



Appendix for test report



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
WCDMA850	UMTS/TM1	LCH	23.61	20.96	38.5	PASS
		MCH	23.66	21.01	38.5	PASS
		HCH	23.66	21.01	38.5	PASS
WCDMA1900	UMTS/TM1	LCH	23.68	25.68	33	PASS
		MCH	23.79	25.79	33	PASS
		HCH	23.78	25.78	33	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,

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

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

b, SGP=Signal Generator Level

Note2:

$$\text{SET Span} = 1.5 * \text{OBW}$$

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

$$\text{SET VBW} \geq 3 * \text{RBW}$$

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
WCDMA850	UMTS/TM1	LCH	2.69	13	PASS
		MCH	2.65	13	PASS
		HCH	2.51	13	PASS
WCDMA1900	UMTS/TM1	LCH	2.48	13	PASS
		MCH	3.16	13	PASS
		HCH	2.64	13	PASS

3Appendix_C: Modulation Characteristics

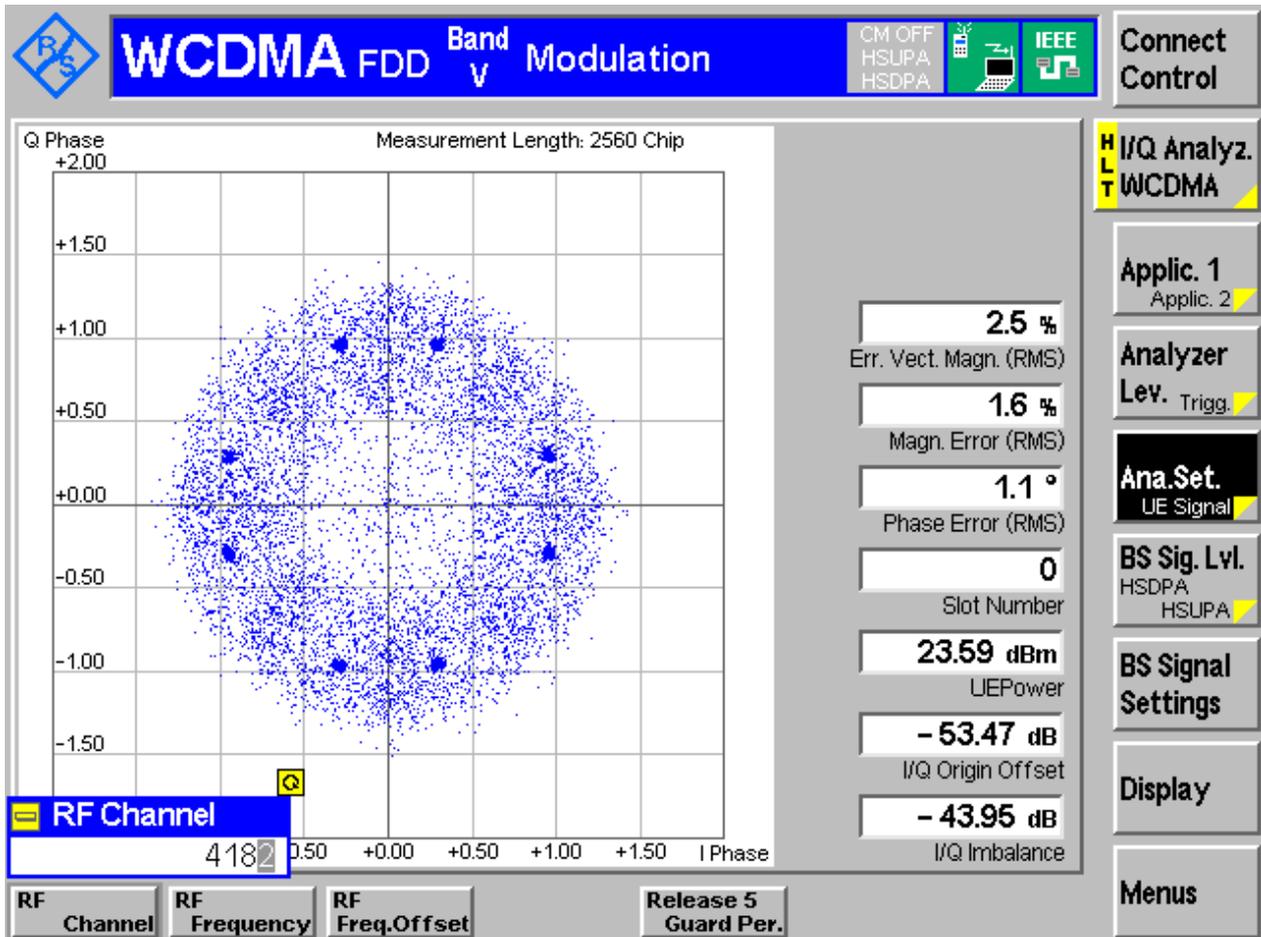
Part I - Test Plots

3.1 For UMTS

3.1.1 Test Band = WCDMA850

3.1.1.1 Test Mode = UMTS/TM1

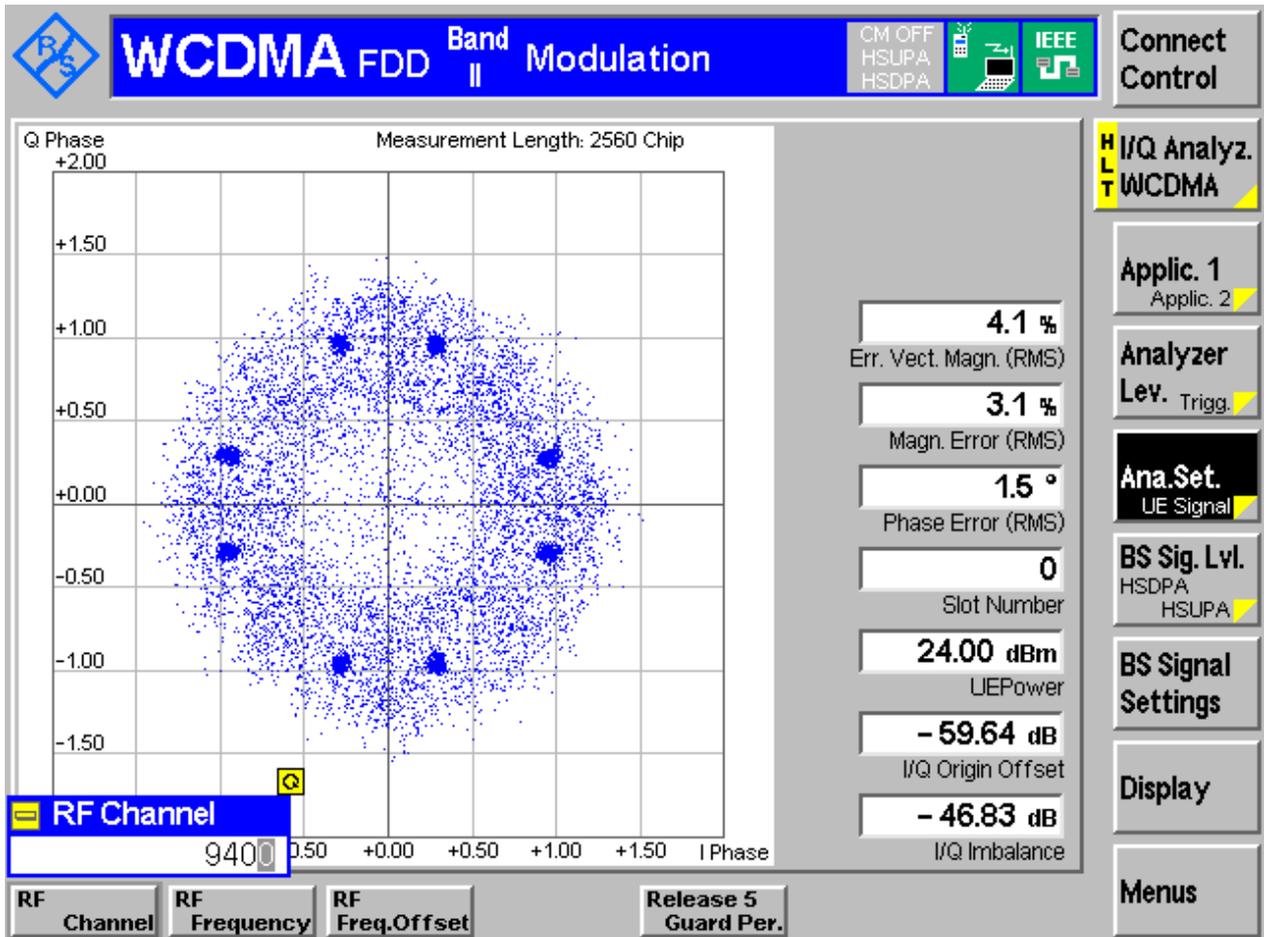
3.1.1.1.1 Test Channel = MCH



3.1.2 Test Band = WCDMA1900

3.1.2.1 Test Mode = UMTS/TM1

3.1.2.1.1 Test Channel = MCH





4Appendix_D: Bandwidth

Part I - Test Results

Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
WCDMA850	UMTS/TM1	LCH	4.17	4.73	Pass
		MCH	4.17	4.73	Pass
		HCH	4.17	4.75	Pass
WCDMA1900	UMTS/TM1	LCH	4.17	4.76	Pass
		MCH	4.16	4.72	Pass
		HCH	4.16	4.73	Pass



