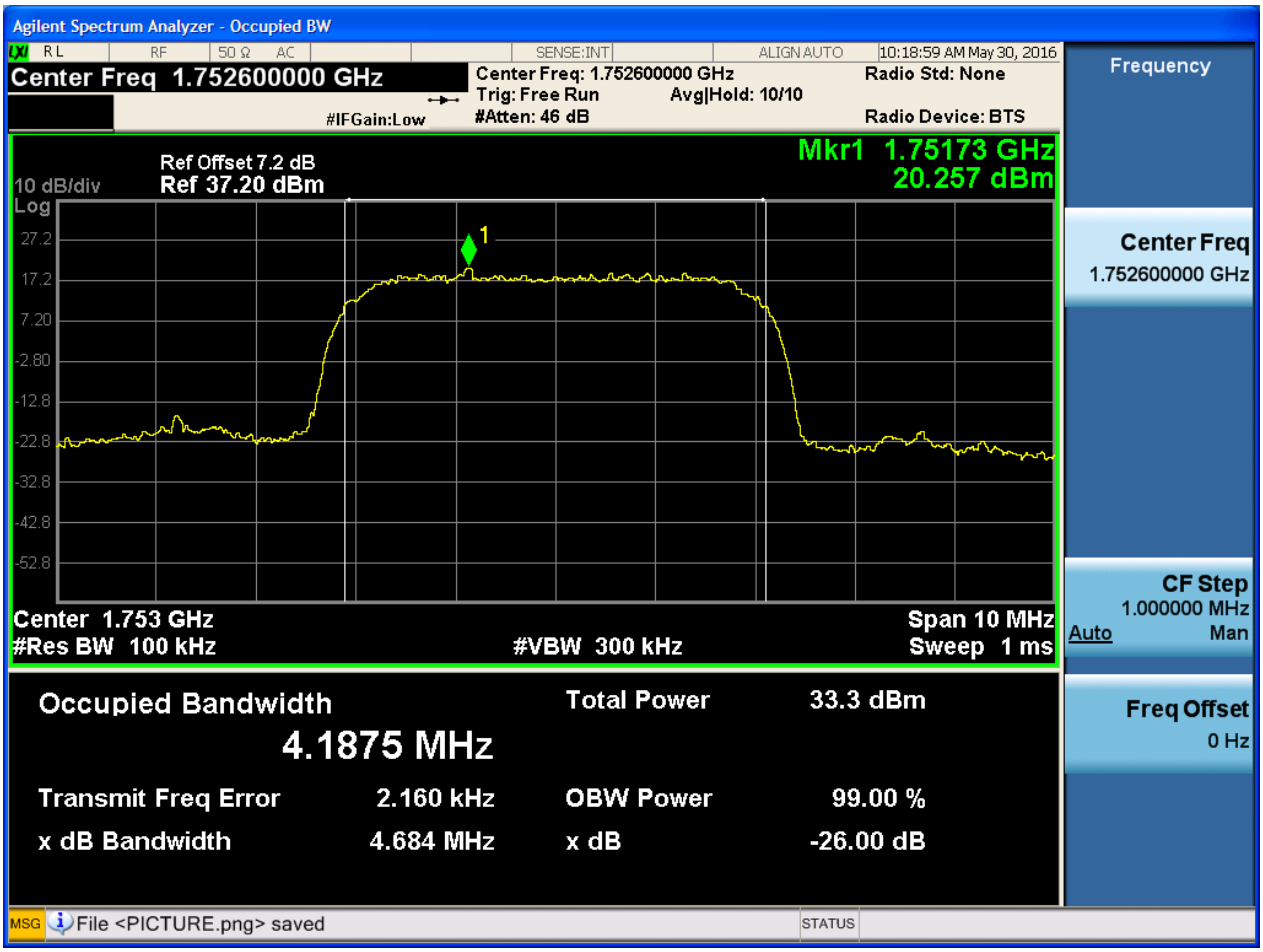
4.2.1.1.1 Test Channel = LCH



4.2.1.1.2 Test Channel = MCH



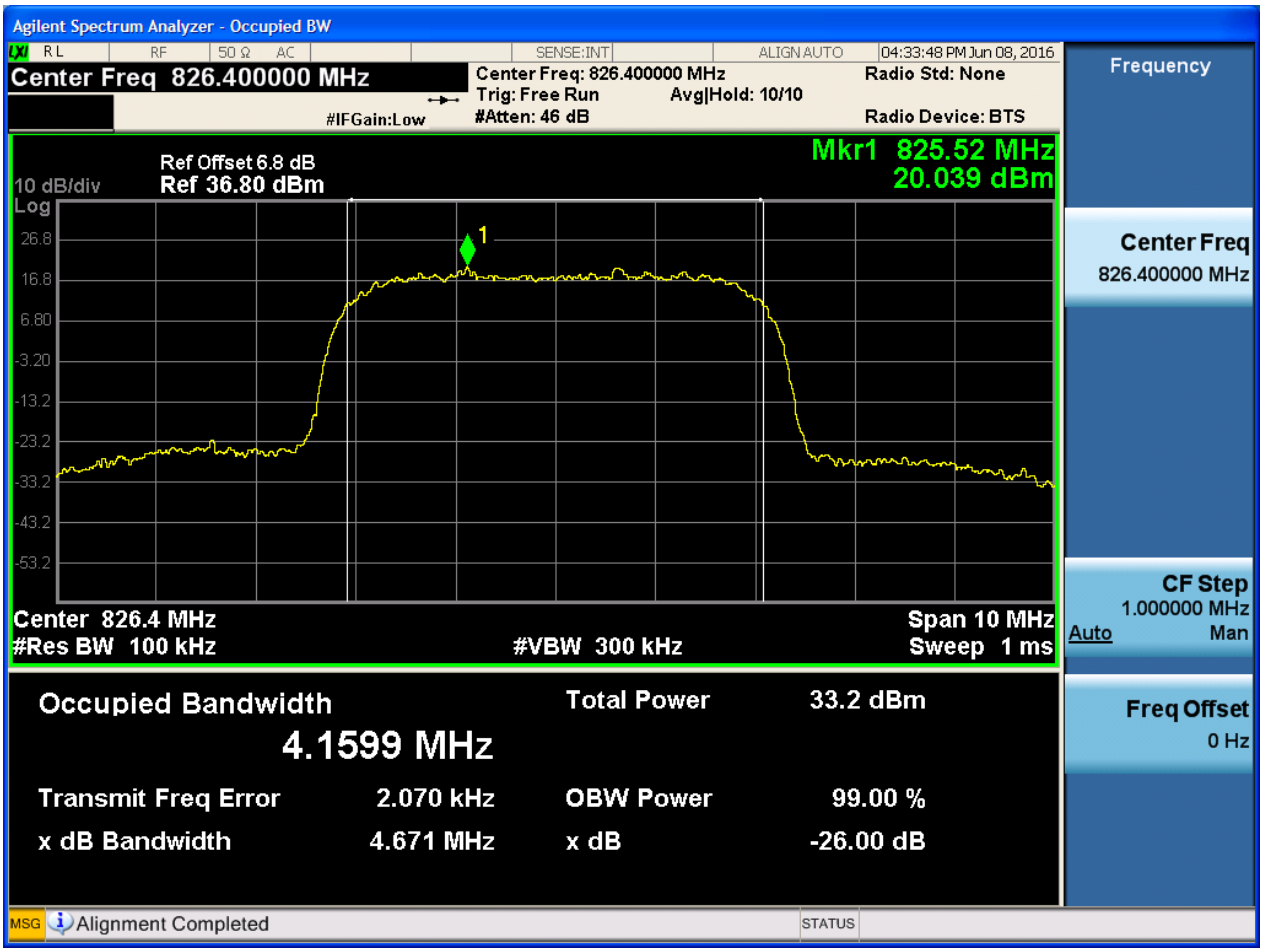
4.2.1.1.3 Test Channel = HCH



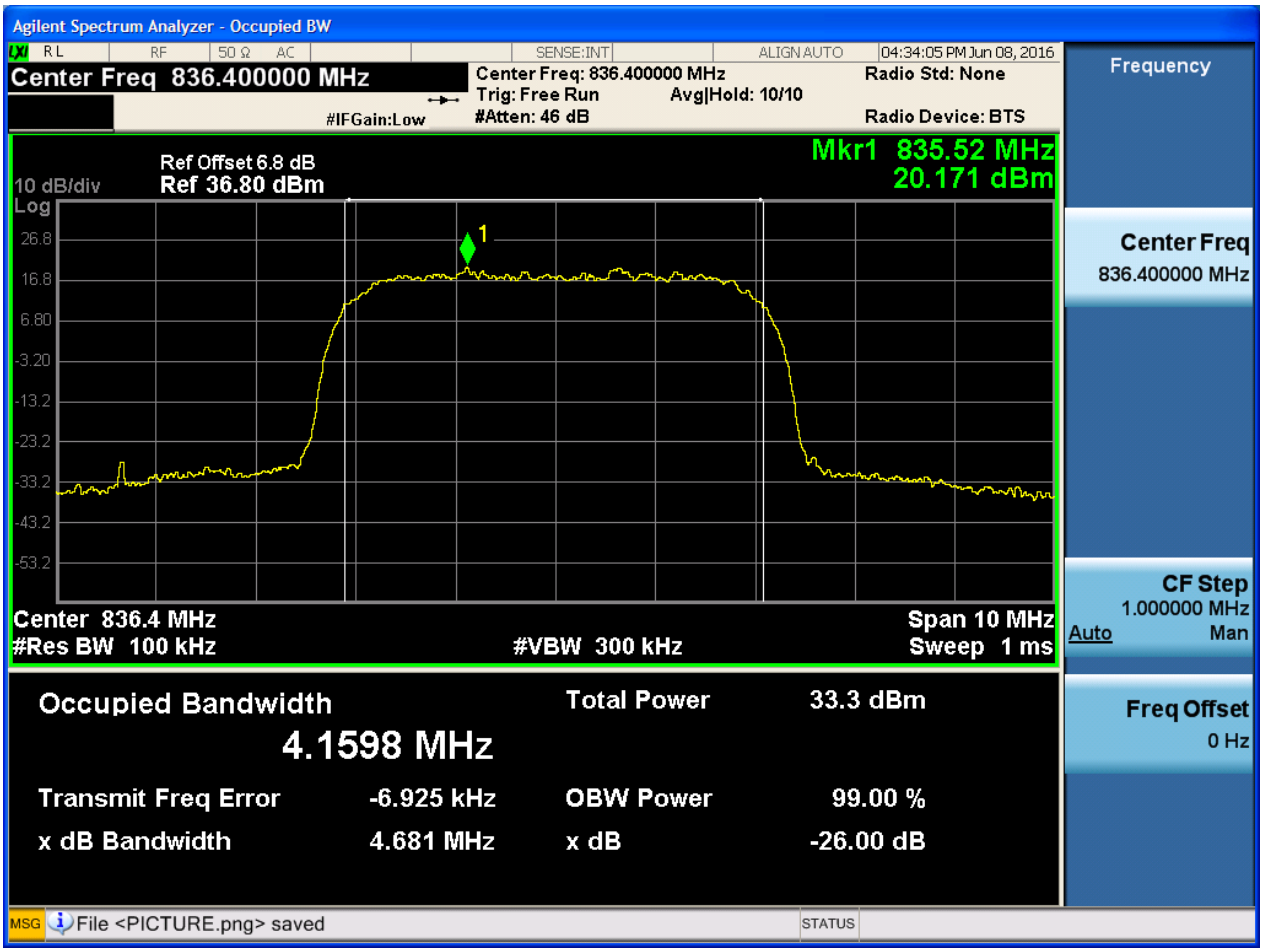
4.2.2 Test Band = WCDMA850

4.2.2.1 Test Mode = UMTS/TM1

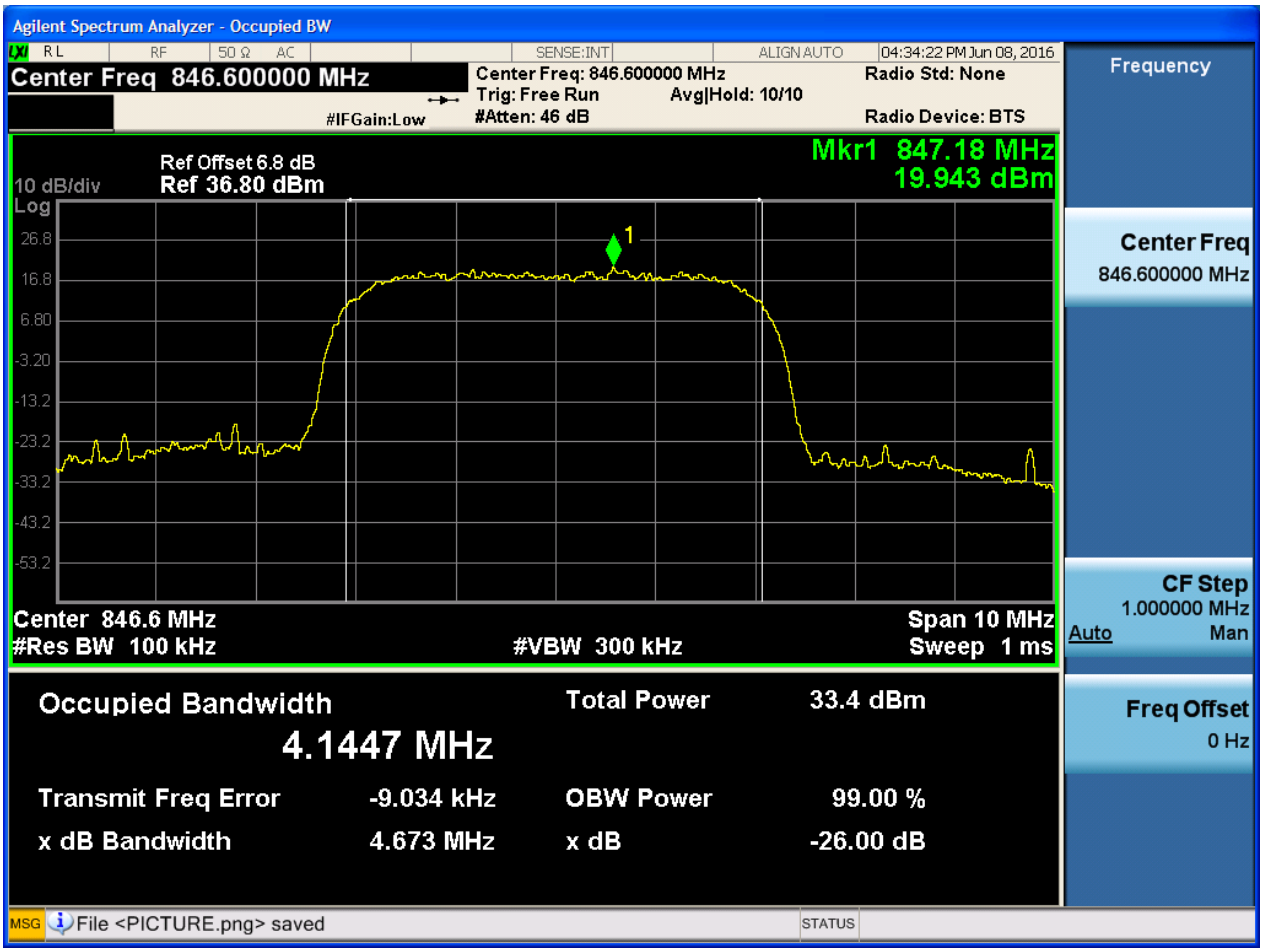
4.2.2.1.1 Test Channel = LCH



4.2.2.1.2 Test Channel = MCH



4.2.2.1.3 Test Channel = HCH



5Appendix_E: Band Edges Compliance

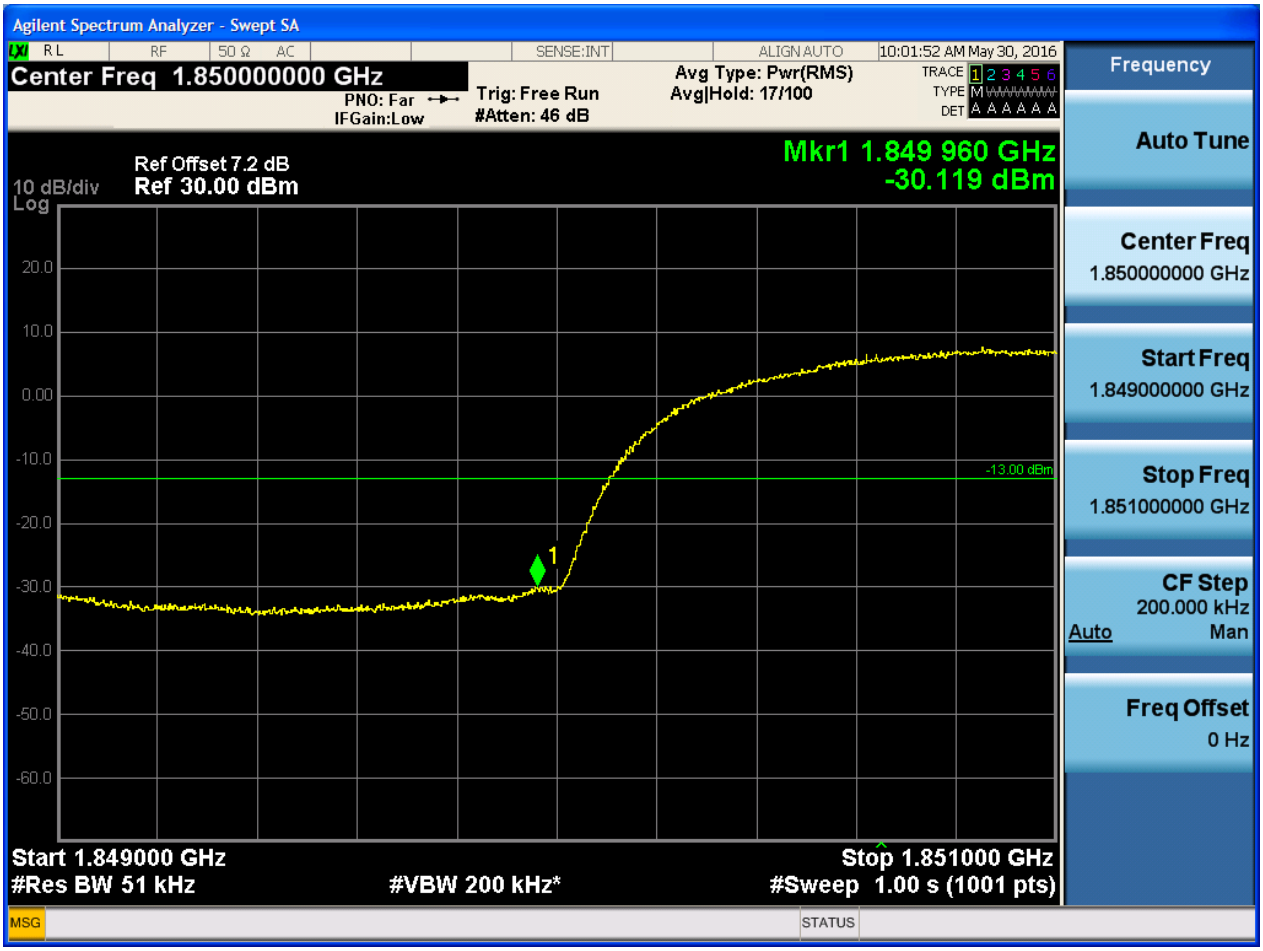
Part I - Test Plots

5.1 For UMTS

5.1.1 Test Band = WCDMA1900

5.1.1.1 Test Mode = UMTS/TM1

5.1.1.1.1 Test Channel = LCH



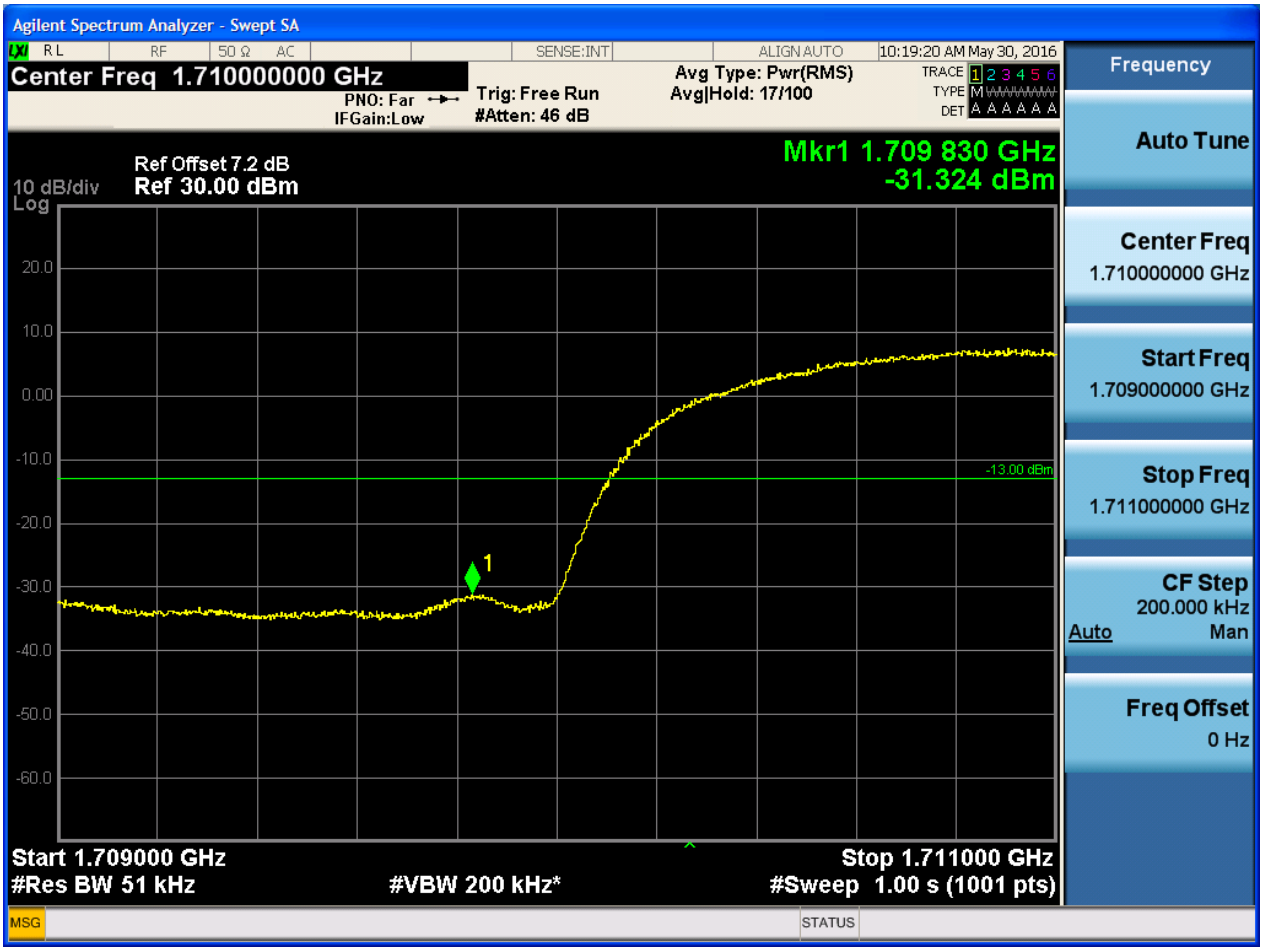
5.1.1.1.2 Test Channel = HCH

5.2 For UMTS

5.2.1 Test Band = WCDMA1700

5.2.1.1 Test Mode = UMTS/TM1

5.2.1.1.1 Test Channel = LCH

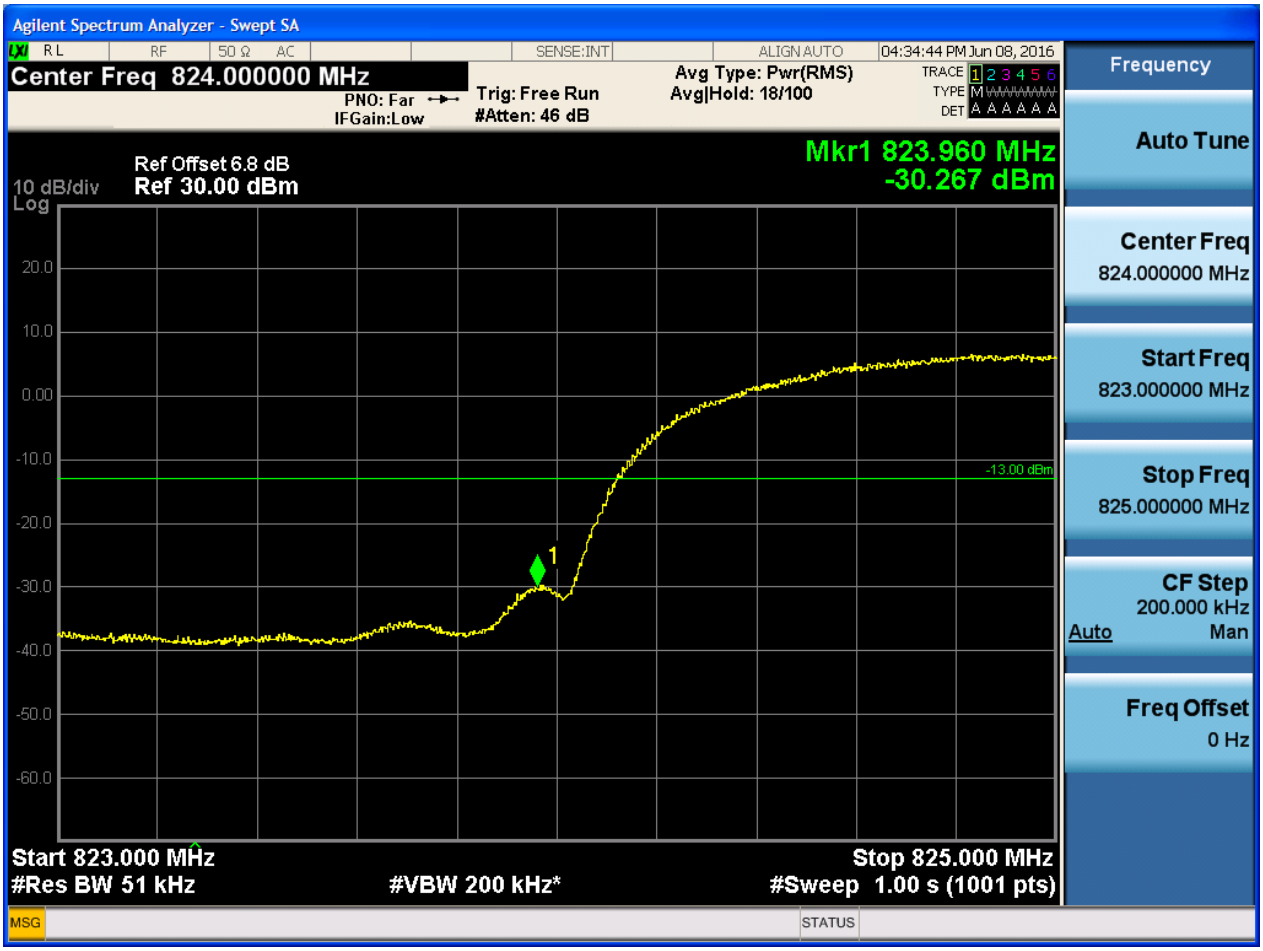


5.2.1.1.2 Test Channel = HCH

5.2.2 Test Band = WCDMA850

5.2.2.1 Test Mode = UMTS/TM1

5.2.2.1.1 Test Channel = LCH



5.2.2.1.2 Test Channel = HCH

6Appendix_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.

