Appendix for test report

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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	24.16	23.76	33	PASS
		MCH	24.18	23.78	33	PASS
		HCH	24.29	23.89	33	PASS
WCDMA1700	UMTS/TM1	LCH	24.23	23.93	30	PASS
		MCH	24.23	23.93	30	PASS
		HCH	24.29	23.99	30	PASS

Test Band	**Test Mode**	**Test Channel**	**Conducted Power [dBm]**	**ERP [dBm]**	**Limit [dBm]**	**Verdict**
WCDMA850	UMTS/TM1	LCH	24.16	19.41	38.5	PASS
		MCH	24.07	19.32	38.5	PASS
		HCH	24.05	19.3	38.5	PASS

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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

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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	3.26	13	PASS
		MCH	3.3	13	PASS
		HCH	3.12	13	PASS
WCDMA1700	UMTS/TM1	LCH	3.02	13	PASS
		MCH	3.12	13	PASS
		HCH	3.04	13	PASS

Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
WCDMA850	UMTS/TM1	LCH	2.9	13	PASS
		MCH	3.05	13	PASS
		HCH	2.85	13	PASS

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3Appendix_C: Modulation Characteristics

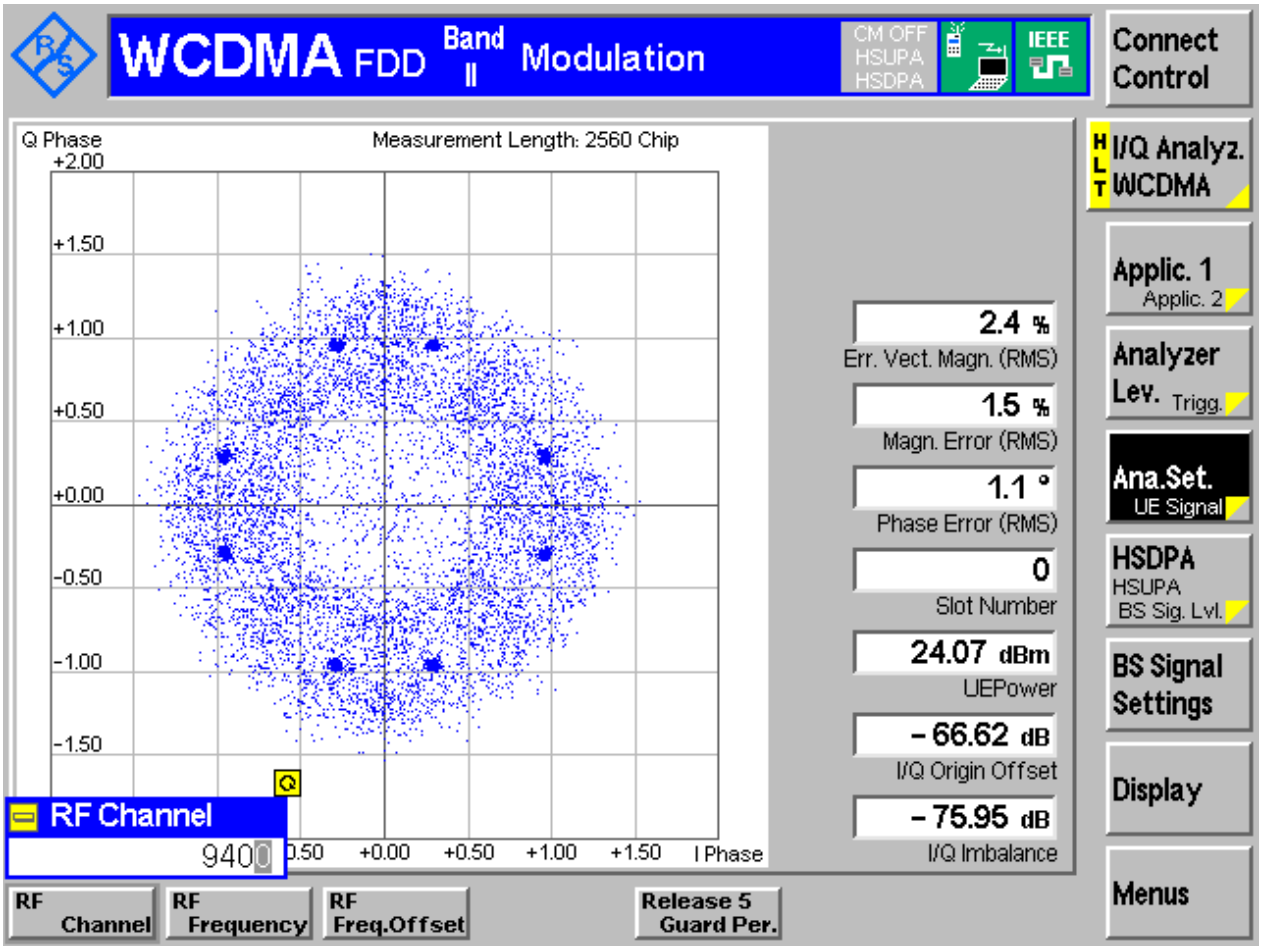
Part I - Test Plots

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



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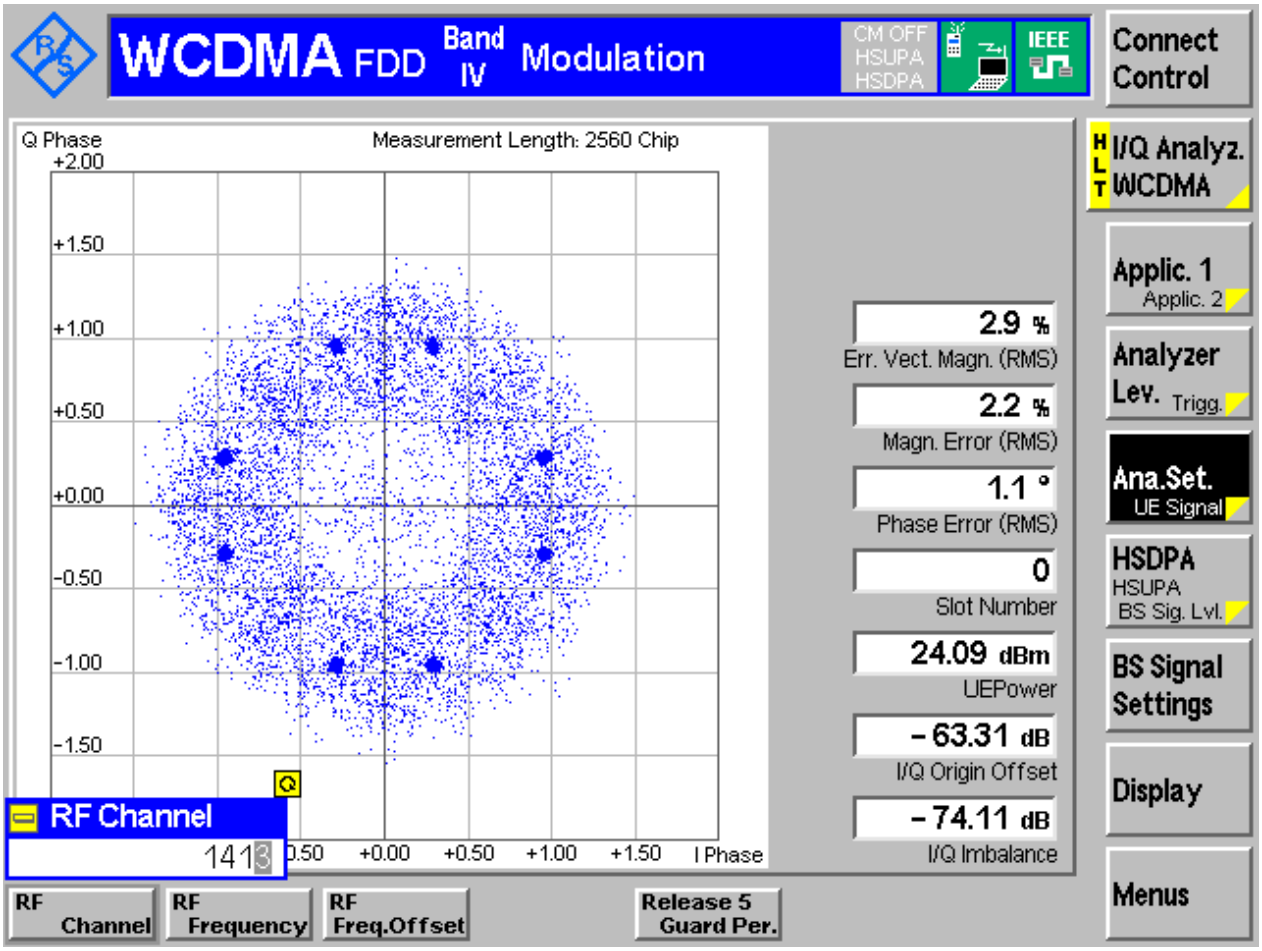
3.1.2 Test Band = WCDMA1700

3.1.2.1 Test Mode = UMTS/TM1

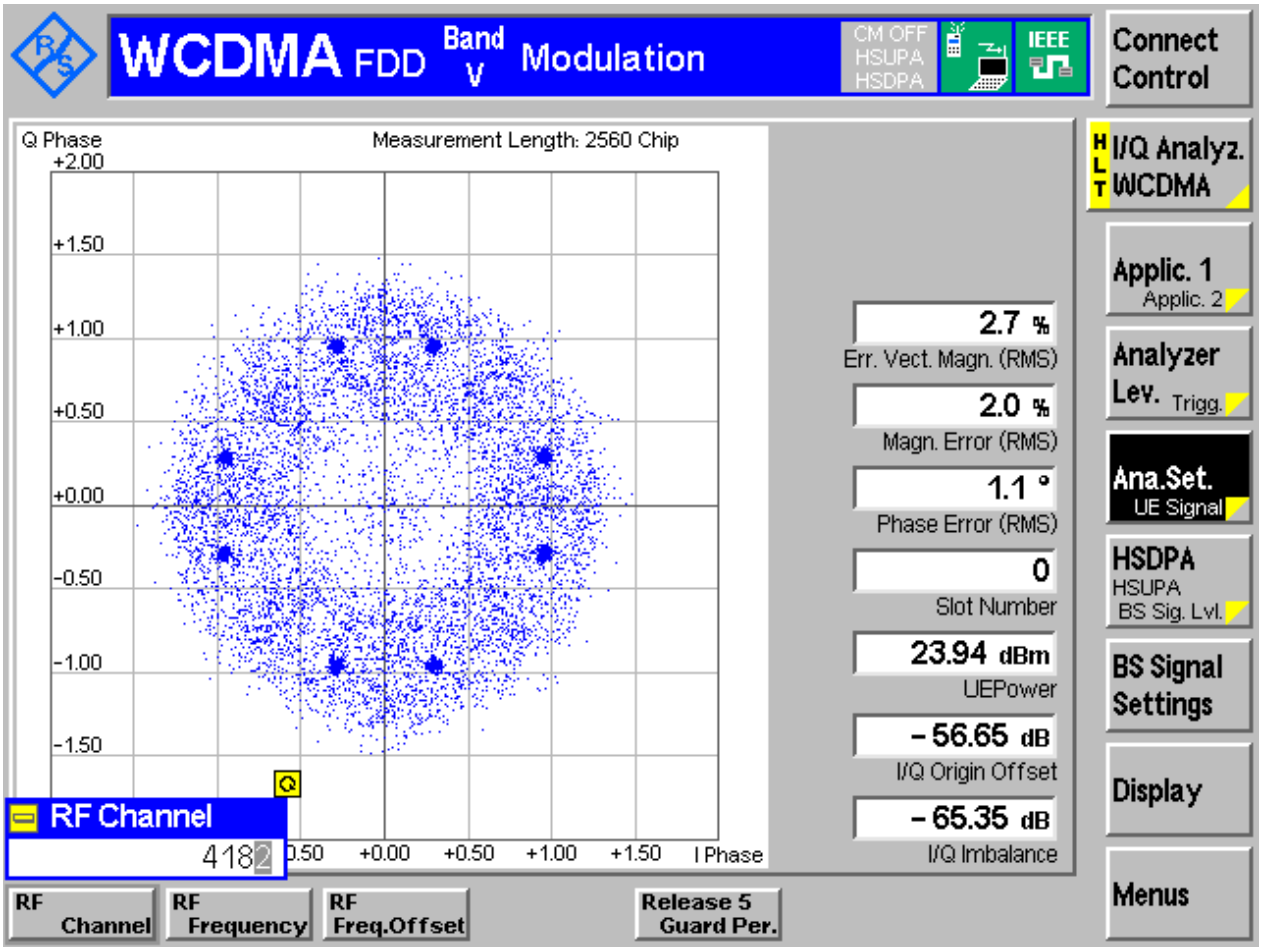
3.1.2.1.1 Test Channel = MCH



3.1.3 Test Band = WCDMA850

3.1.3.1 Test Mode = UMTS/TM1

3.1.3.1.1 Test Channel = MCH



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4Appendix_D: Bandwidth

Part I - Test Results

Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
WCDMA1900	UMTS/TM1	LCH	4.15	4.71	Pass
		MCH	4.15	4.71	Pass
		HCH	4.15	4.70	Pass
WCDMA1700	UMTS/TM1	LCH	4.15	4.72	Pass
		MCH	4.15	4.71	Pass
		HCH	4.15	4.71	Pass
WCDMA850	UMTS/TM1	LCH	4.16	4.71	Pass
		MCH	4.15	4.71	Pass
		HCH	4.14	4.70	Pass

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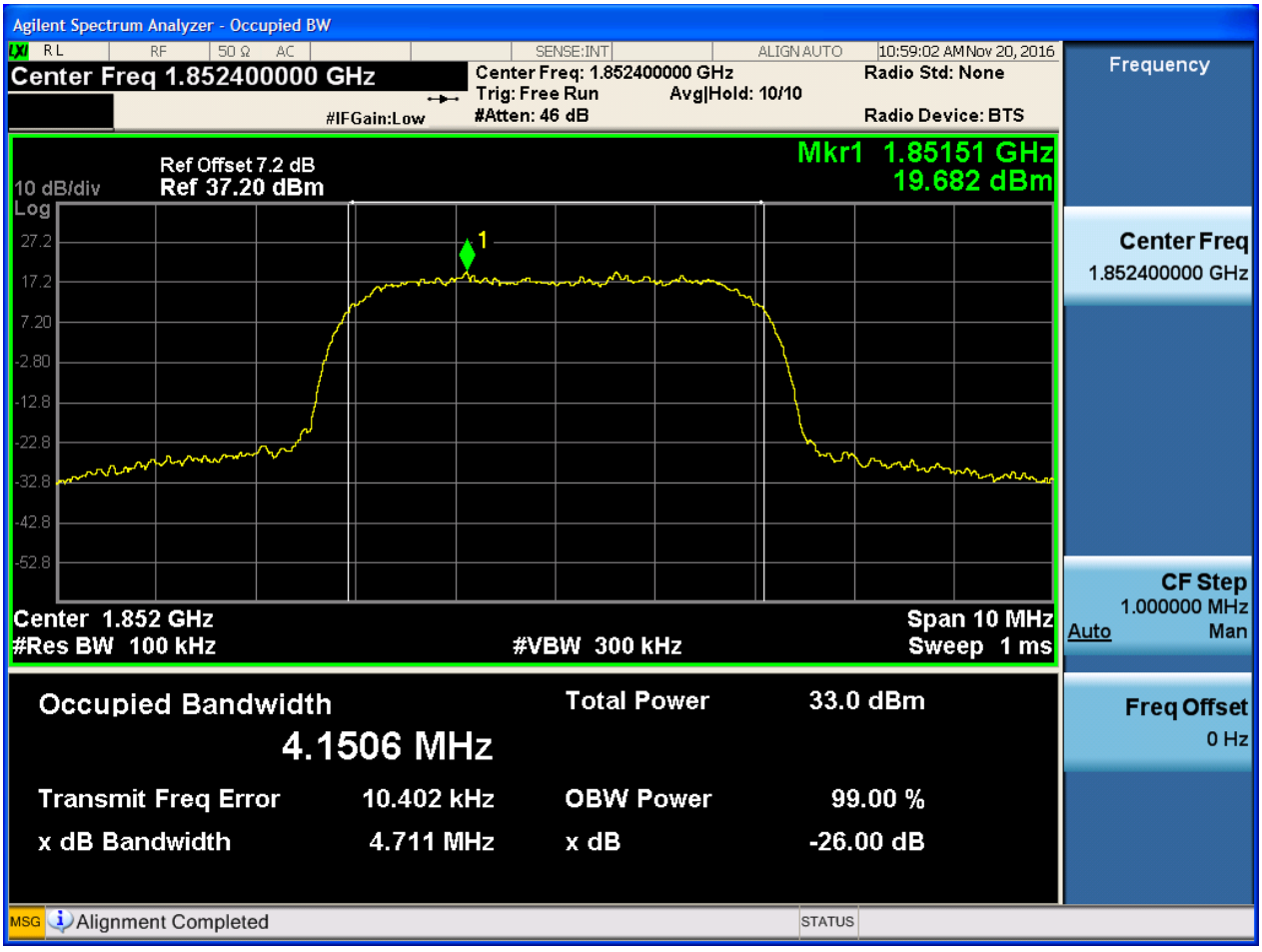
Part II - Test Plots

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



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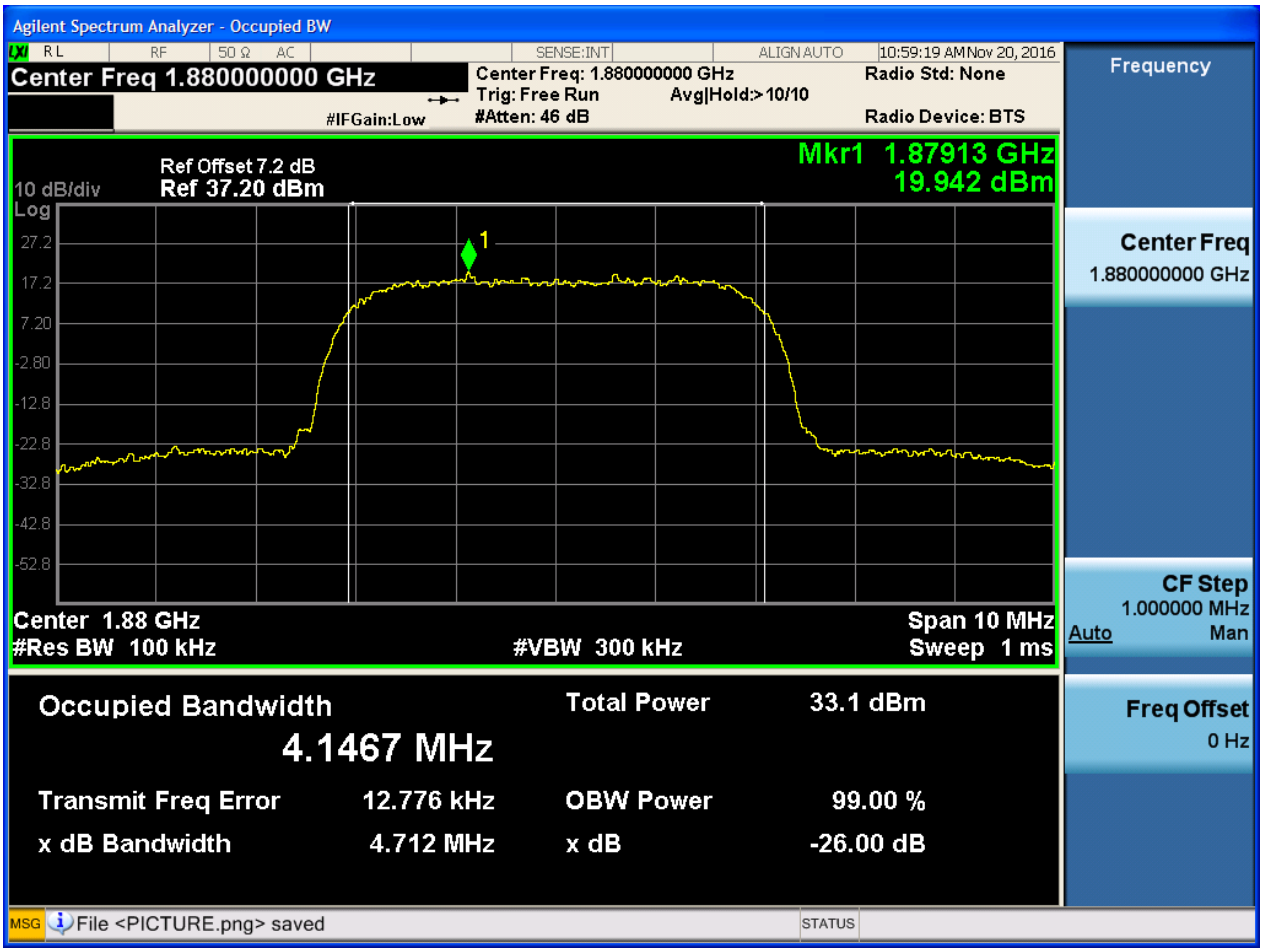
4.1.1.1.2 Test Channel = MCH



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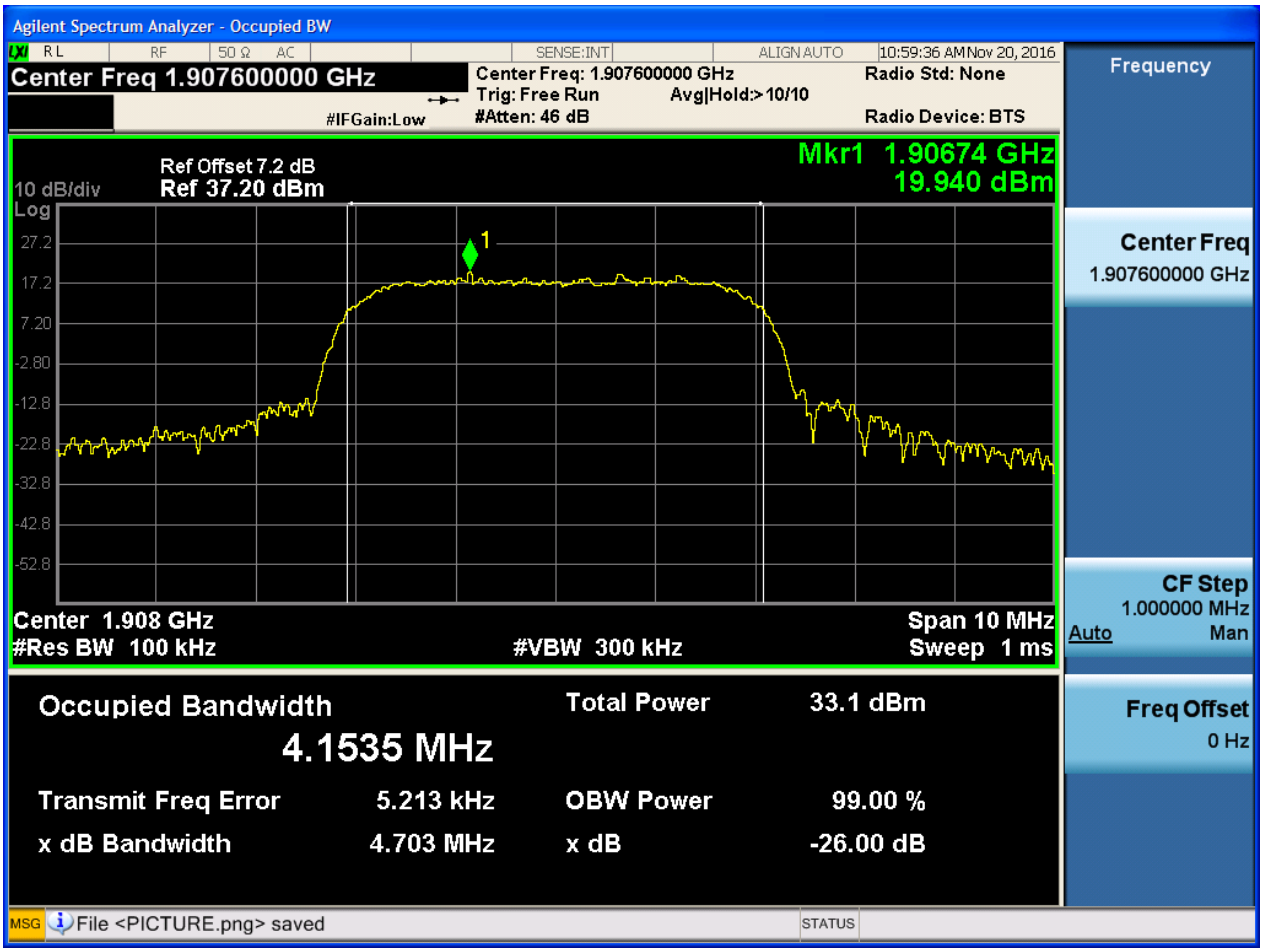
4.1.1.1.3 Test Channel = HCH



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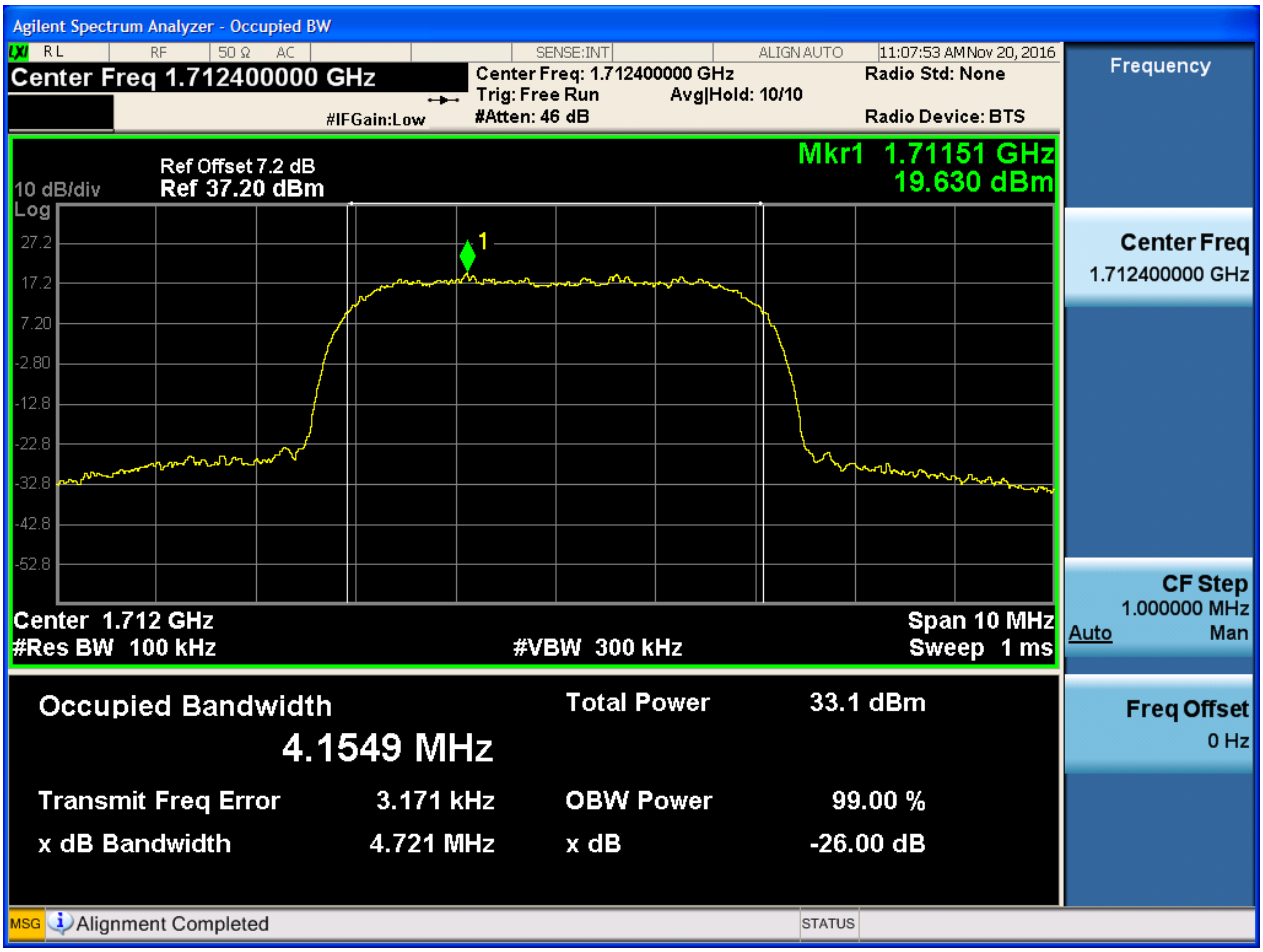
4.1.2 Test Band = WCDMA1700