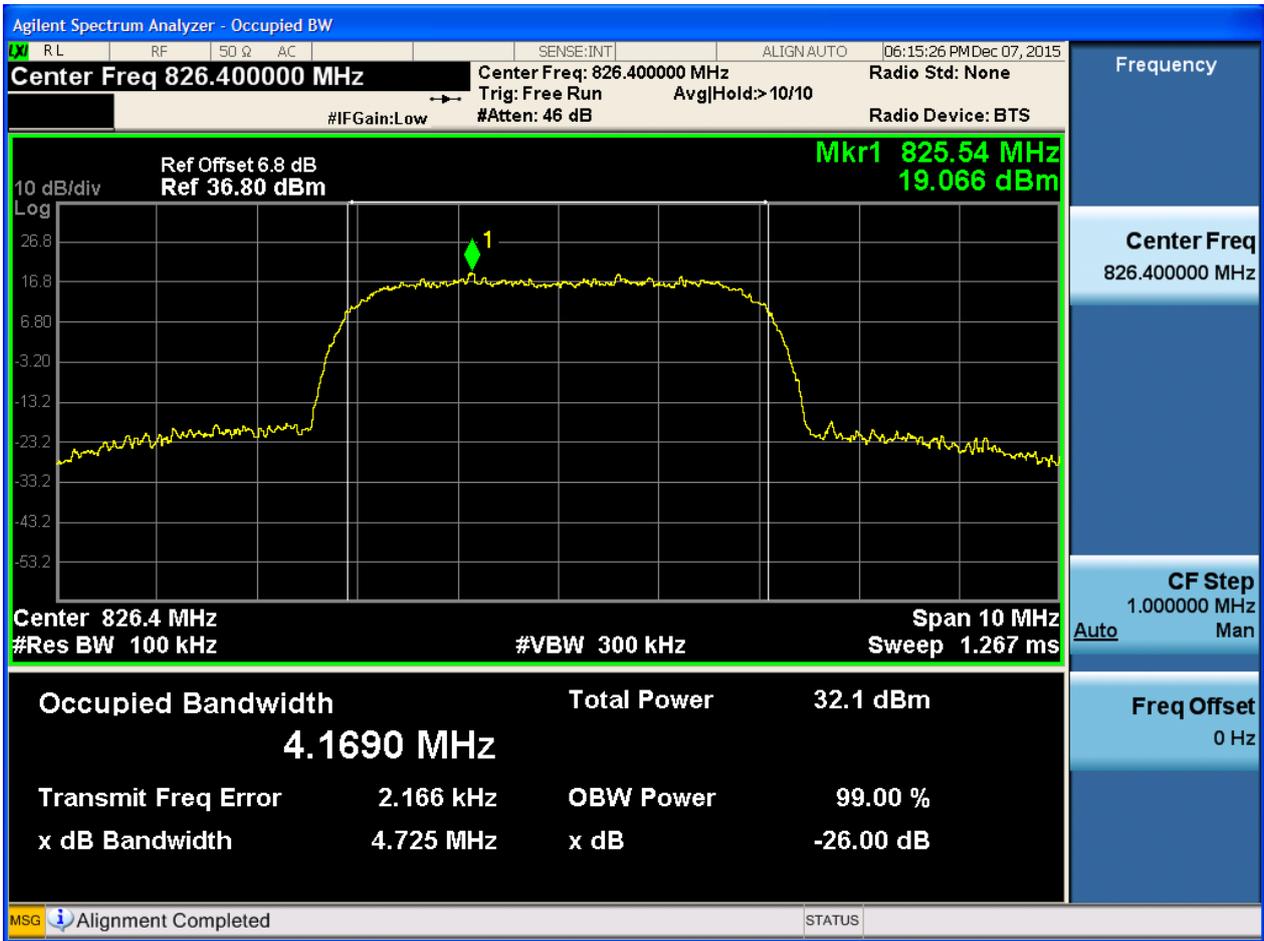
Part II - Test Plots

4.1 For UMTS

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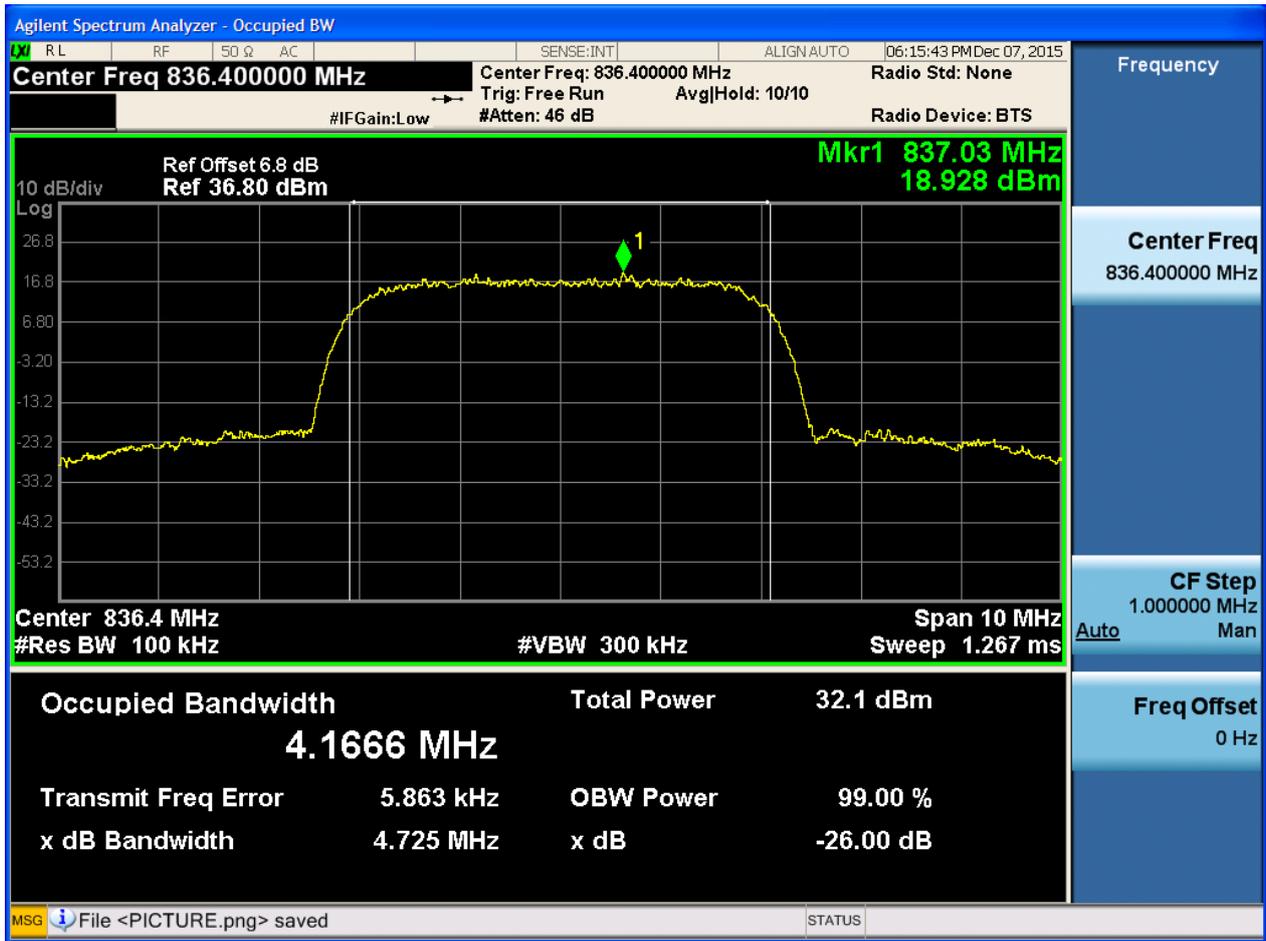
4.1.1.1 Test Mode = UMTS/TM1