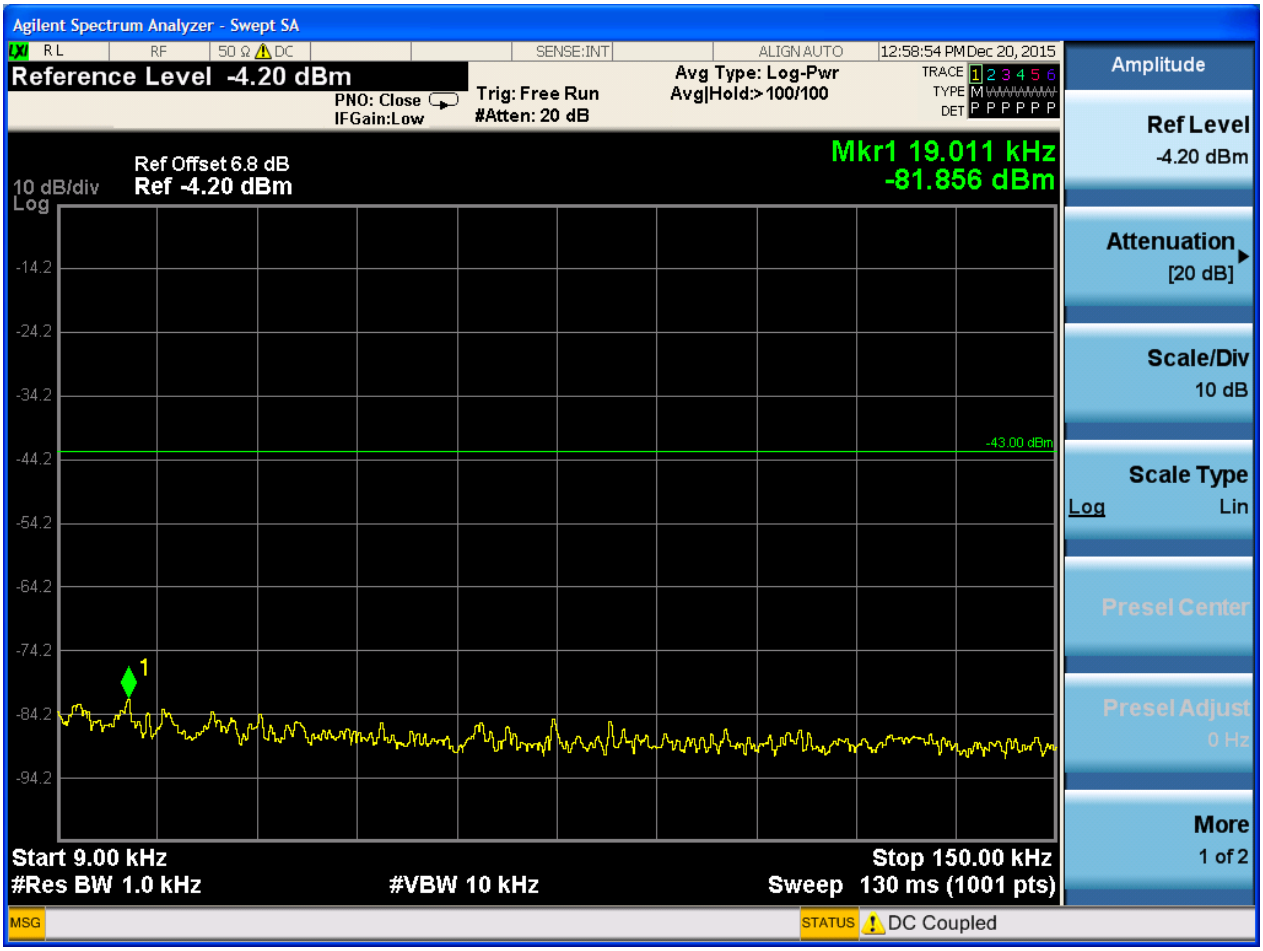
Part I - Test Plots

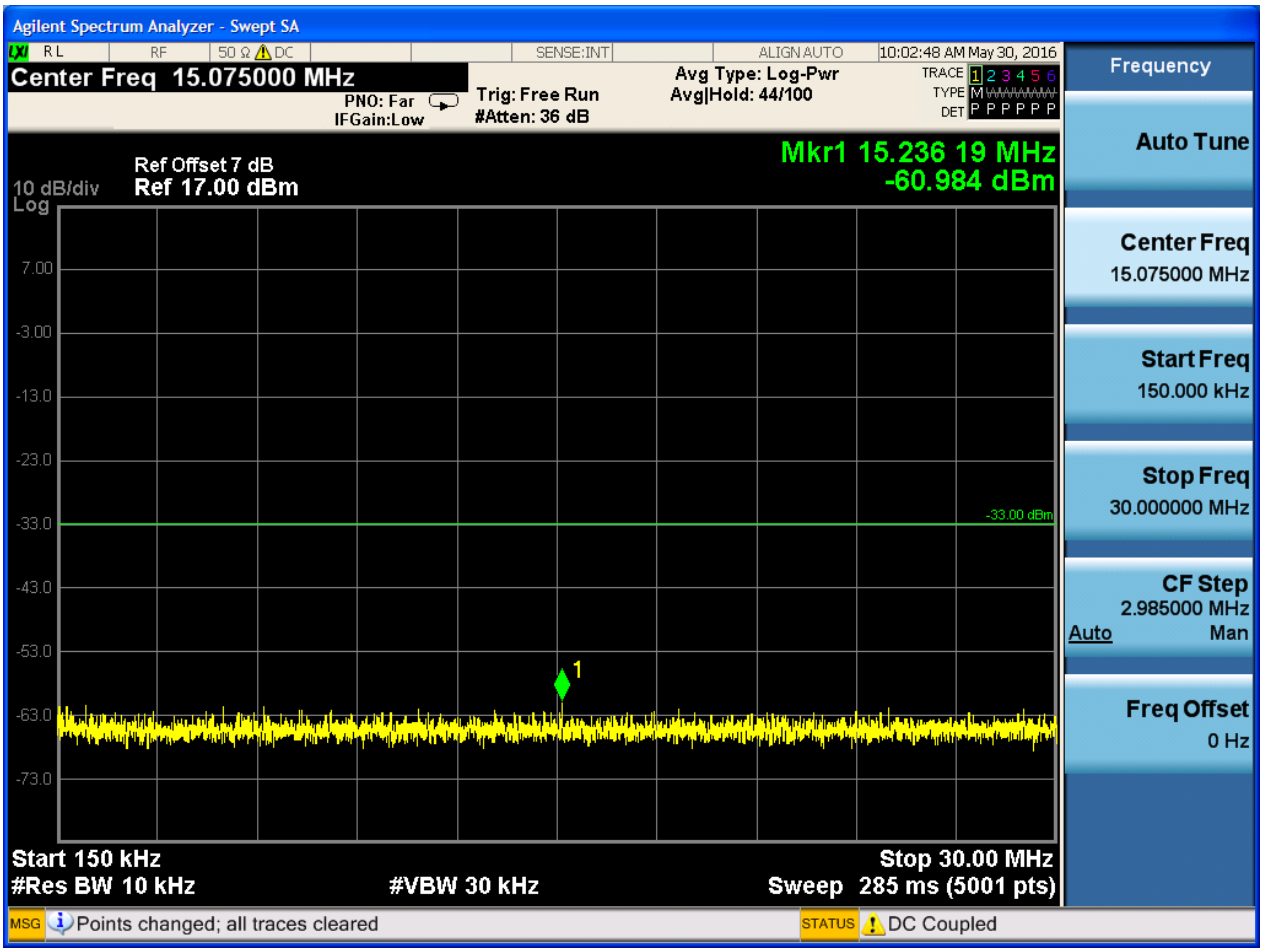
6.1 For UMTS

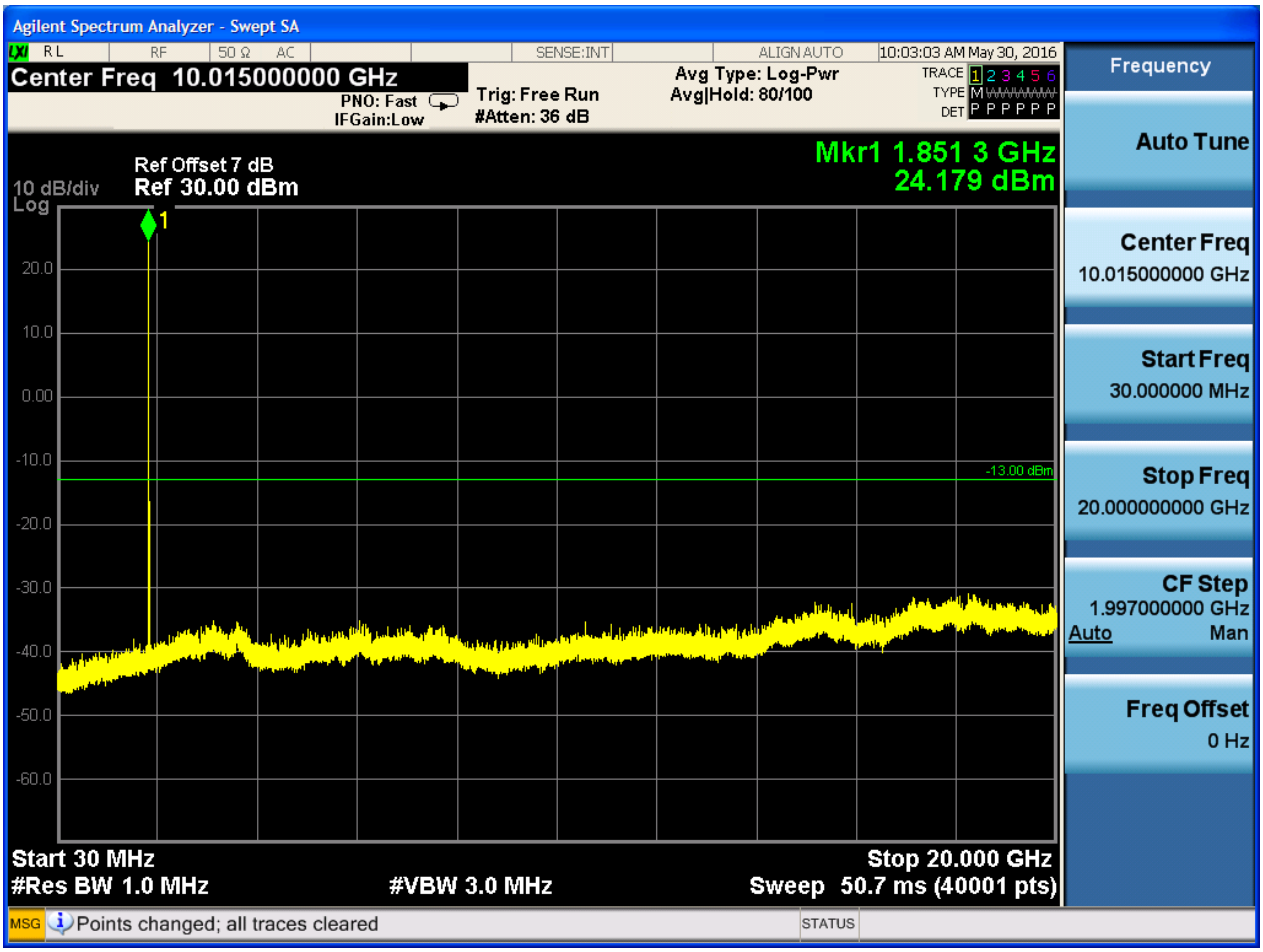
6.1.1 Test Band = WCDMA1900

6.1.1.1 Test Mode = UMTS/TM1

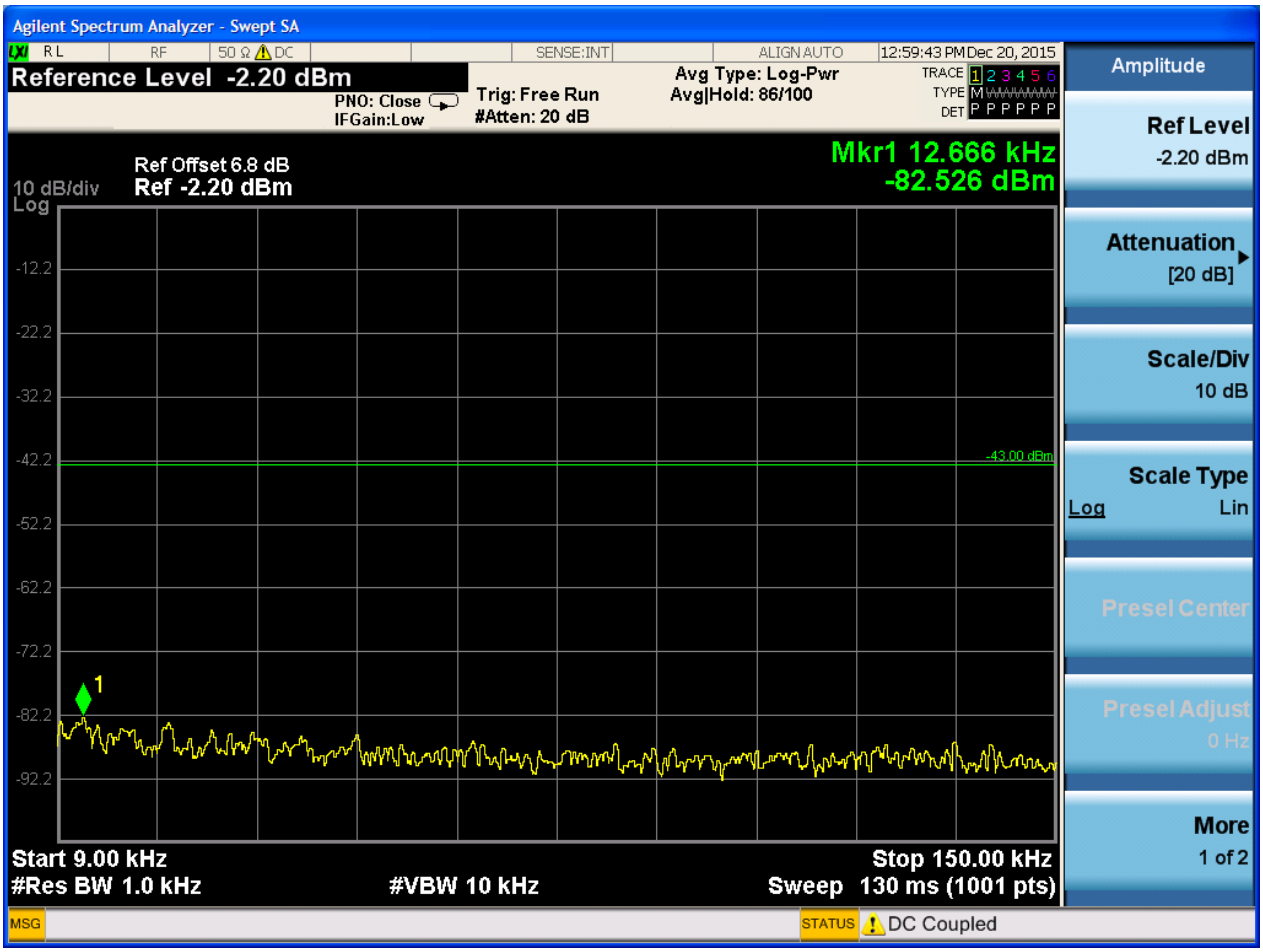
6.1.1.1.1 Test Channel = LCH

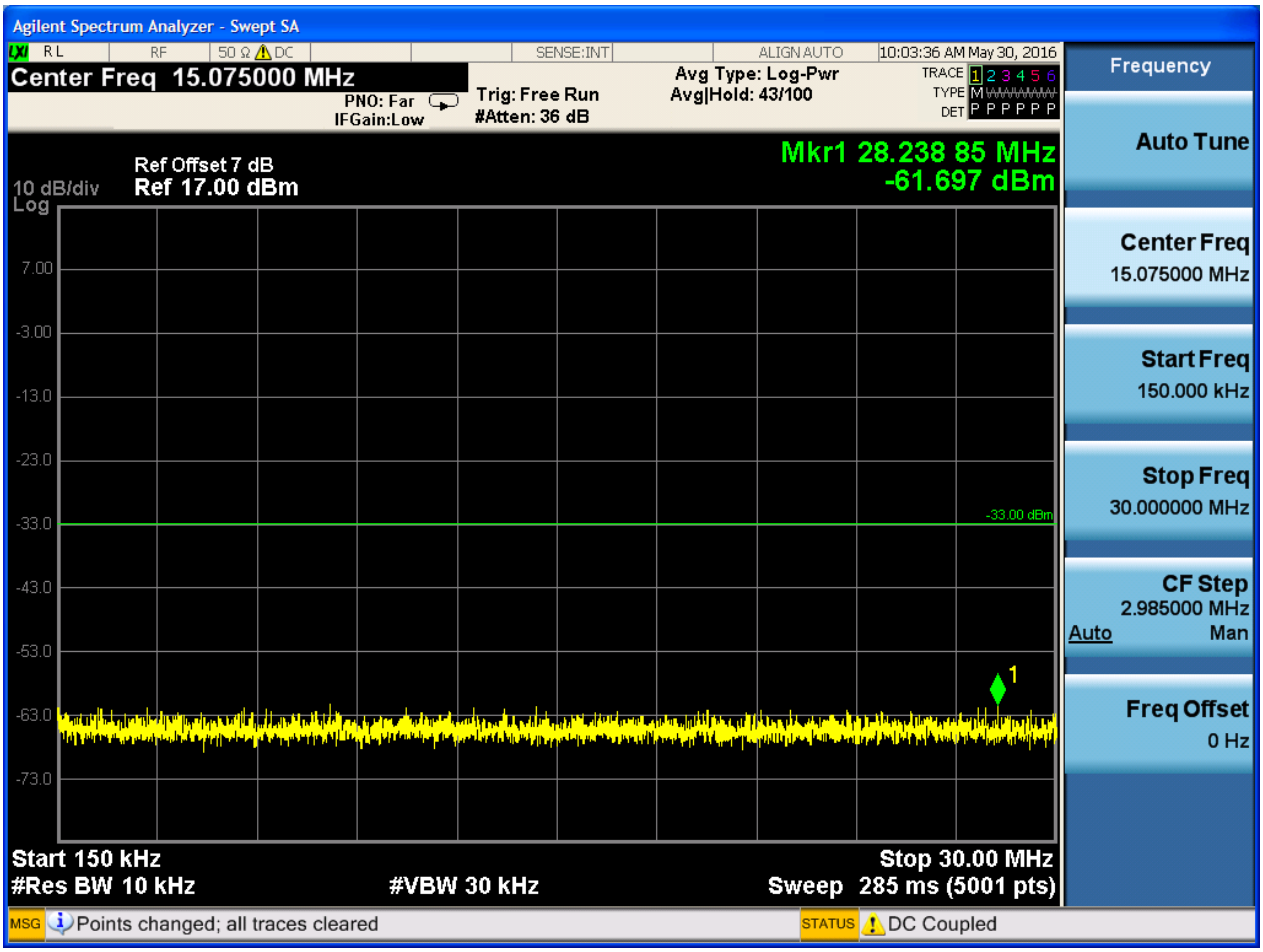


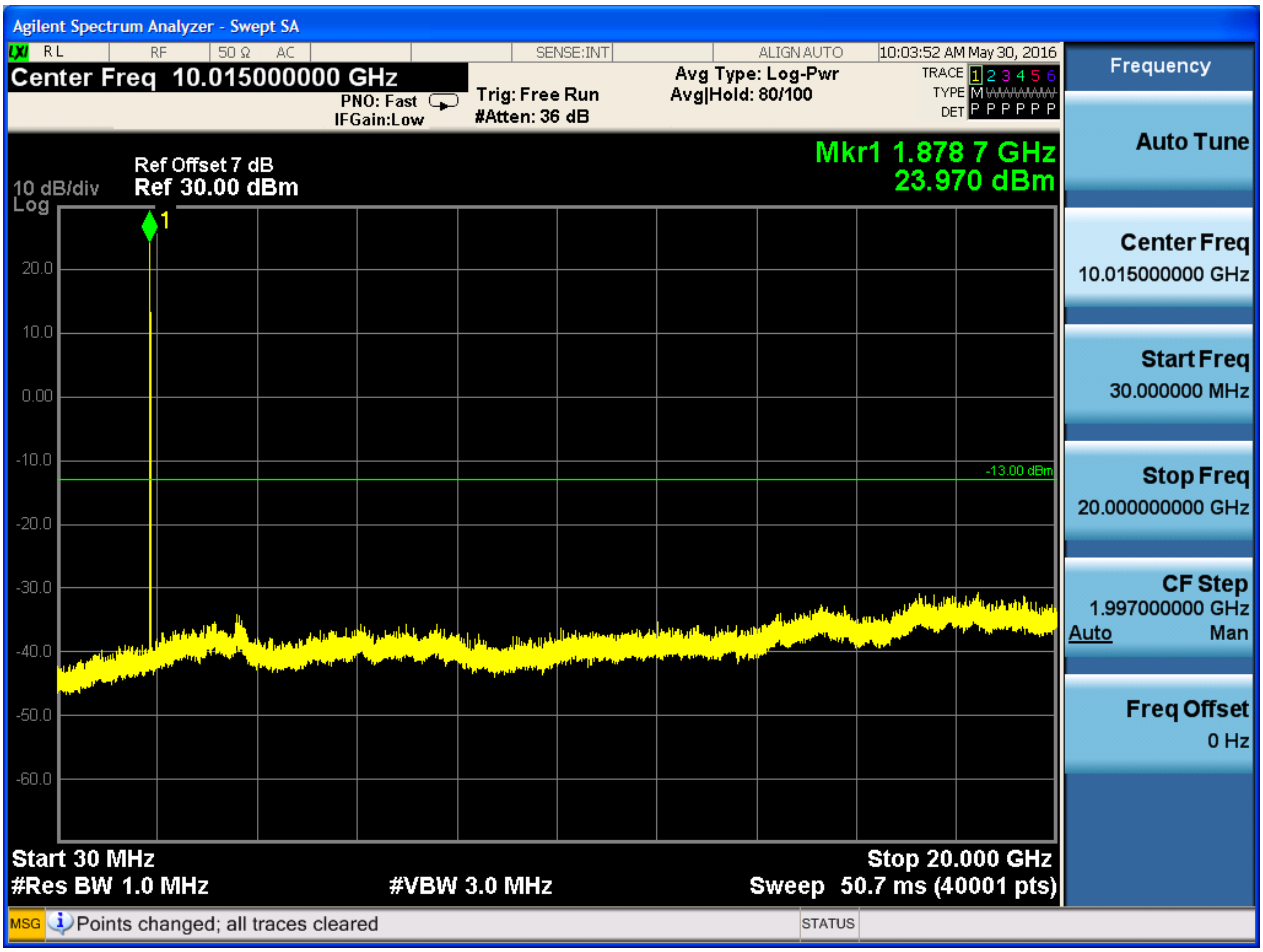




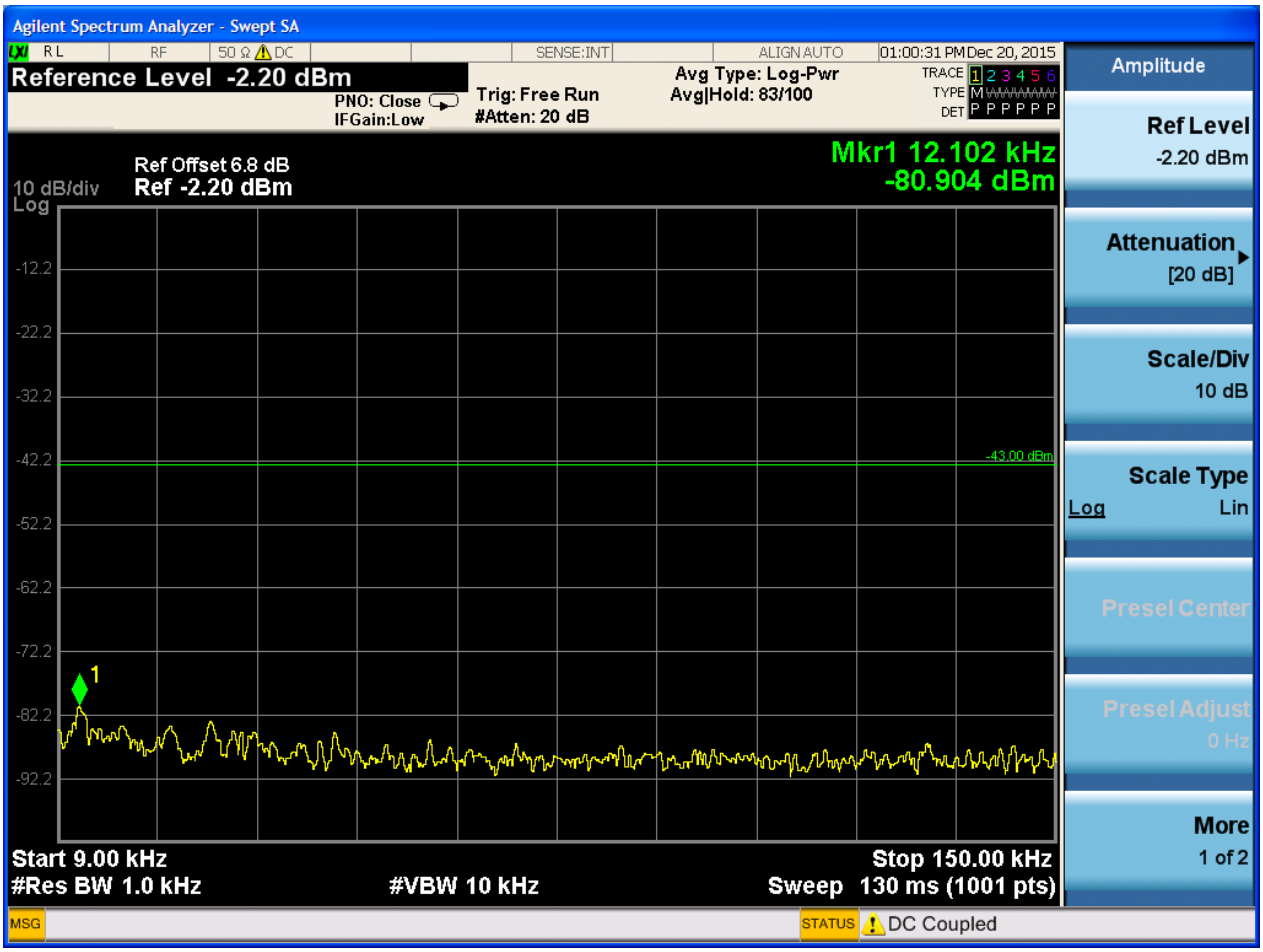