4.1.2.1 Test Mode = UMTS/TM1

4.1.2.1.1 Test Channel = LCH



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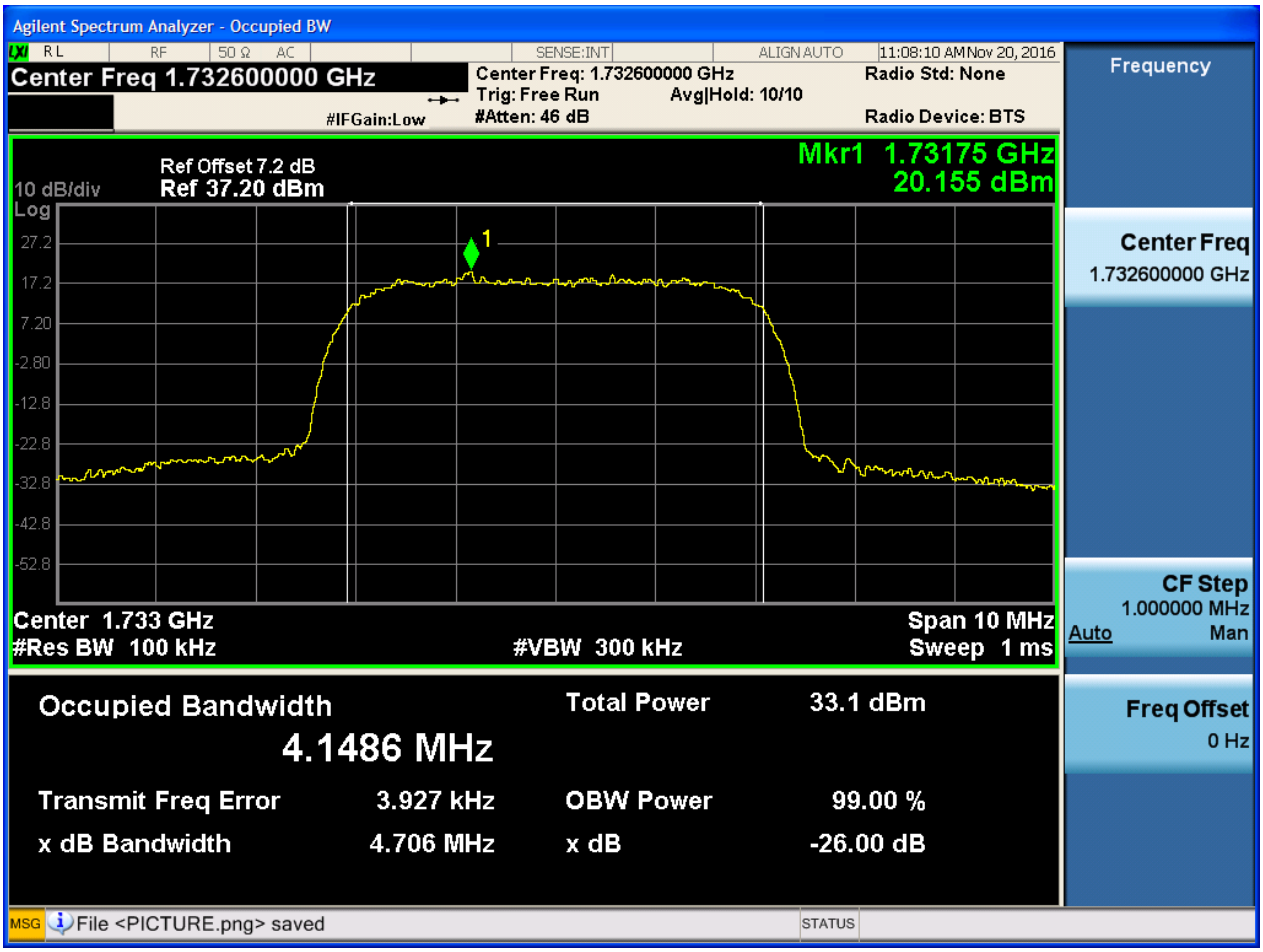
4.1.2.1.2 Test Channel = MCH



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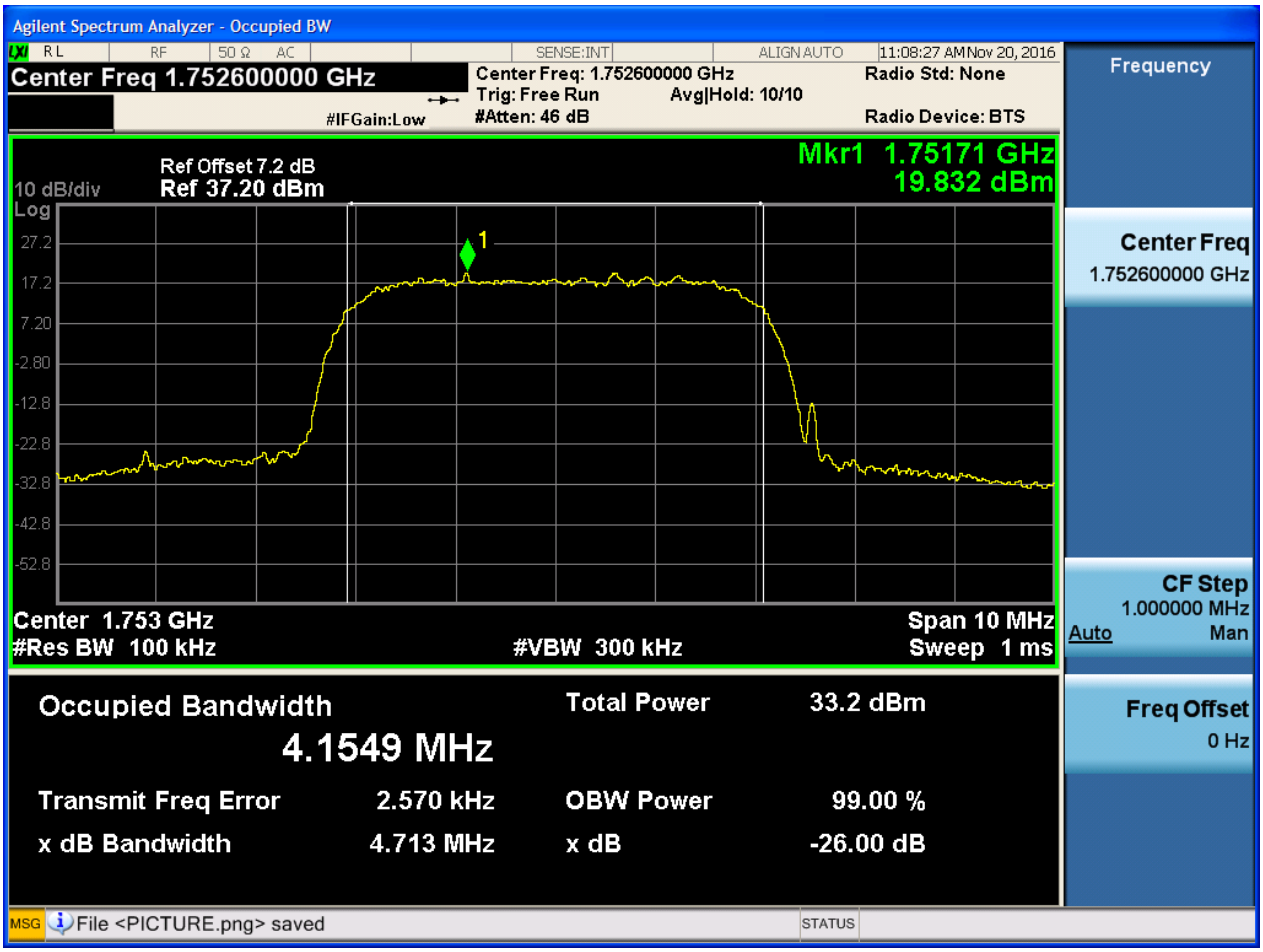
4.1.2.1.3 Test Channel = HCH



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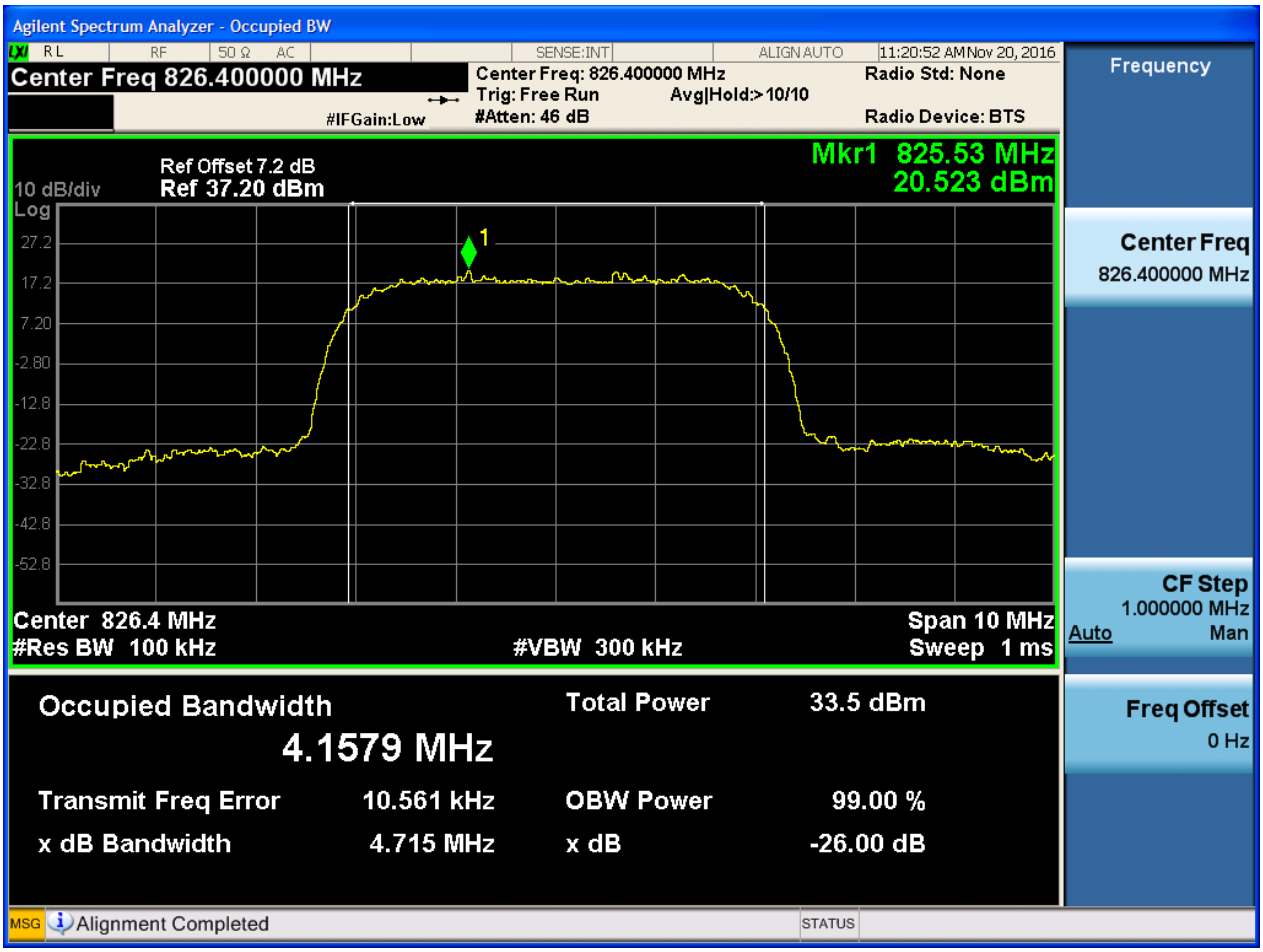
4.1.3 Test Band = WCDMA850

4.1.3.1 Test Mode = UMTS/TM1

4.1.3.1.1 Test Channel = LCH



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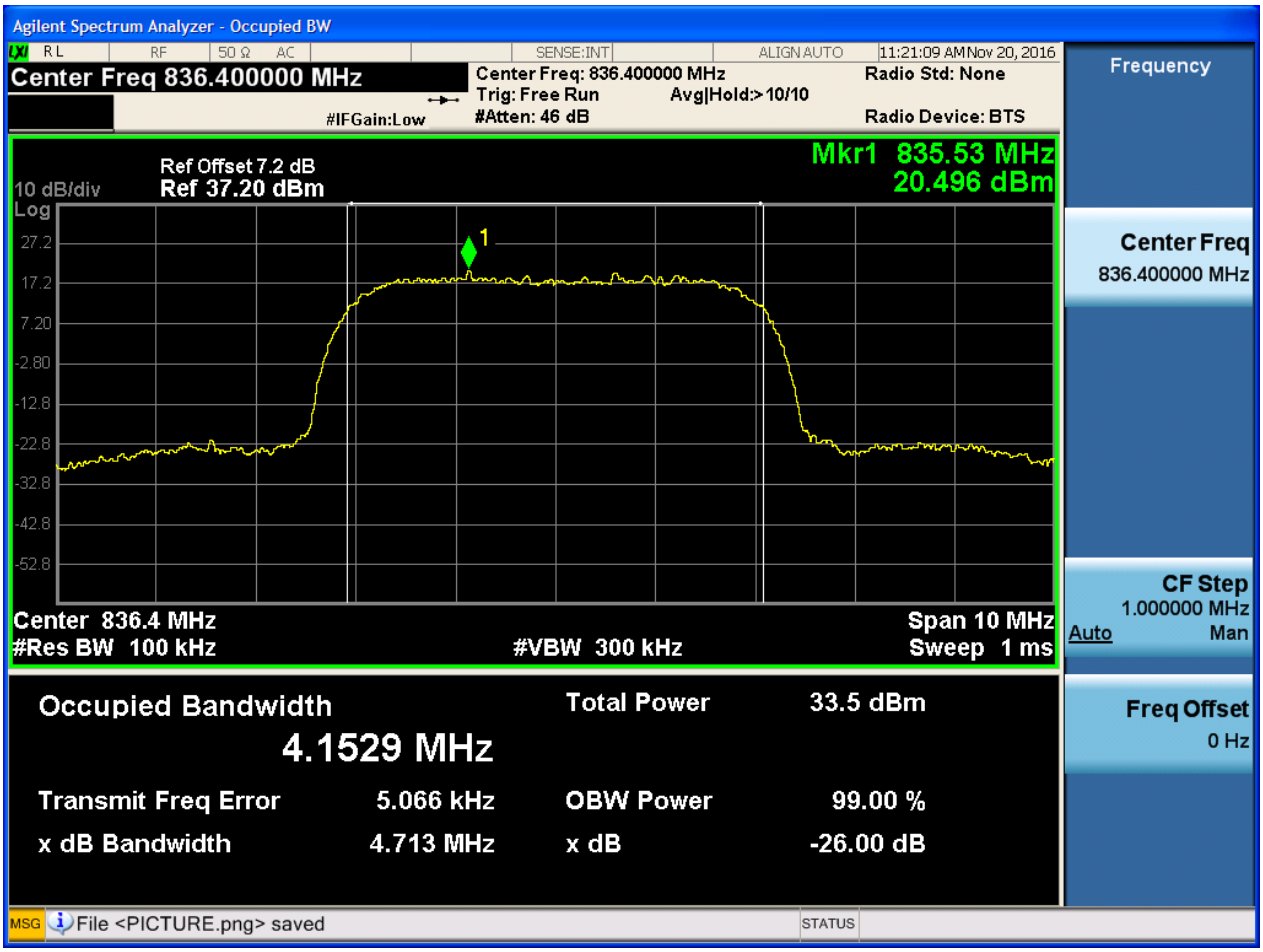

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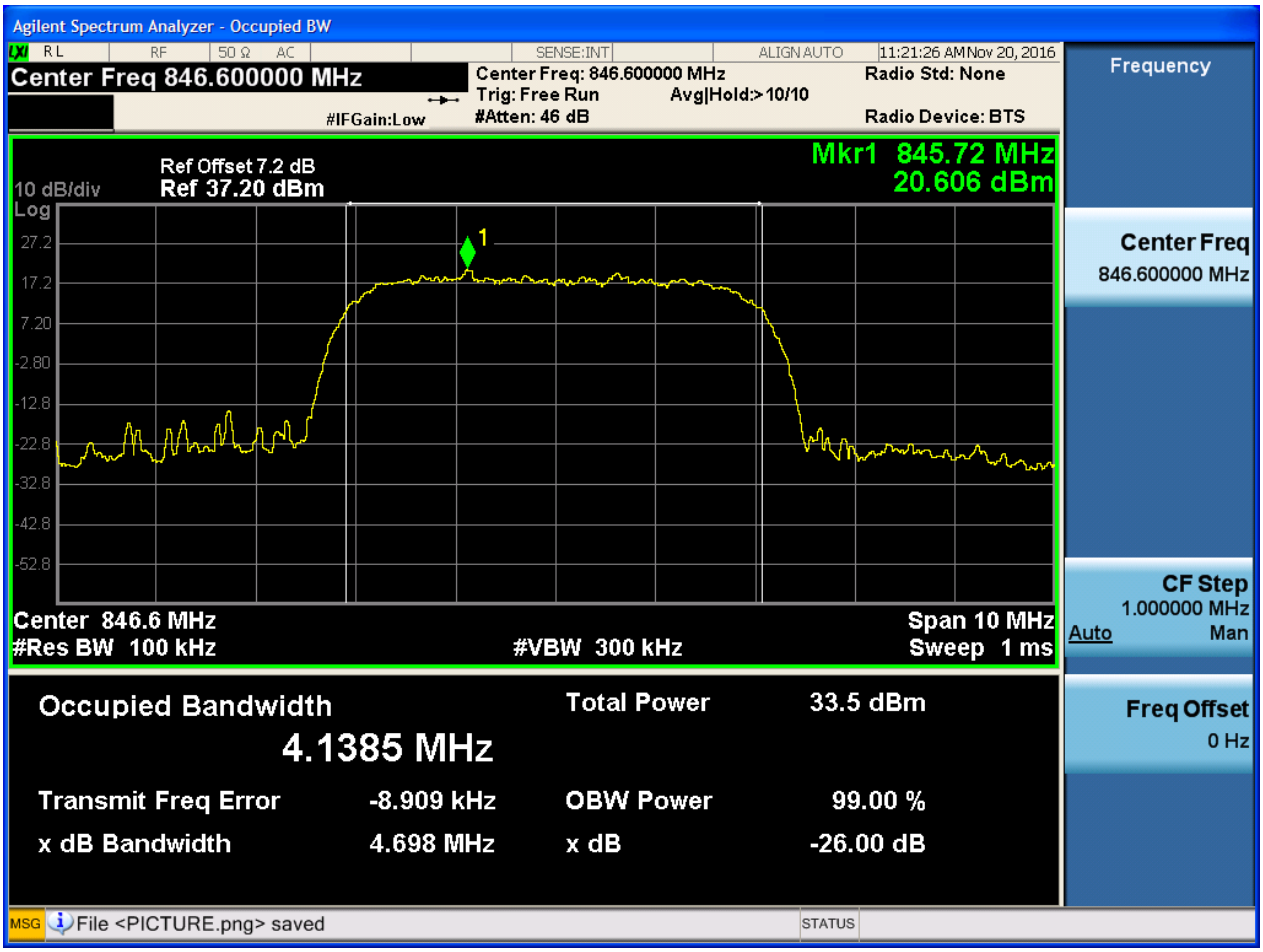
4.1.3.1.3 Test Channel = HCH



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5Appendix_E: Band Edges Compliance

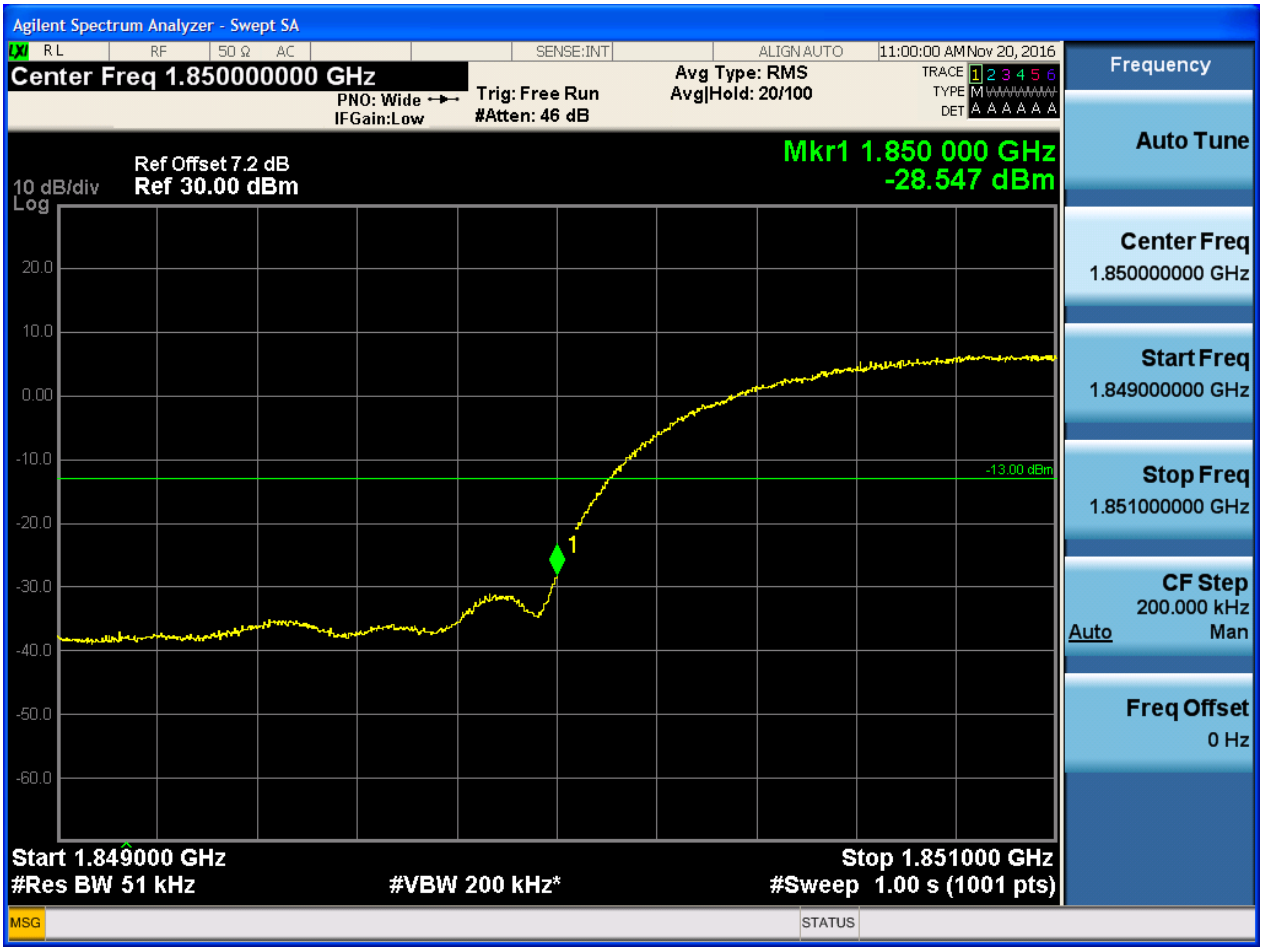
Part I - Test Plots

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



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5.1.1.1.2 Test Channel = HCH

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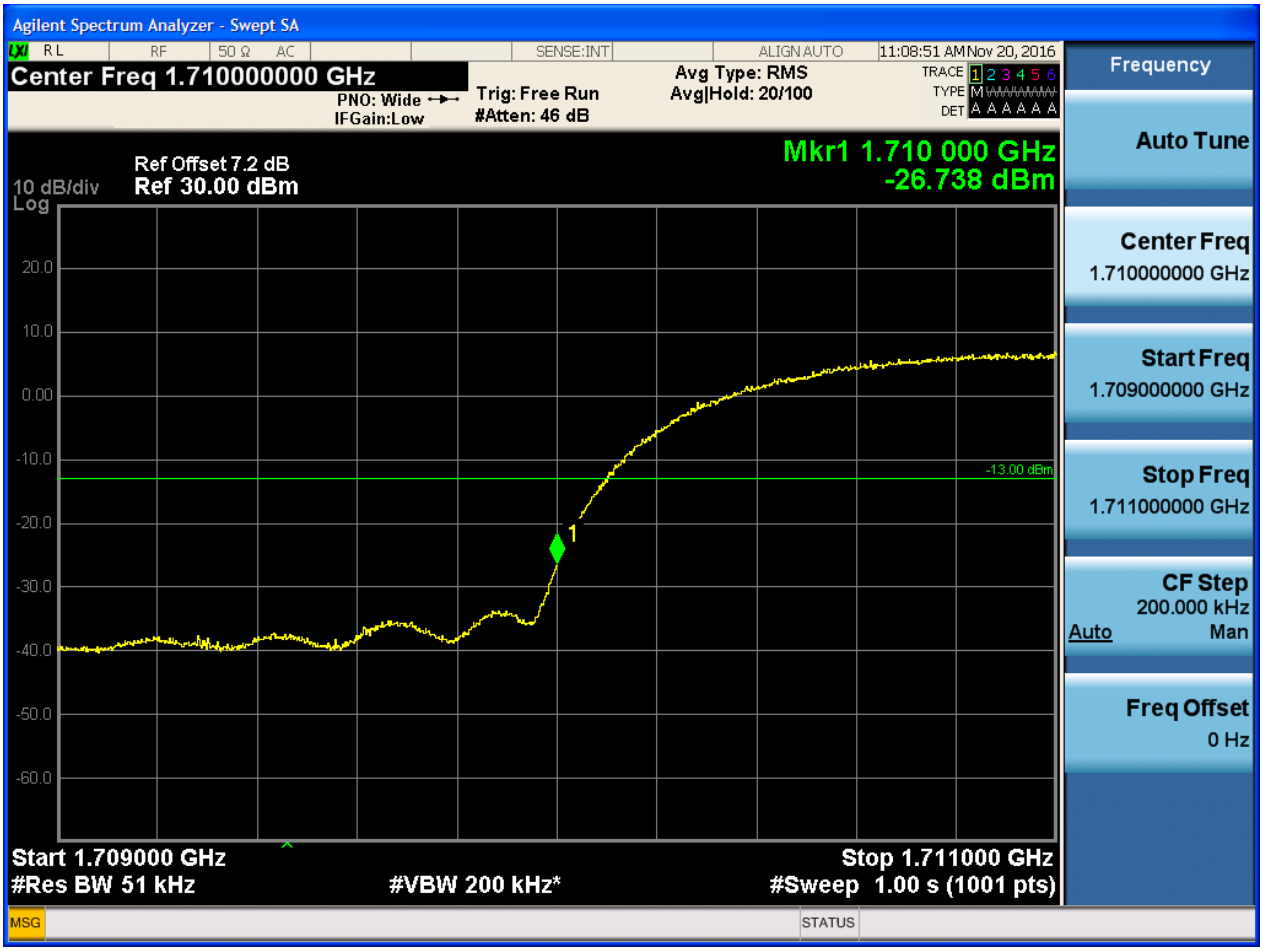
5.1.2 Test Band = WCDMA1700

5.1.2.1 Test Mode = UMTS/TM1

5.1.2.1.1 Test Channel = LCH



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5.1.2.1.2 Test Channel = HCH