4.1.1.1.1 Test Channel = LCH



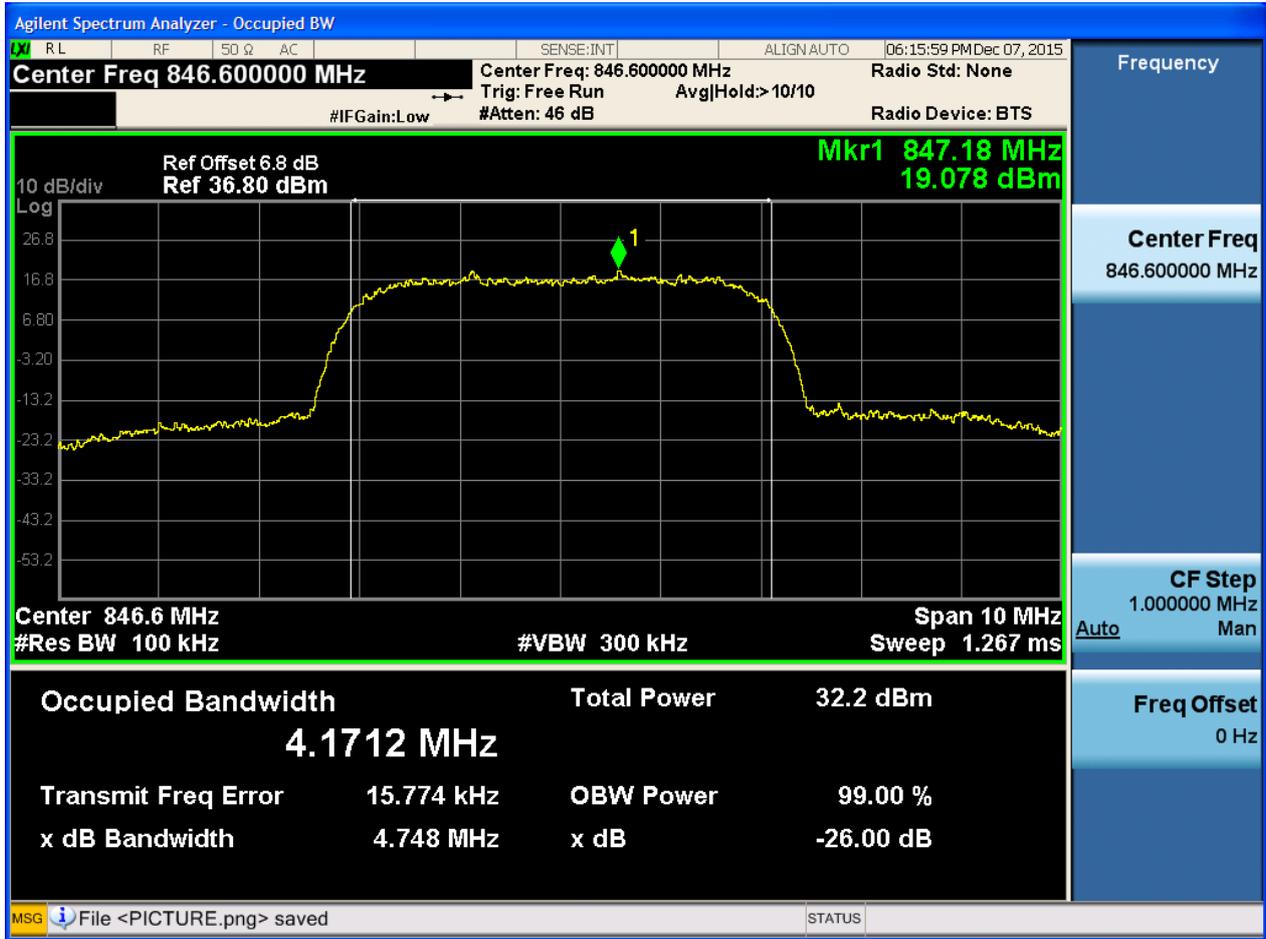


4.1.1.1.2 Test Channel = MCH





4.1.1.1.3 Test Channel = HCH

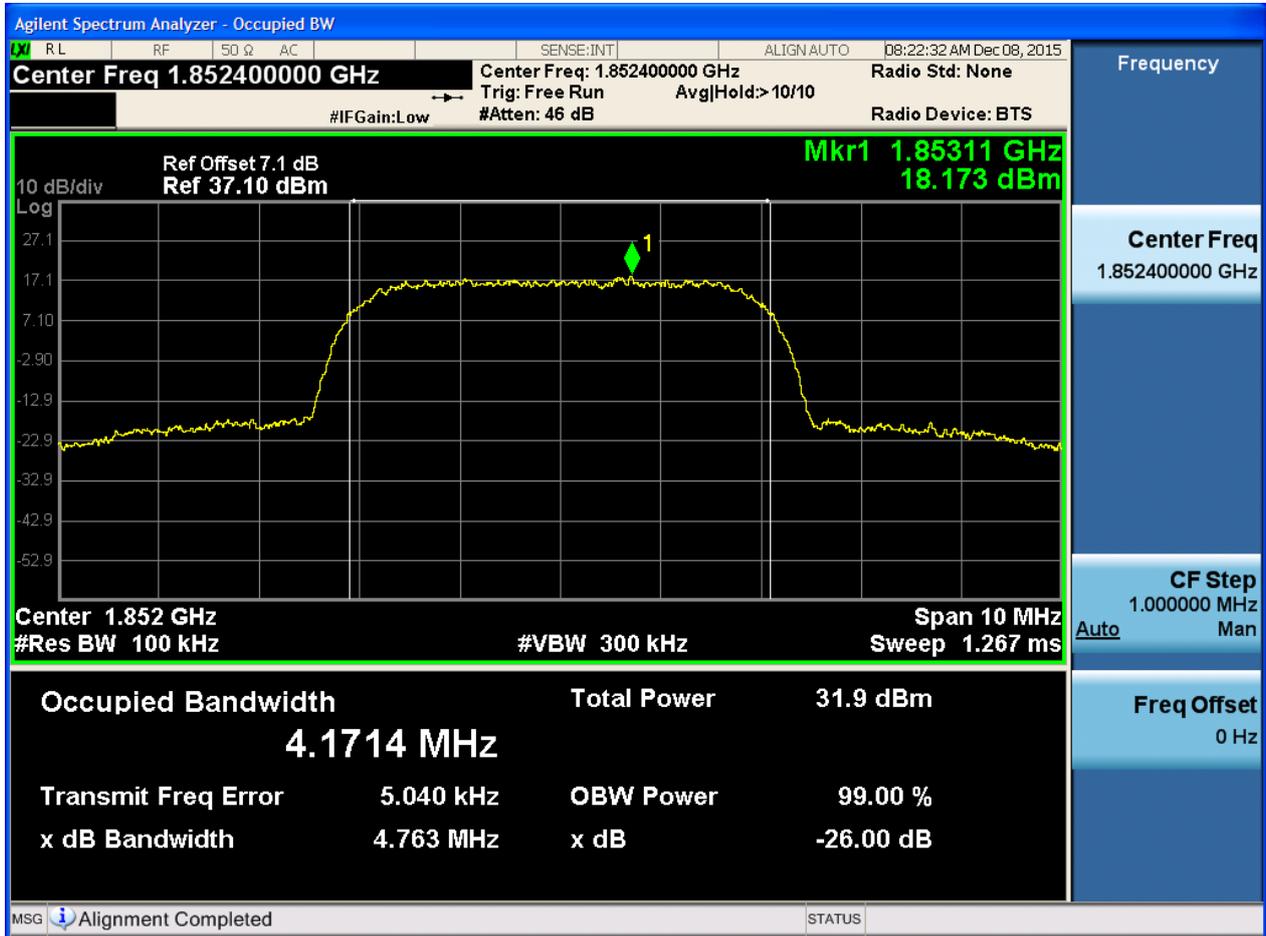




4.1.2 Test Band = WCDMA1900

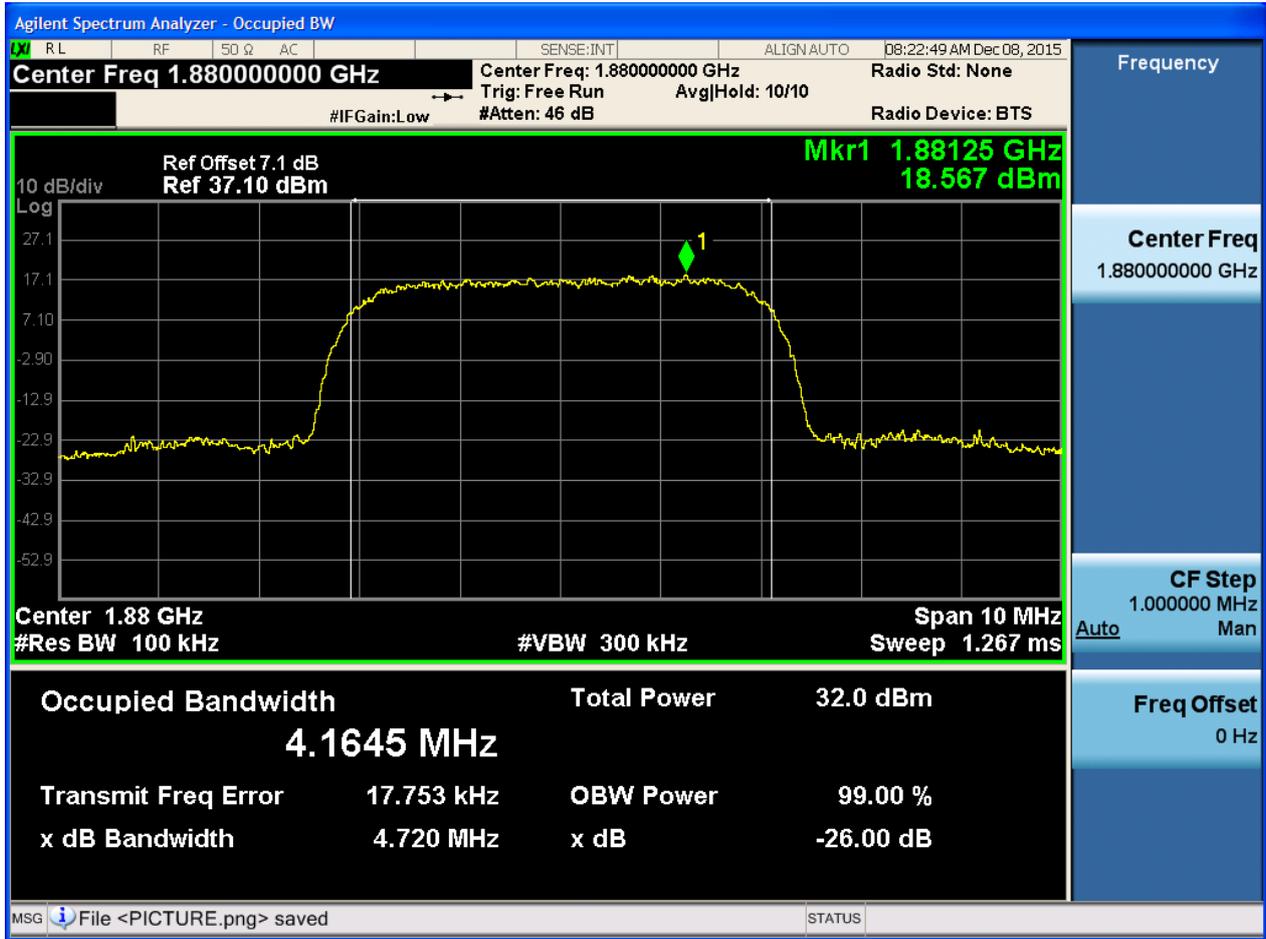
4.1.2.1 Test Mode = UMTS/TM1

4.1.2.1.1 Test Channel = LCH



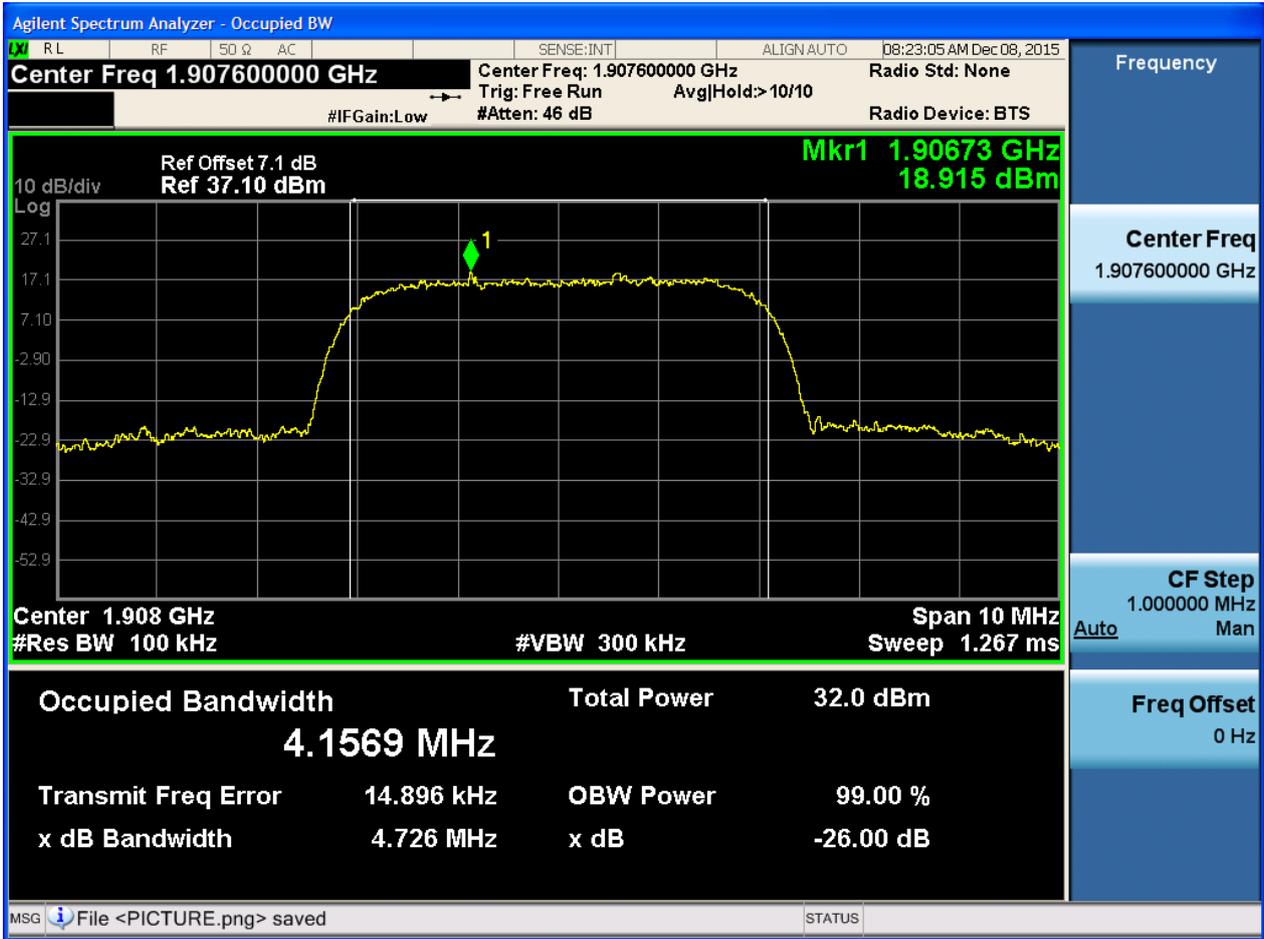


4.1.2.1.2 Test Channel = MCH





4.1.2.1.3 Test Channel = HCH





5Appendix_E: Band Edges Compliance

Part I - Test Plots

5.1 For UMTS

5.1.1 Test Band = WCDMA850

5.1.1.1 Test Mode = UMTS/TM1

5.1.1.1.1 Test Channel = LCH





5.1.1.1.2 Test Channel = HCH





5.1.2 Test Band = WCDMA1900

5.1.2.1 Test Mode = UMTS/TM1

5.1.2.1.1 Test Channel = LCH



5.1.2.1.2 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.