6.1.1.1.2 Test Channel = MCH

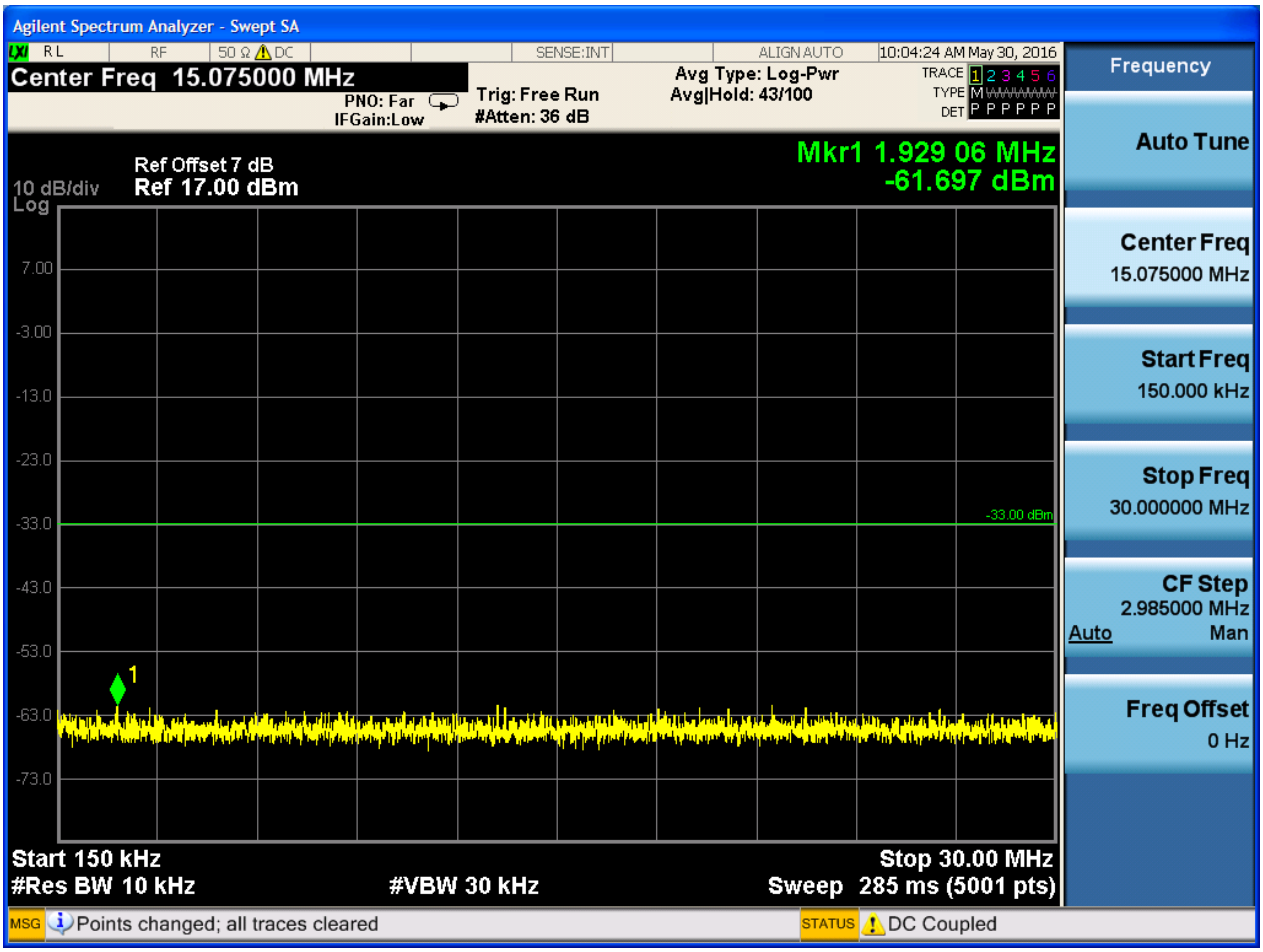


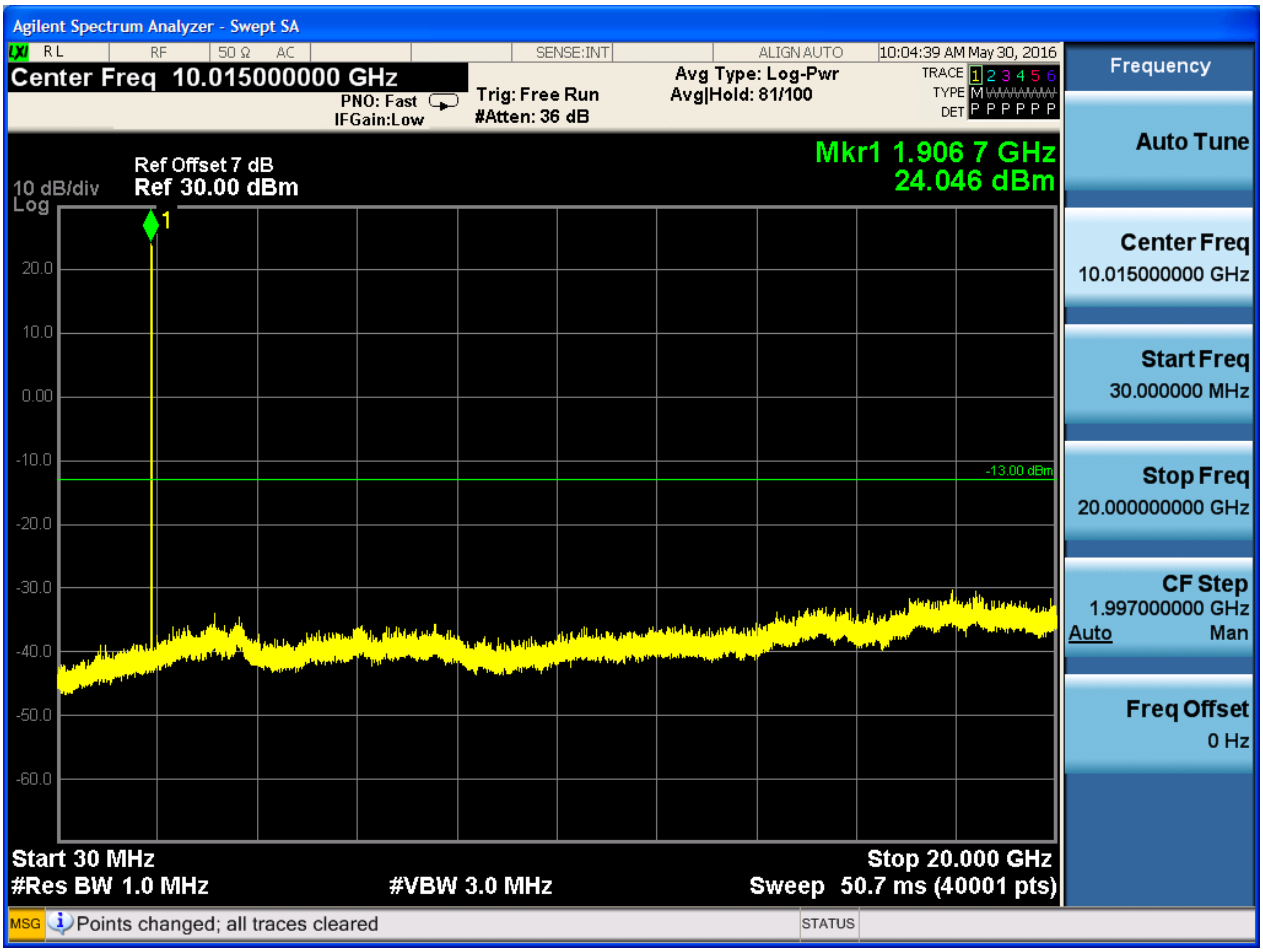




6.1.1.1.3 Test Channel = HCH





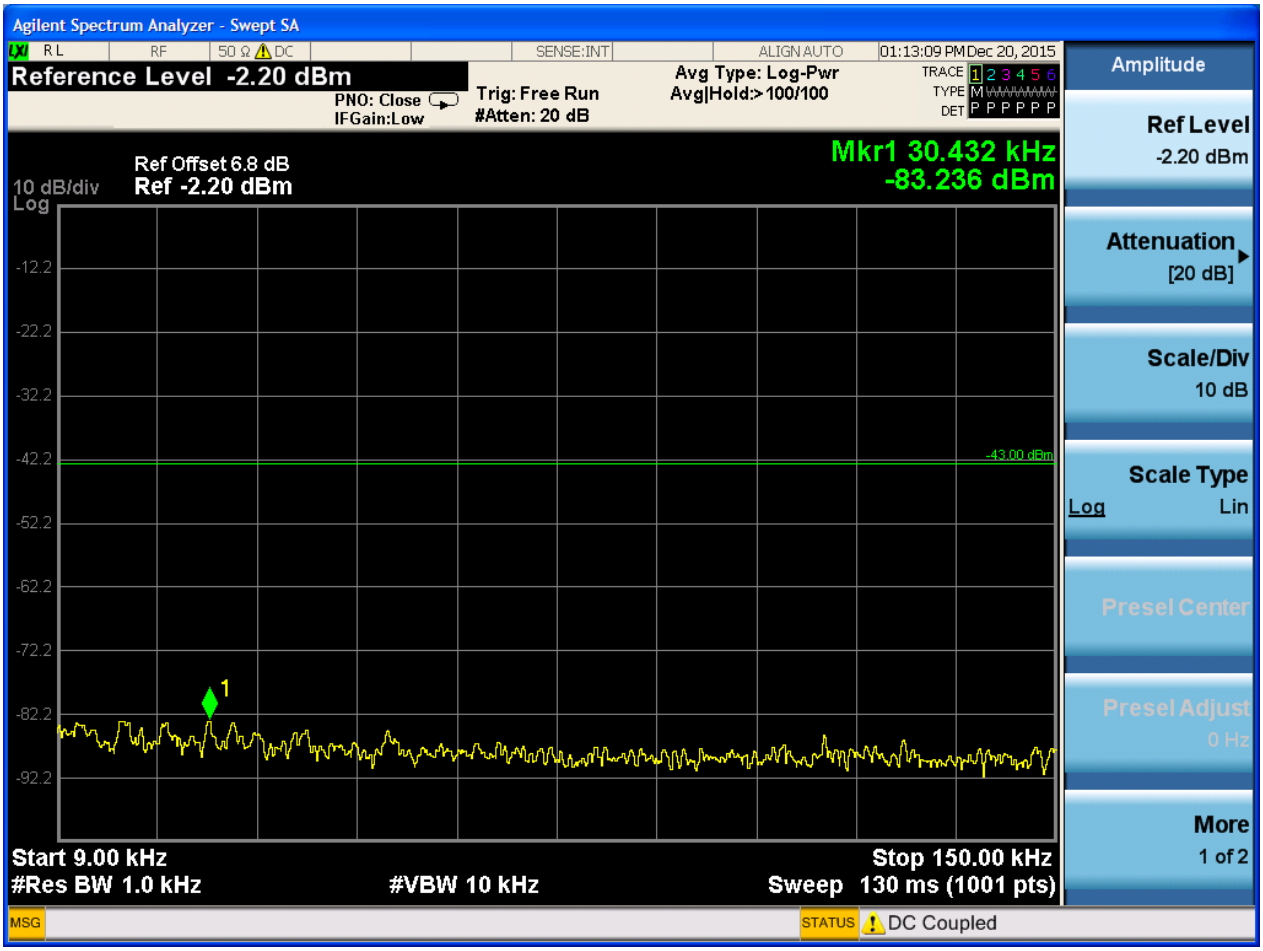


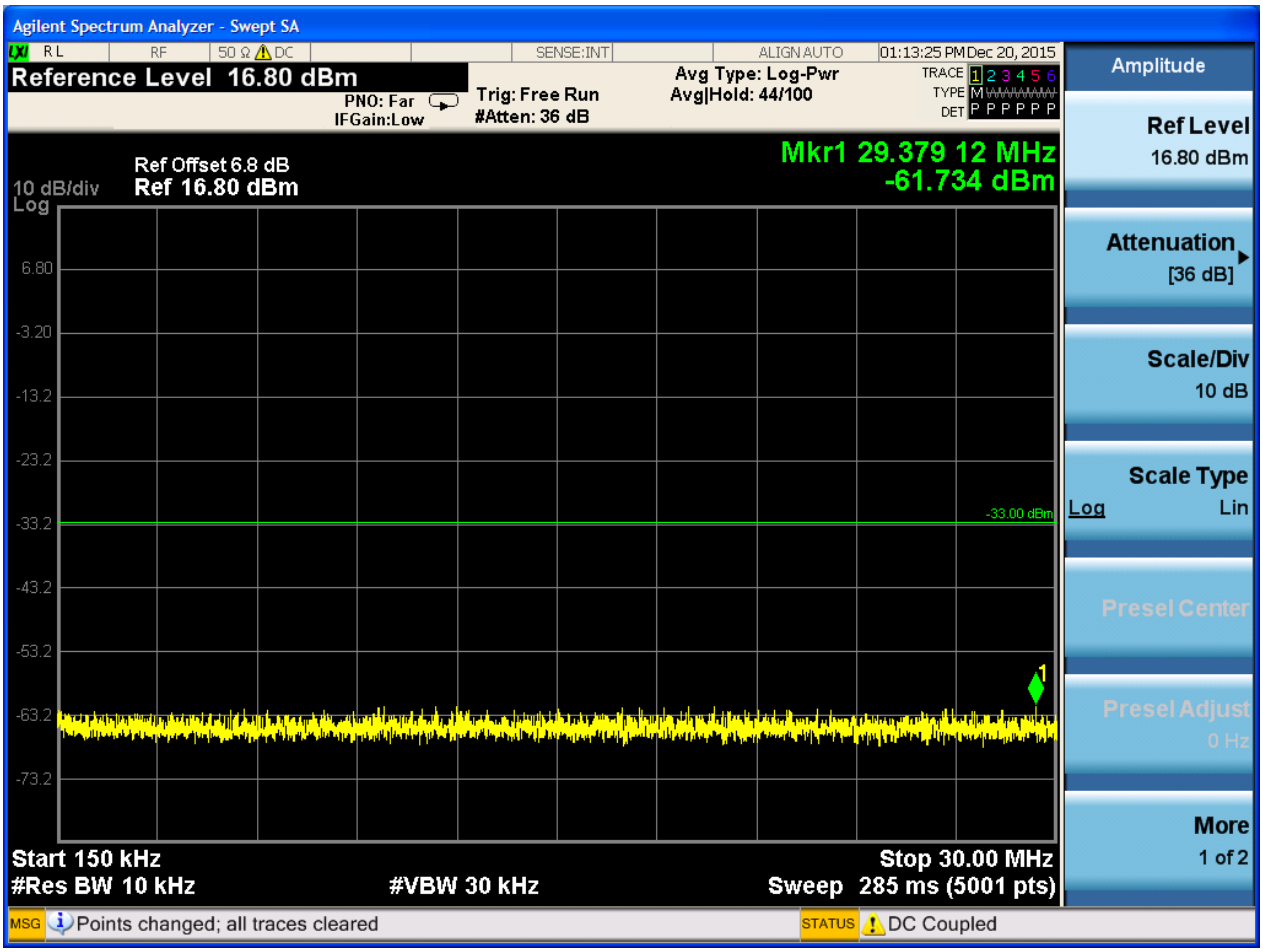
6.2 For UMTS

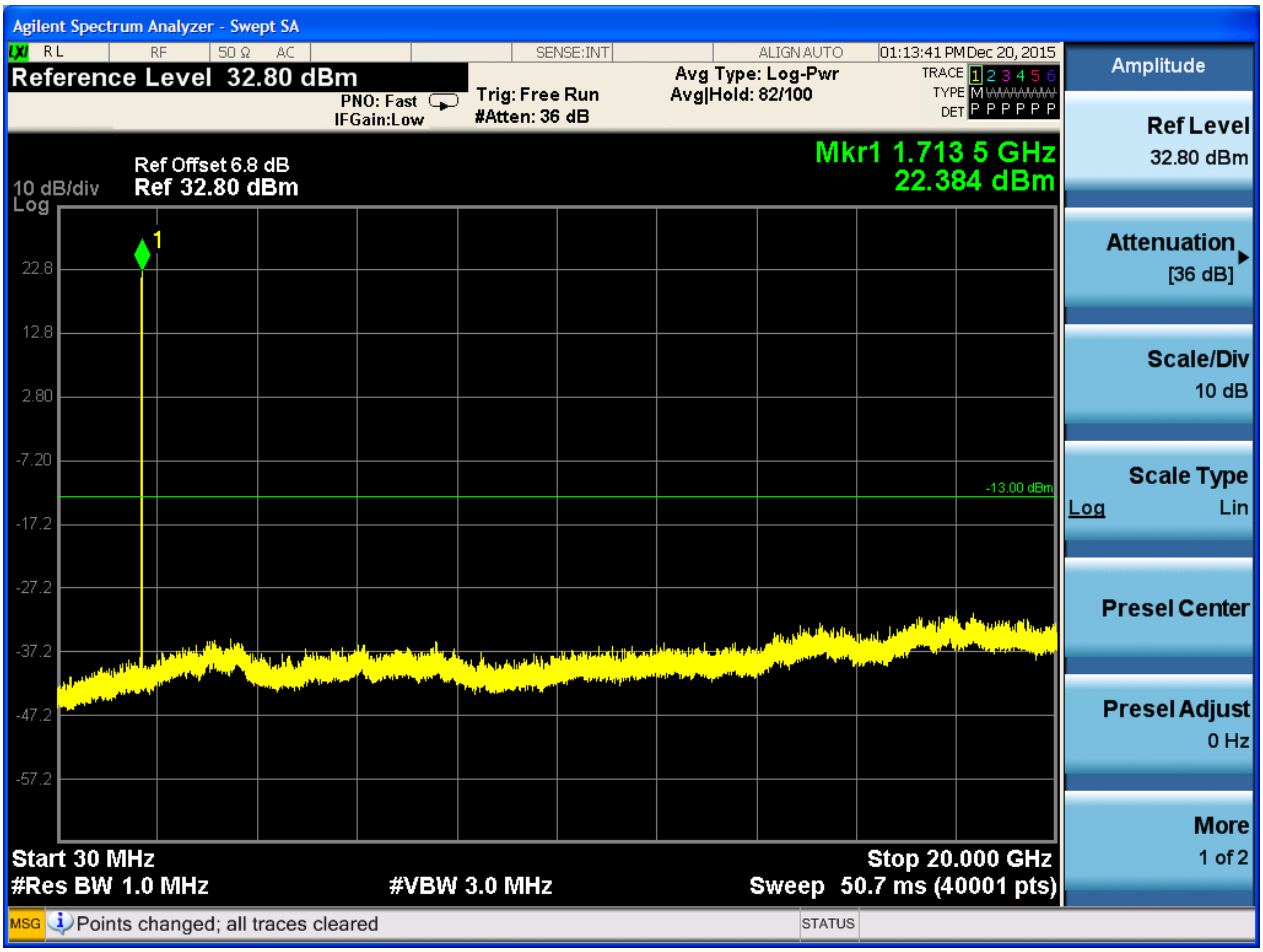
6.2.1 Test Band = WCDMA1700

6.2.1.1 Test Mode = UMTS/TM1

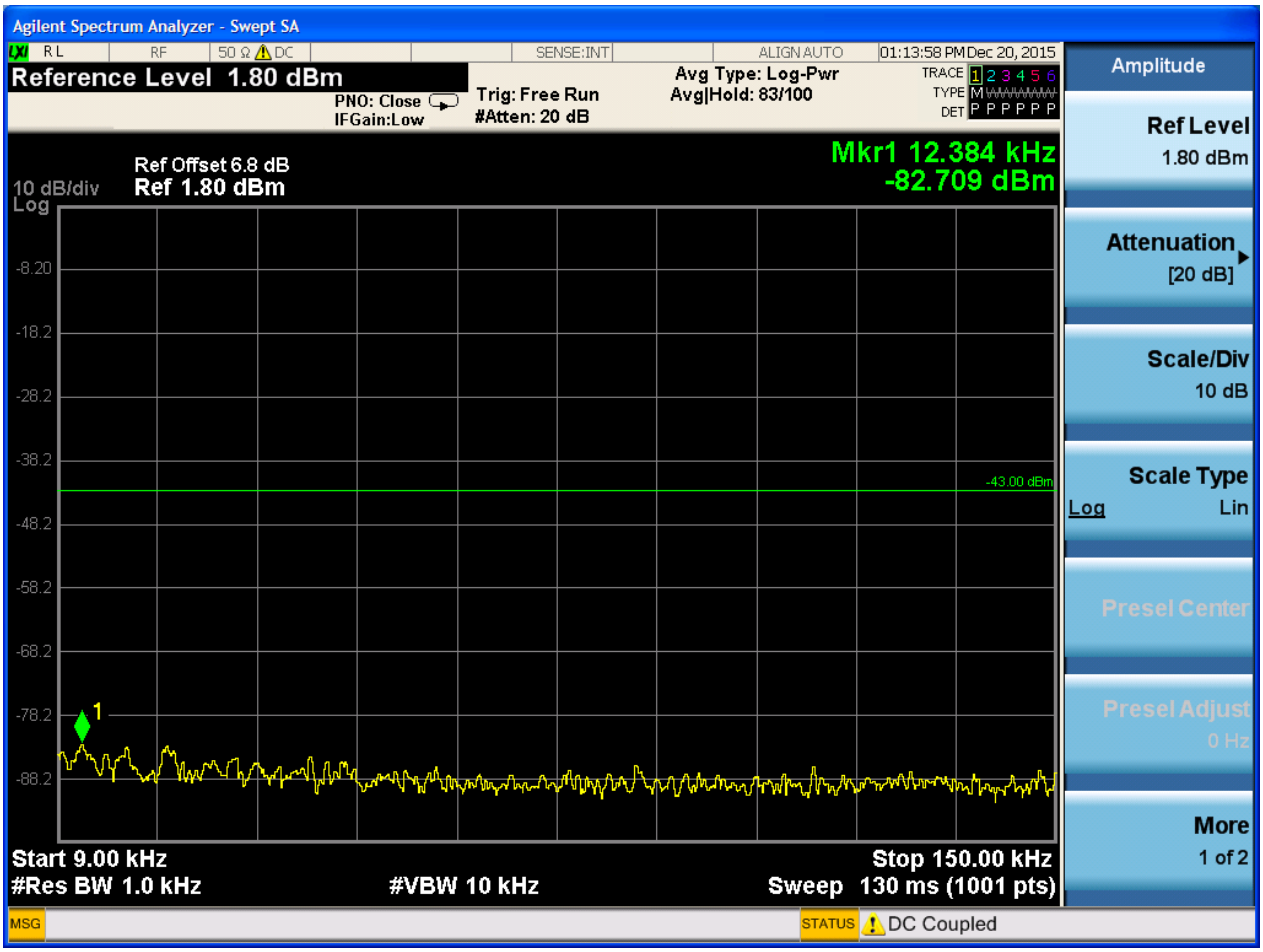
6.2.1.1.1 Test Channel = LCH