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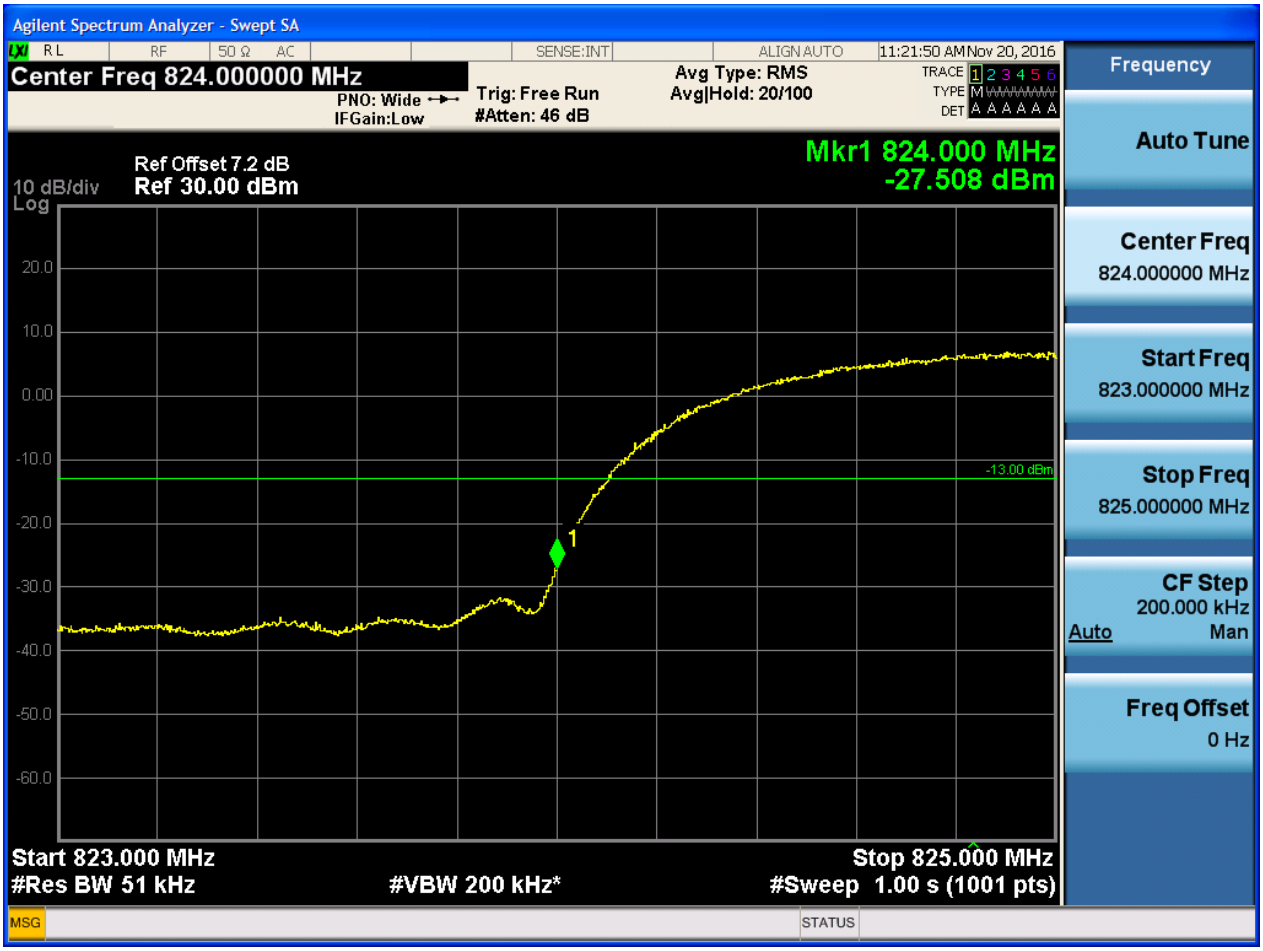
5.1.3 Test Band = WCDMA850

5.1.3.1 Test Mode = UMTS/TM1

5.1.3.1.1 Test Channel = LCH



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5.1.3.1.2 Test Channel = HCH

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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

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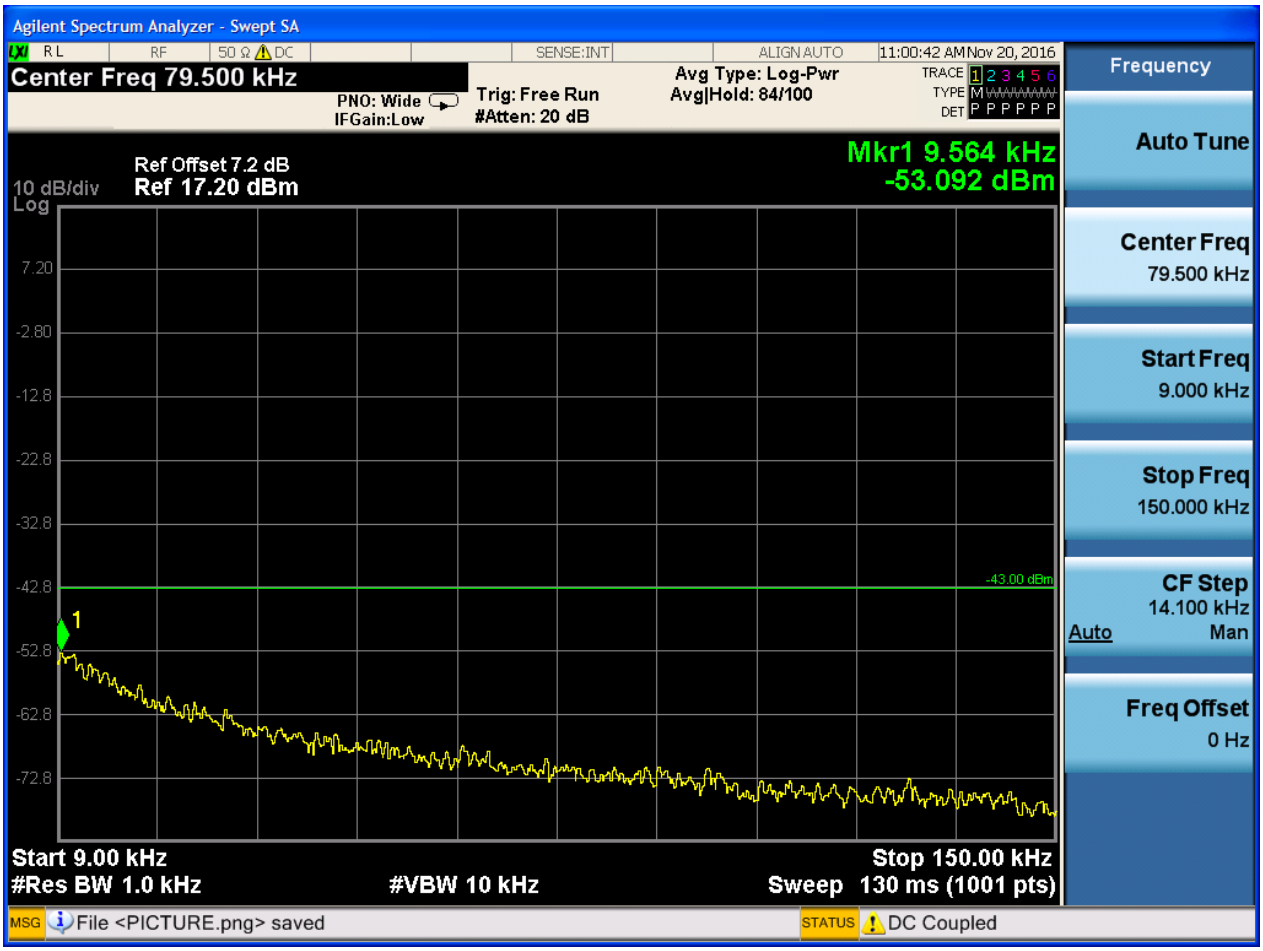

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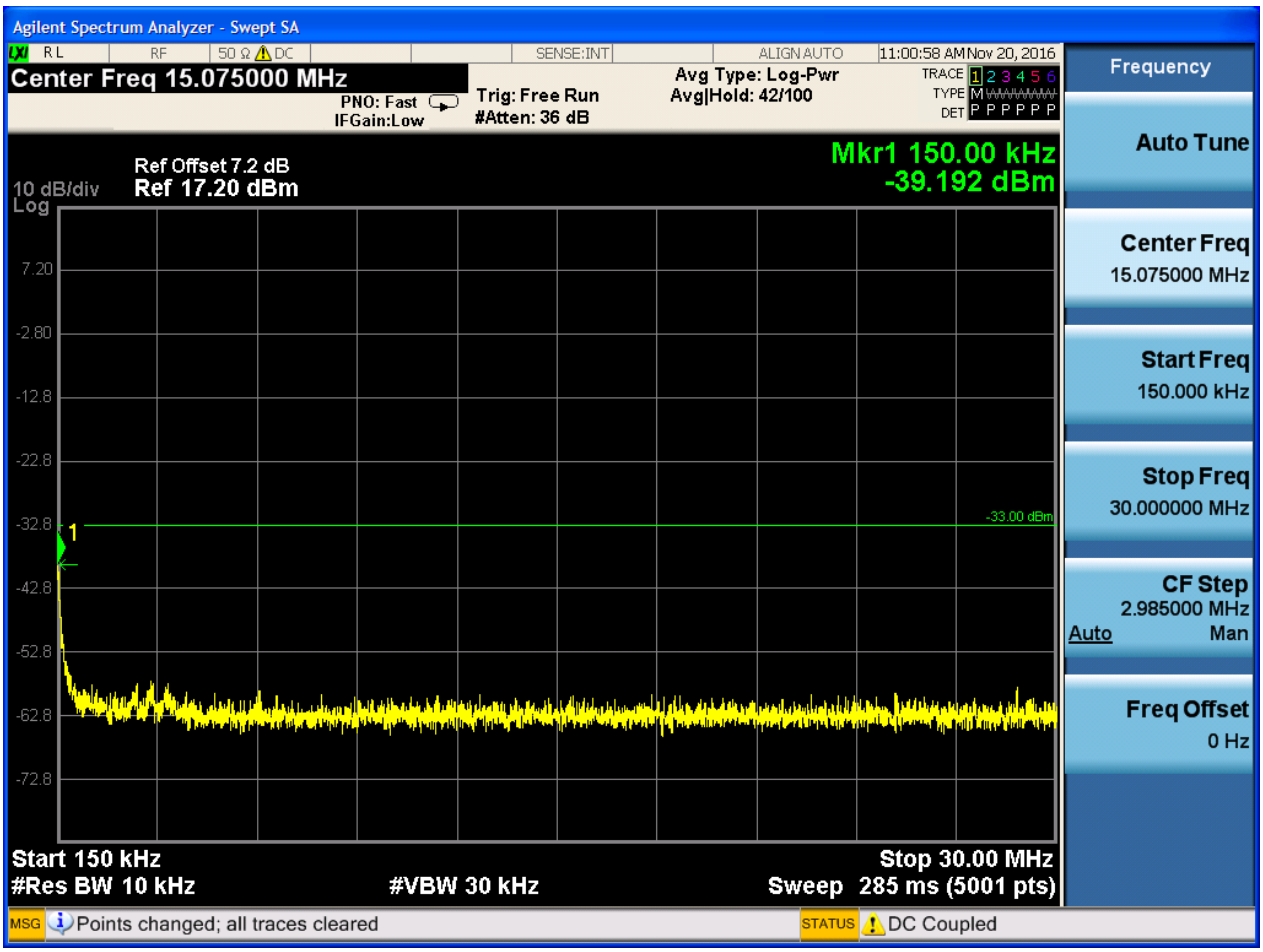

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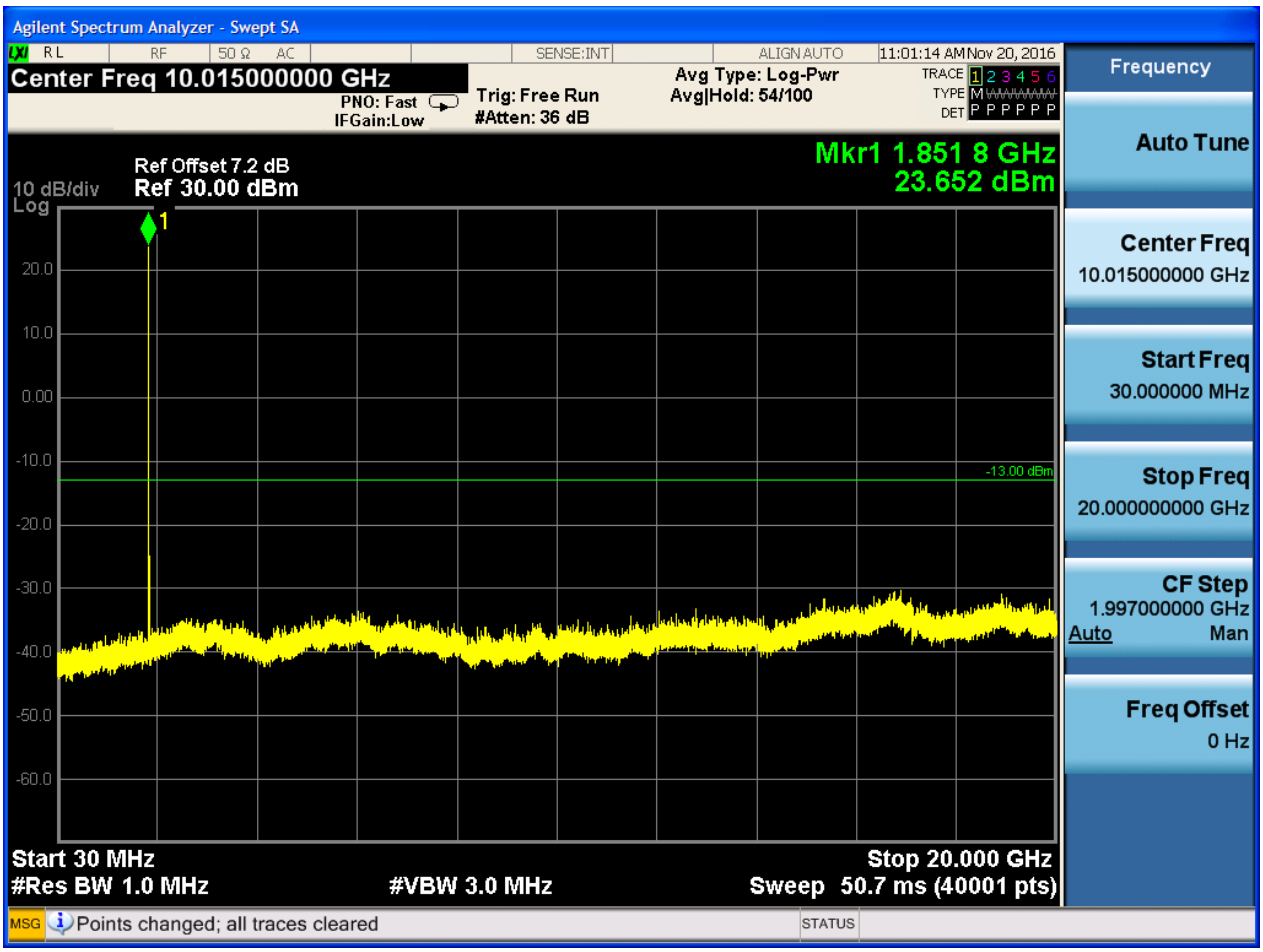

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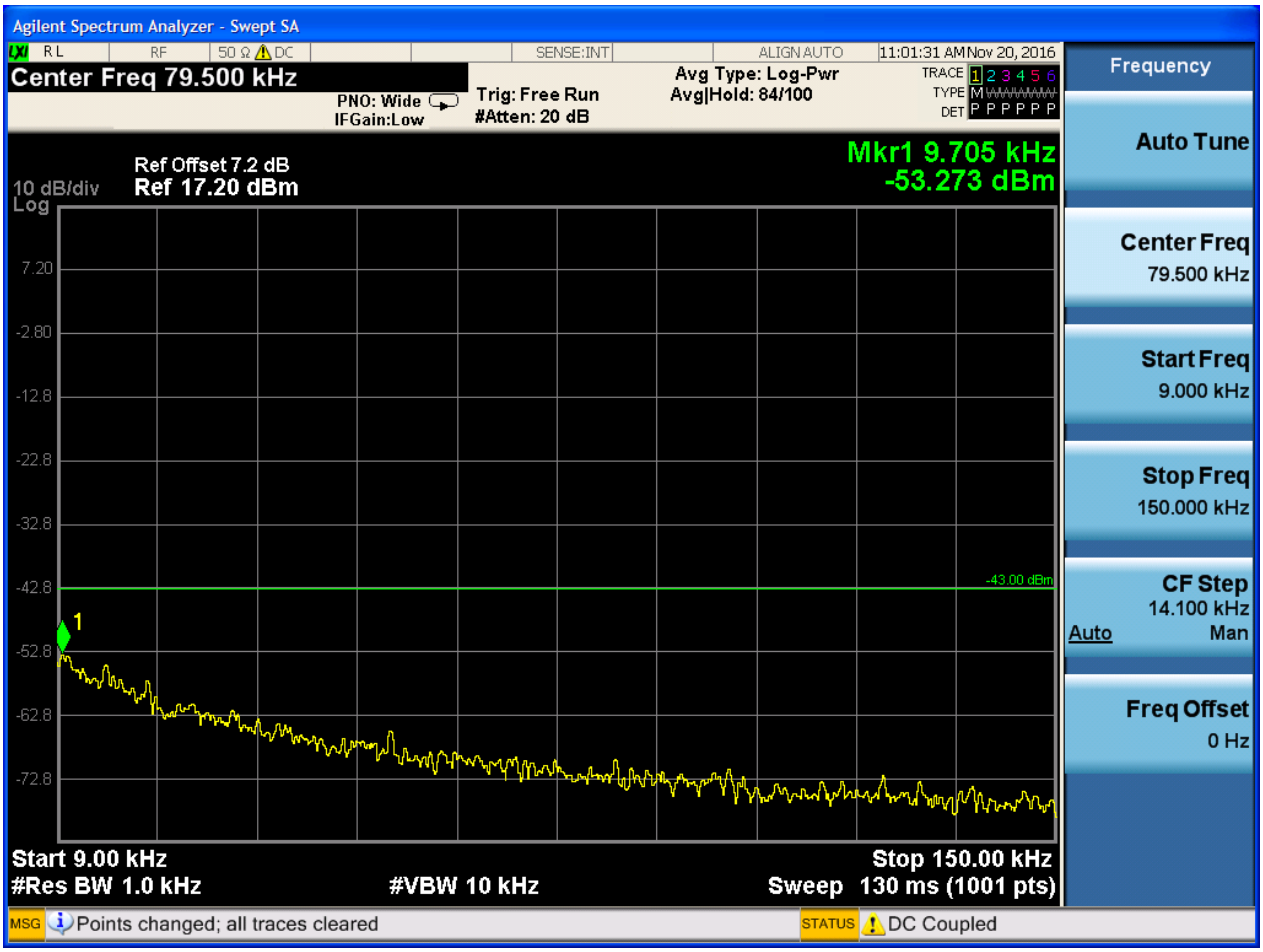
6.1.1.1.2 Test Channel = MCH



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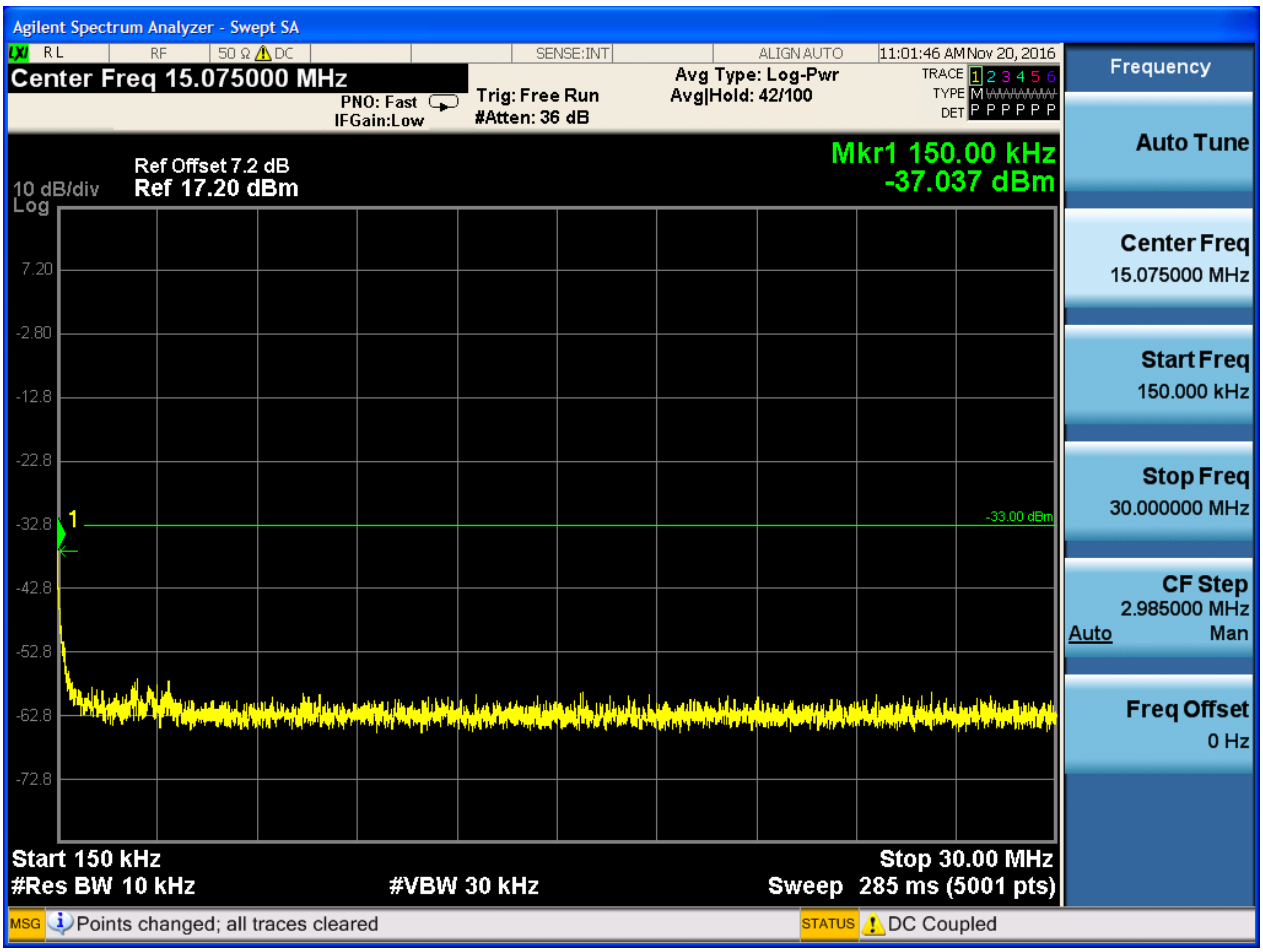

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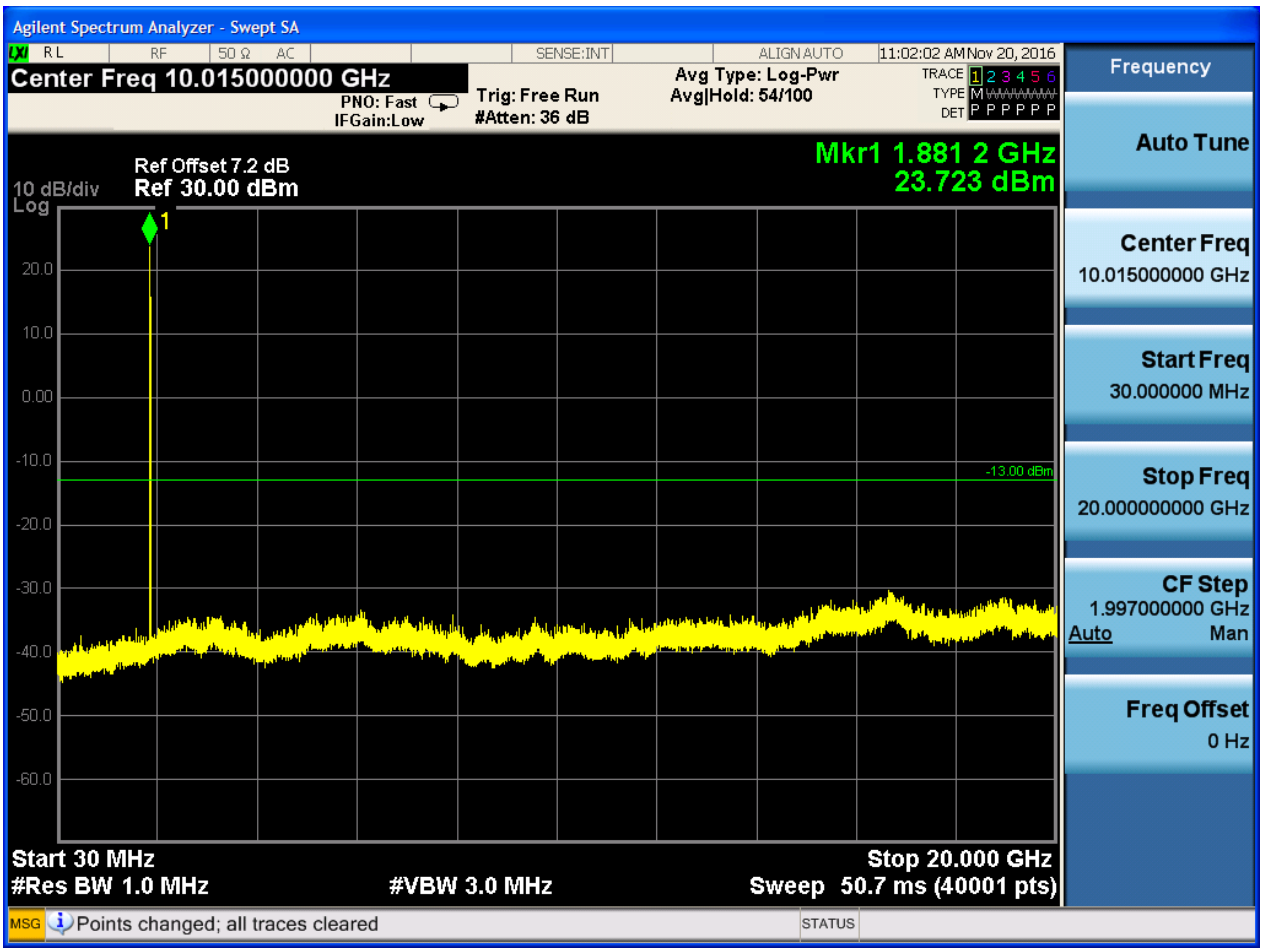

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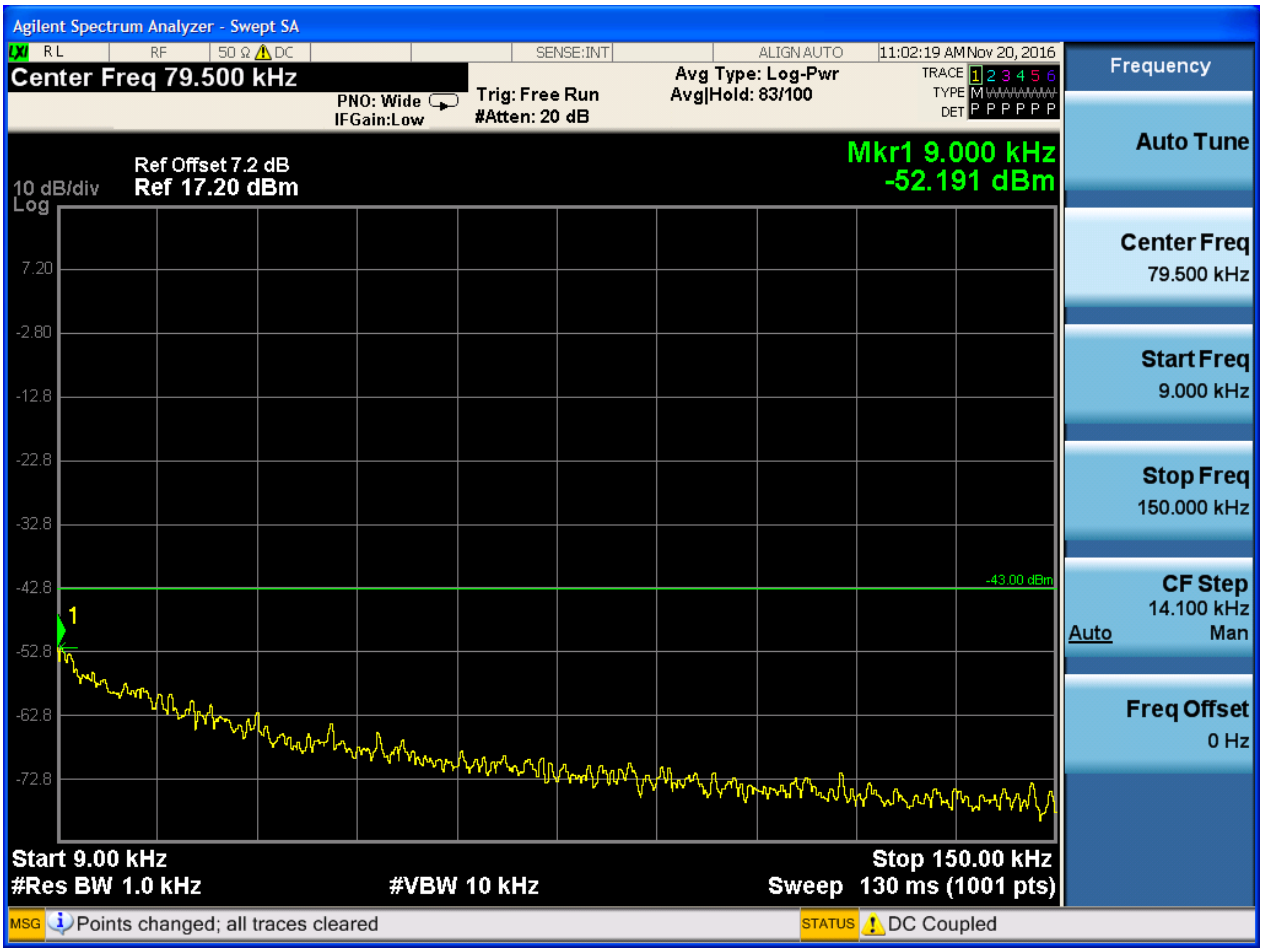
6.1.1.1.3 Test Channel = HCH