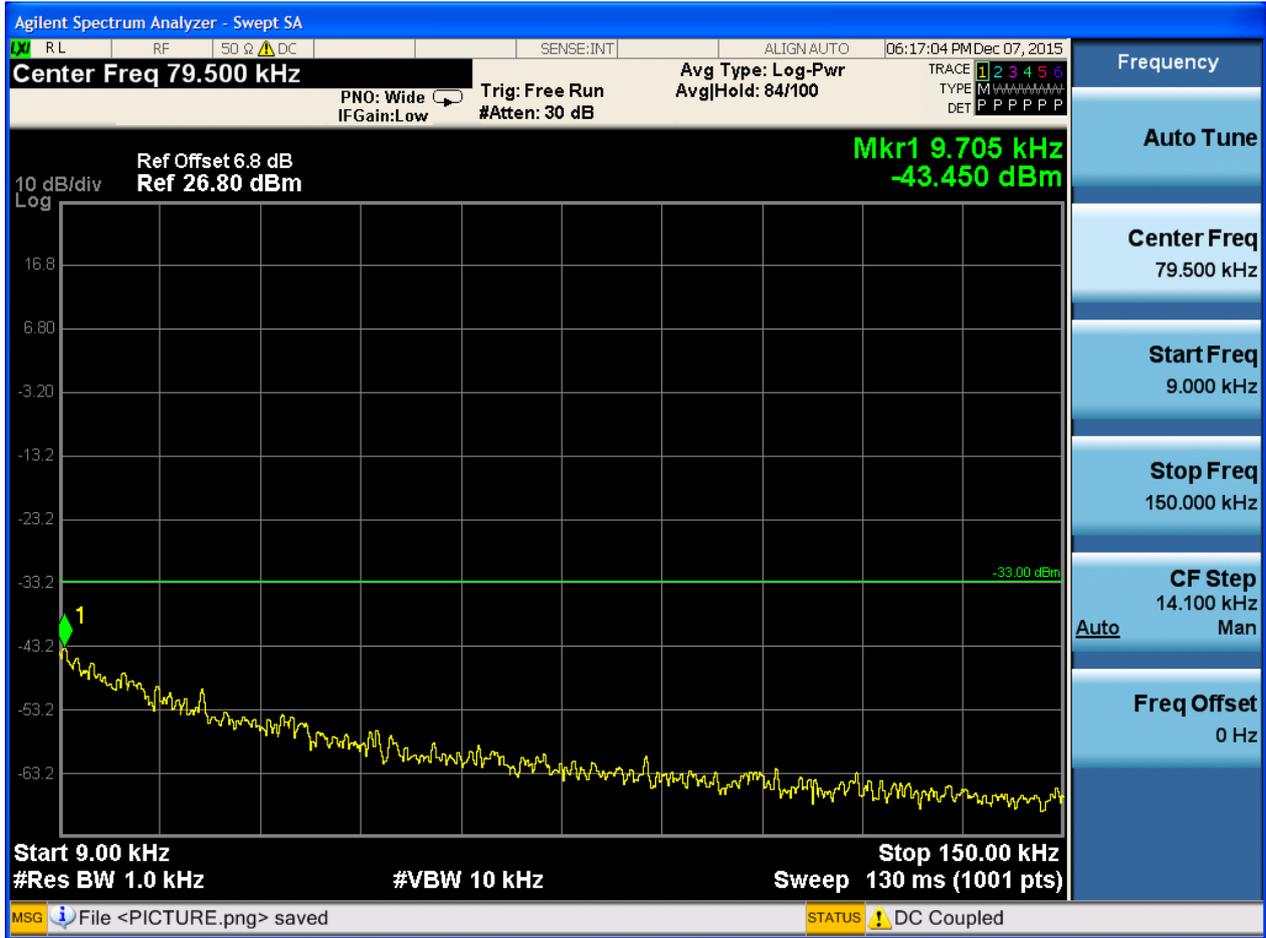
Part I - Test Plots

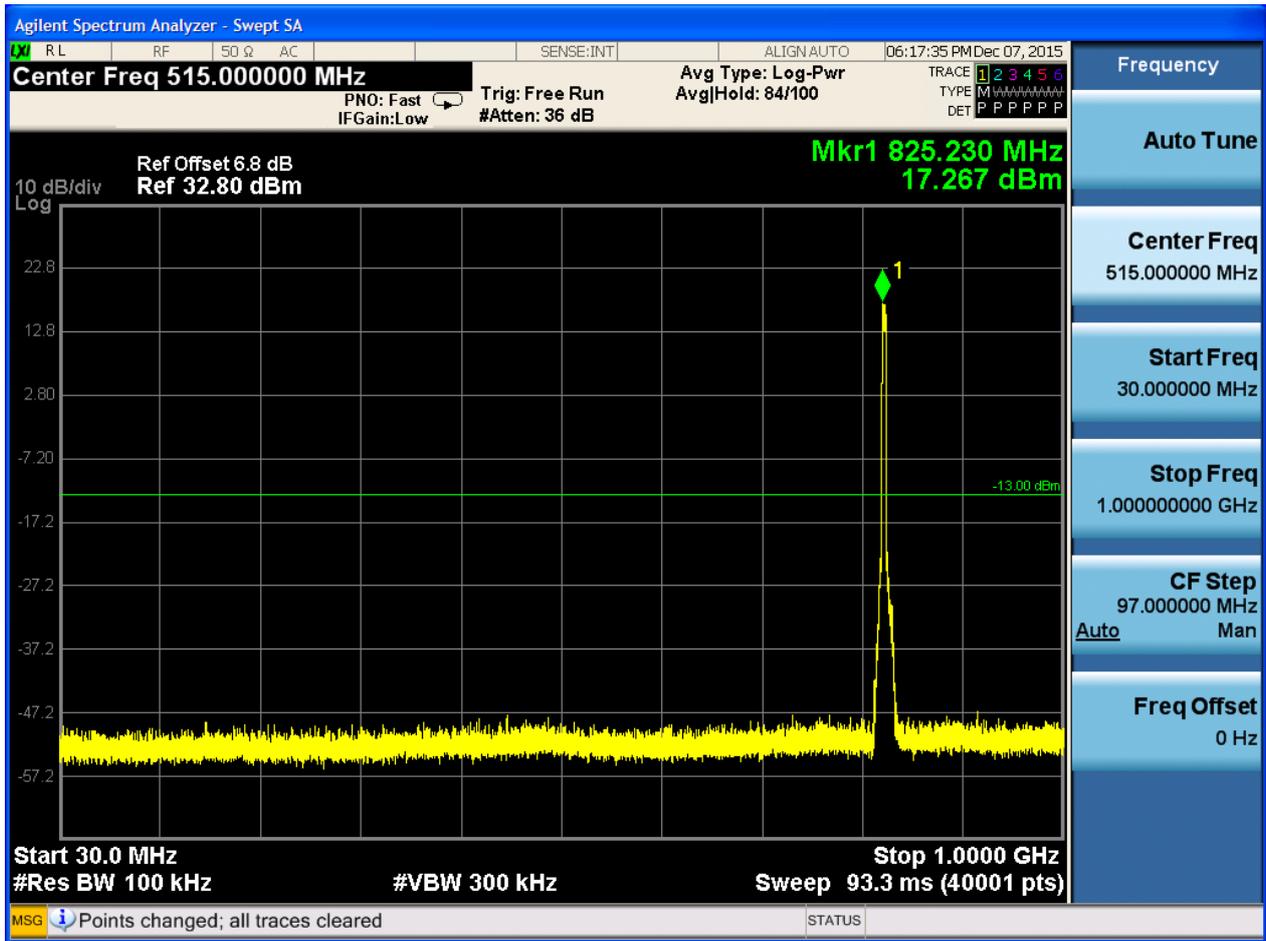
6.1 For UMTS

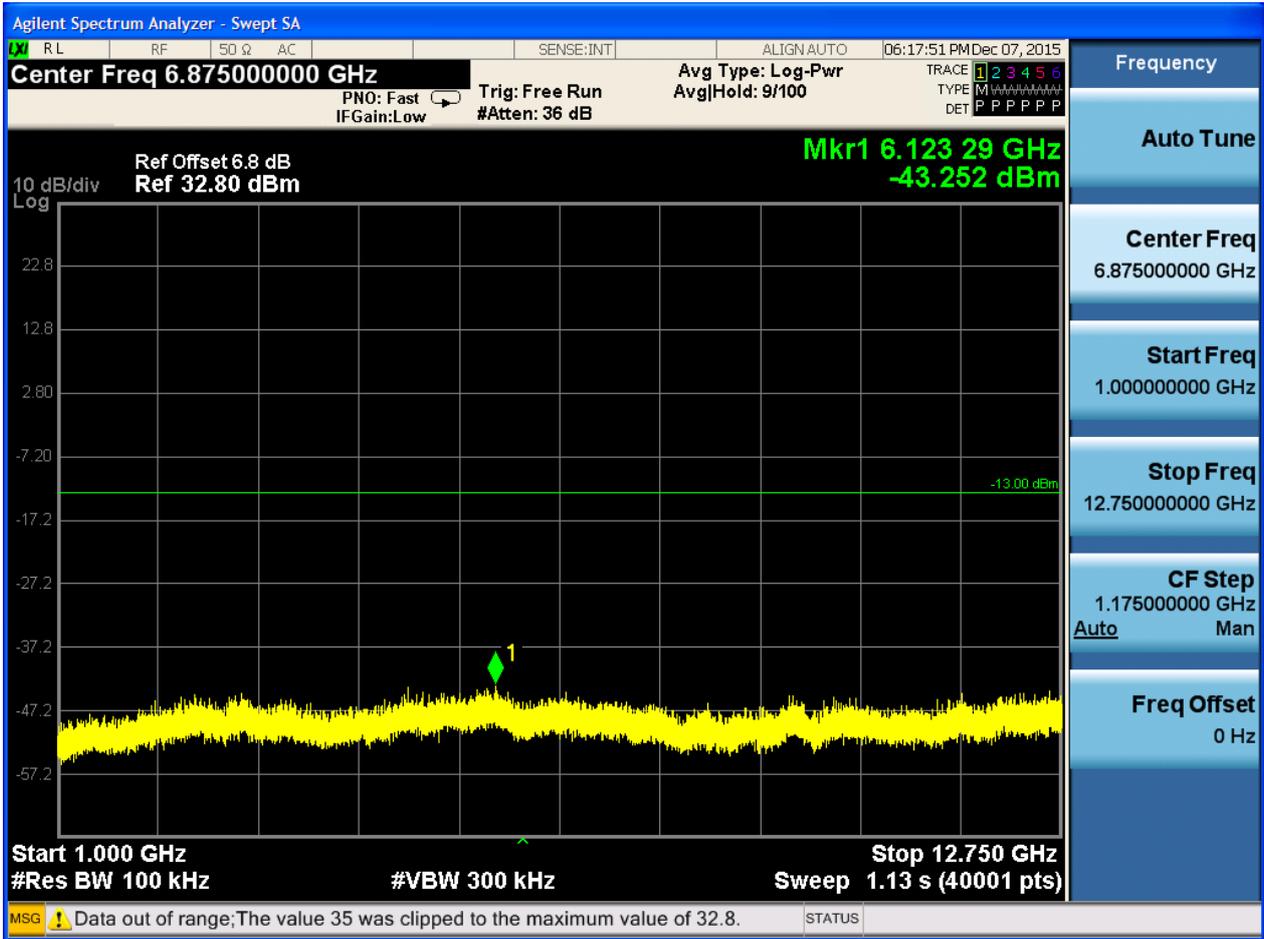