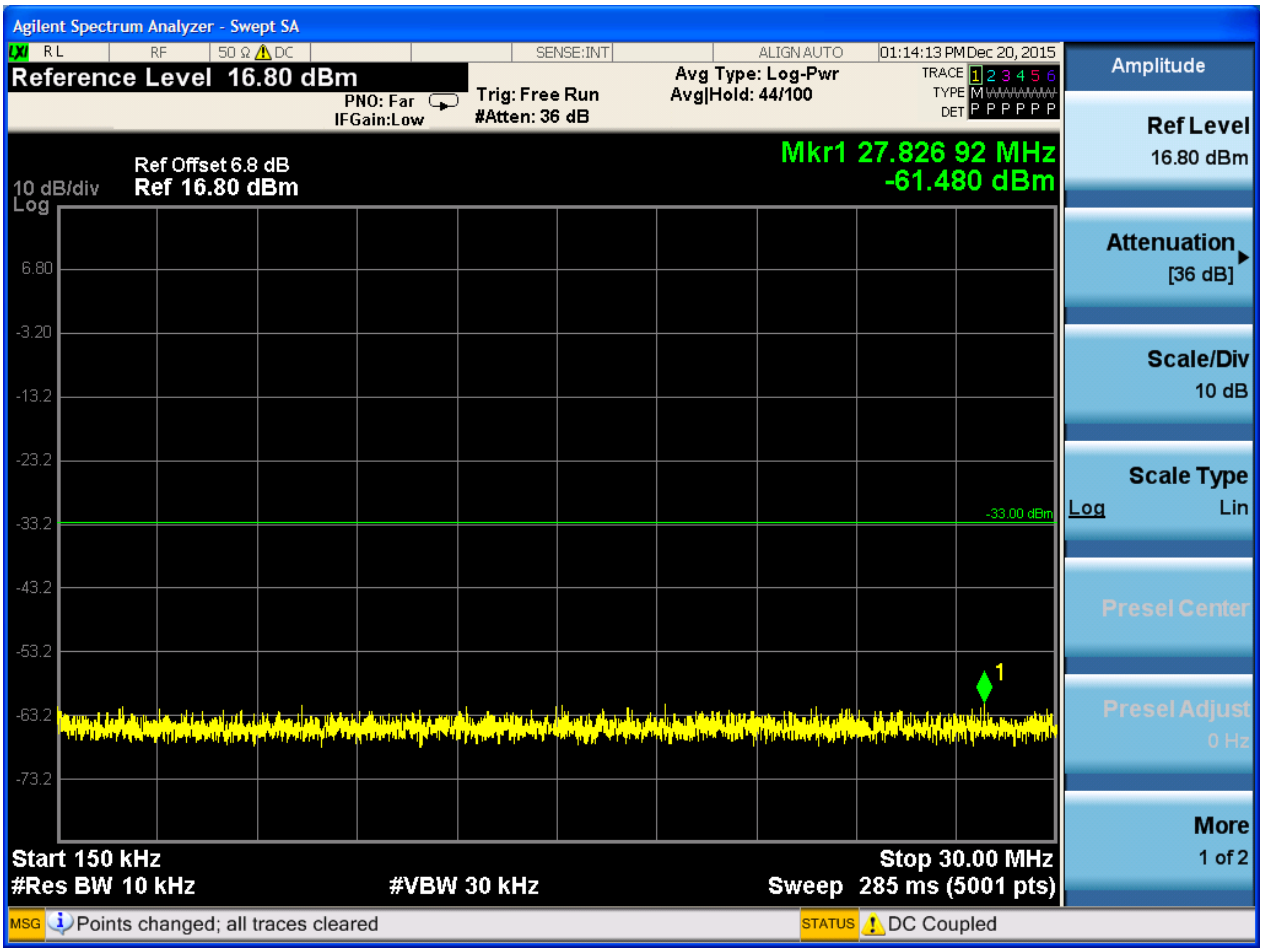


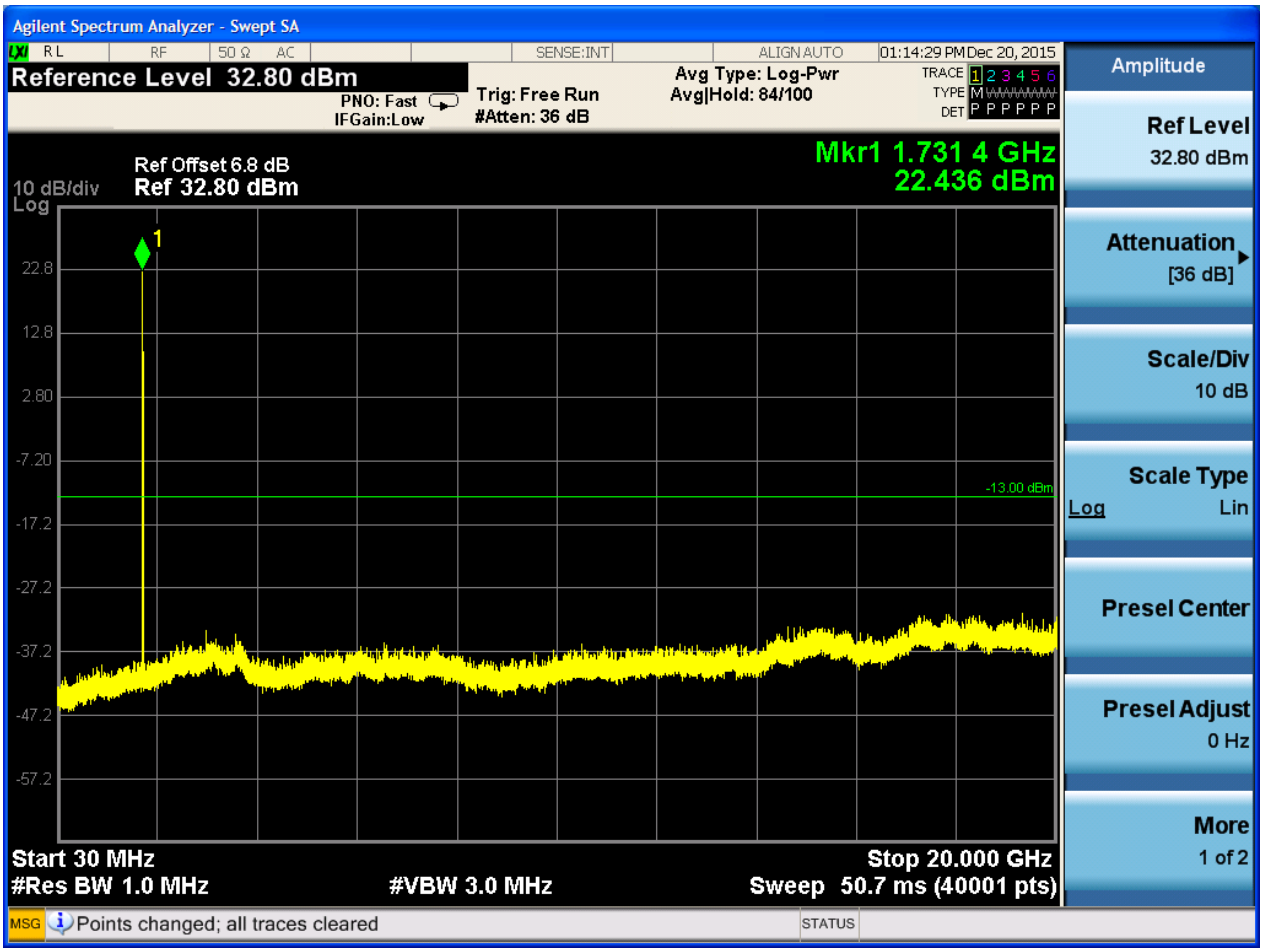




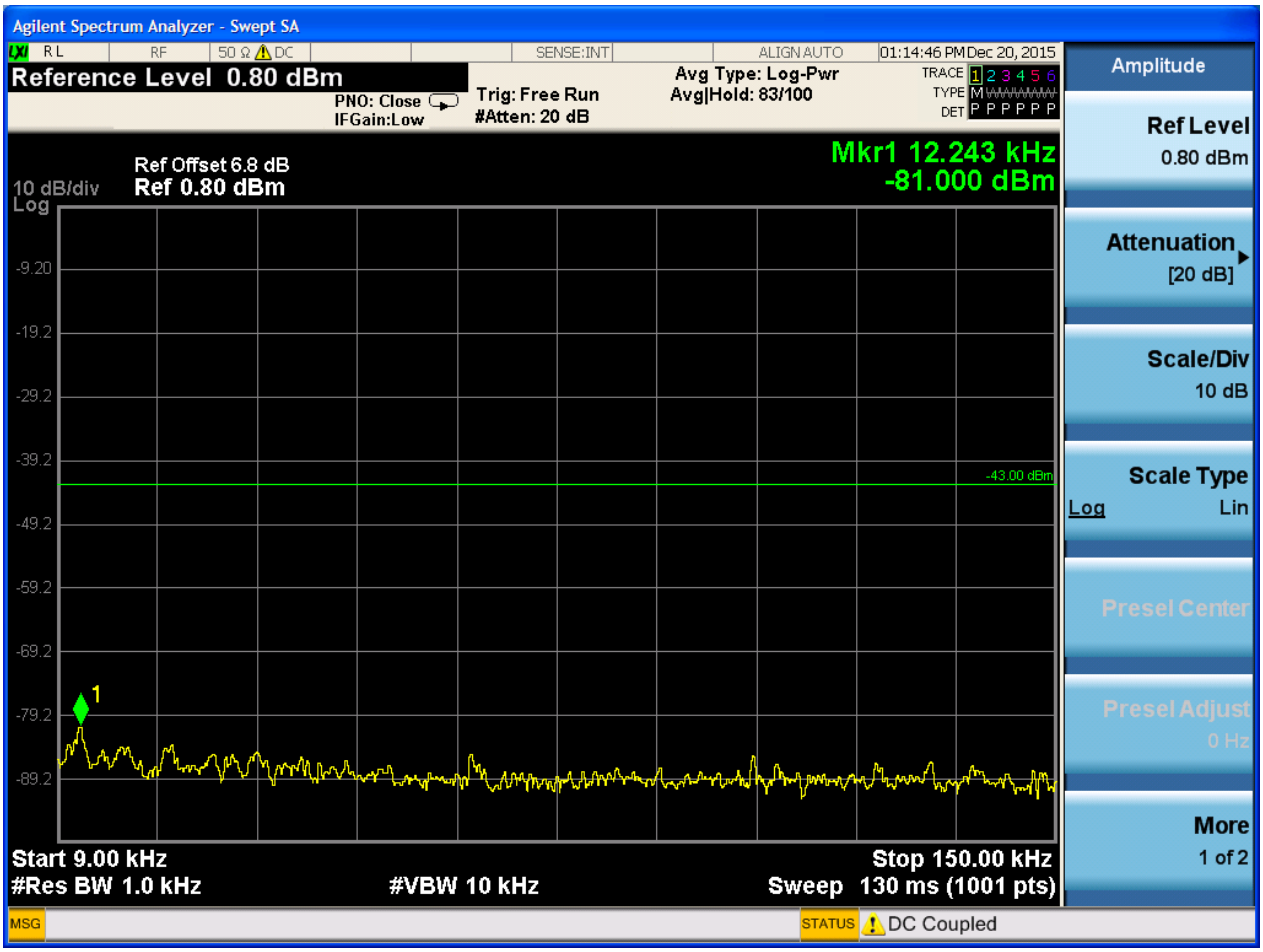
6.2.1.1.2 Test Channel = MCH

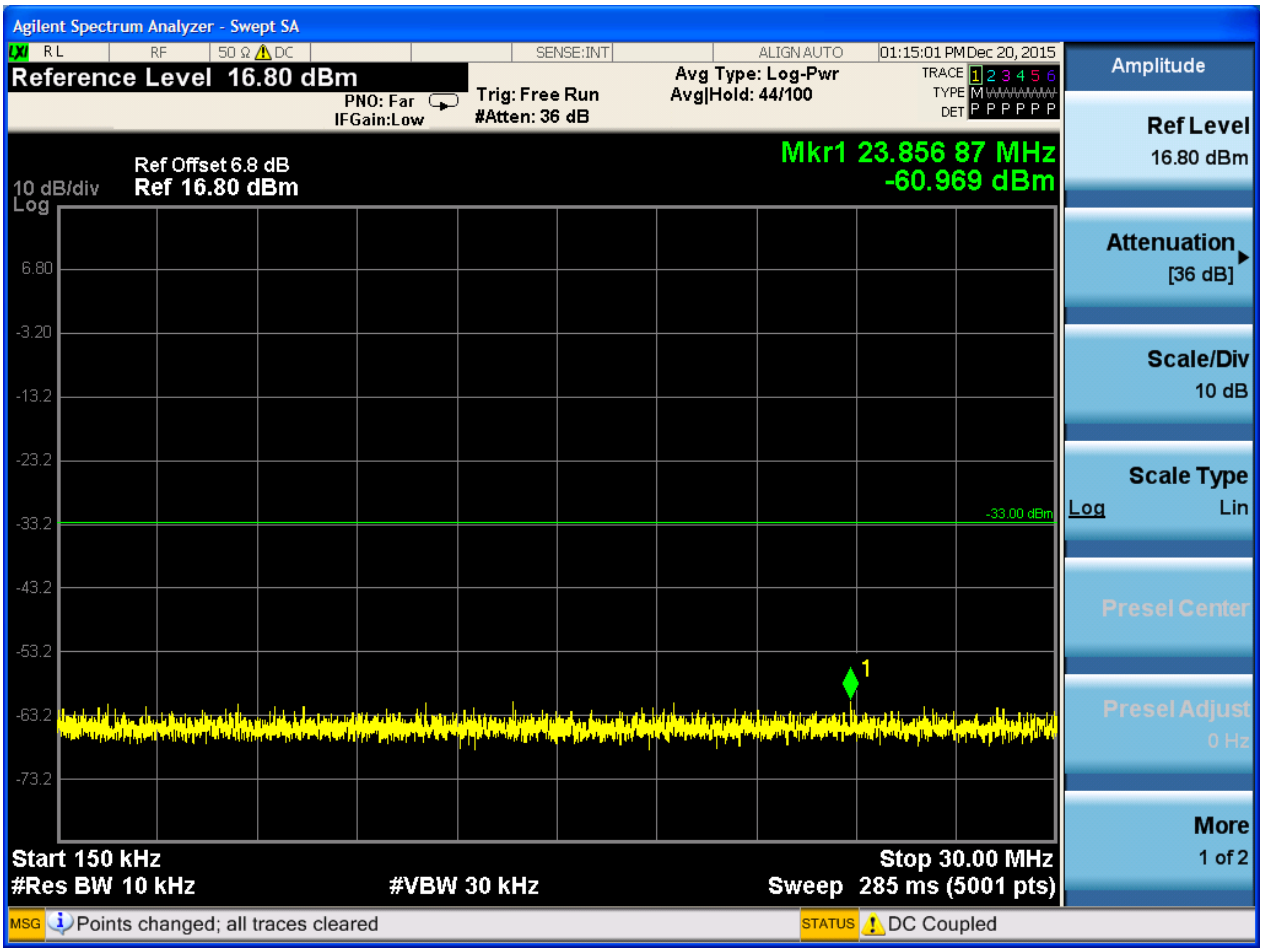


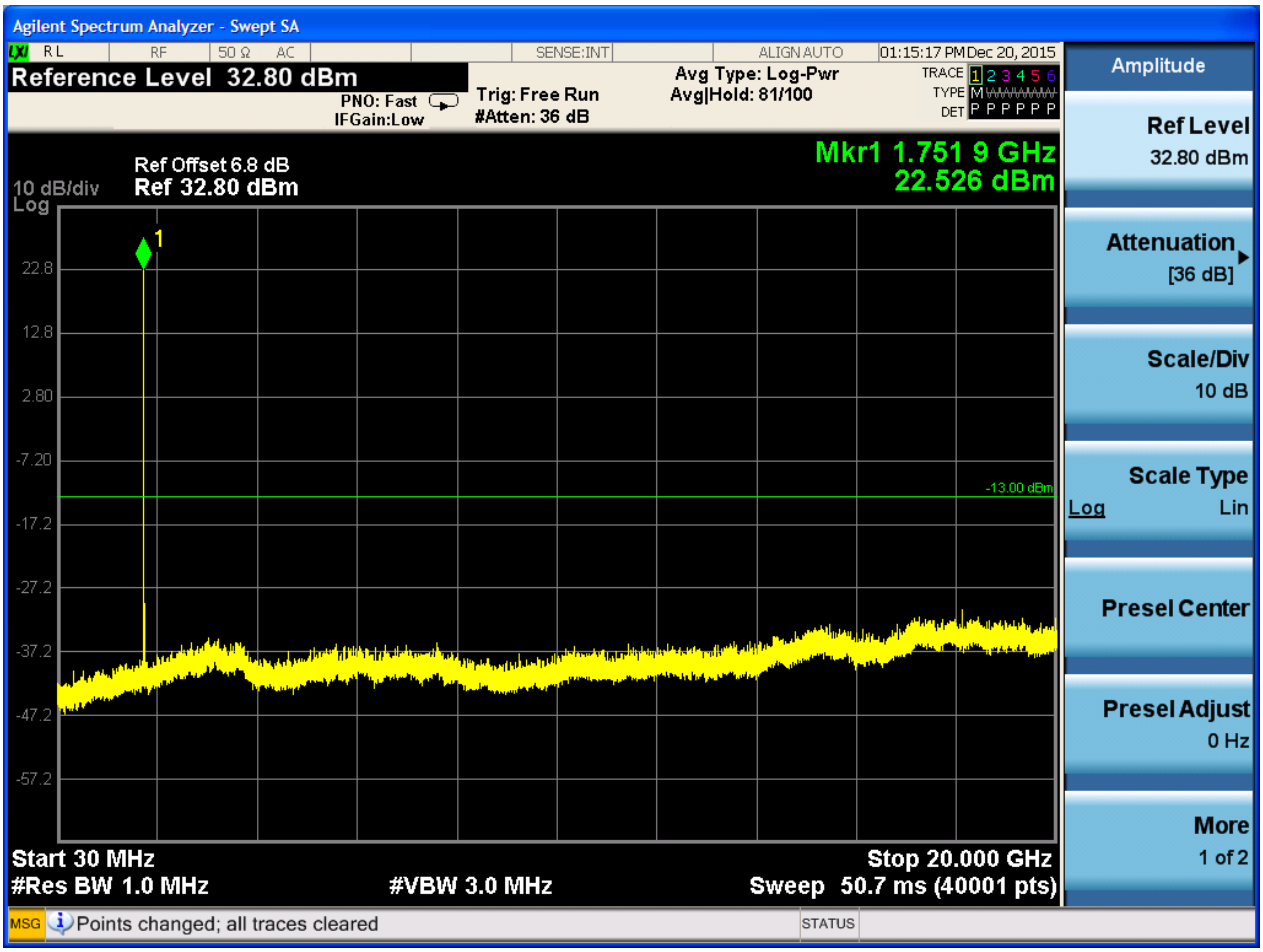




6.2.1.1.3 Test Channel = HCH



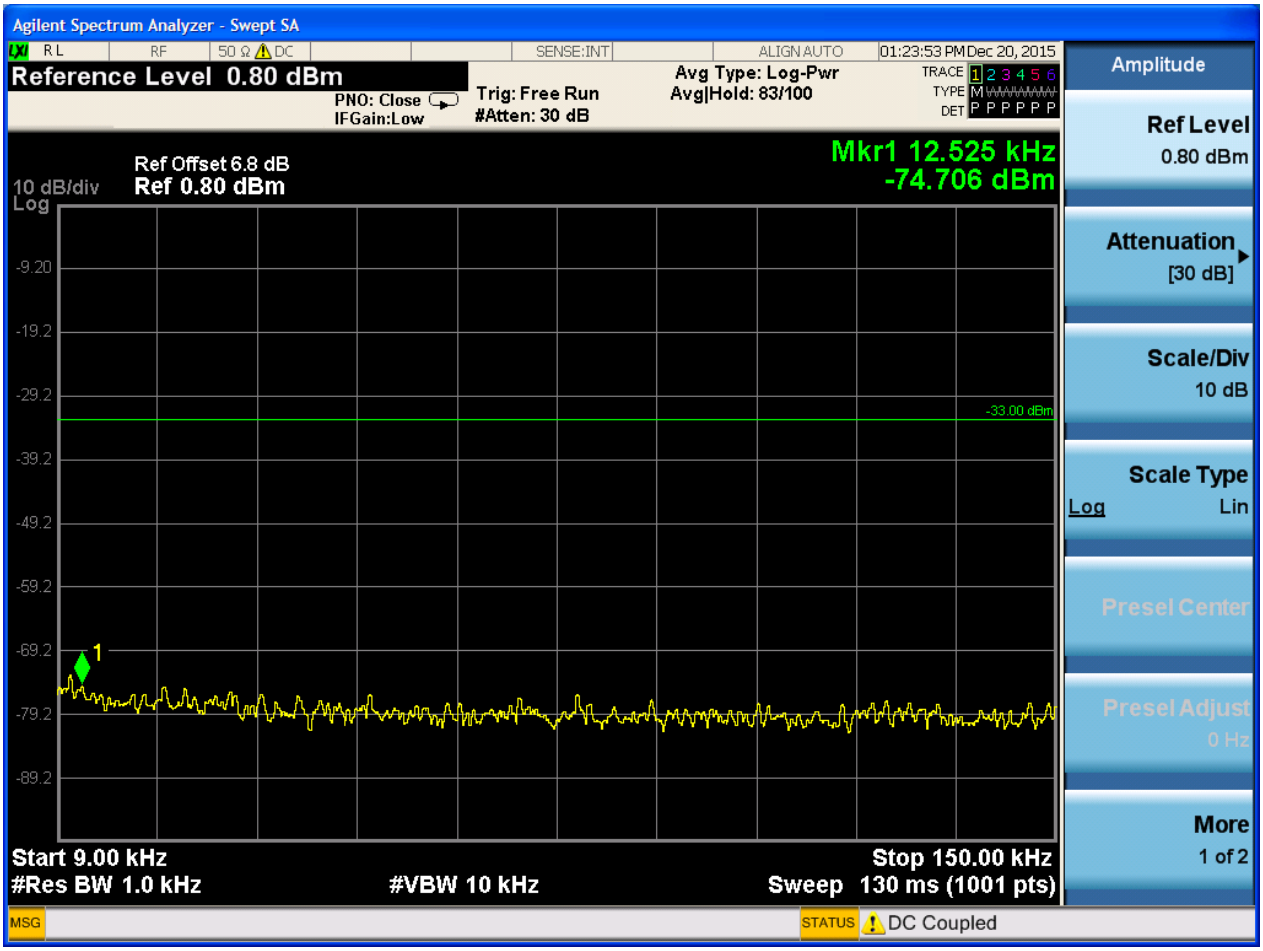


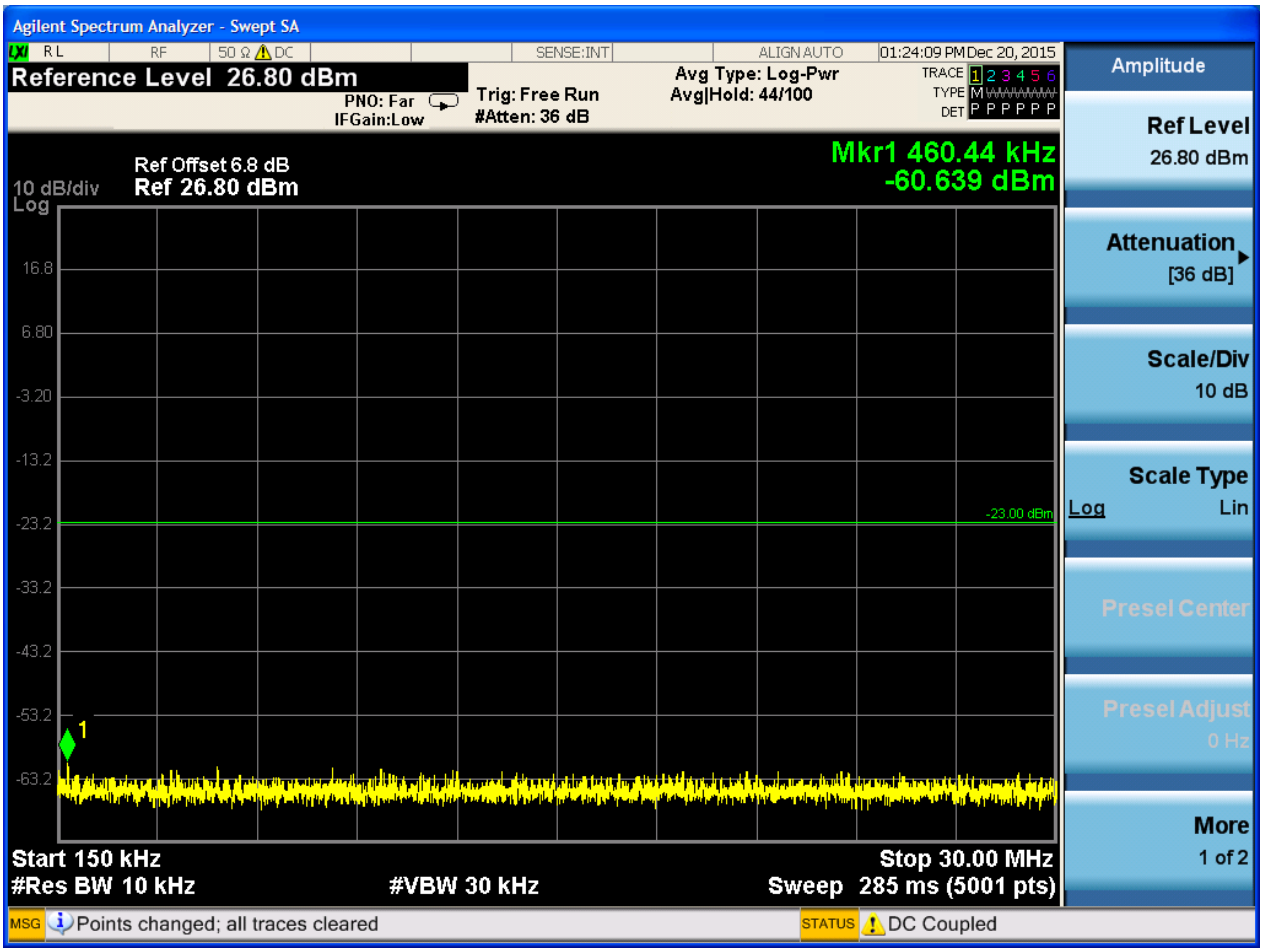


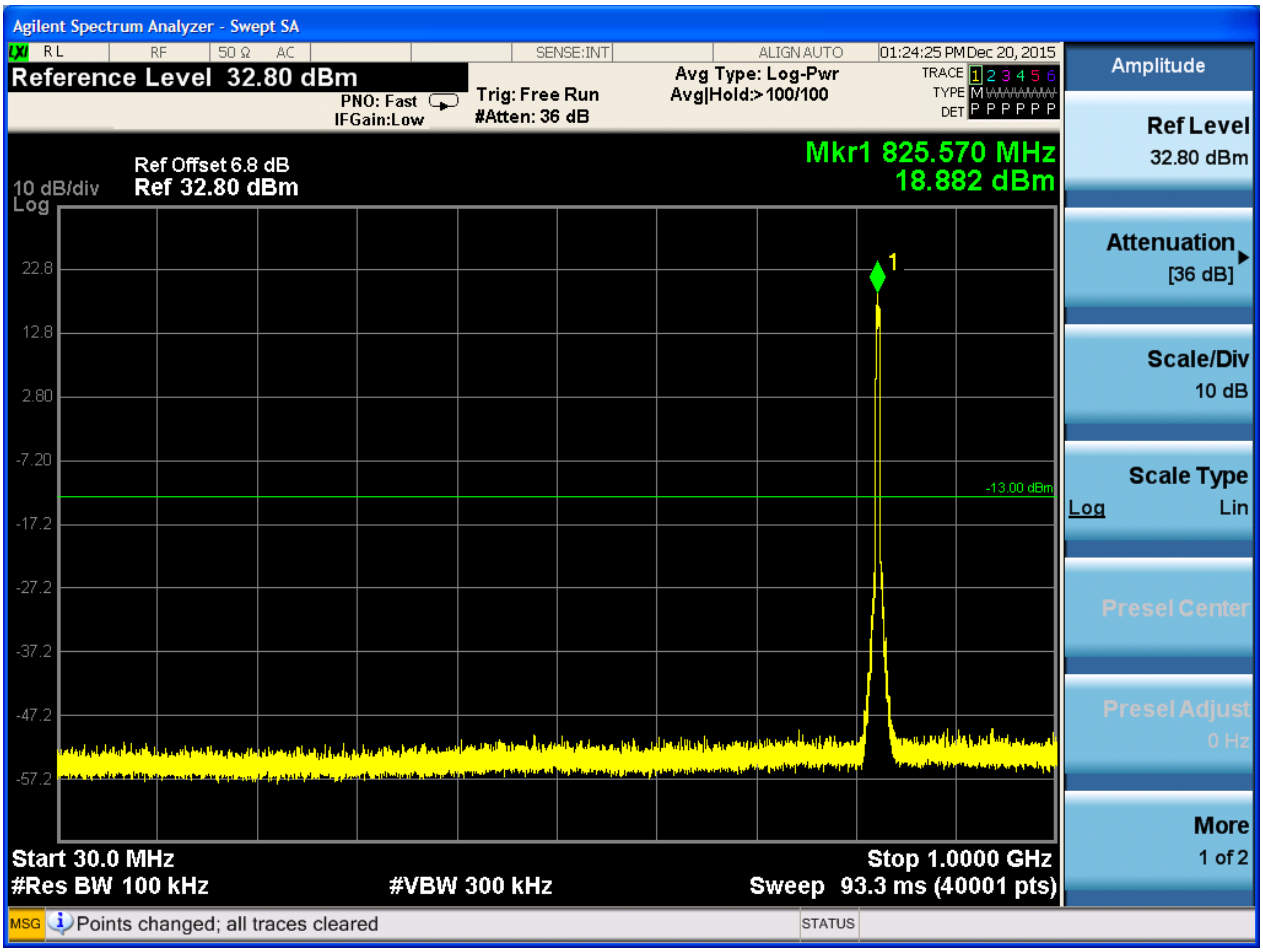
6.2.2 Test Band = WCDMA850