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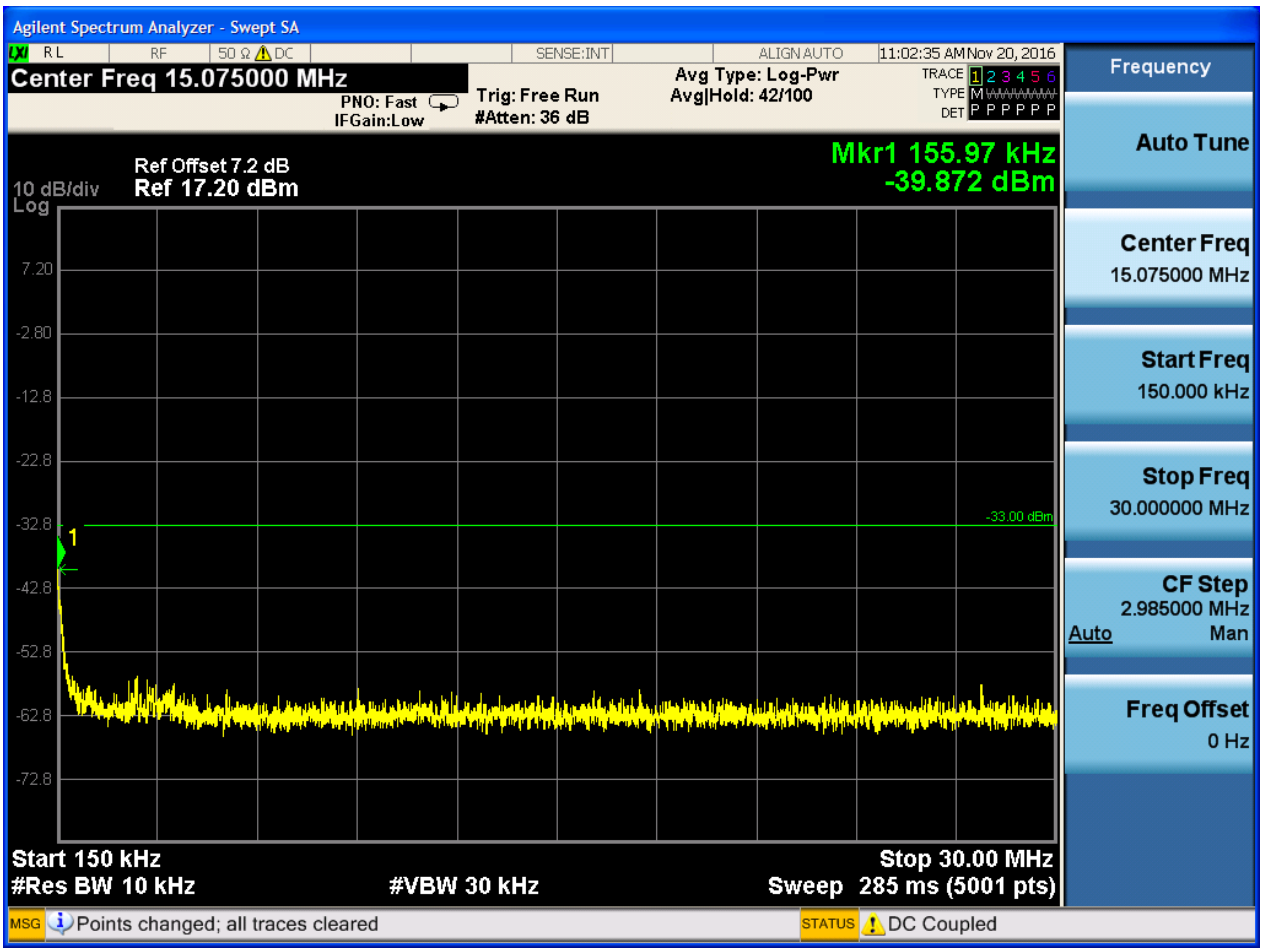

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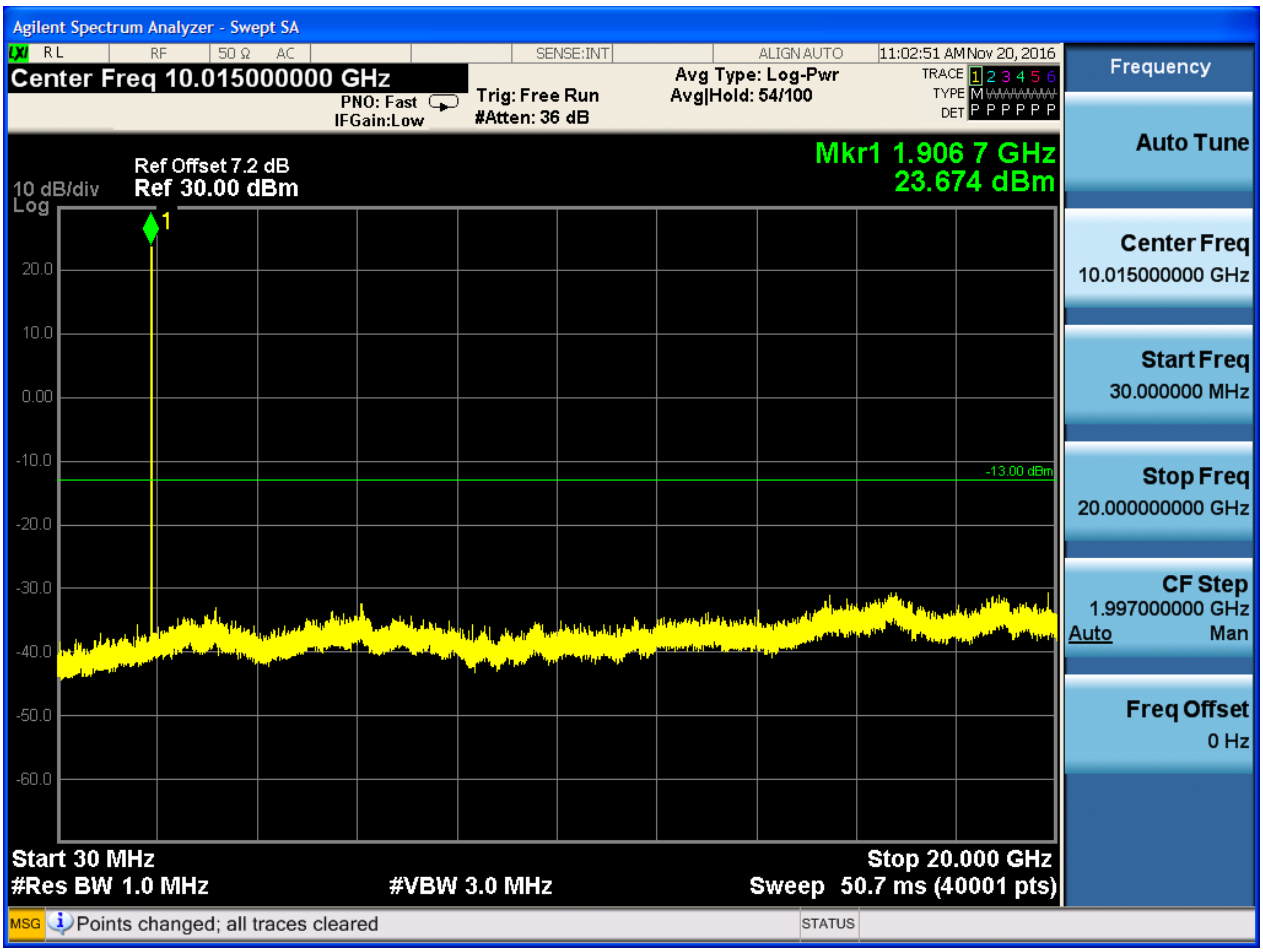

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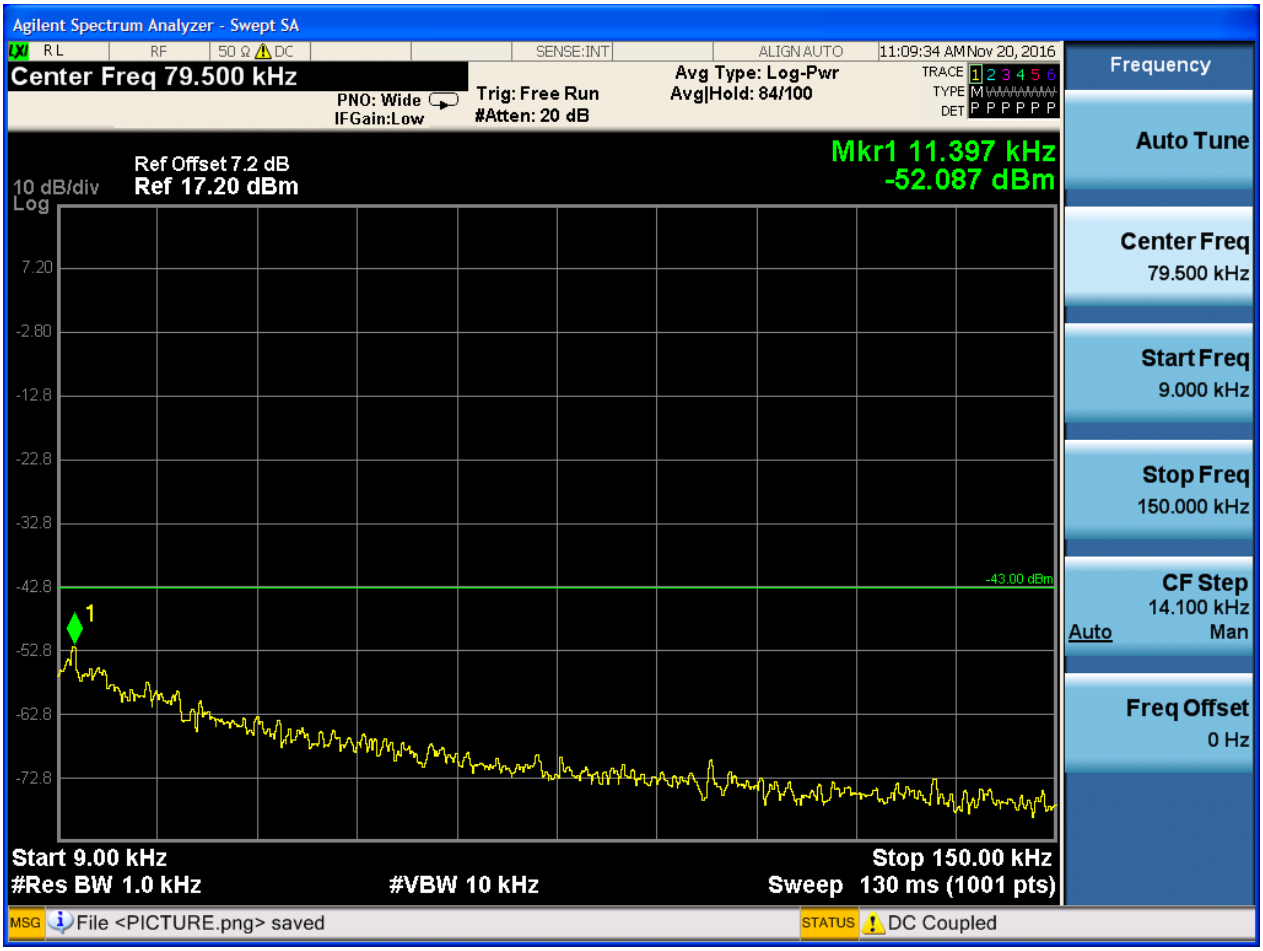
6.1.2 Test Band = WCDMA1700

6.1.2.1 Test Mode = UMTS/TM1

6.1.2.1.1 Test Channel = LCH



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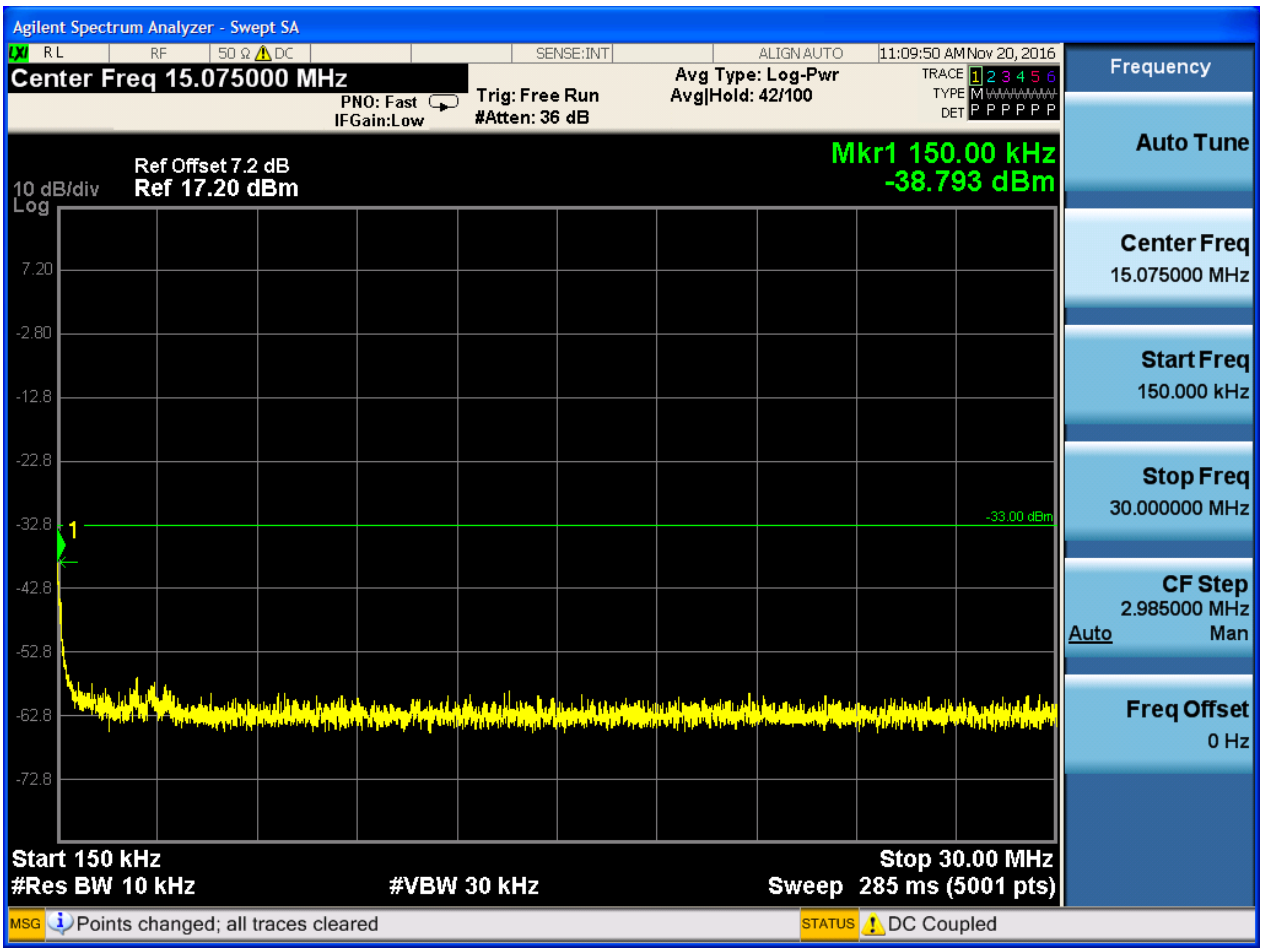

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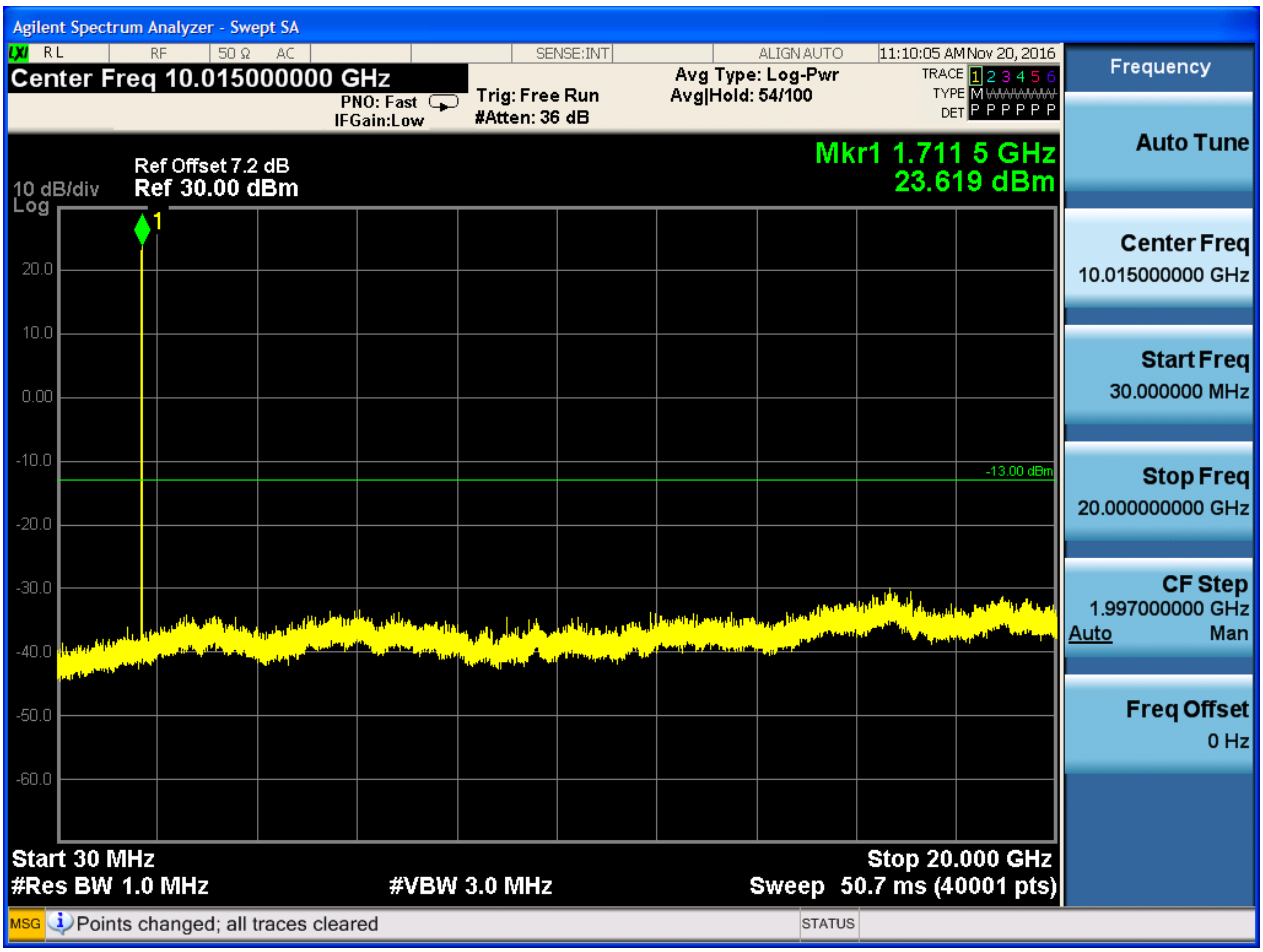

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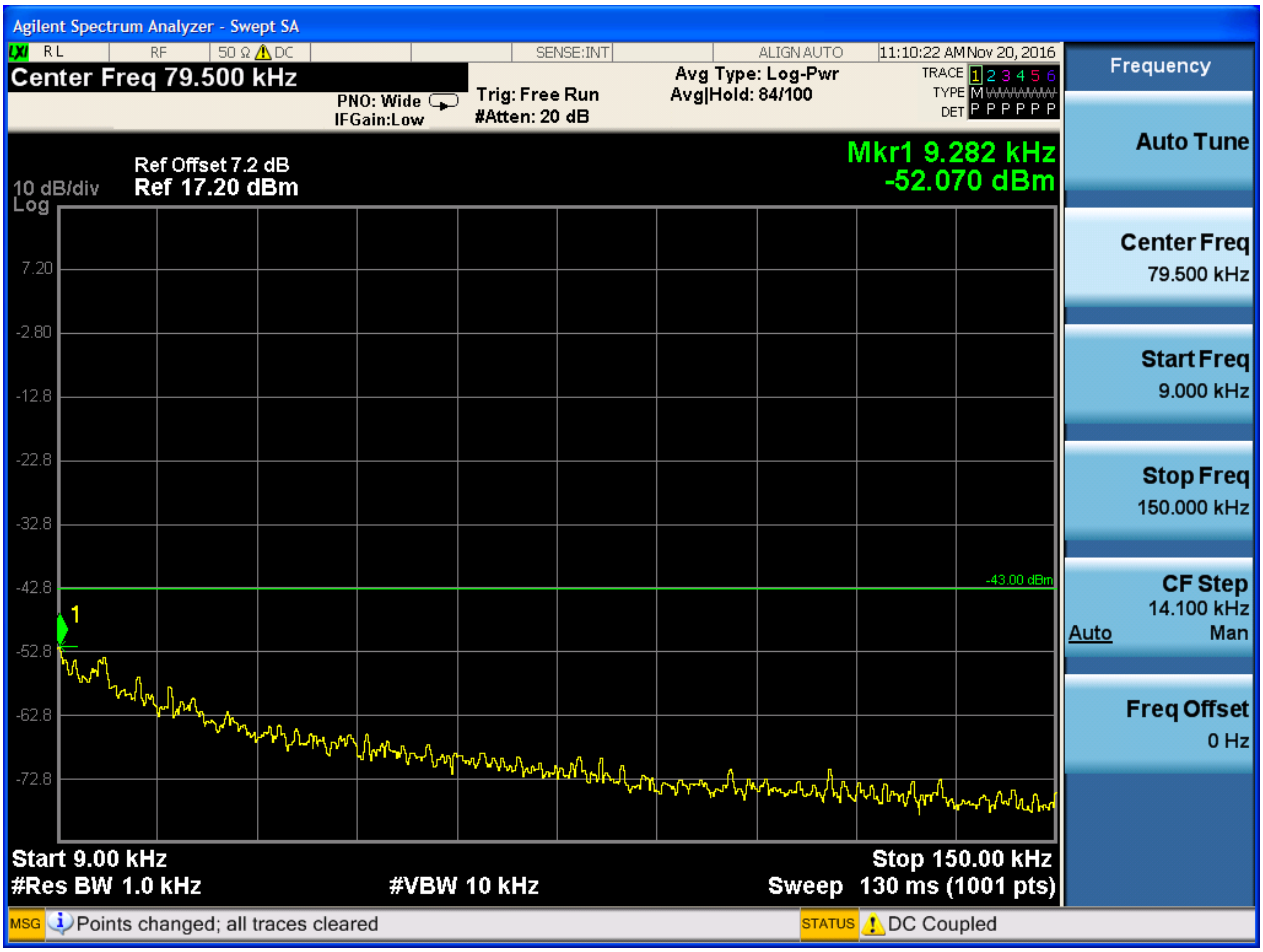
6.1.2.1.2 Test Channel = MCH



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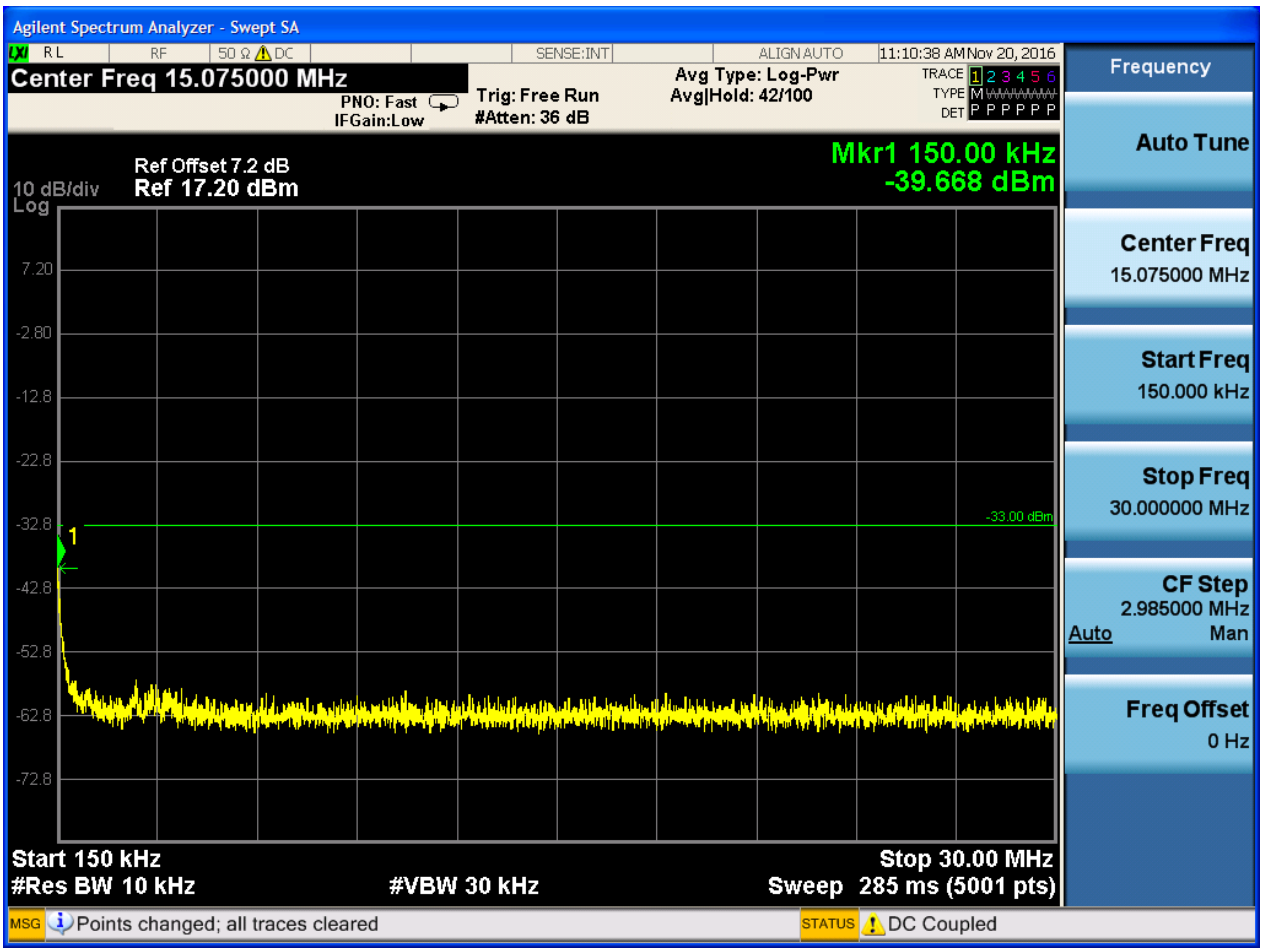