6.1.1 Test Band = WCDMA850

6.1.1.1 Test Mode = UMTS/TM1

6.1.1.1.1 Test Channel = LCH



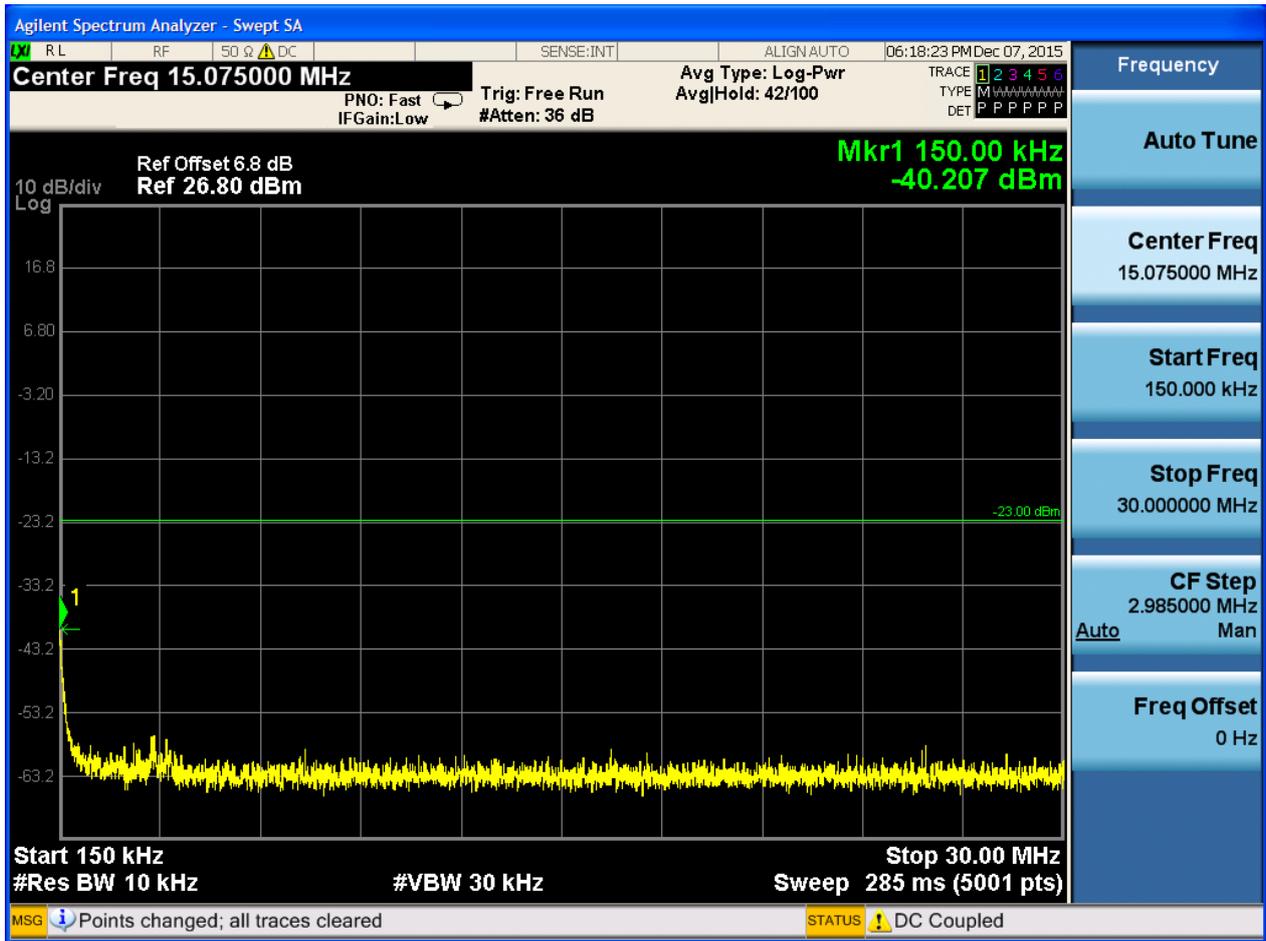