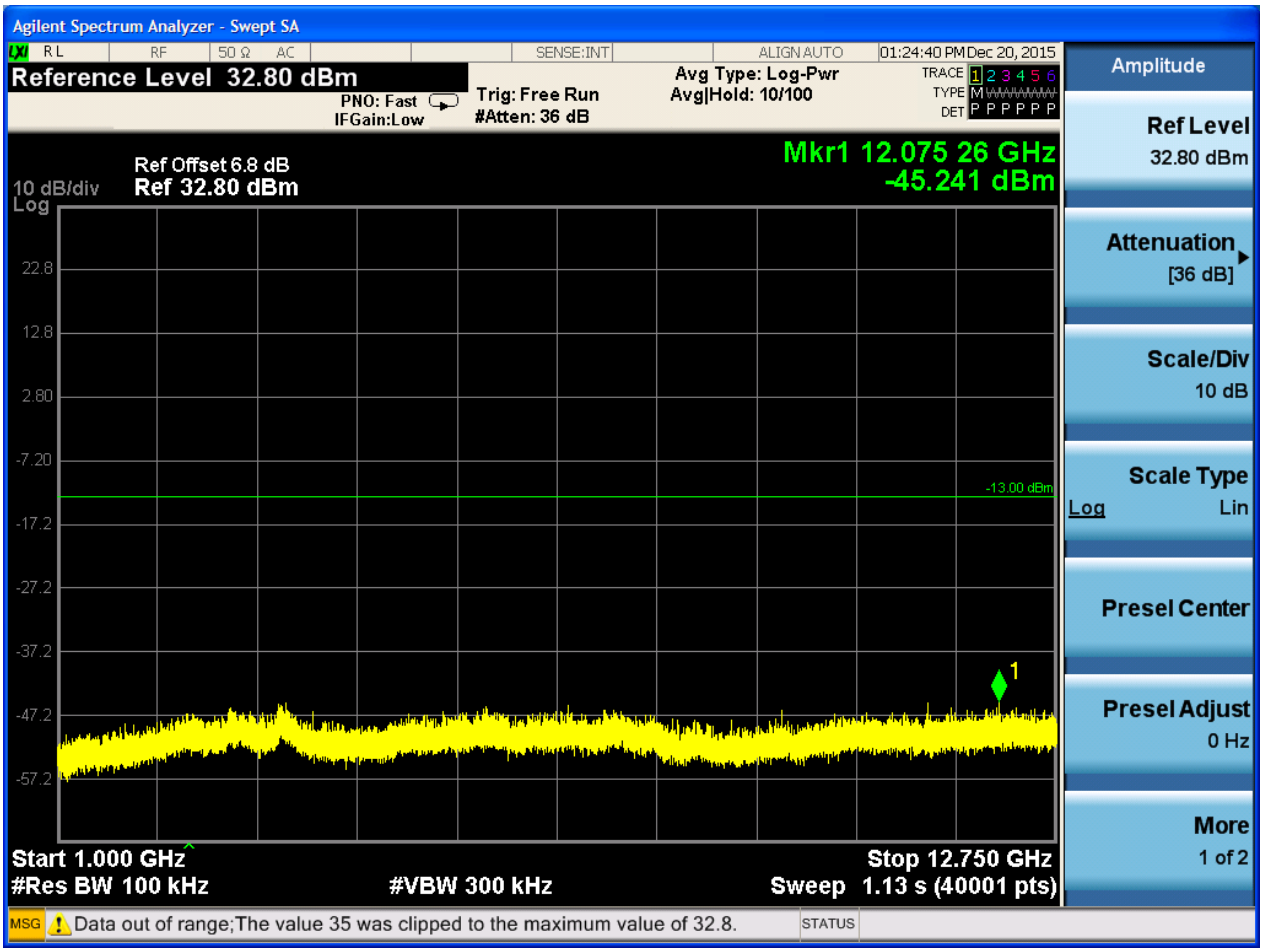
6.2.2.1 Test Mode = UMTS/TM1

6.2.2.1.1 Test Channel = LCH

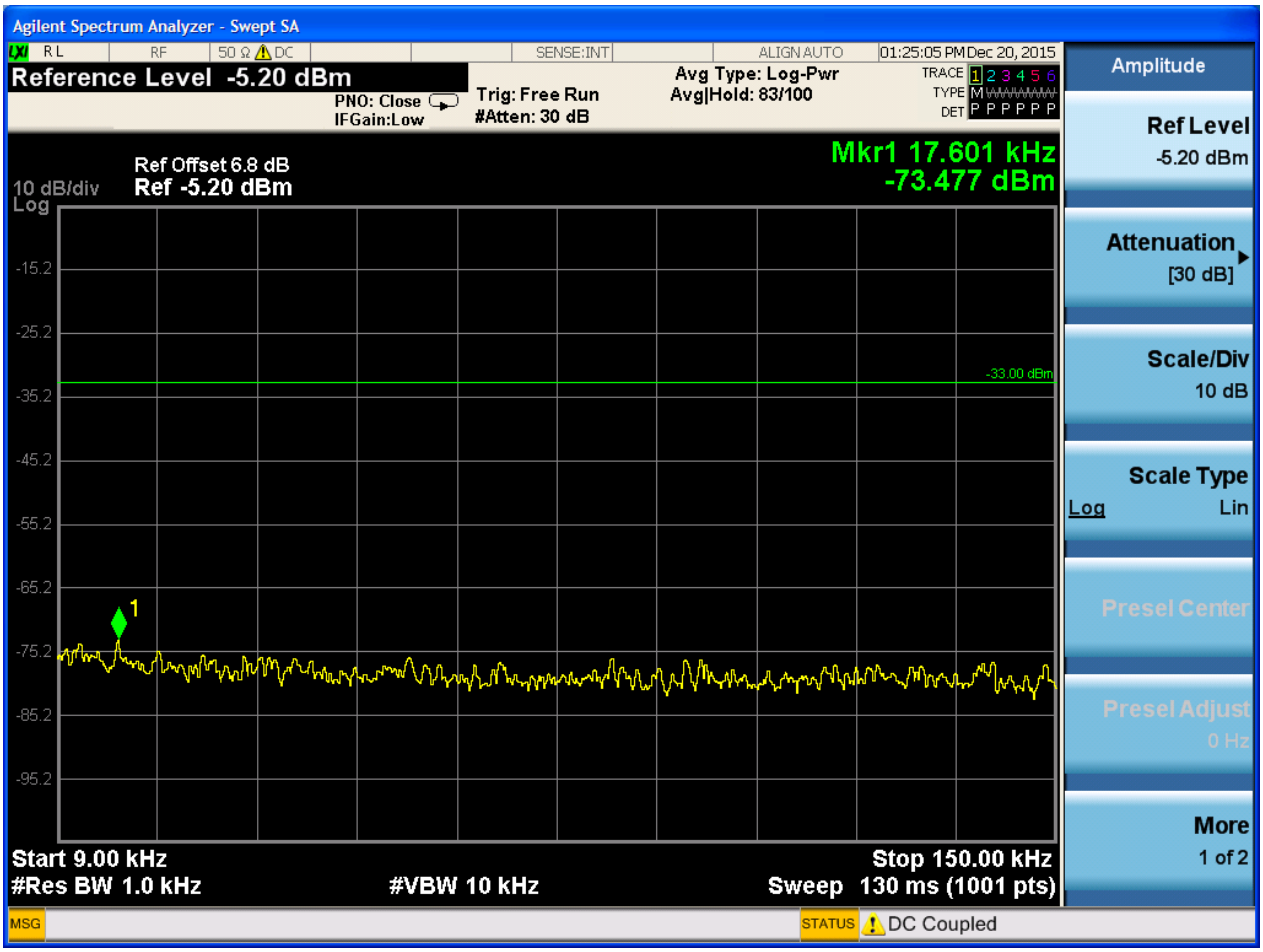


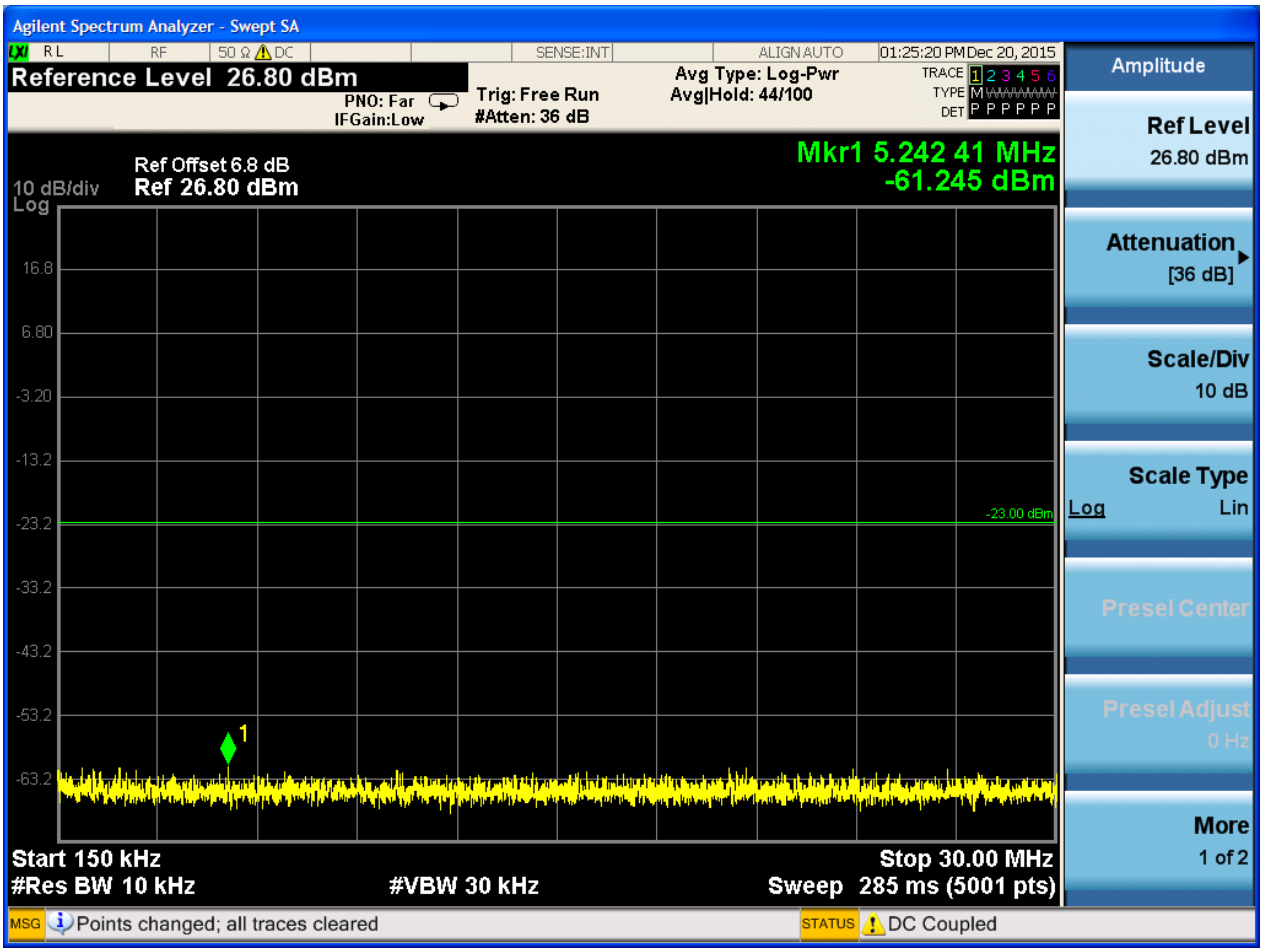


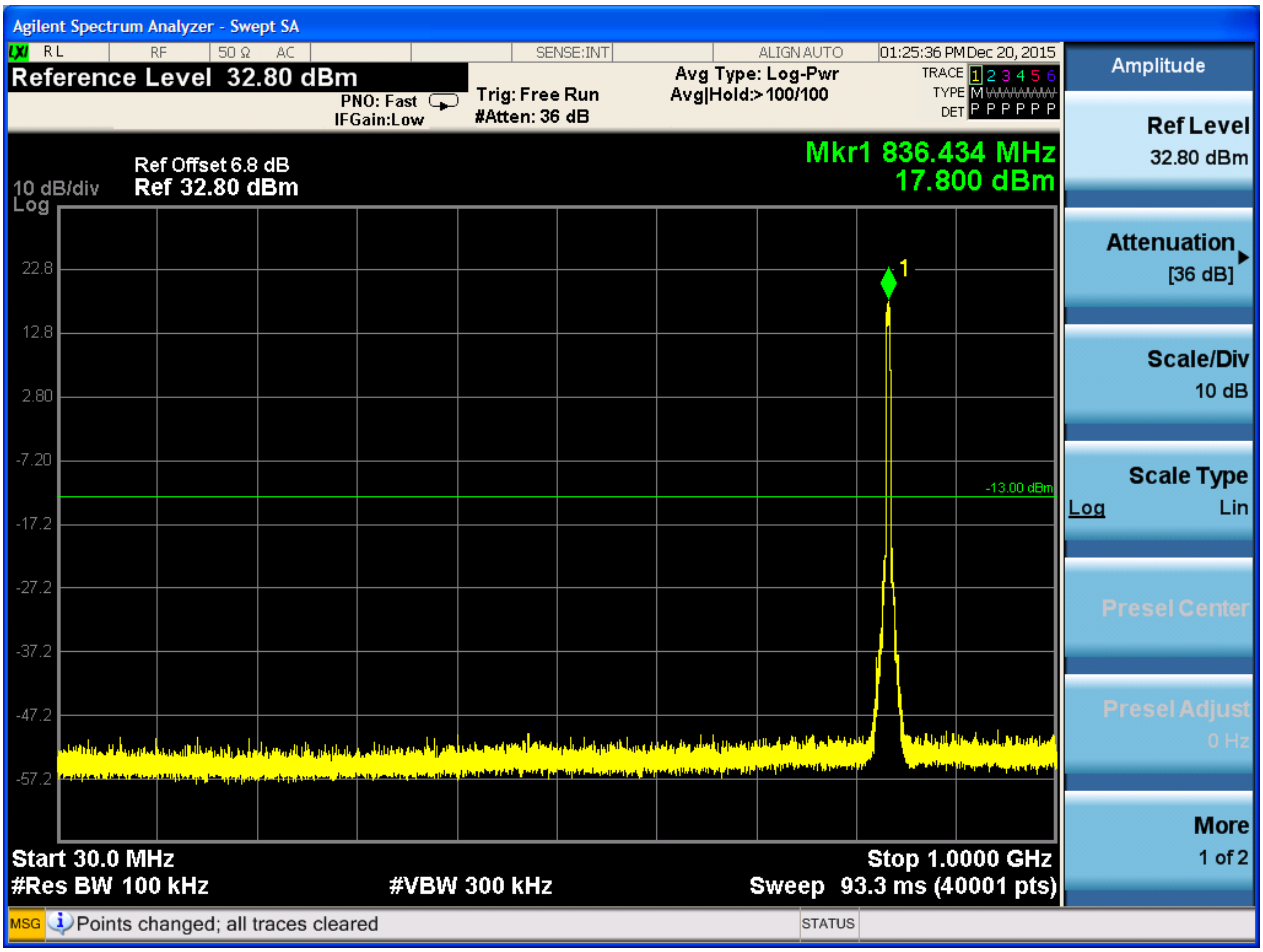


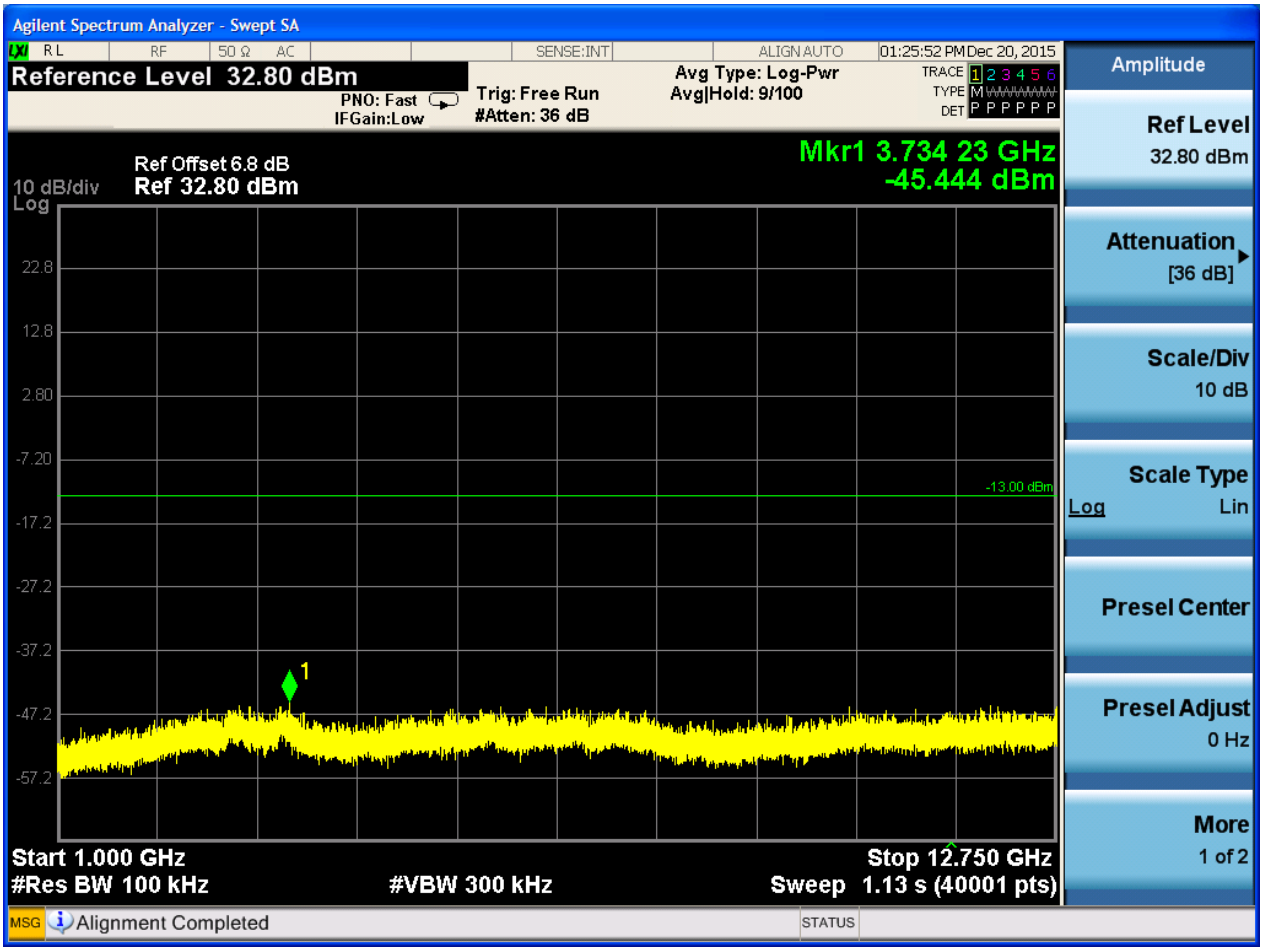


6.2.2.1.2 Test Channel = MCH

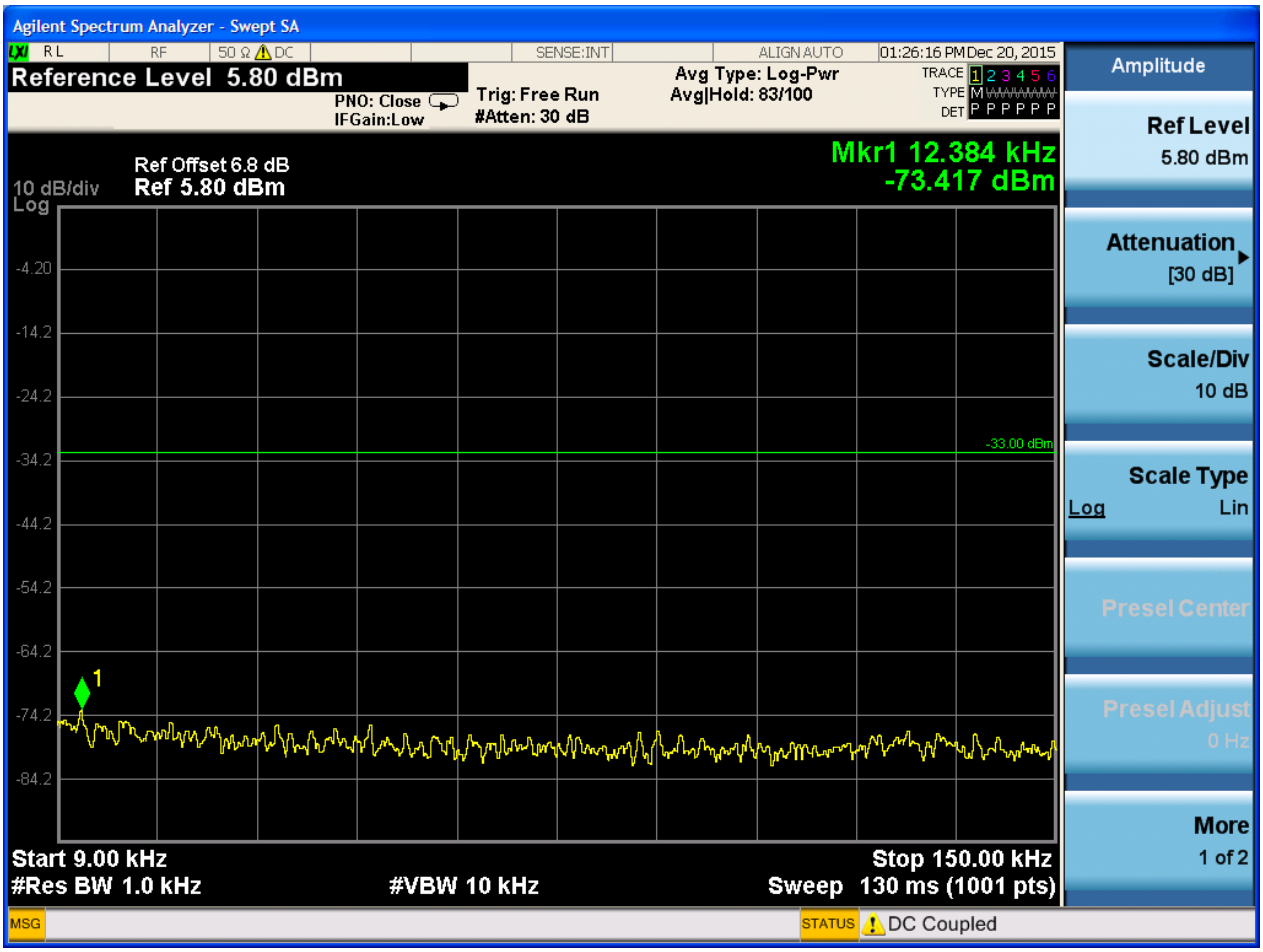


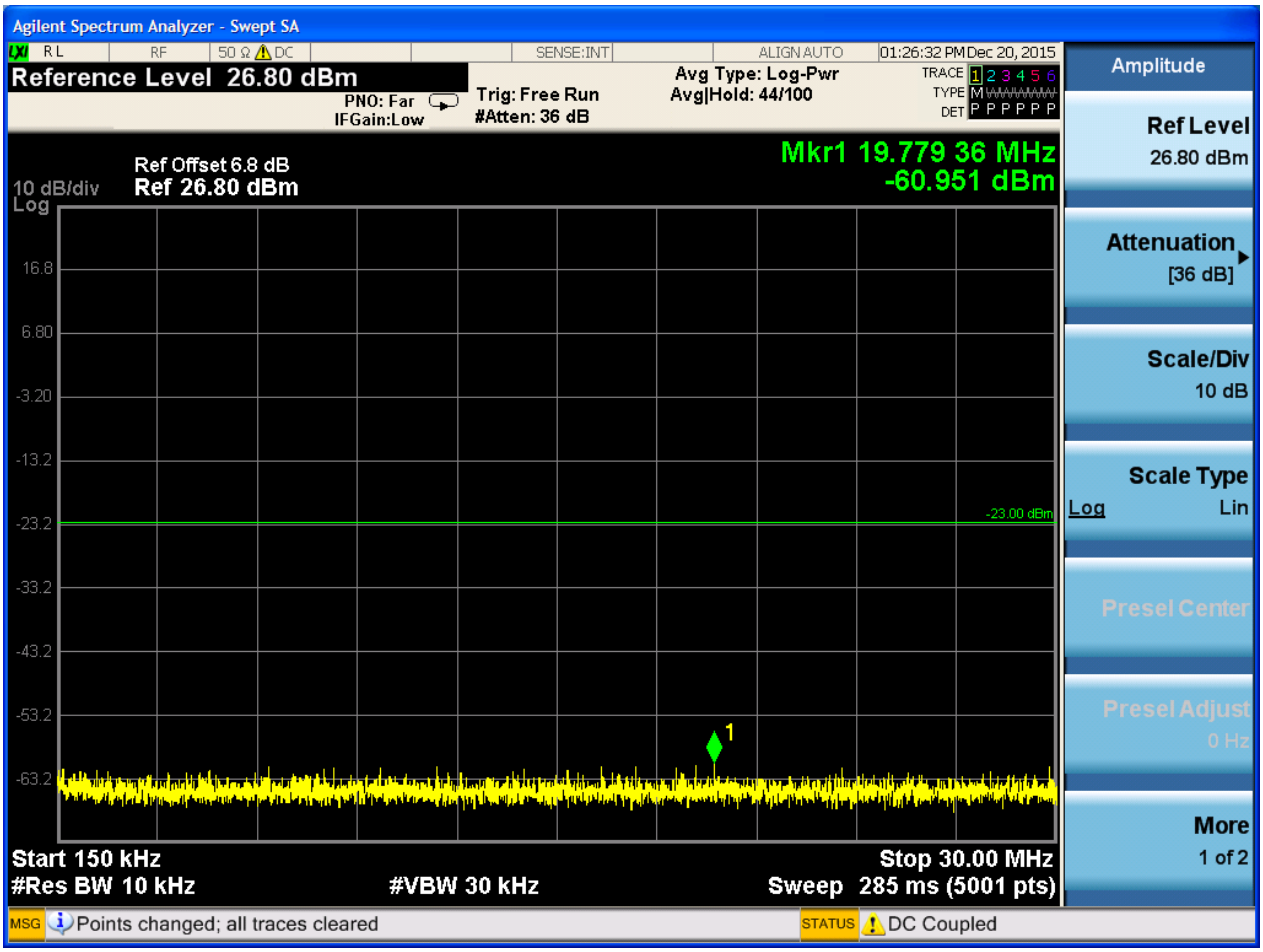