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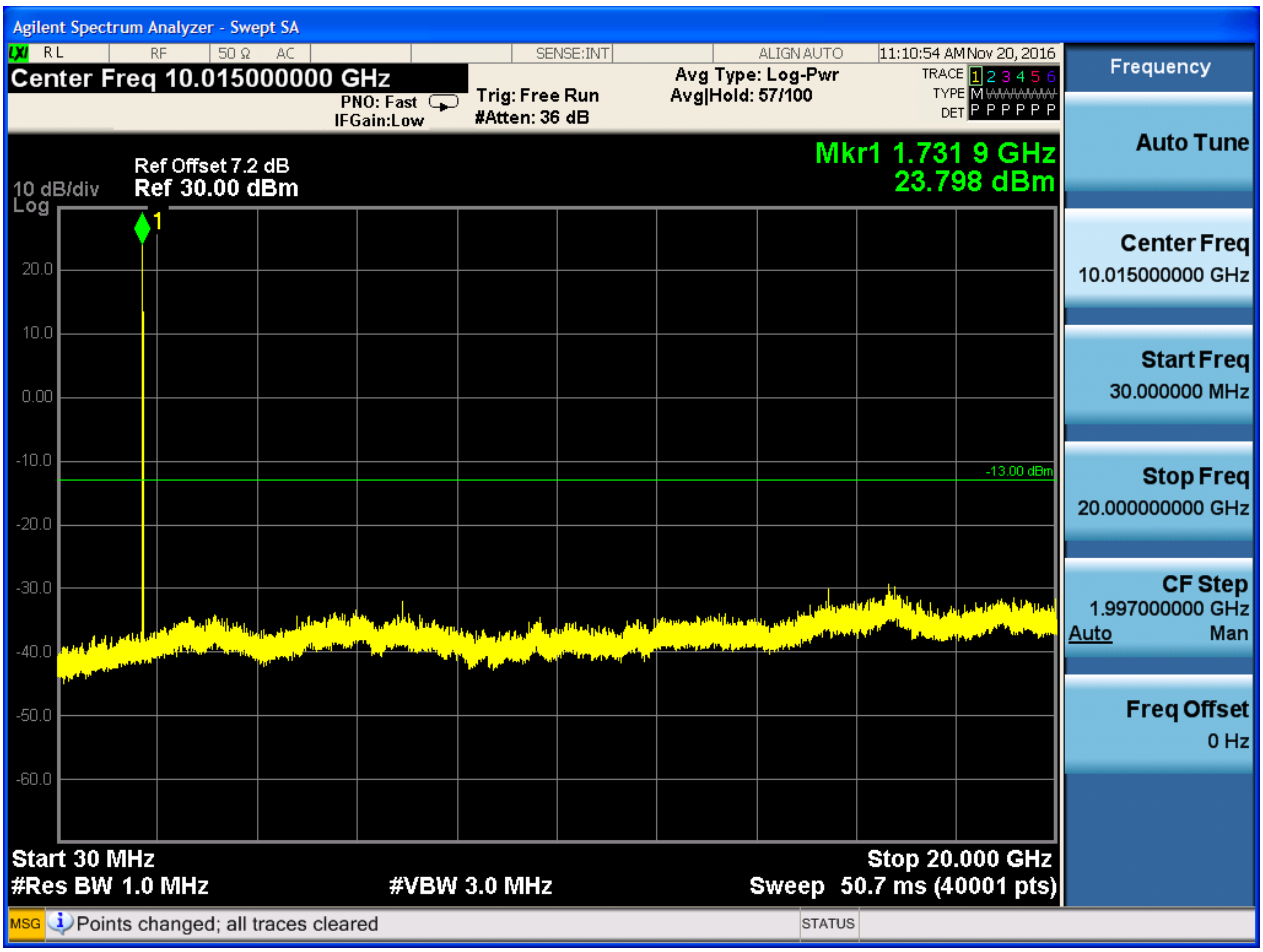

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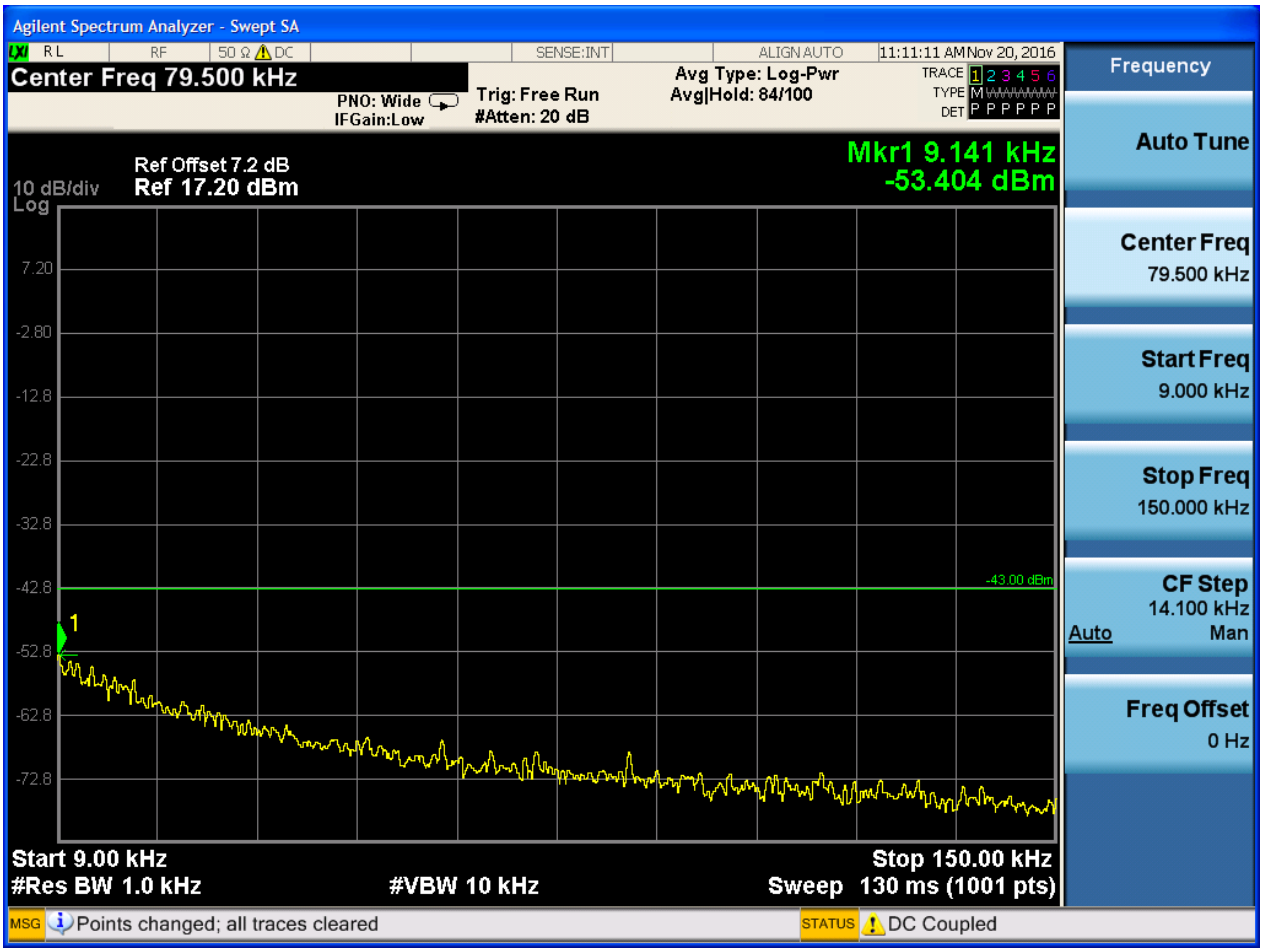
6.1.2.1.3 Test Channel = HCH



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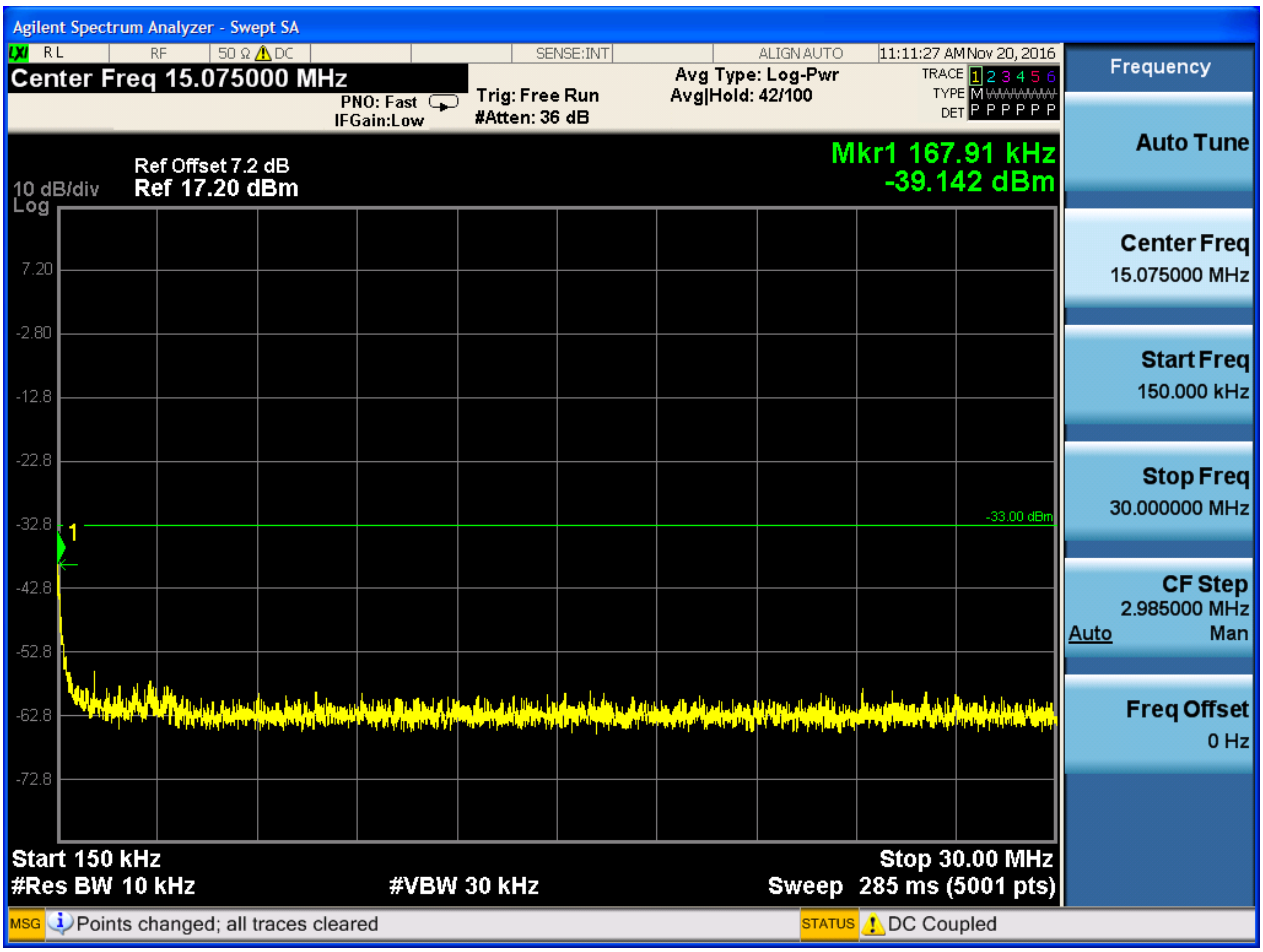

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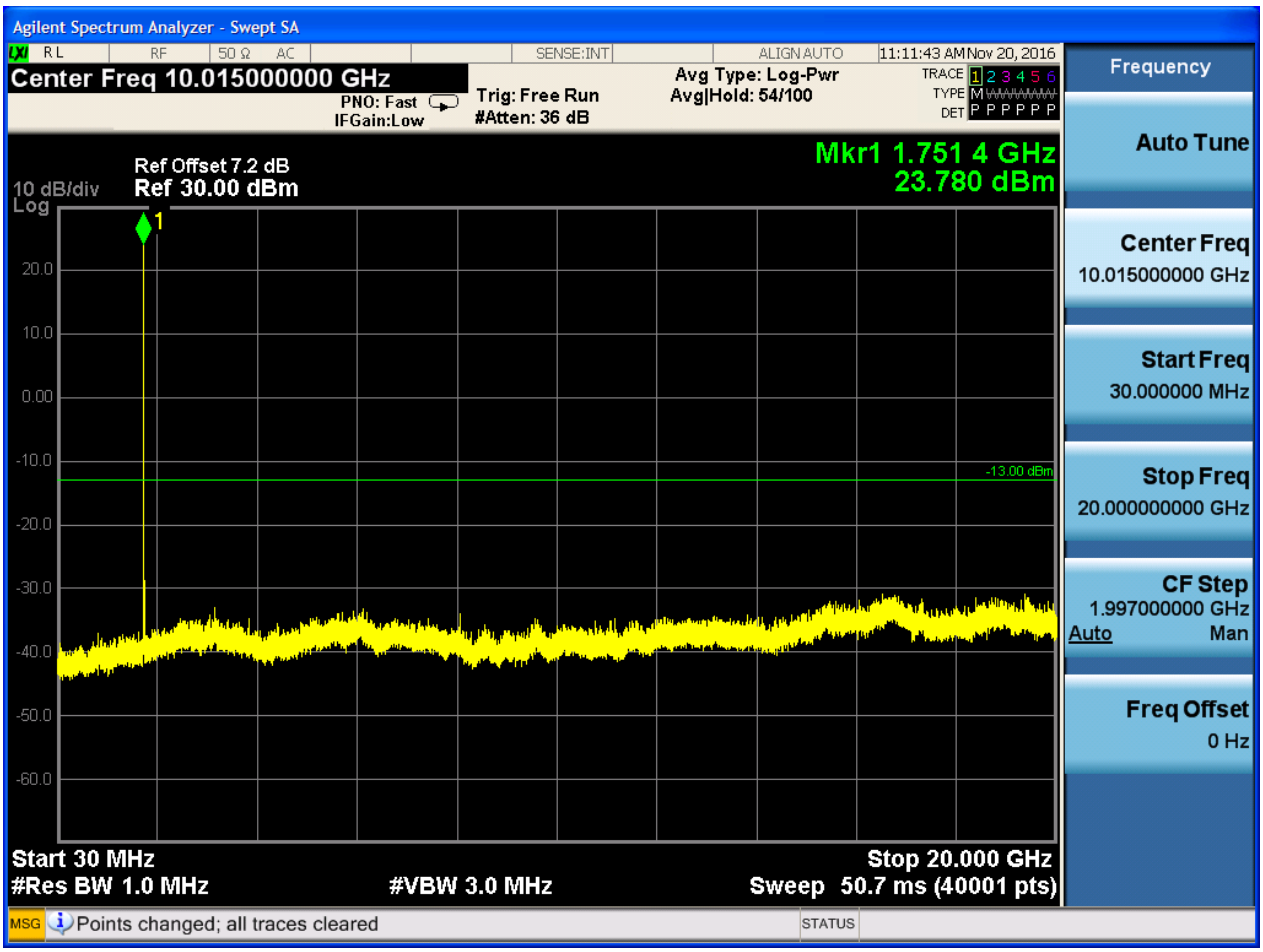

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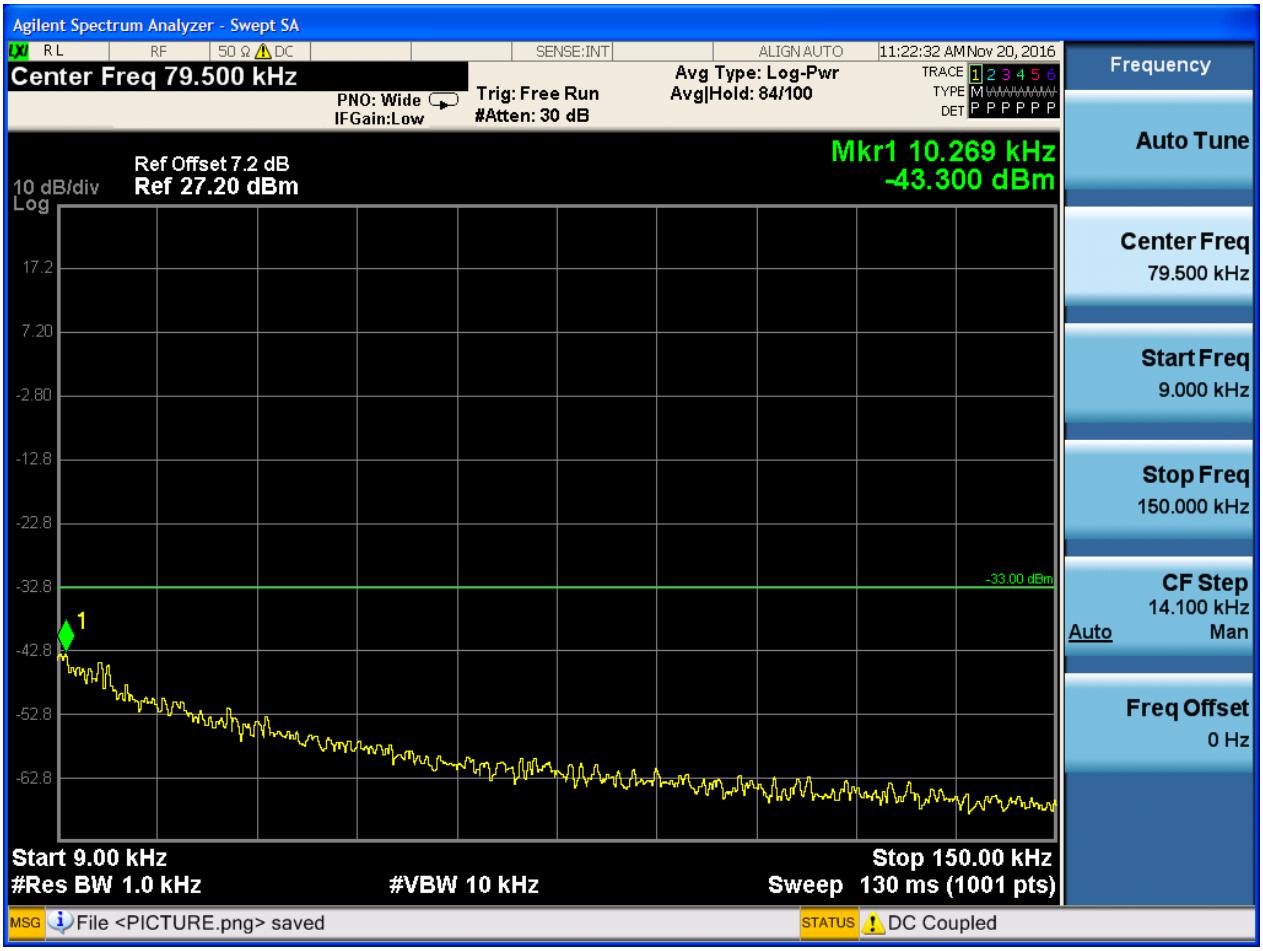
6.1.3 Test Band = WCDMA850

6.1.3.1 Test Mode = UMTS/TM1

6.1.3.1.1 Test Channel = LCH



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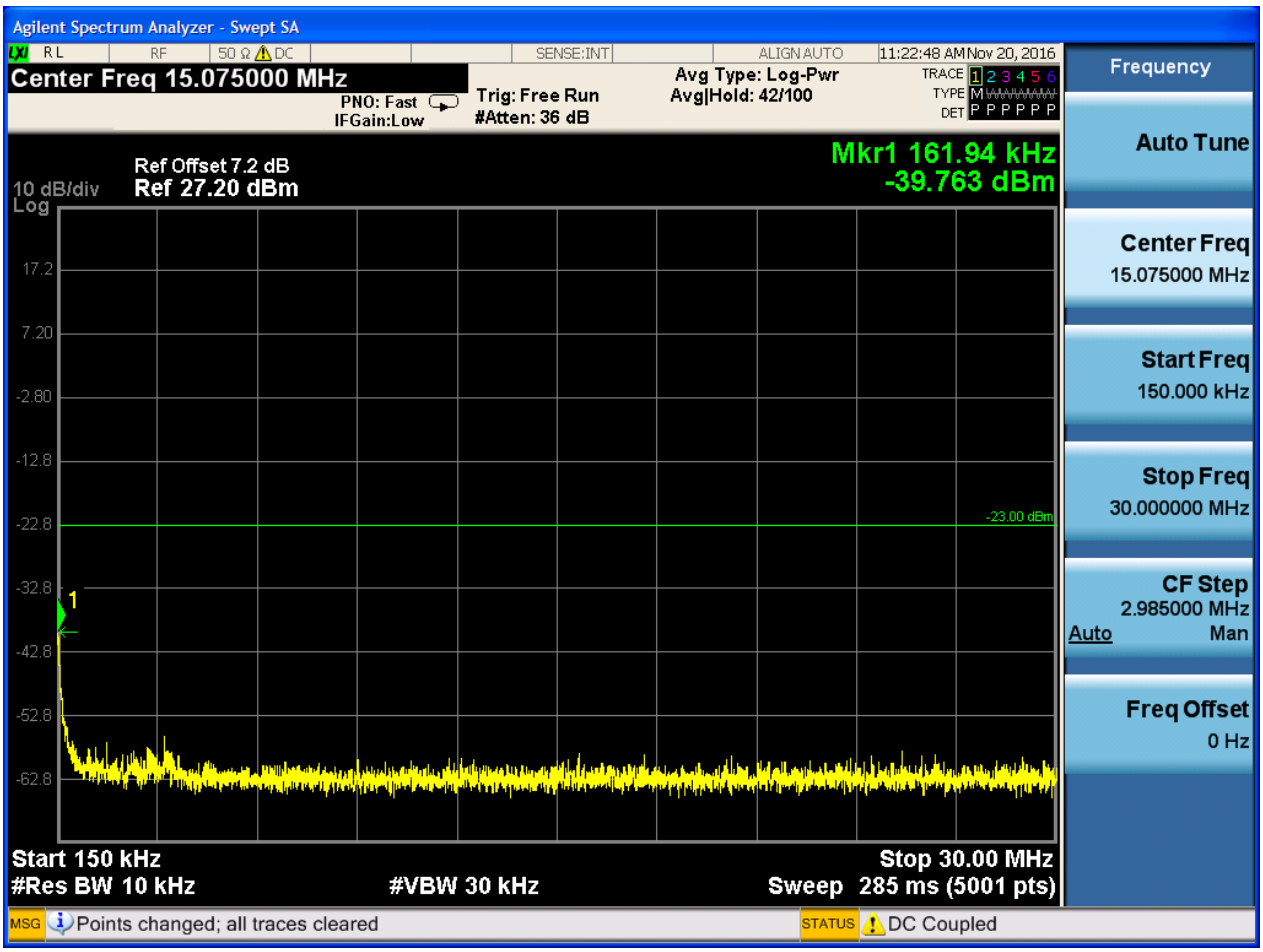

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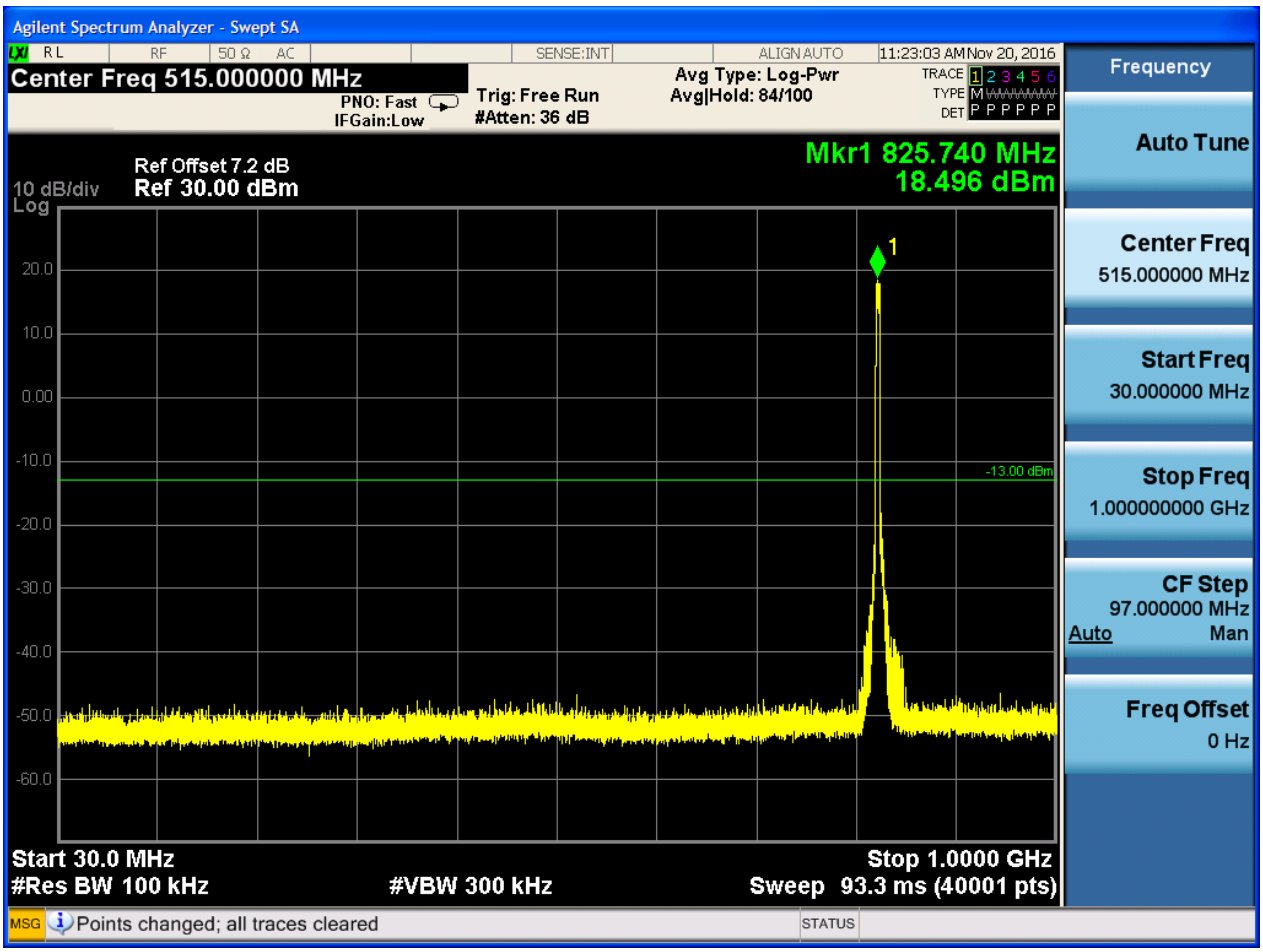

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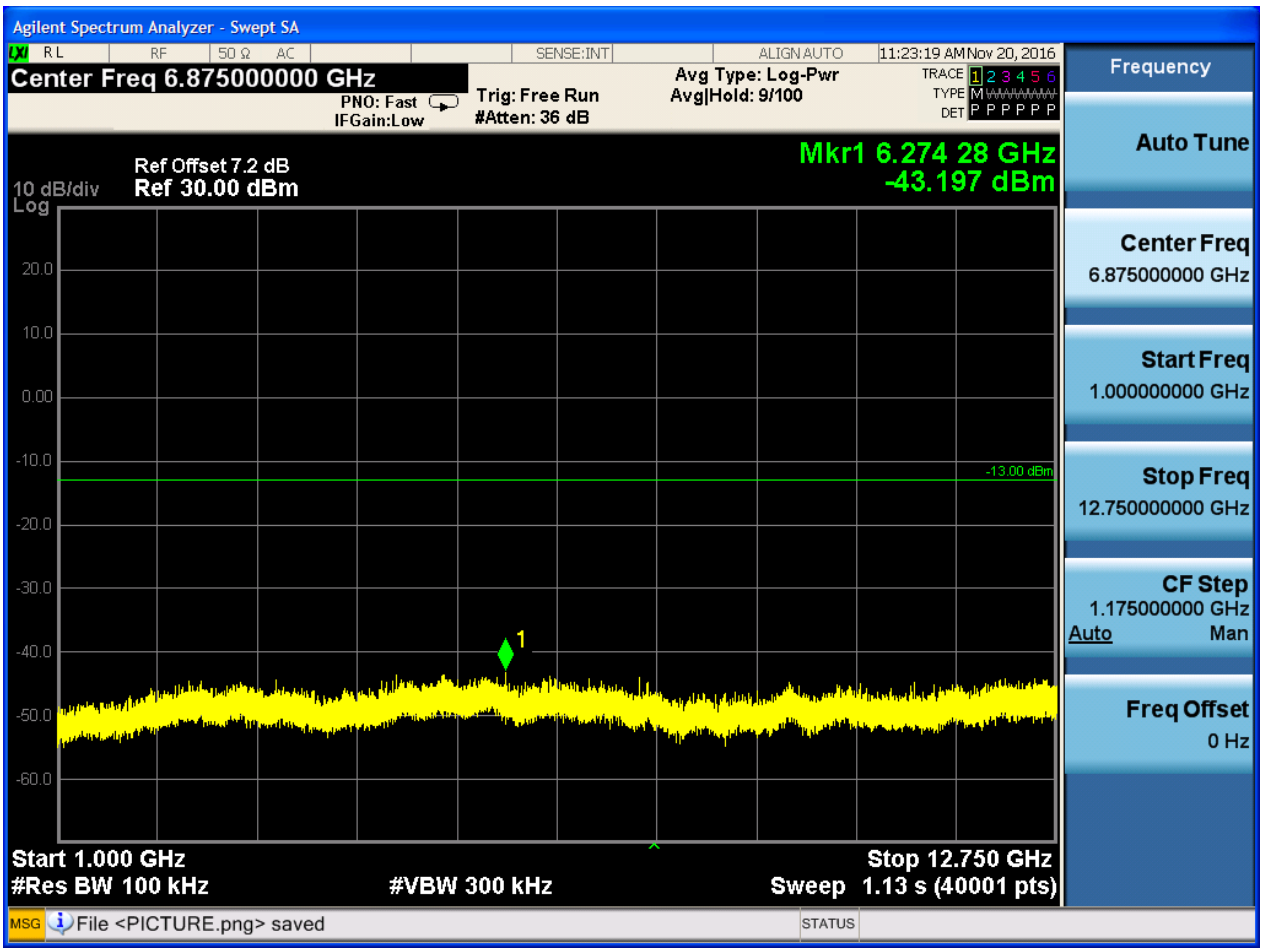