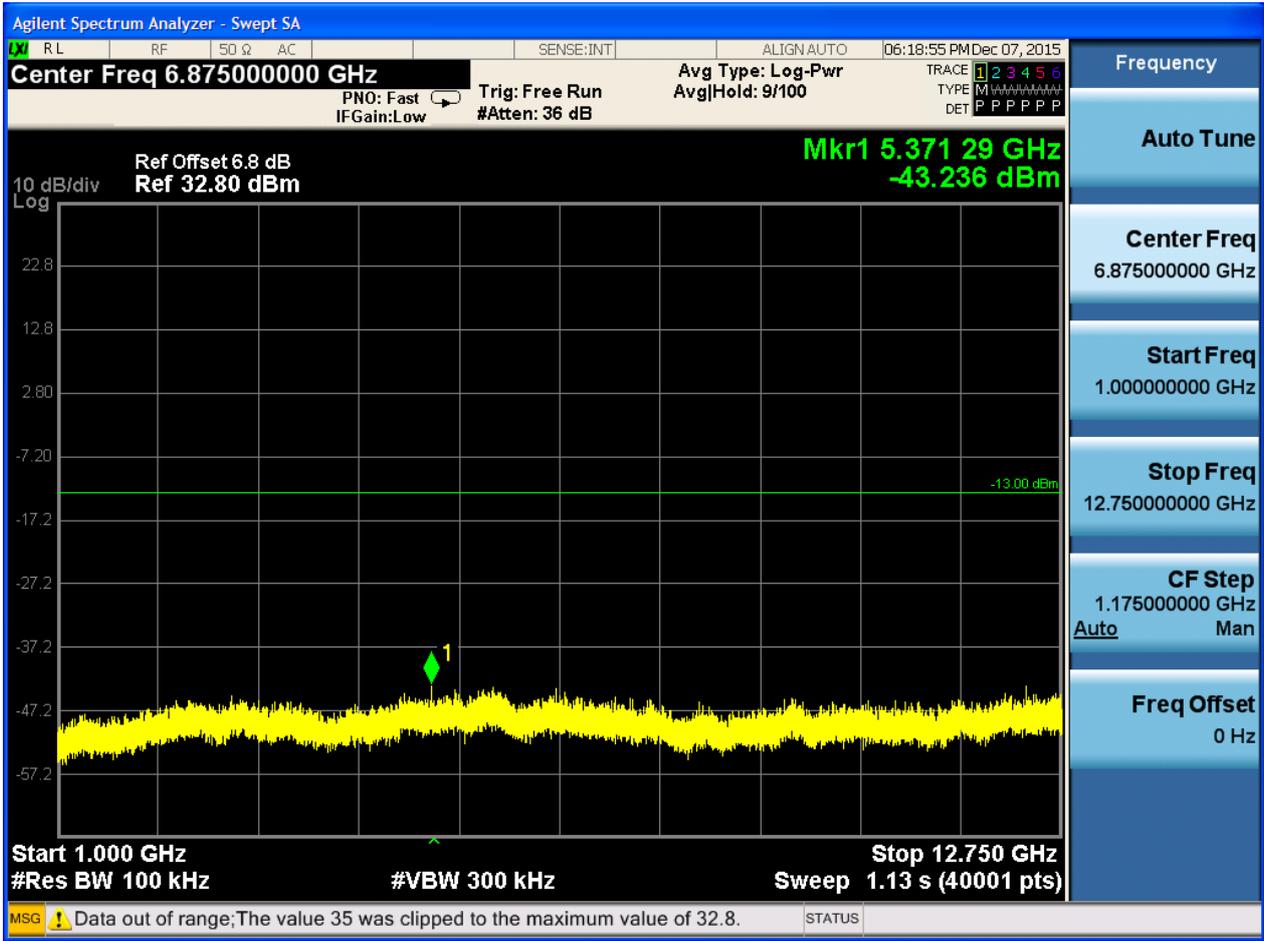




6.1.1.1.2 Test Channel = MCH



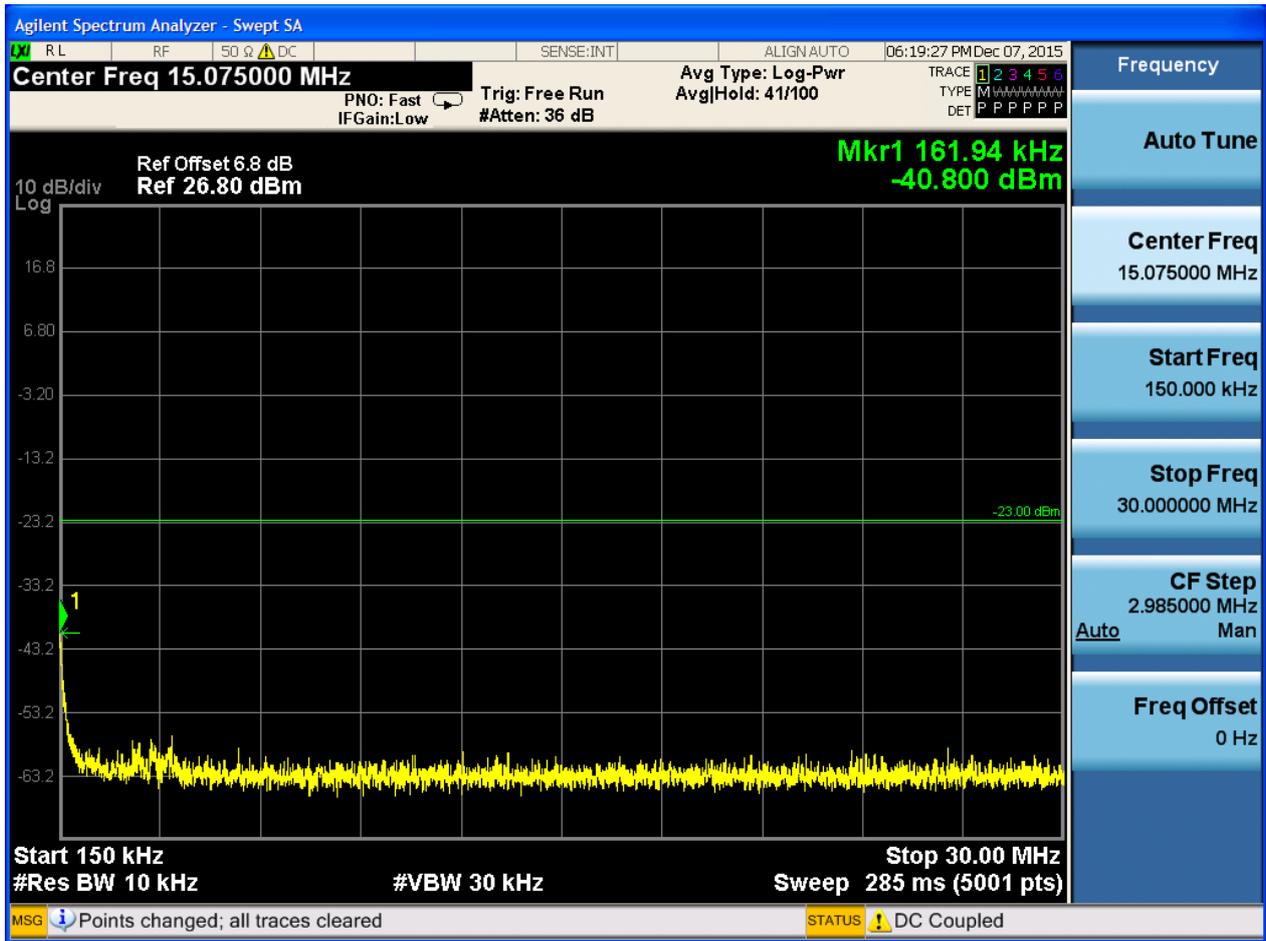


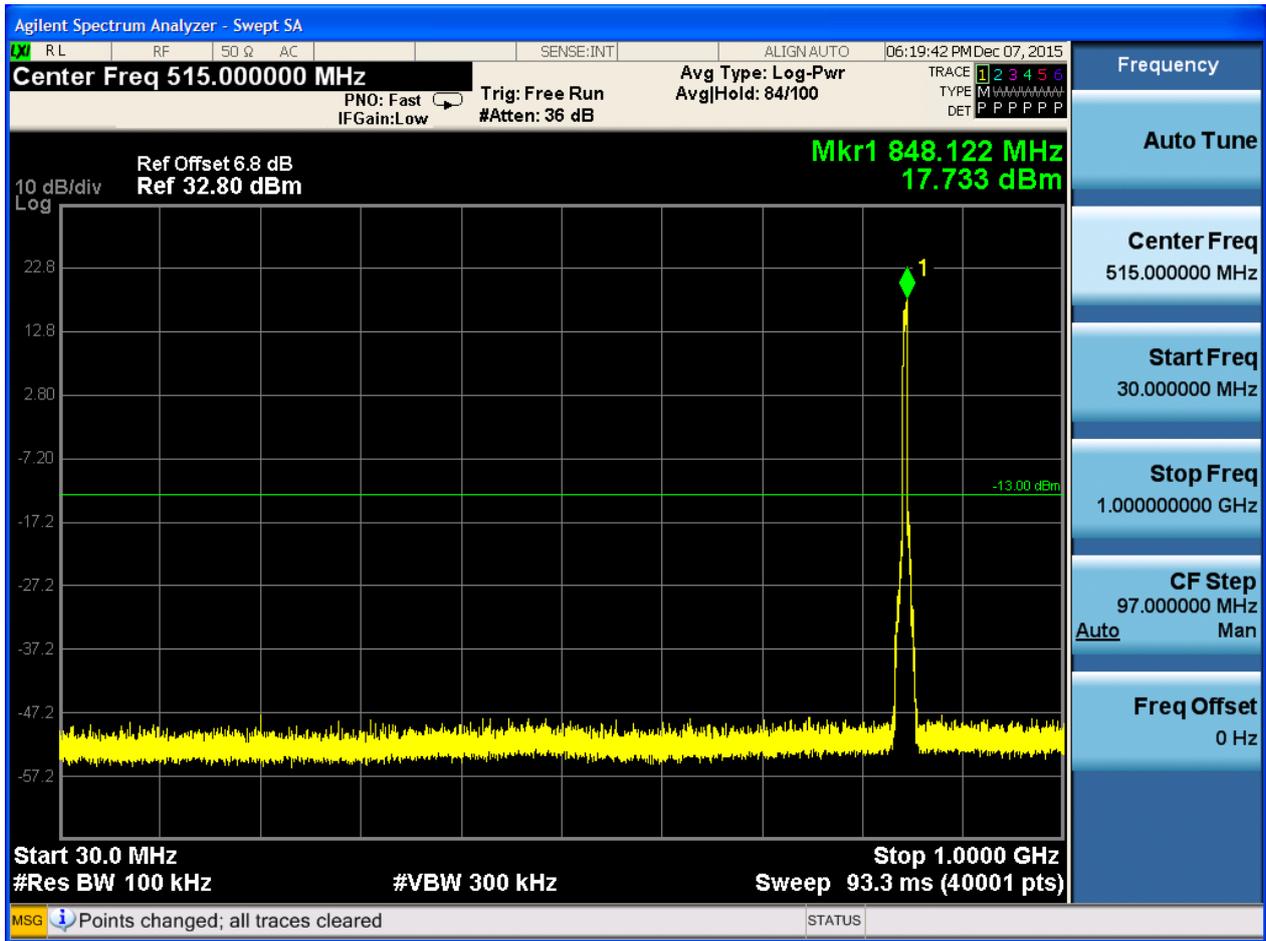