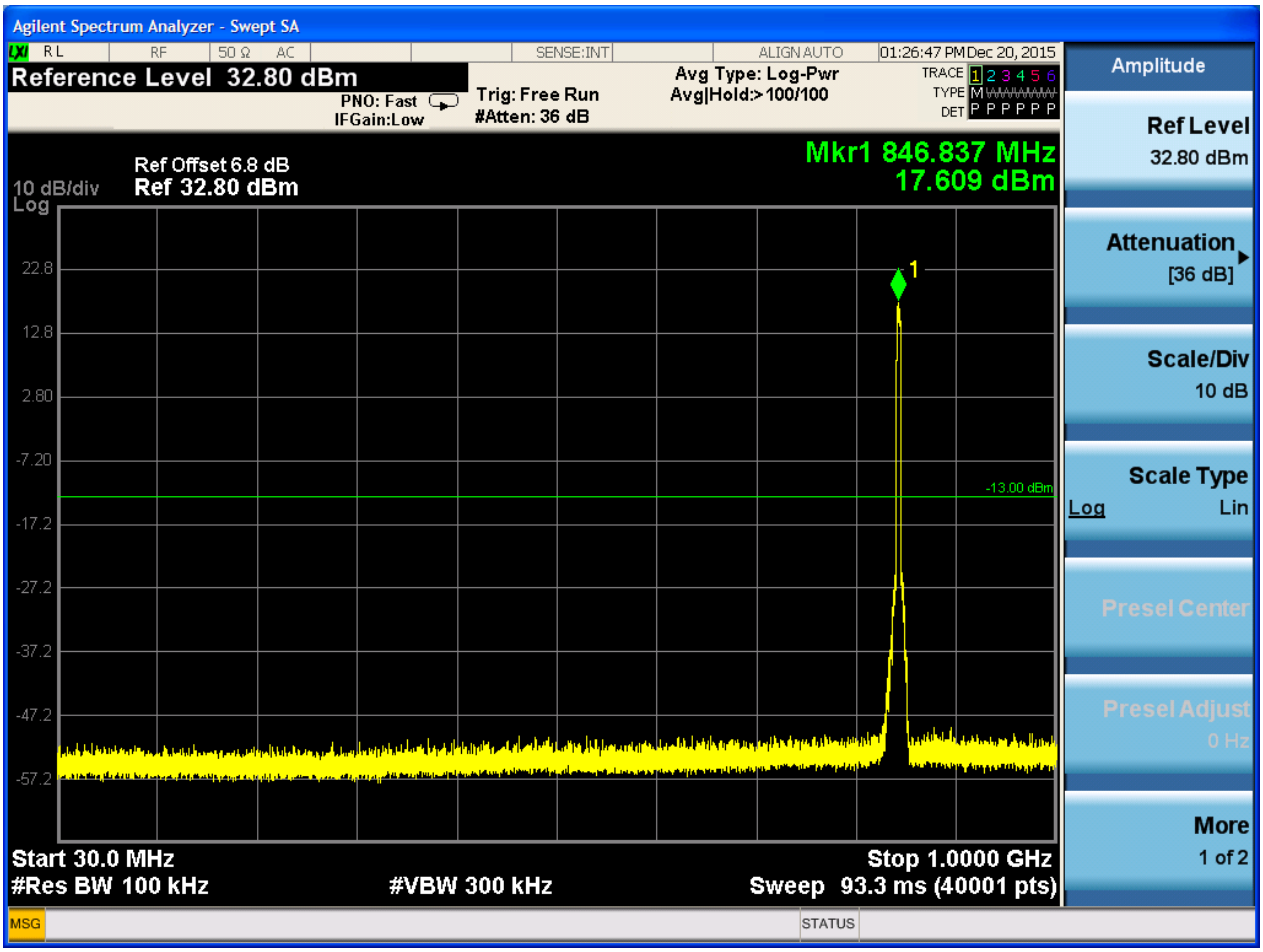


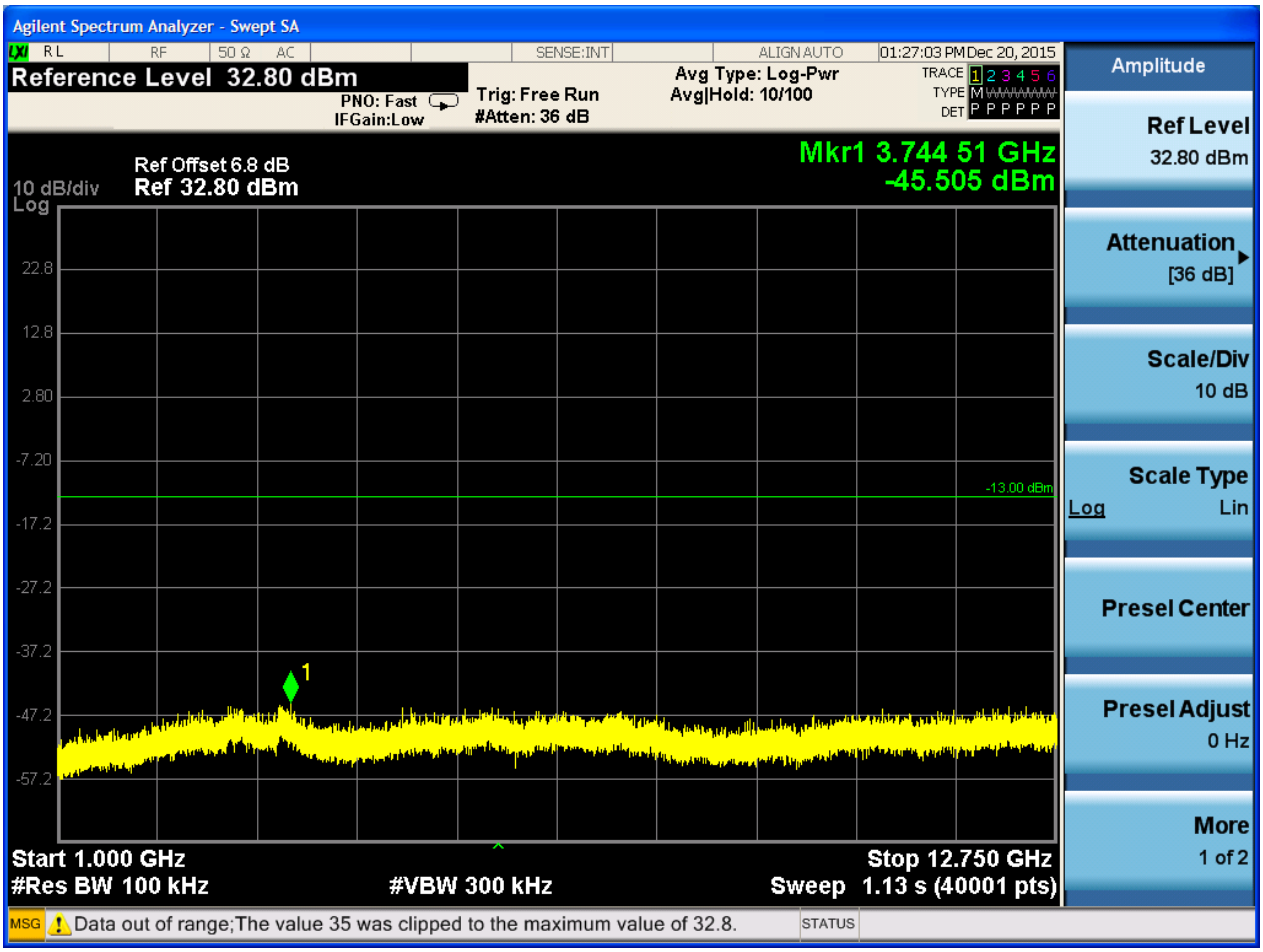


6.2.2.1.3 Test Channel = HCH









7Appendix_G: Field Strength of Spurious Radiation

Note: We tested all modes, but the data presented below is the worst case.

9kHz~150kHz, VBW = 200Hz, VBW = 600 Hz, Detector: PK

150kHz~30MHz, VBW = 9kHz, VBW = 30k Hz, Detector: PK

30MHz~1GHz, RBW = 100 kHz, VBW = 300 kHz. Detector: PK

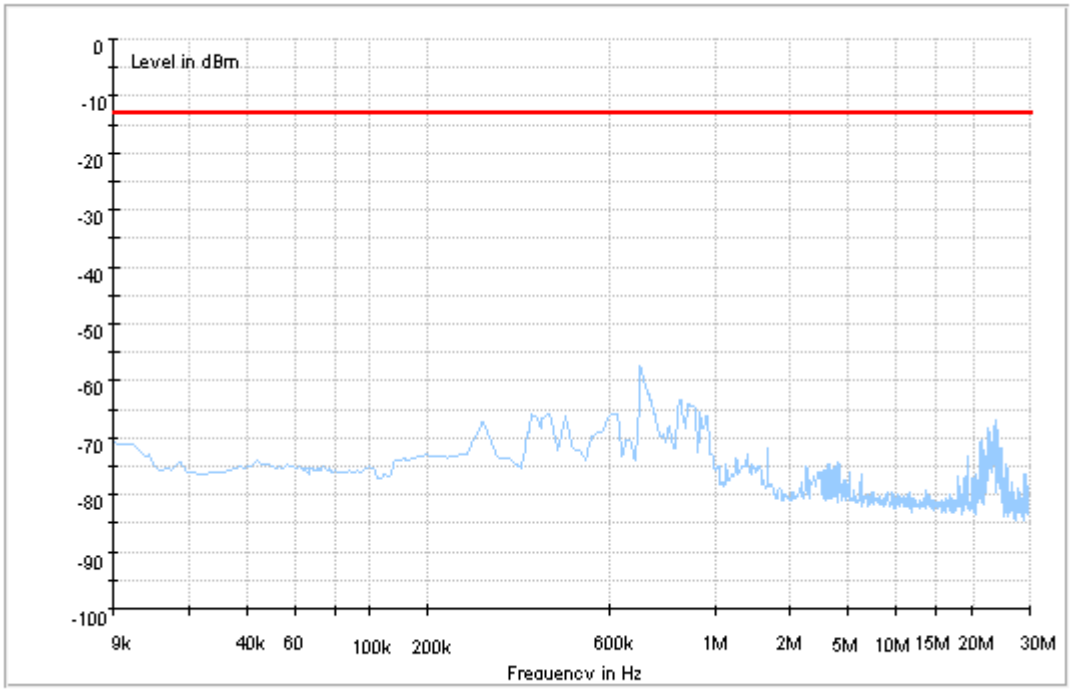