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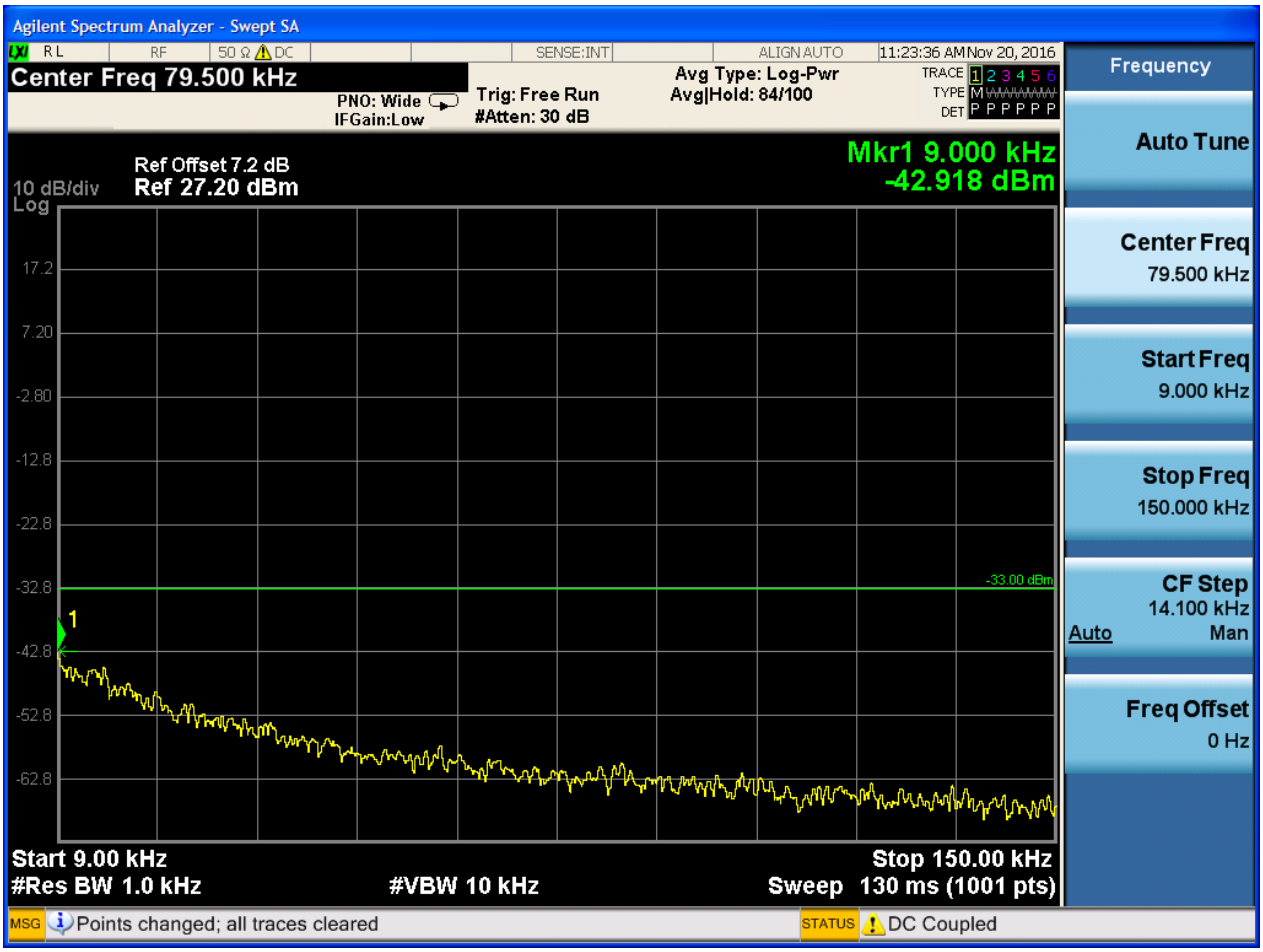
6.1.3.1.2 Test Channel = MCH



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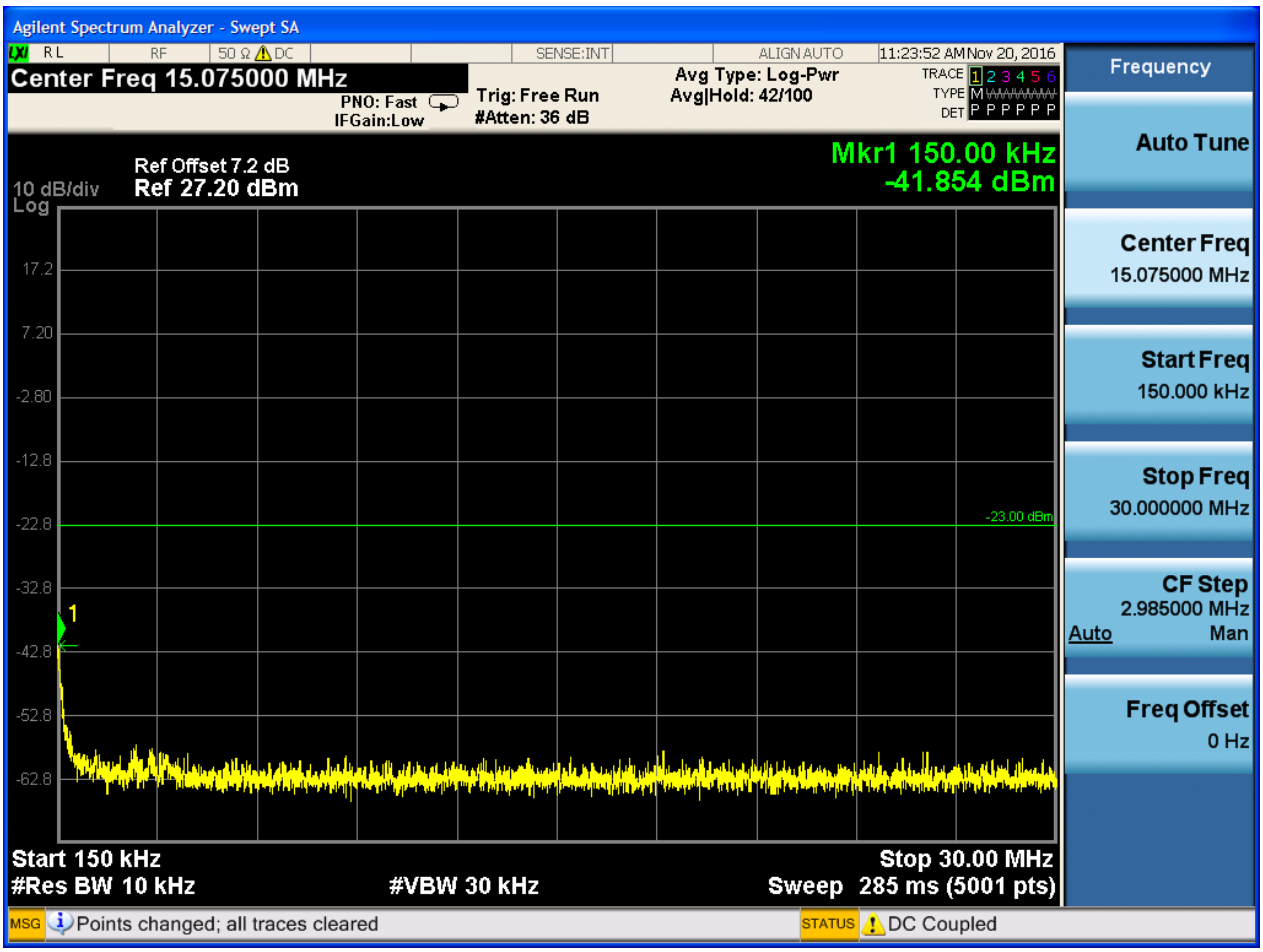

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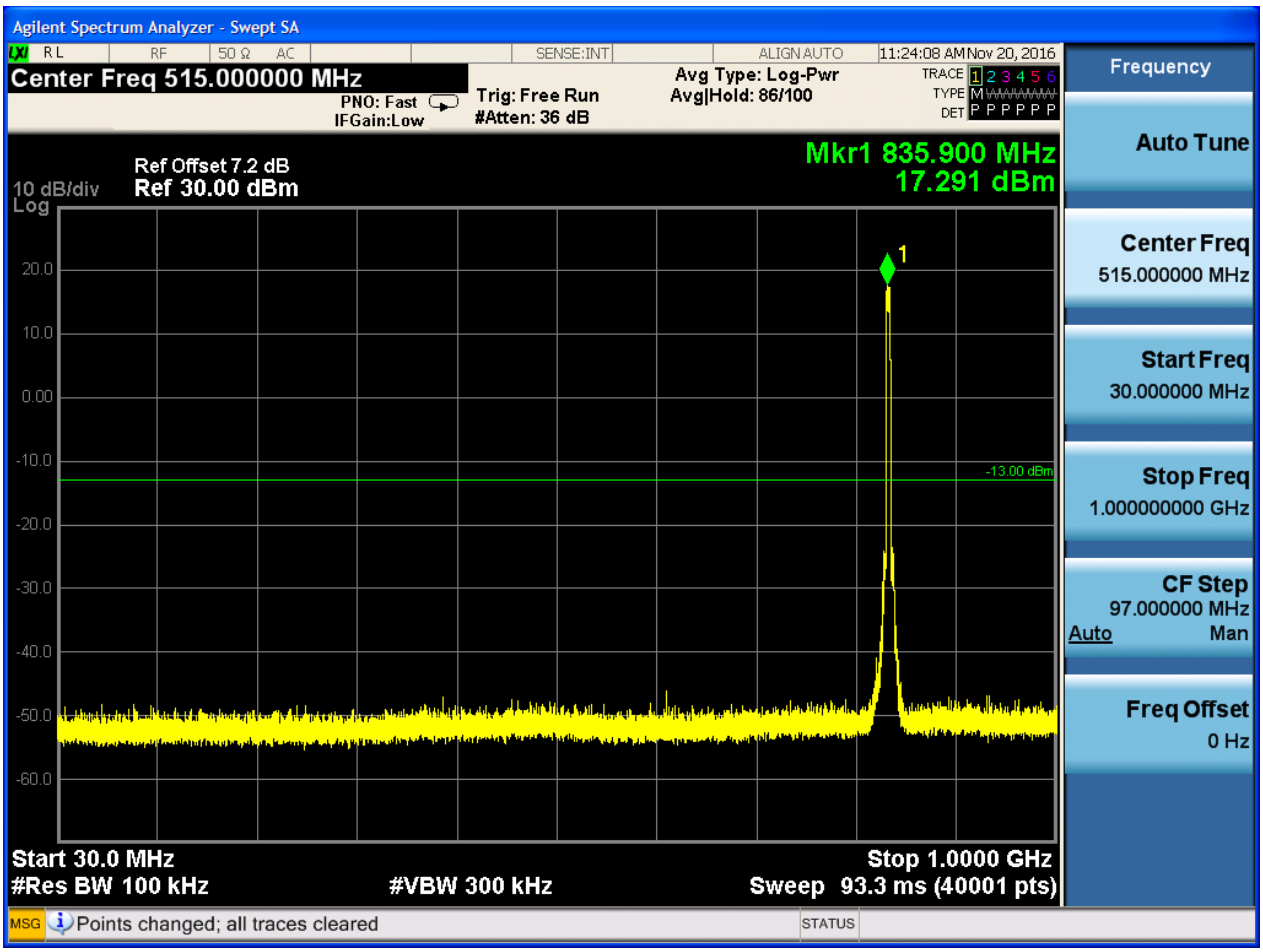

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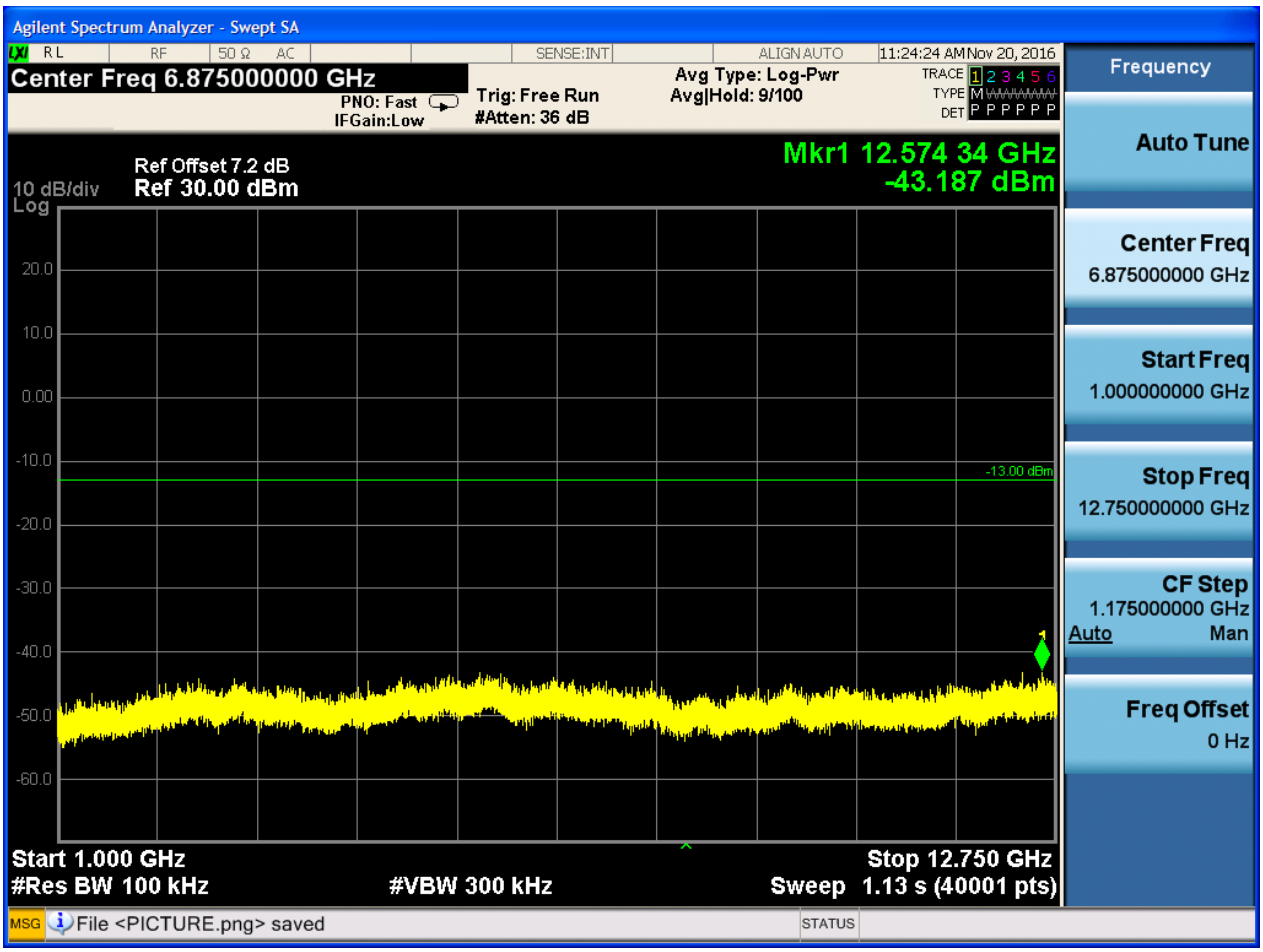

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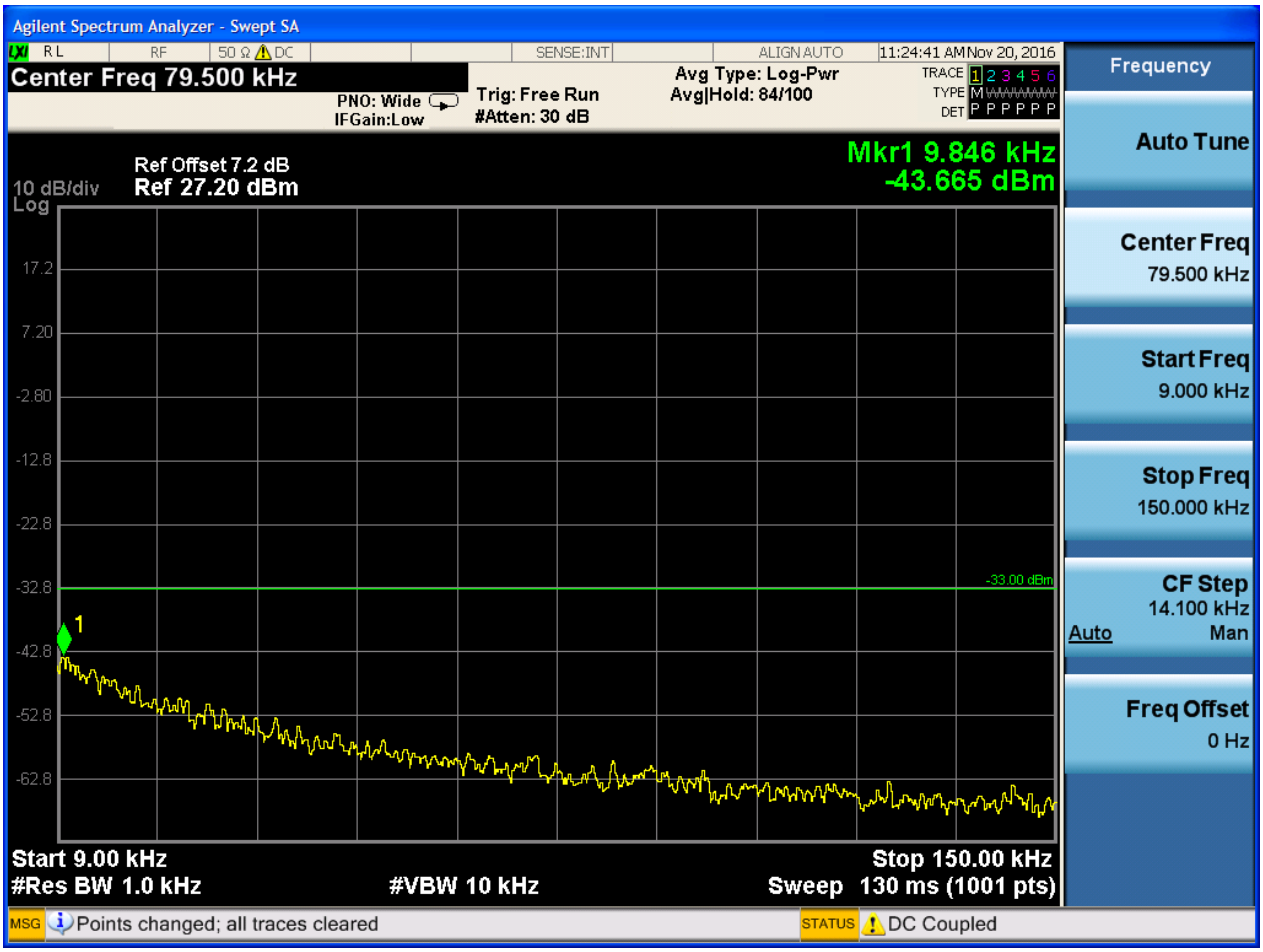
6.1.3.1.3 Test Channel = HCH



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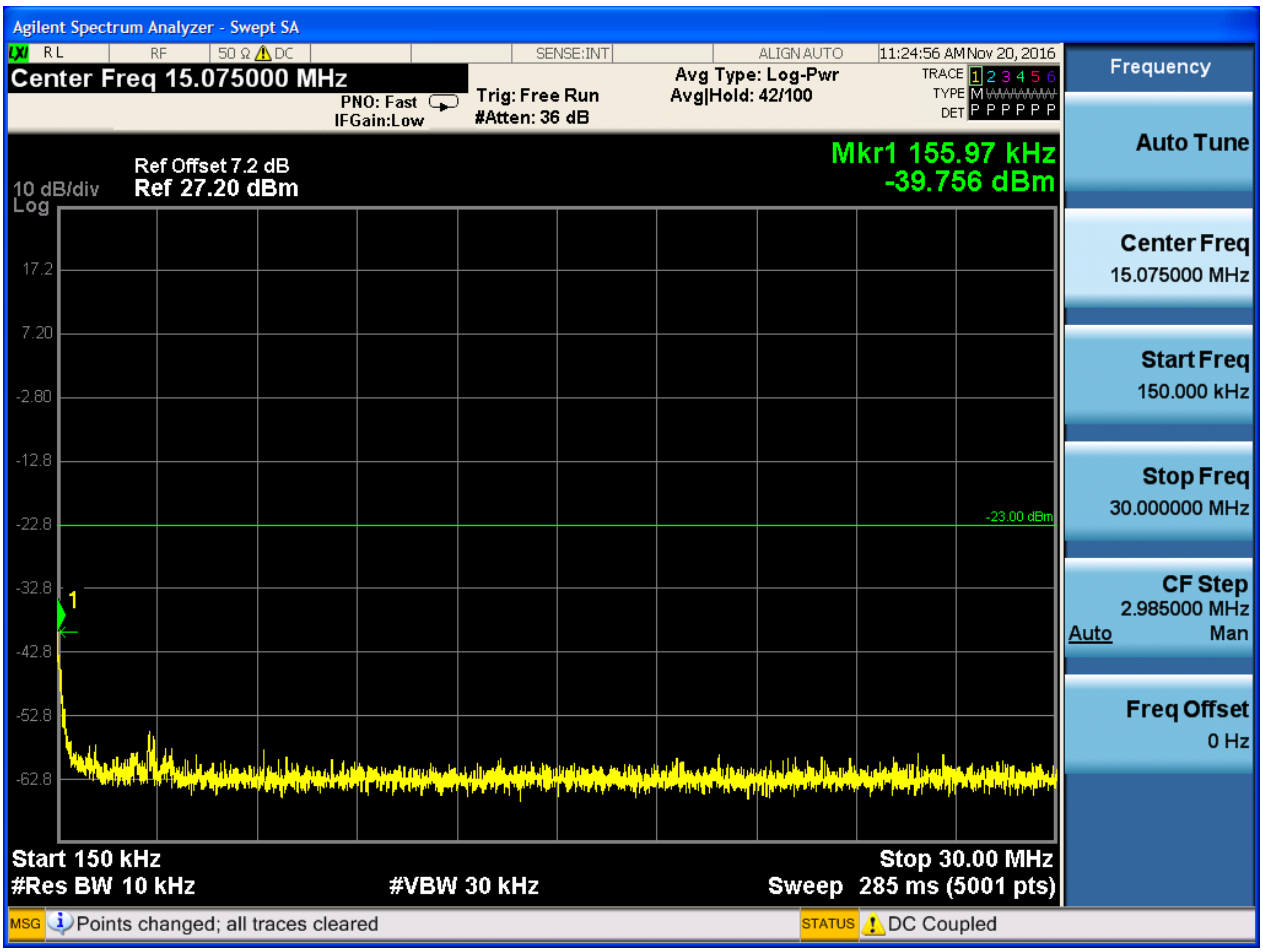

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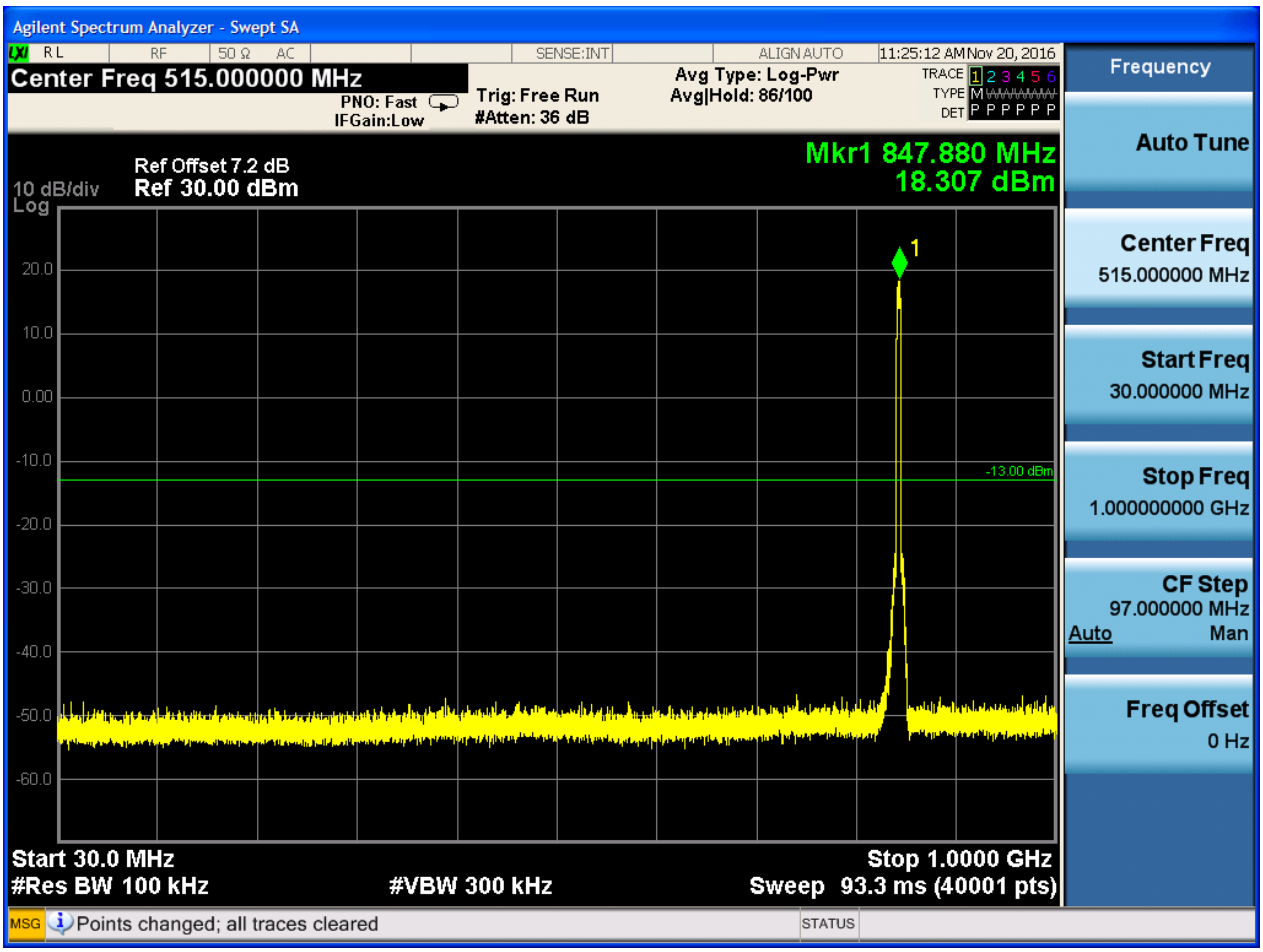

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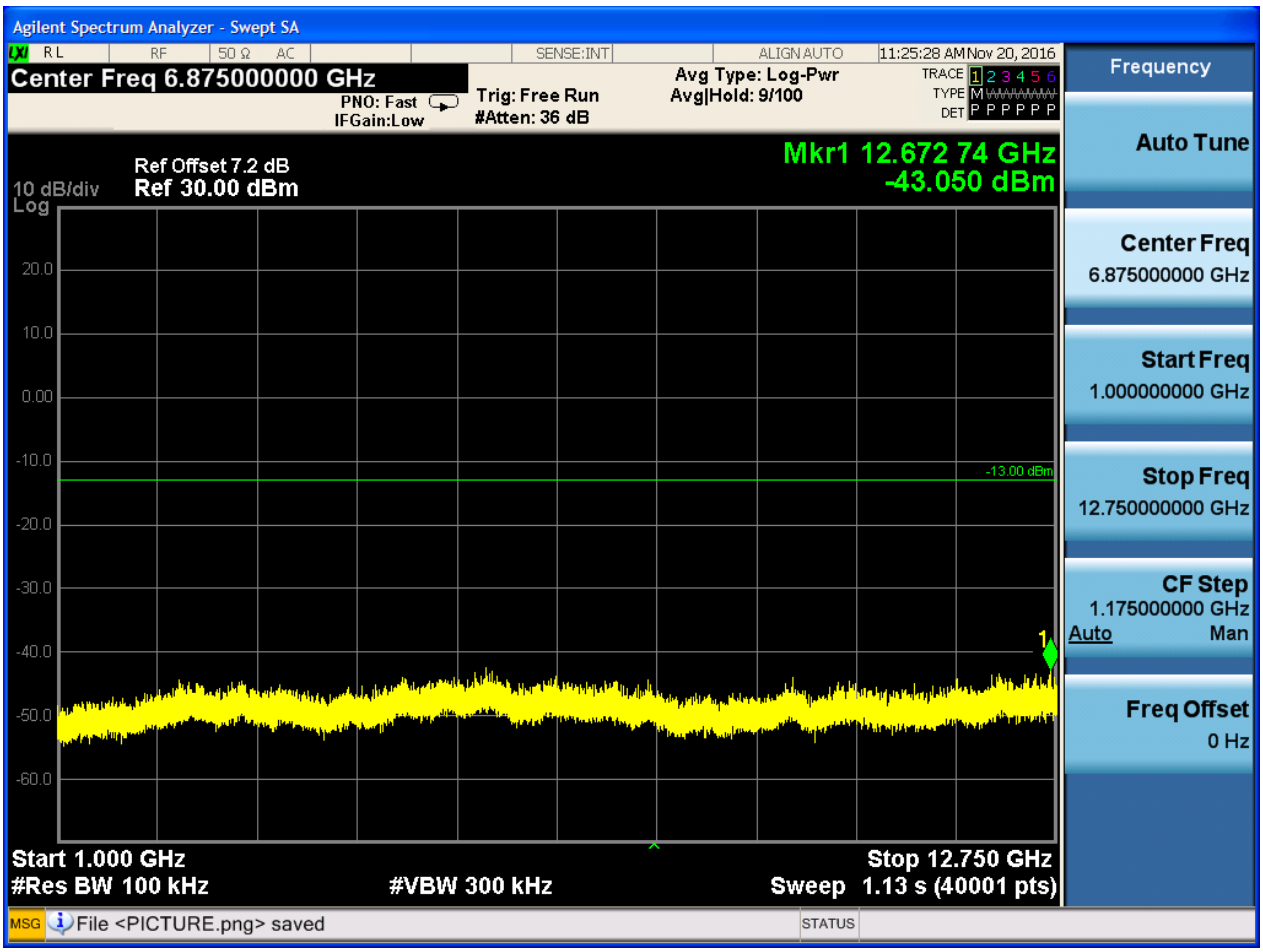

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7Appendix_G: Field Strength of Spurious Radiation

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

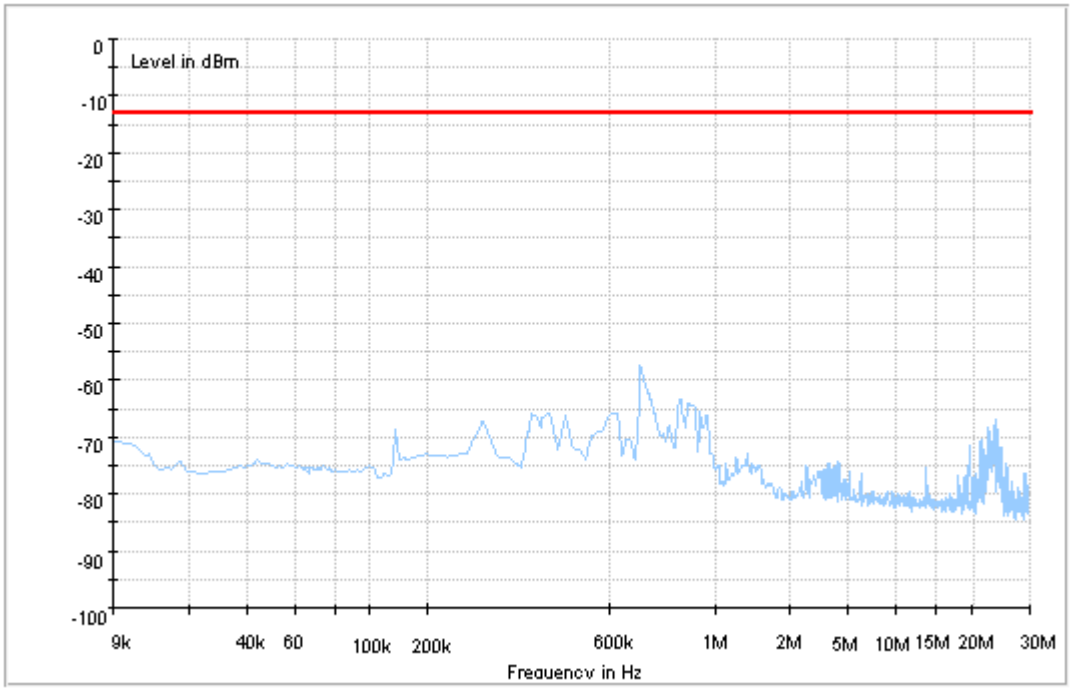
Above 1GHz, RBW = 1 MHz, VBW = 3 MHz. Detector: PK

Part I - Test Plots

7.1 For UMTS

7.1.1 Test Band = WCDMA1900_Ant1

7.1.1.1 Test Mode = UMTS/TM1



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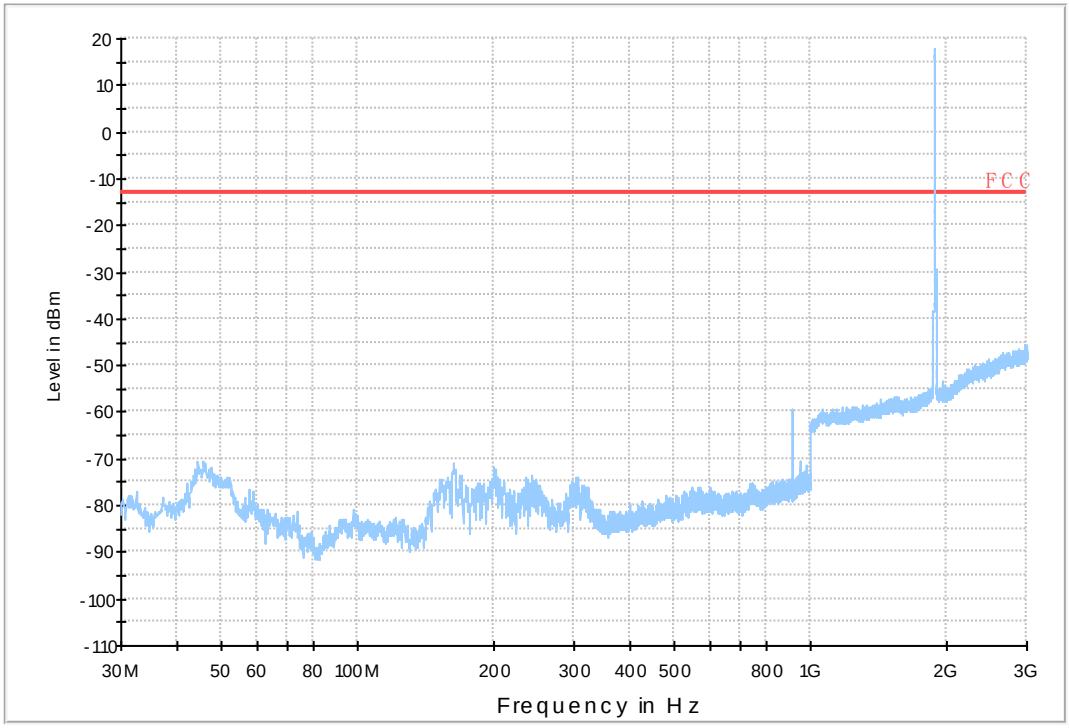
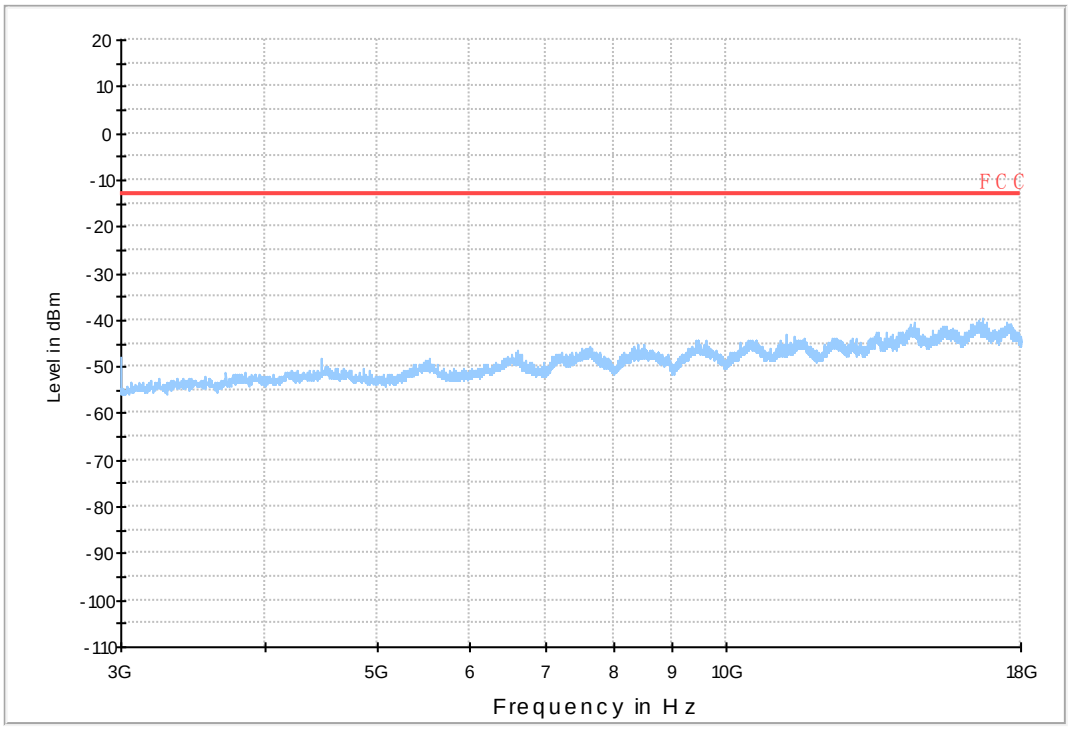
Copy of FCC PART24 WCDMA1900_L



Copy of FCC PART24 WCDMA1900_H



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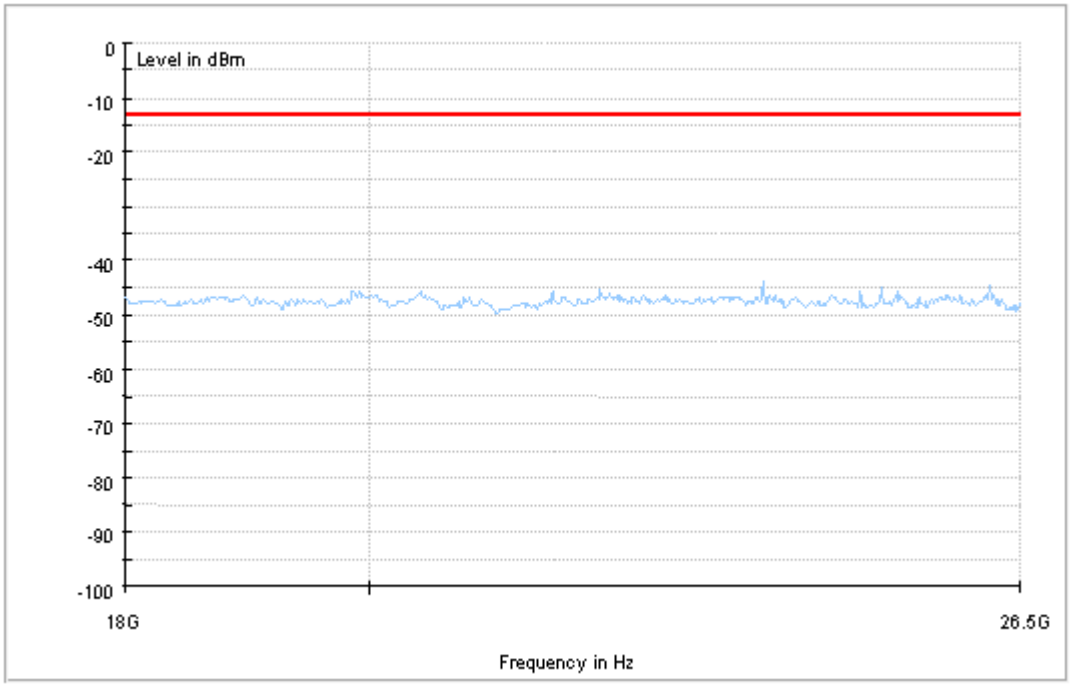

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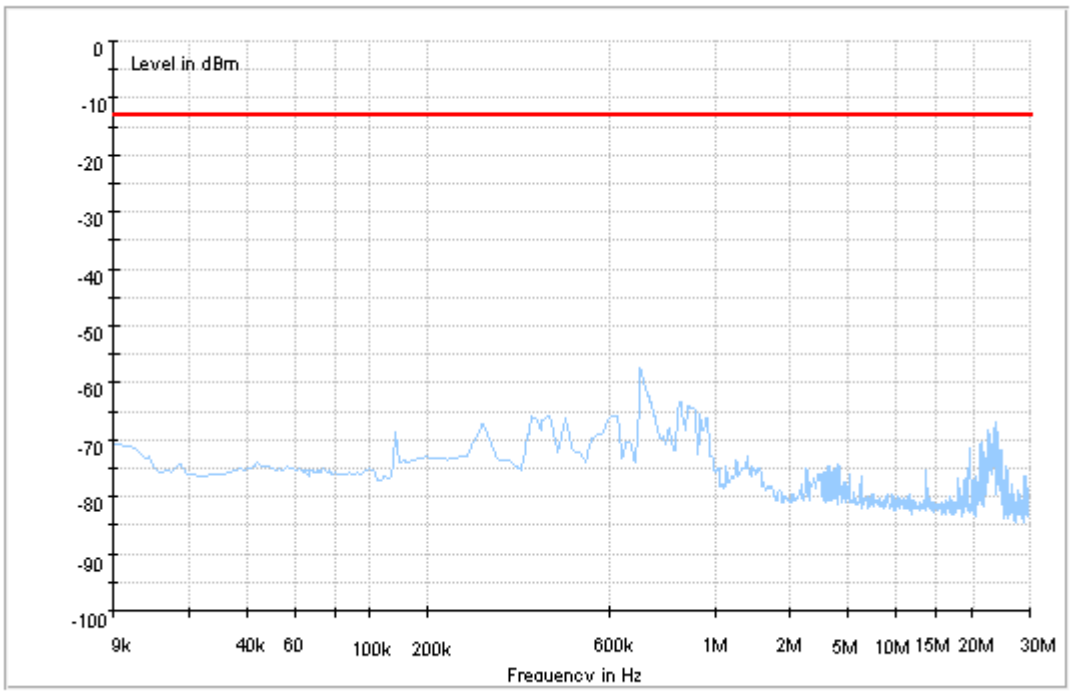
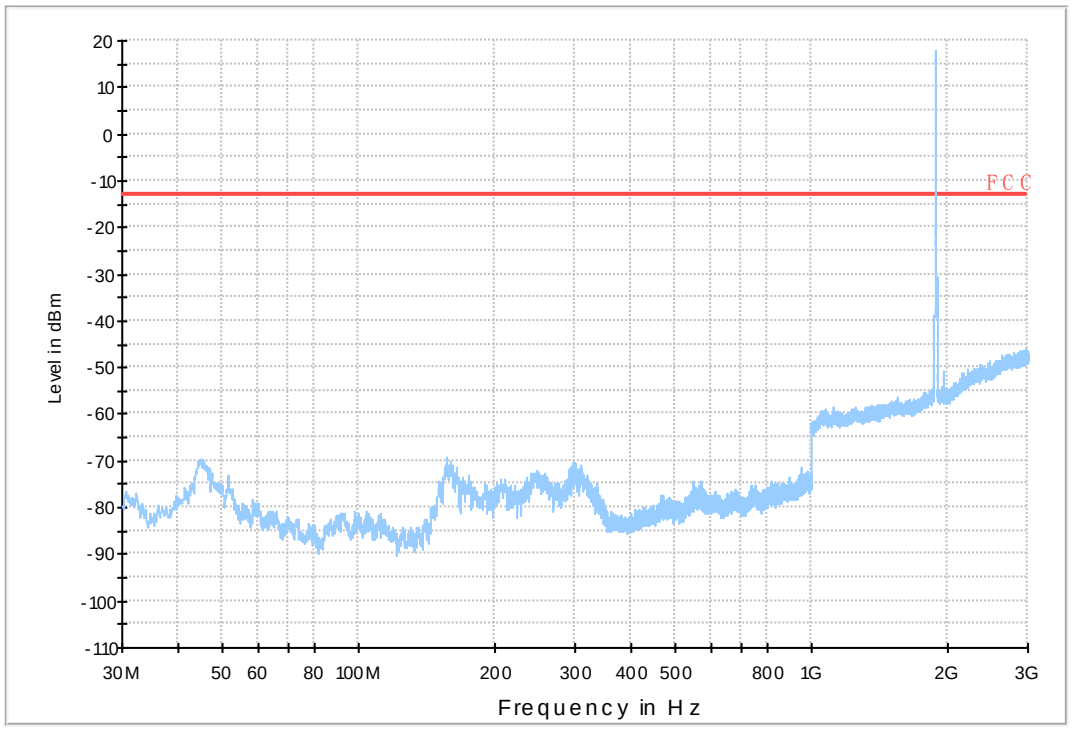
7.1.2 Test Band = WCDMA1900_Ant2

7.1.2.1 Test Mode = UMTS/TM1



Copy of FCC PART24 WCDMA1900_L



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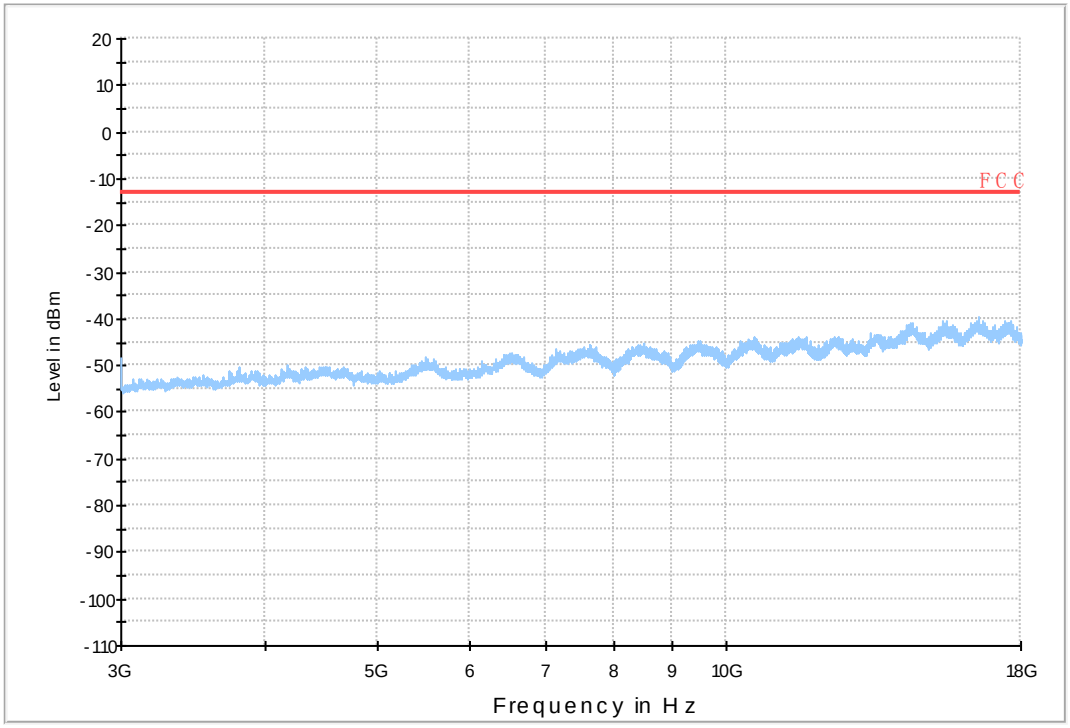
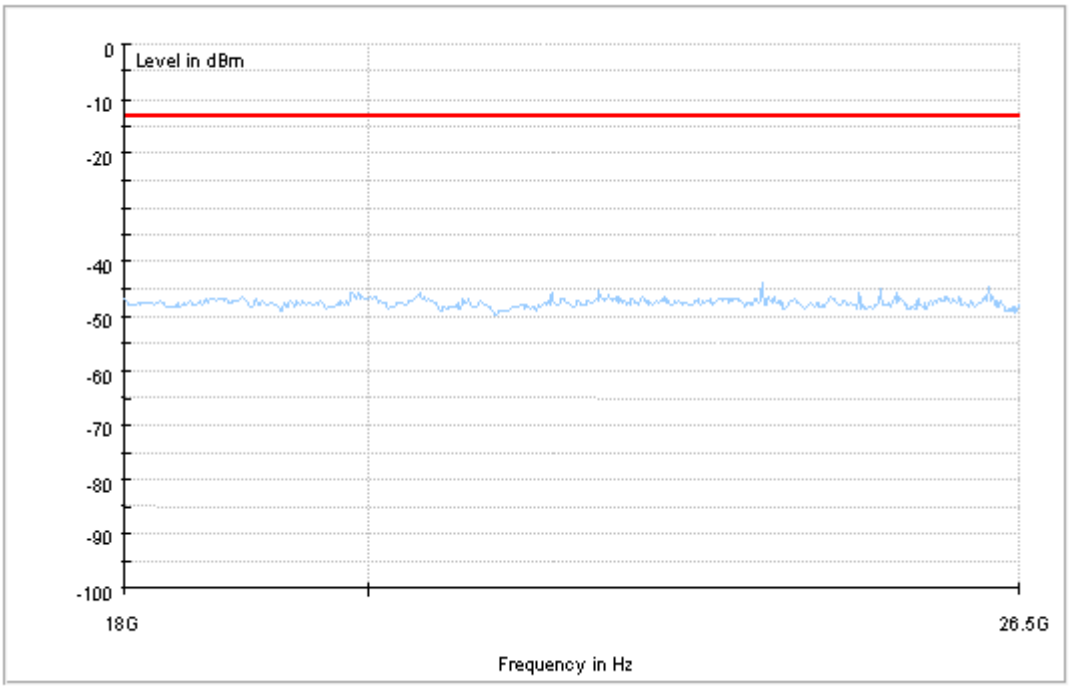
Copy of FCC PART24 WCDMA1900_H





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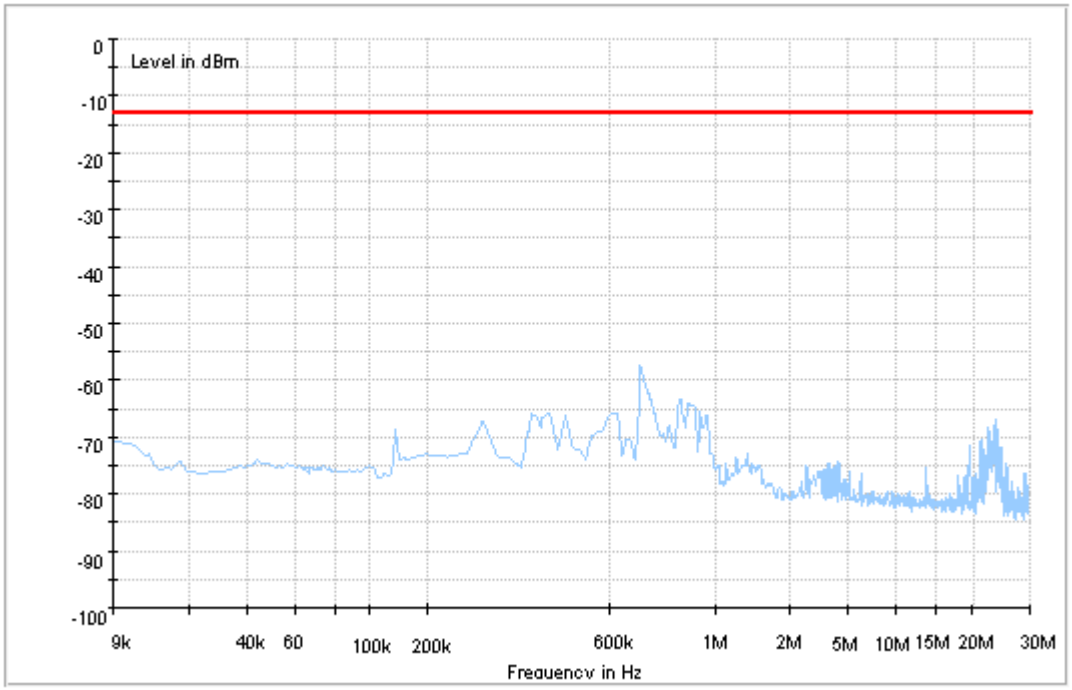
7.2 For UMTS

7.2.1 Test Band = WCDMA1700_Ant1

7.2.1.1 Test Mode = UMTS/TM1



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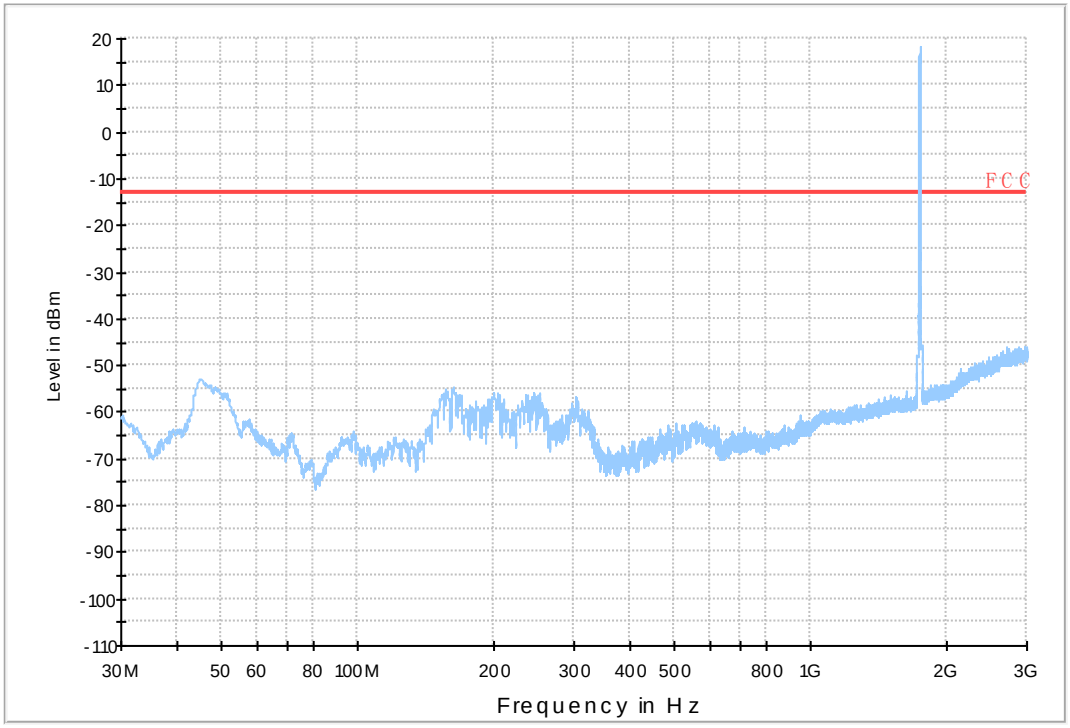
Copy of FCC PART27 WCDMA1700_L



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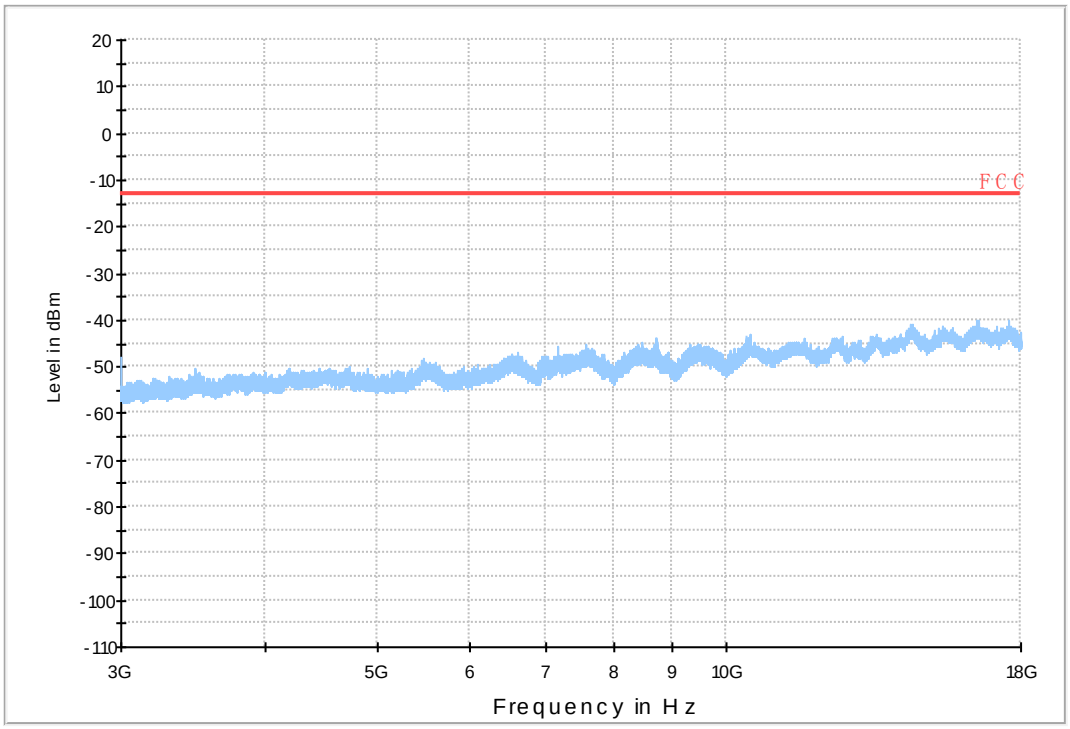