Above 1GHz, RBW = 1 MHz, VBW = 3 MHz. Detector: PK

Part I - Test Plots

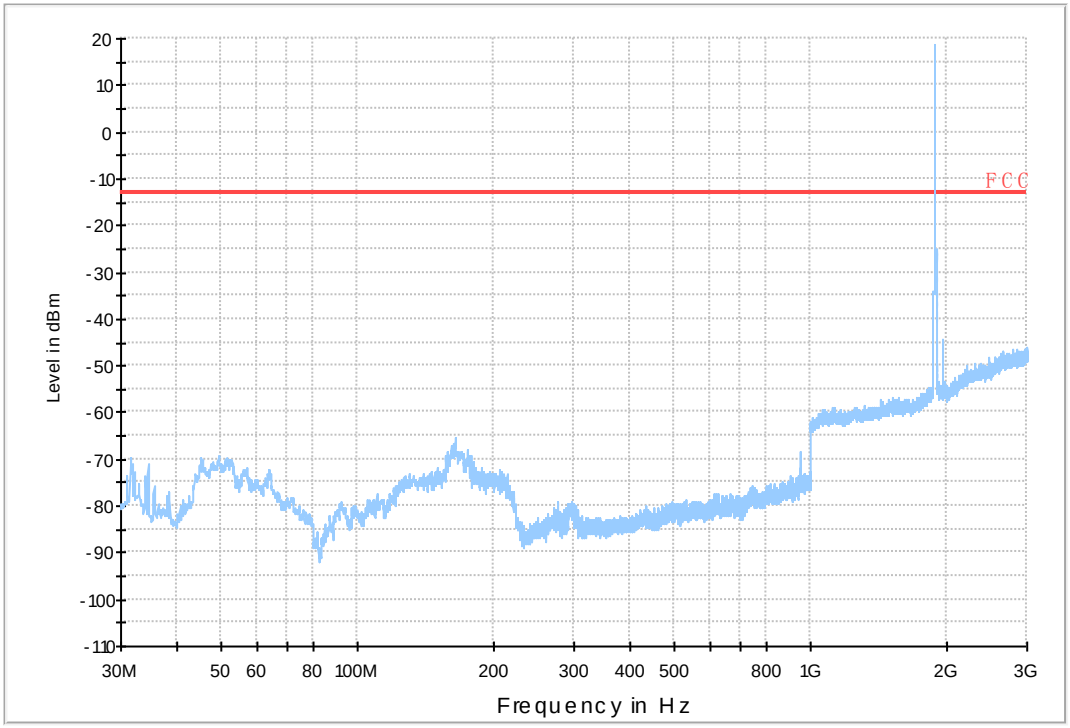
7.1 For UMTS

7.1.1 Test Band = WCDMA1900

7.1.1.1 Test Mode = UMTS/TM1



Copy of FCC PART24 WCDMA1900_L



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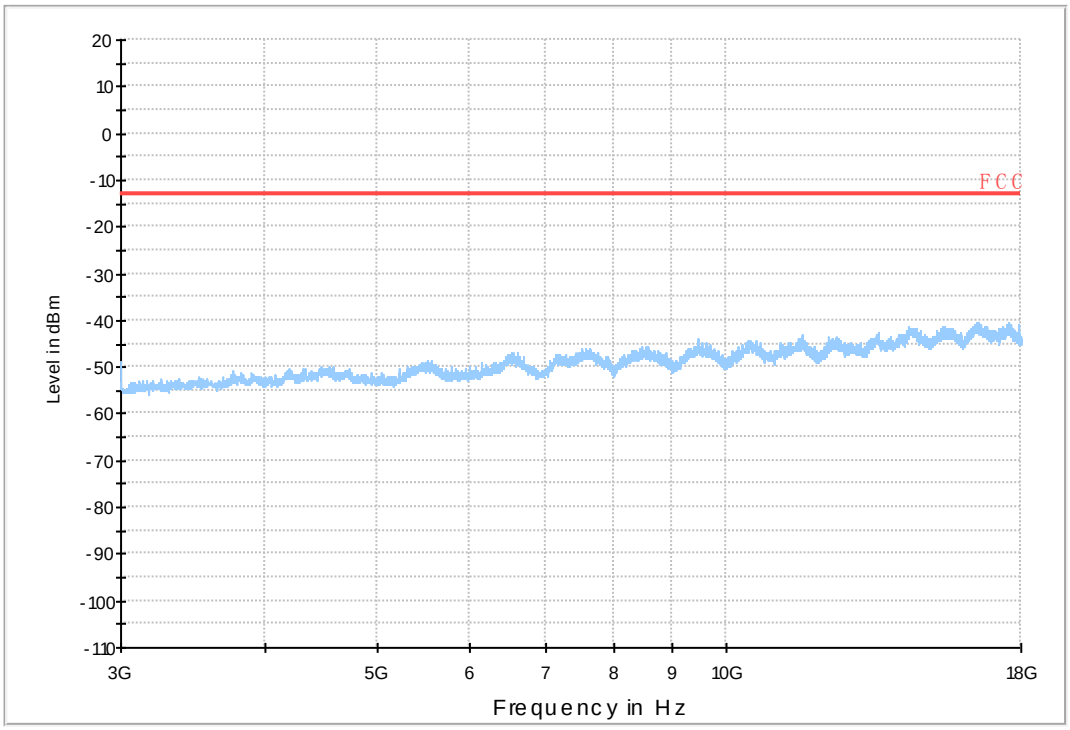
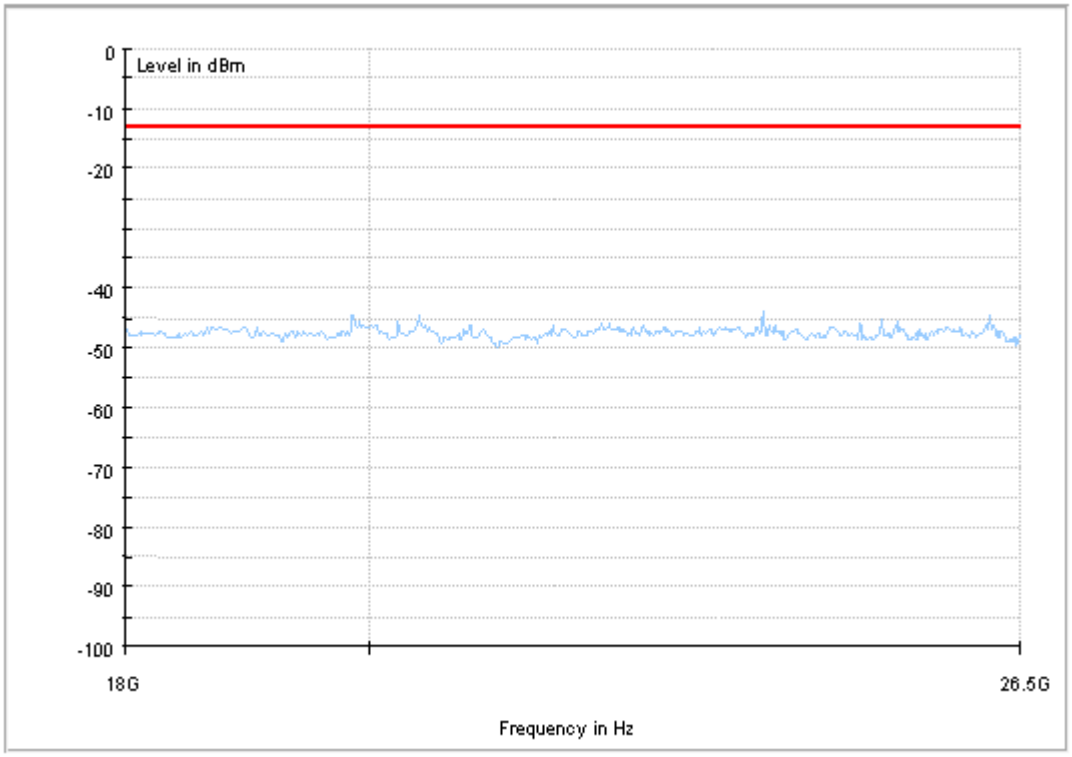
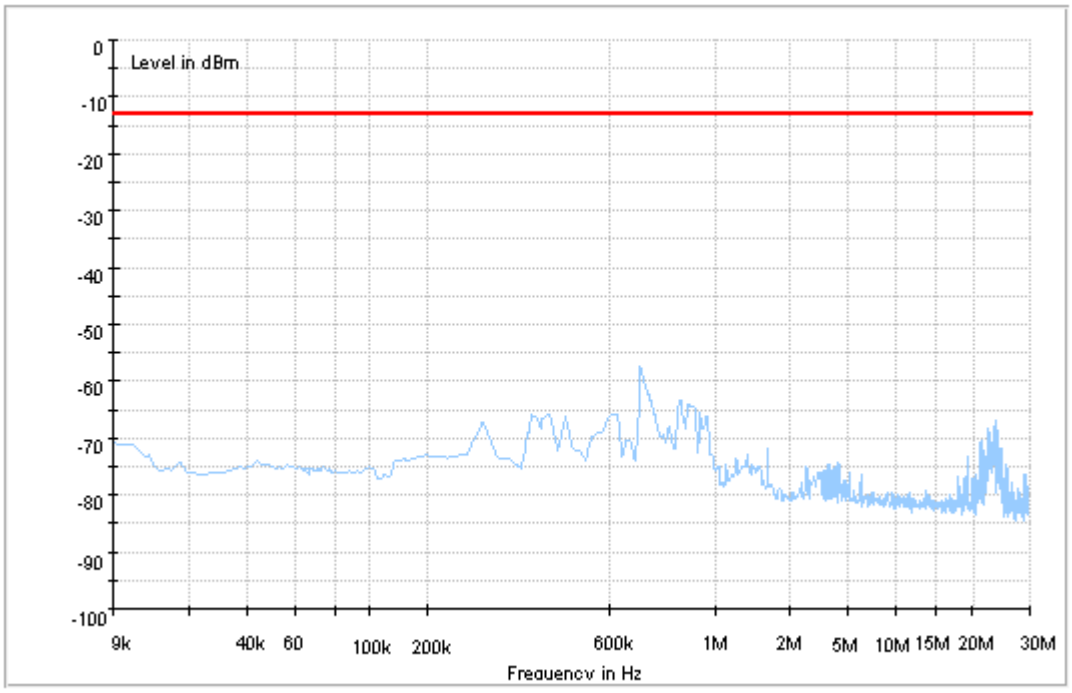