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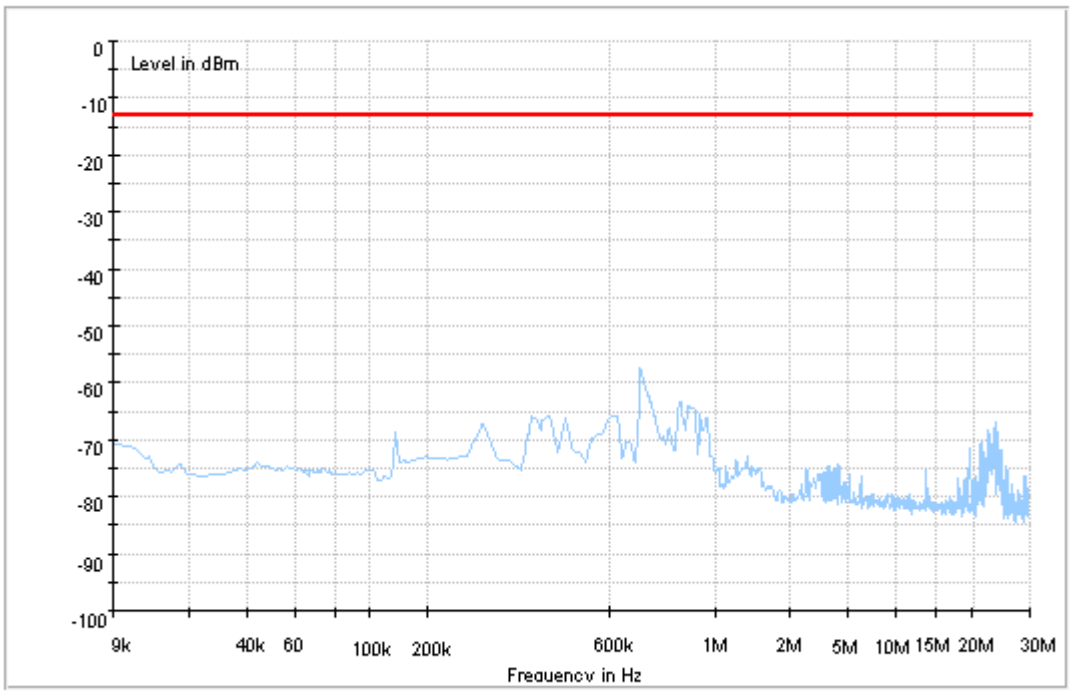
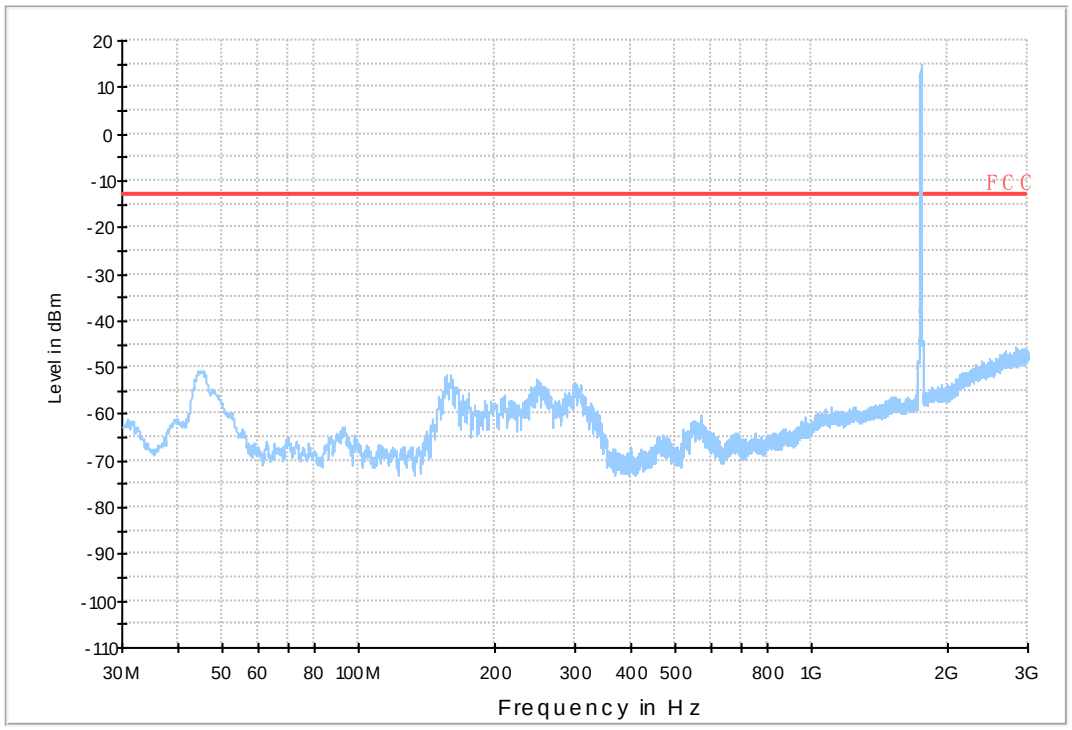
7.2.2 Test Band = WCDMA1700_Ant2

7.2.2.1 Test Mode = UMTS/TM1



Copy of FCC PART27 WCDMA1700_L



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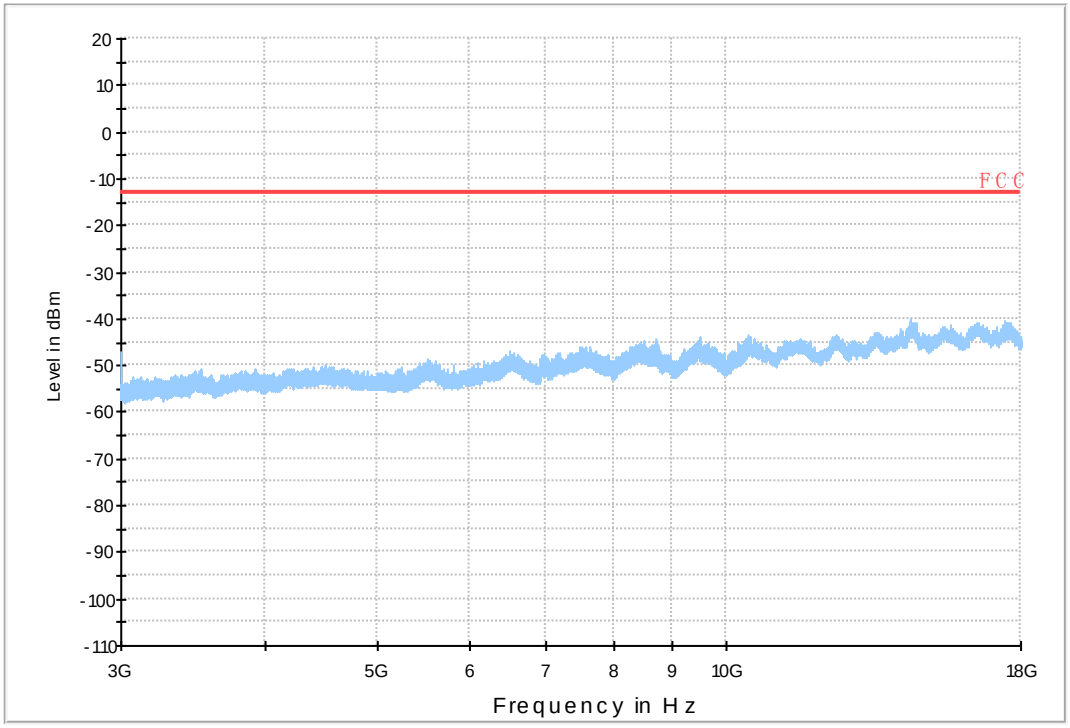
Copy of FCC PART27 WCDMA1700_H



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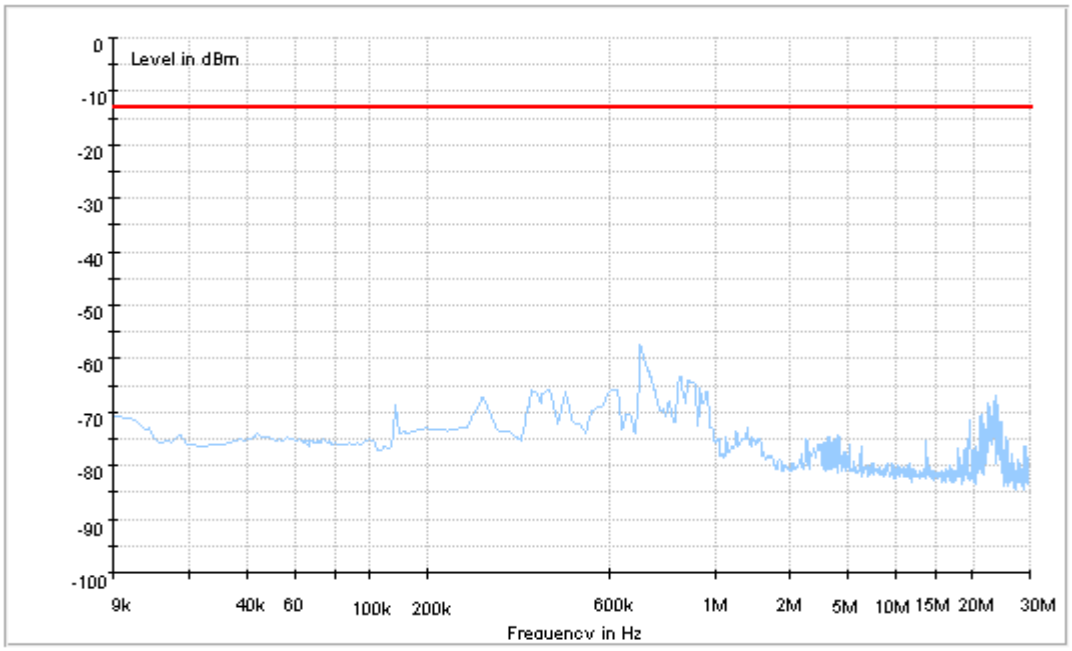
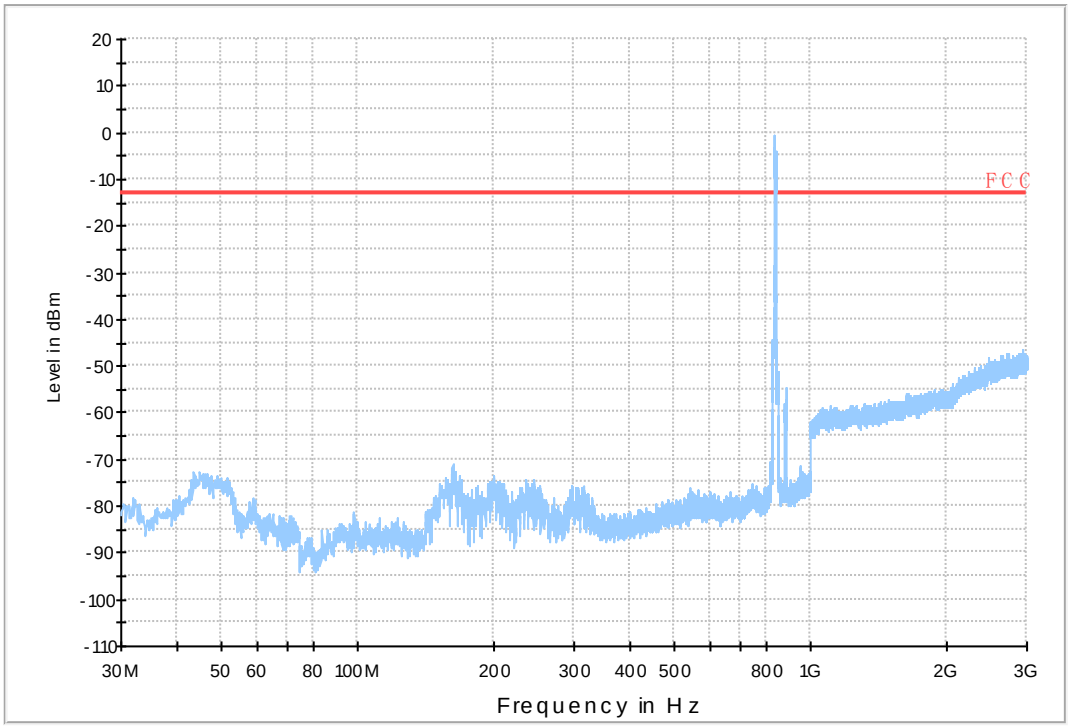
7.3 For UMTS

7.3.1 Test Band = WCDMA850_Ant1

7.3.1.1 Test Mode = UMTS/TM1



Copy of FCC PART22 WCDMA850_L



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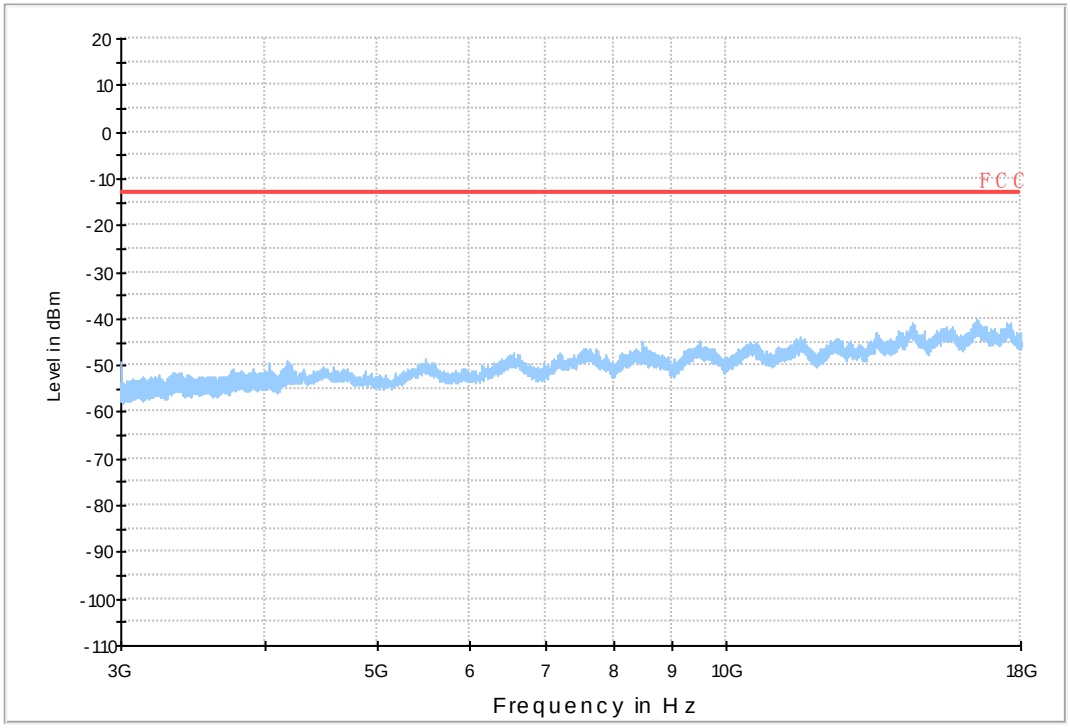
Copy of FCC PART22 WCDMA850_H



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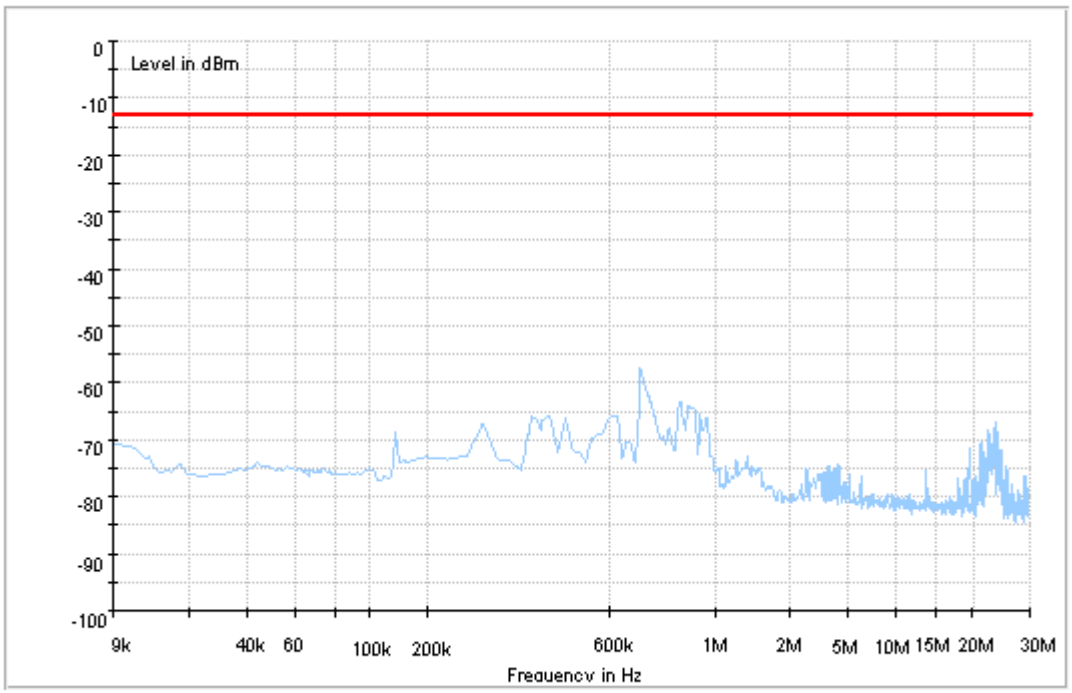
7.3.2 Test Band = WCDMA850_Ant2

7.3.2.1 Test Mode = UMTS/TM1



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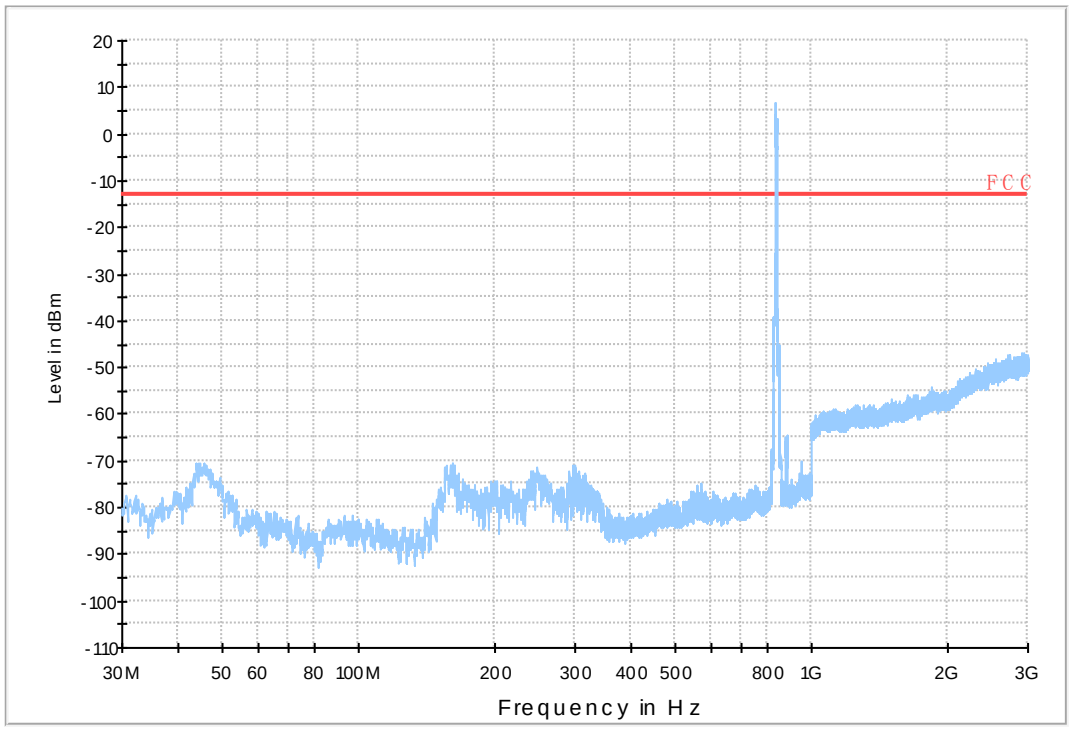

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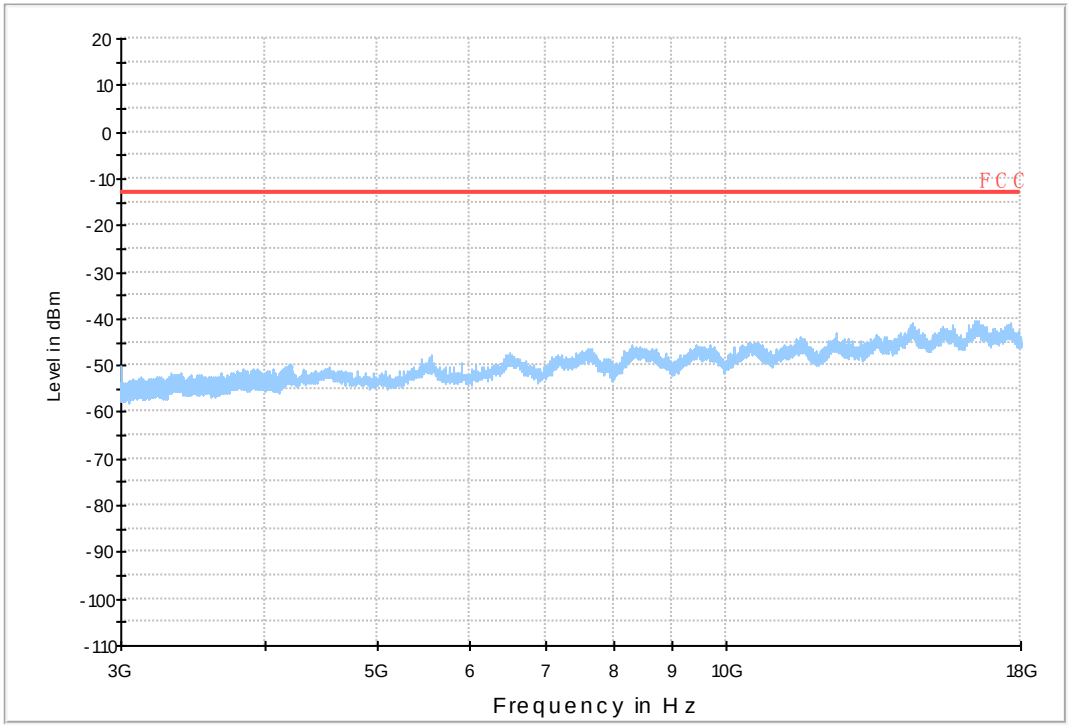

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8Appendix_H: Frequency Stability

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	-3.80	-0.00205	PASS
				VN	-3.28	-0.00177	PASS
				VH	-4.88	-0.00263	PASS
		MCH	TN	VL	-8.29	-0.00441	PASS
				VN	2.01	0.00107	PASS
				VH	2.61	0.00139	PASS
		HCH	TN	VL	-0.95	-0.0005	PASS
				VN	1.19	0.00062	PASS
				VH	0.55	0.00029	PASS
WCDMA1700	UMTS/TM1	LCH	TN	VL	-4.04	-0.00236	PASS
				VN	2.98	0.00174	PASS
				VH	-3.30	-0.00193	PASS
		MCH	TN	VL	-9.02	-0.00521	PASS
				VN	-1.05	-0.00061	PASS
				VH	-1.24	-0.00072	PASS
		HCH	TN	VL	-1.88	-0.00107	PASS
				VN	-2.78	-0.00159	PASS
				VH	-2.53	-0.00144	PASS
WCDMA850	UMTS/TM1	LCH	TN	VL	1.57	0.0019	PASS
				VN	-5.60	-0.00678	PASS
				VH	-8.00	-0.00968	PASS
		MCH	TN	VL	1.71	0.00204	PASS
				VN	3.19	0.00381	PASS
				VH	3.37	0.00403	PASS
		HCH	TN	VL	-4.99	-0.00589	PASS
				VN	-4.32	-0.0051	PASS
				VH	-8.44	-0.00997	PASS

8.1.2Frequency Error vs. Temperature:

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Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
WCDMA1900	UMTS/TM1	LCH	VN	-30	-1.66	-0.0009	PASS
				-20	-2.96	-0.0016	PASS
				-10	-0.26	-0.00014	PASS
				0	0.73	0.00039	PASS
				10	-1.79	-0.00097	PASS
				20	-2.14	-0.00116	PASS
				30	0.92	0.0005	PASS
				40	-2.99	-0.00161	PASS
				50	-5.97	-0.00322	PASS
		MCH	VN	-30	3.04	0.00162	PASS
				-20	6.64	0.00353	PASS
				-10	-3.60	-0.00191	PASS
				0	-3.36	-0.00179	PASS
				10	-0.41	-0.00022	PASS
				20	1.45	0.00077	PASS
				30	4.59	0.00244	PASS
				40	1.63	0.00087	PASS
				50	1.59	0.00085	PASS
		HCH	VN	-30	-5.11	-0.00268	PASS
				-20	-6.97	-0.00365	PASS
				-10	-3.65	-0.00191	PASS
				0	-10.12	-0.00531	PASS
				10	-7.69	-0.00403	PASS
				20	3.62	0.0019	PASS
				30	-8.47	-0.00444	PASS
				40	-0.63	-0.00033	PASS
				50	-7.74	-0.00406	PASS
WCDMA1700	UMTS/TM1	LCH	VN	-30	-2.12	-0.00124	PASS
				-20	0.34	0.0002	PASS
				-10	-2.91	-0.0017	PASS
				0	-0.15	-0.00009	PASS
				10	-2.94	-0.00172	PASS
				20	12.39	0.00724	PASS
				30	-7.43	-0.00434	PASS
				40	4.17	0.00244	PASS
				50	1.43	0.00084	PASS
		MCH	VN	-30	-5.89	-0.0034	PASS
				-20	-3.37	-0.00195	PASS
				-10	-6.04	-0.00349	PASS
				0	11.44	0.0066	PASS

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Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				10	-12.39	-0.00715	PASS
				20	-2.52	-0.00145	PASS
				30	-1.01	-0.00058	PASS
				40	-4.01	-0.00231	PASS
				50	-0.23	-0.00013	PASS
		HCH	VN	-30	0.92	0.00052	PASS
				-20	-2.75	-0.00157	PASS
				-10	3.86	0.0022	PASS
				0	-3.98	-0.00227	PASS
				10	-3.49	-0.00199	PASS
				20	-4.55	-0.0026	PASS
				30	2.04	0.00116	PASS
				40	4.36	0.00249	PASS
				50	2.32	0.00132	PASS
WCDMA850	UMTS/TM1	LCH	VN	-30	-10.99	-0.0133	PASS
				-20	3.63	0.00439	PASS
				-10	-3.74	-0.00453	PASS
				0	-0.31	-0.00038	PASS
				10	-2.75	-0.00333	PASS
				20	-6.59	-0.00797	PASS
				30	-0.82	-0.00099	PASS
				40	0.49	0.00059	PASS
				50	2.62	0.00317	PASS
		MCH	VN	-30	0.93	0.00111	PASS
				-20	2.96	0.00354	PASS
				-10	2.32	0.00277	PASS
				0	4.99	0.00597	PASS
				10	4.52	0.0054	PASS
				20	-0.69	-0.00082	PASS
				30	-0.09	-0.00011	PASS
				40	2.12	0.00253	PASS
				50	-6.96	-0.00832	PASS
		HCH	VN	-30	-5.29	-0.00625	PASS
				-20	2.37	0.0028	PASS
				-10	-17.20	-0.02032	PASS
				0	-3.04	-0.00359	PASS
				10	-0.76	-0.0009	PASS
				20	4.97	0.00587	PASS
				30	1.69	0.002	PASS
				40	5.60	0.00661	PASS

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Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				50	-4.35	-0.00514	PASS

END

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