7.2.1 Test Band = WCDMA1700

7.2.1.1 Test Mode = UMTS/TM1



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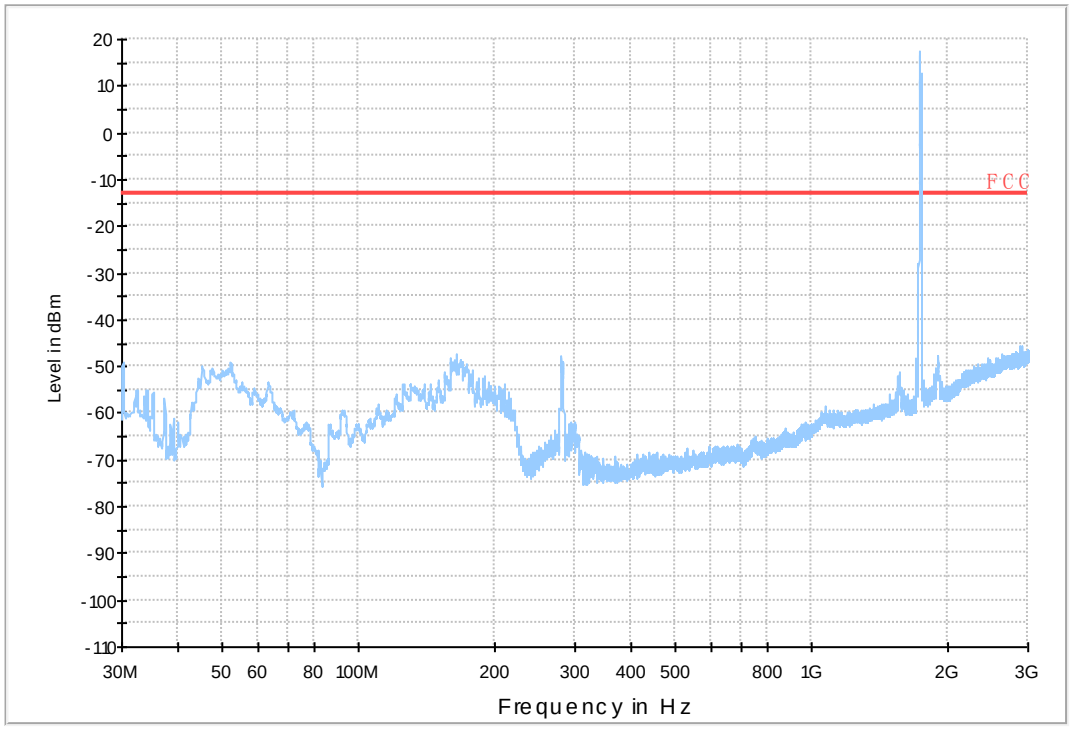

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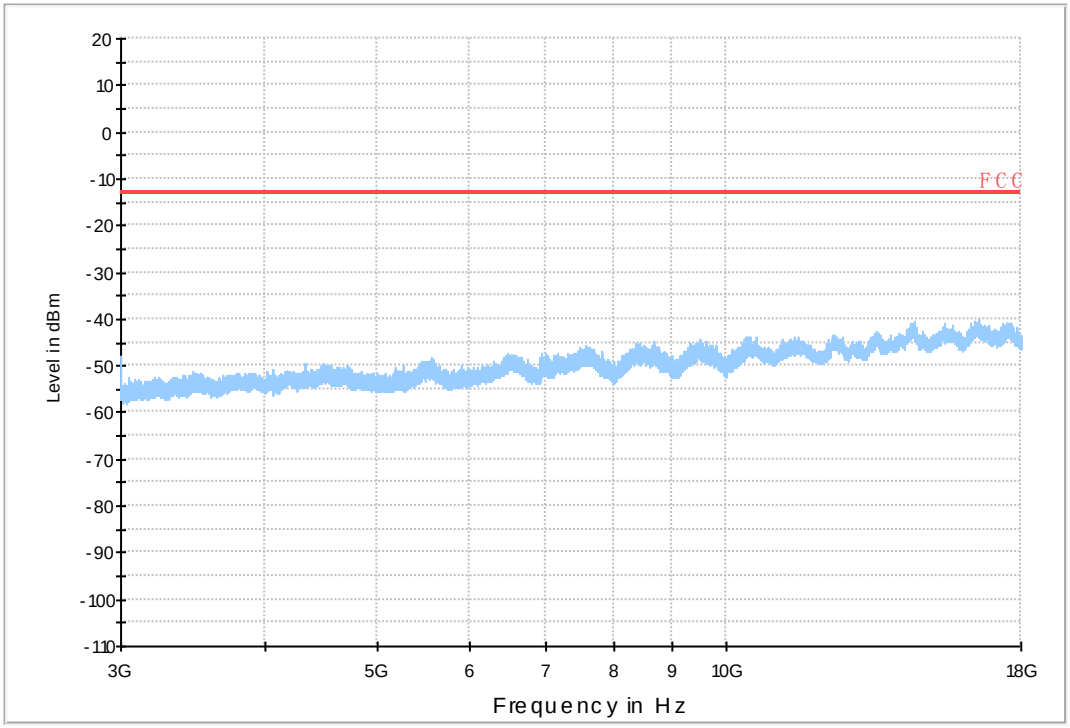
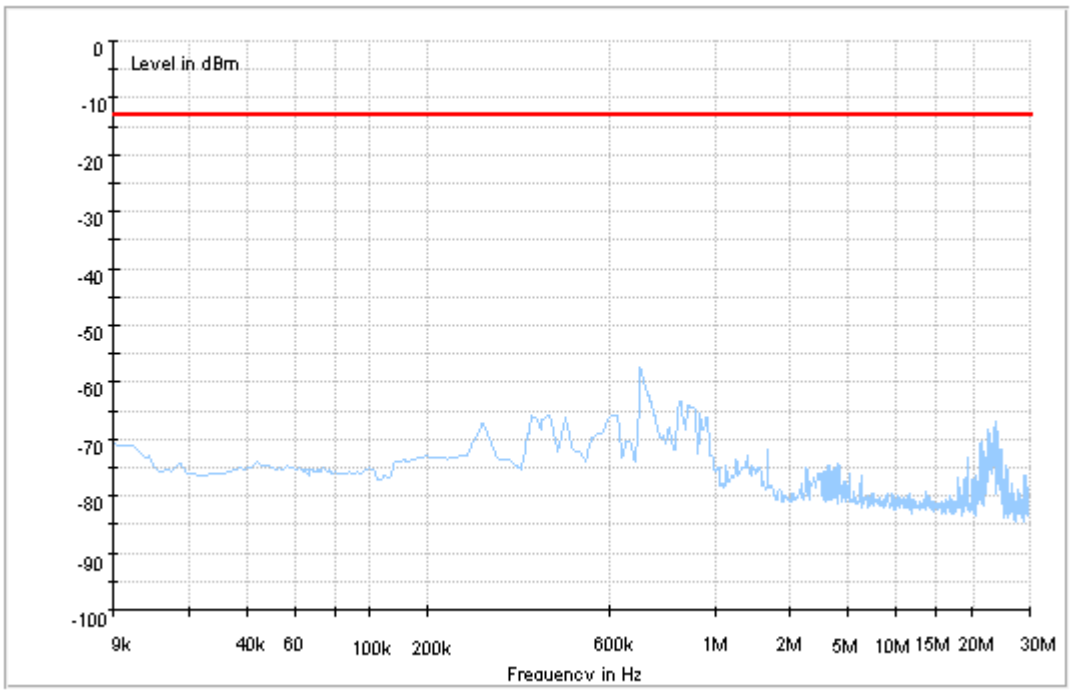


7.2.2 Test Band = WCDMA850

7.2.2.1 Test Mode = UMTS/TM1



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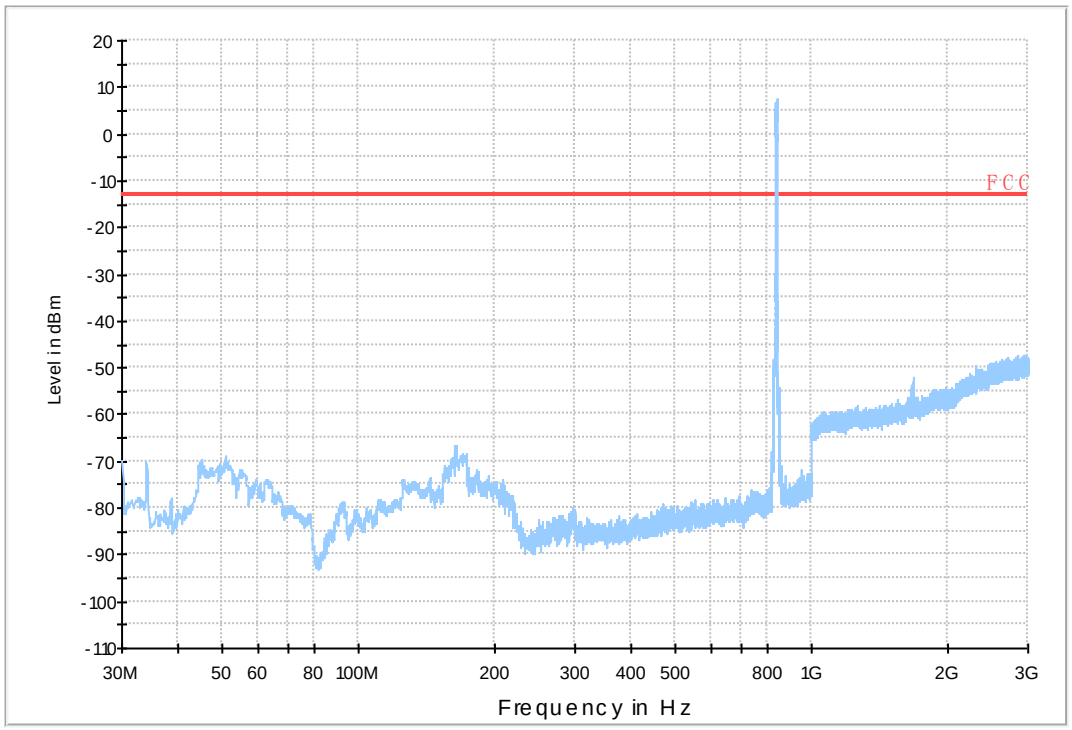

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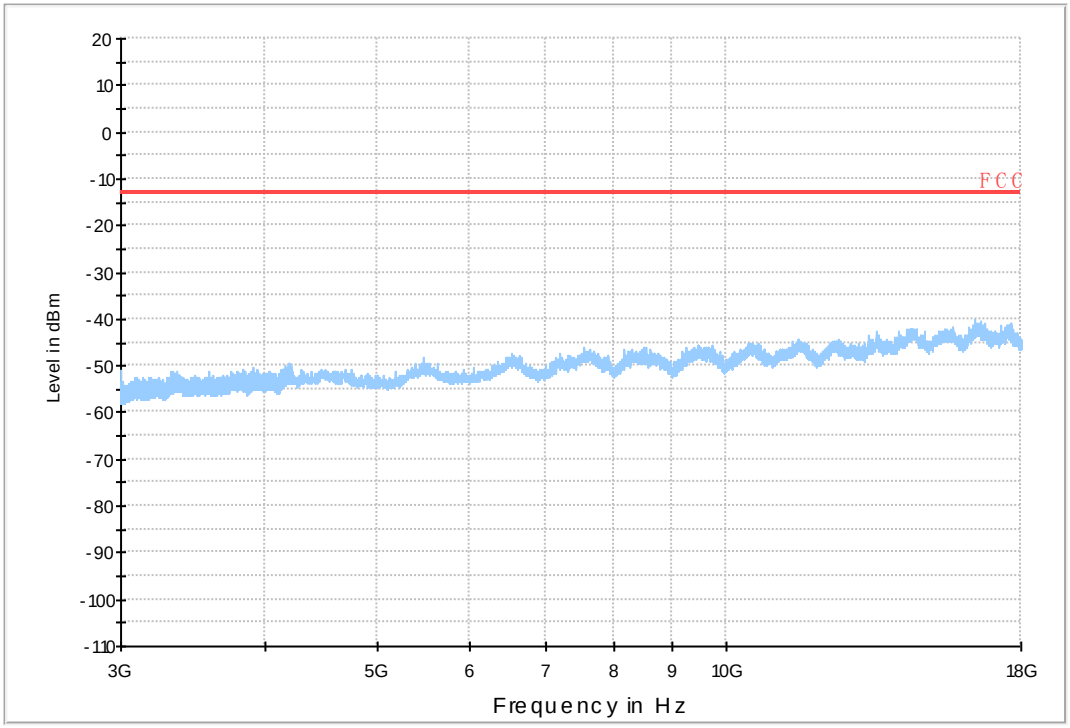

8Appendix_H: Frequency Stability

8.1 For UMTS

8.1.1Frequency Error vs. Voltage:

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
WCDMA1900	UMTS/TM1	LCH	TN	VL	0.76	0.00041	PASS
				VN	1.16	0.00063	PASS
				VH	-0.02	-0.00001	PASS
		MCH	TN	VL	2.27	0.00121	PASS
				VN	-1.10	-0.00059	PASS
				VH	3.05	0.00162	PASS
		HCH	TN	VL	-4.35	-0.00228	PASS
				VN	-1.75	-0.00092	PASS
				VH	-0.49	-0.00026	PASS

8.1.2Frequency Error vs. Voltage:

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
WCDMA1700	UMTS/TM1	LCH	TN	VL	1.97	0.00115	PASS
				VN	3.13	0.00183	PASS
				VH	5.62	0.00328	PASS
		MCH	TN	VL	2.73	0.00158	PASS
				VN	0.96	0.00055	PASS
				VH	-0.79	-0.00046	PASS
		HCH	TN	VL	-0.89	-0.00051	PASS
				VN	-0.32	-0.00018	PASS
				VH	-1.11	-0.00063	PASS
WCDMA850	UMTS/TM1	LCH	TN	VL	1.53	0.00185	PASS
				VN	0.27	0.00033	PASS
				VH	1.63	0.00197	PASS
		MCH	TN	VL	-2.52	-0.00301	PASS
				VN	1.02	0.00122	PASS
				VH	-1.28	-0.00153	PASS
		HCH	TN	VL	-0.38	-0.00045	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				VN	-2.14	-0.00253	PASS
				VH	0.24	0.00028	PASS

8.2.2Frequency Error vs. Temperature:

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
WCDMA1700	UMTS/TM1	LCH	VN	-30	5.02	0.00293	PASS
				-20	2.04	0.00119	PASS
				-10	3.05	0.00178	PASS
				0	5.40	0.00315	PASS
				10	5.23	0.00305	PASS
				20	4.94	0.00288	PASS
				30	6.53	0.00381	PASS
				40	3.39	0.00198	PASS
				50	3.97	0.00232	PASS
		MCH	VN	-30	-0.20	-0.00012	PASS
				-20	1.42	0.00082	PASS
				-10	-0.37	-0.00021	PASS
				0	-0.95	-0.00055	PASS
				10	-0.82	-0.00047	PASS
				20	1.02	0.00059	PASS
				30	1.83	0.00106	PASS
				40	-1.60	-0.00092	PASS
				50	-0.81	-0.00047	PASS
		HCH	VN	-30	-1.21	-0.00069	PASS
				-20	-3.17	-0.00181	PASS
				-10	-3.27	-0.00187	PASS
				0	-2.30	-0.00131	PASS
				10	-3.02	-0.00172	PASS
				20	-1.69	-0.00096	PASS
				30	-2.82	-0.00161	PASS
				40	-0.64	-0.00037	PASS
				50	-3.19	-0.00182	PASS
WCDMA850	UMTS/TM1	LCH	VN	-30	-1.10	-0.00133	PASS
				-20	1.37	0.00166	PASS
				-10	-2.15	-0.0026	PASS
				0	1.59	0.00192	PASS
				10	0.41	0.0005	PASS
				20	-2.35	-0.00284	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				30	-0.96	-0.00116	PASS
				40	0.73	0.00088	PASS
				50	-0.38	-0.00046	PASS
		MCH	VN	-30	-0.44	-0.00053	PASS
				-20	-0.69	-0.00082	PASS
				-10	0.63	0.00075	PASS
				0	-1.13	-0.00135	PASS
				10	-1.57	-0.00188	PASS
				20	-1.14	-0.00136	PASS
				30	1.08	0.00129	PASS
				40	0.61	0.00073	PASS
				50	1.37	0.00164	PASS
		HCH	VN	-30	-2.18	-0.00258	PASS
				-20	-0.15	-0.00018	PASS
				-10	-1.91	-0.00226	PASS
				0	0.12	0.00014	PASS
				10	-0.44	-0.00052	PASS
				20	-0.34	-0.0004	PASS
				30	-2.15	-0.00254	PASS
				40	-1.34	-0.00158	PASS
				50	-2.23	-0.00263	PASS

8.1.2Frequency Error vs. Temperature:

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
WCDMA1900	UMTS/TM1	LCH	VN	-30	0.46	0.00025	PASS
				-20	0.29	0.00016	PASS
				-10	2.04	0.0011	PASS
				0	0.84	0.00045	PASS
				10	1.11	0.0006	PASS
				20	0.93	0.0005	PASS
				30	1.27	0.00069	PASS
				40	-0.31	-0.00017	PASS
				50	0.99	0.00053	PASS
		MCH	VN	-30	-2.37	-0.00126	PASS
				-20	-1.66	-0.00088	PASS
				-10	1.97	0.00105	PASS
				0	0.70	0.00037	PASS
				10	0.35	0.00019	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				20	-2.21	-0.00118	PASS
				30	0.44	0.00023	PASS
				40	-1.89	-0.00101	PASS
				50	1.63	0.00087	PASS
		HCH	VN	-30	-2.09	-0.0011	PASS
				-20	-0.02	-0.00001	PASS
				-10	-0.84	-0.00044	PASS
				0	0.84	0.00044	PASS
				10	0.47	0.00025	PASS
				20	2.09	0.0011	PASS
				30	-3.85	-0.00202	PASS
				40	-0.26	-0.00014	PASS
				50	-0.14	-0.00007	PASS

END