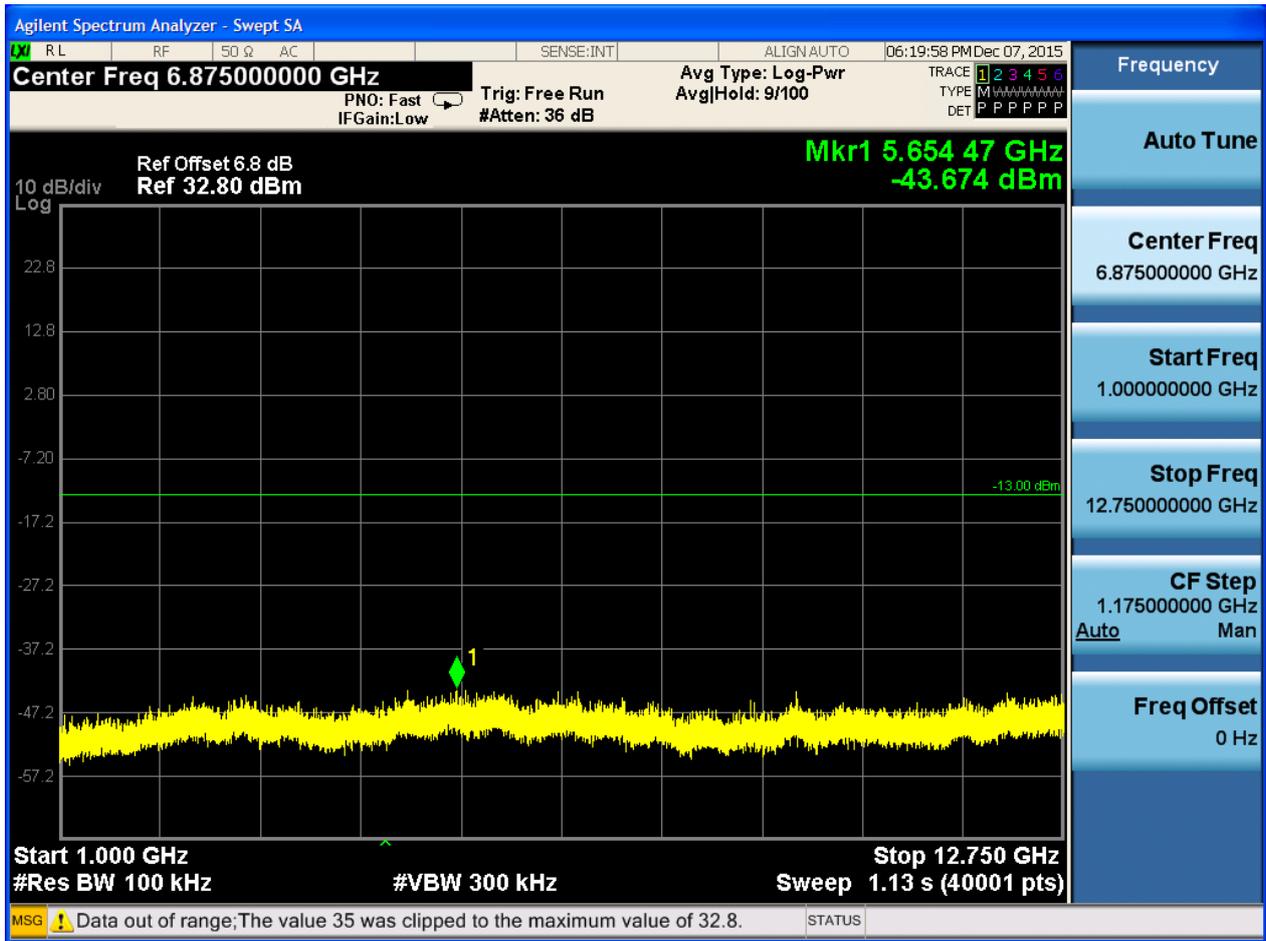


6.1.1.1.3 Test Channel = HCH







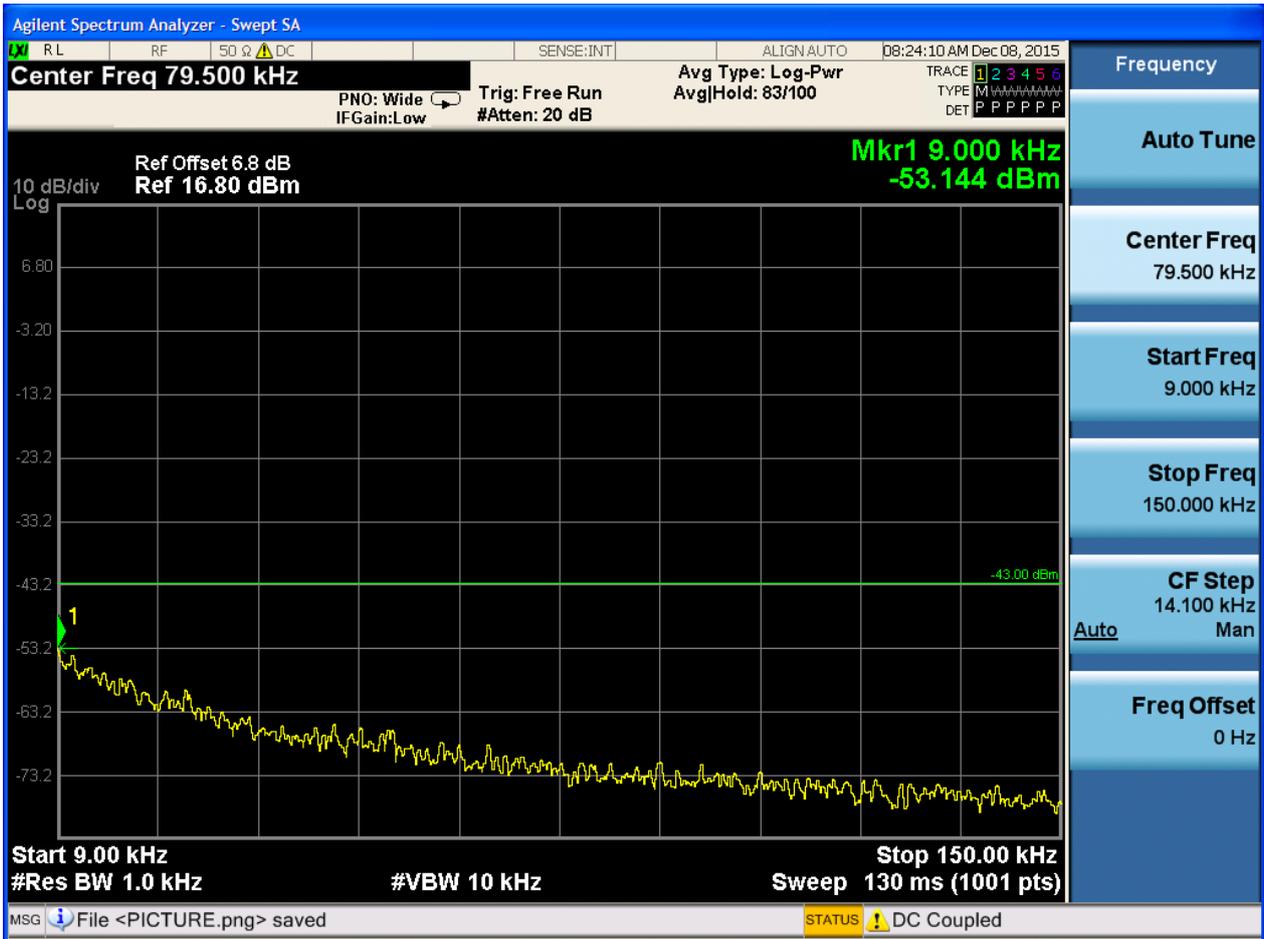


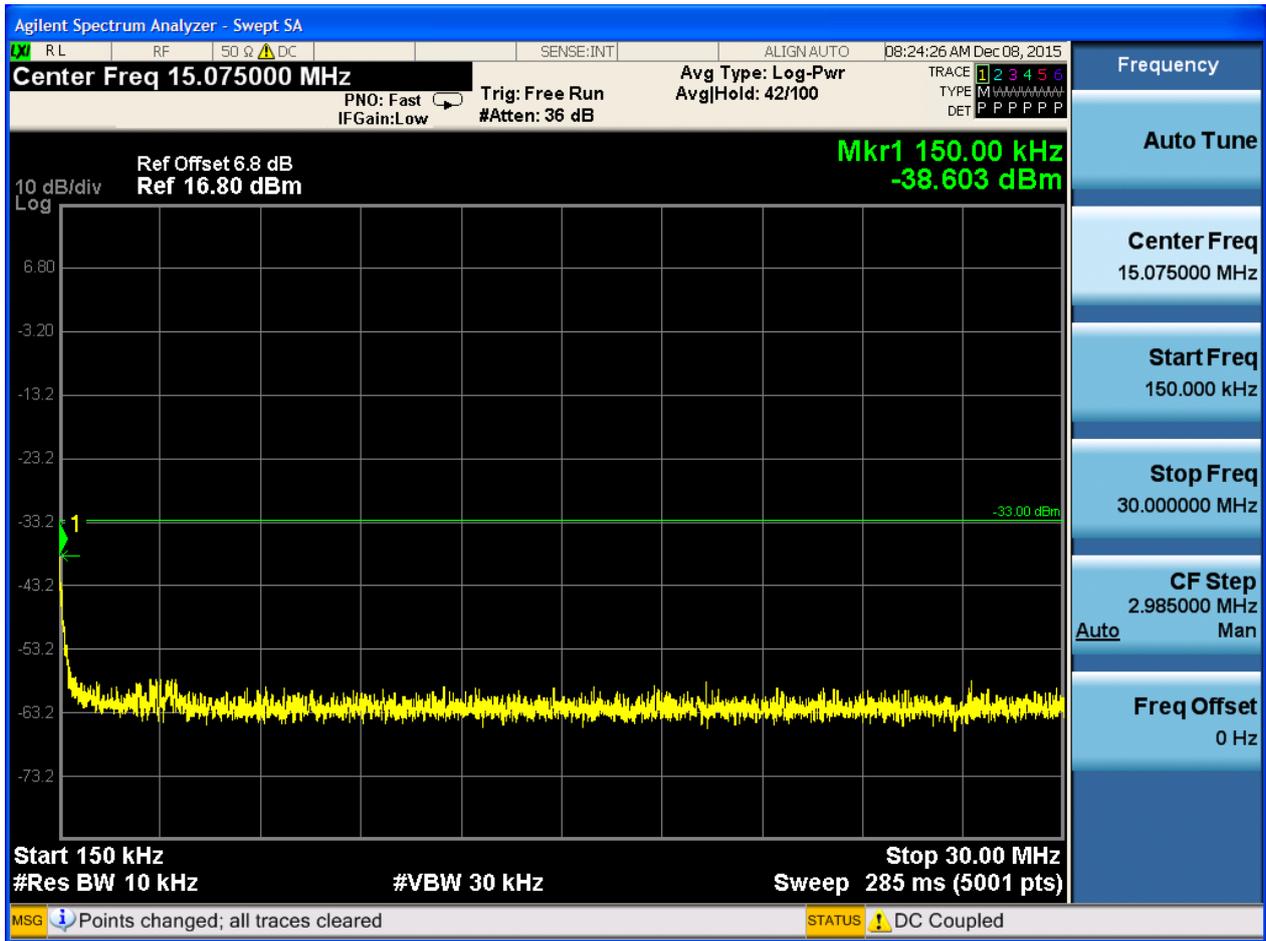


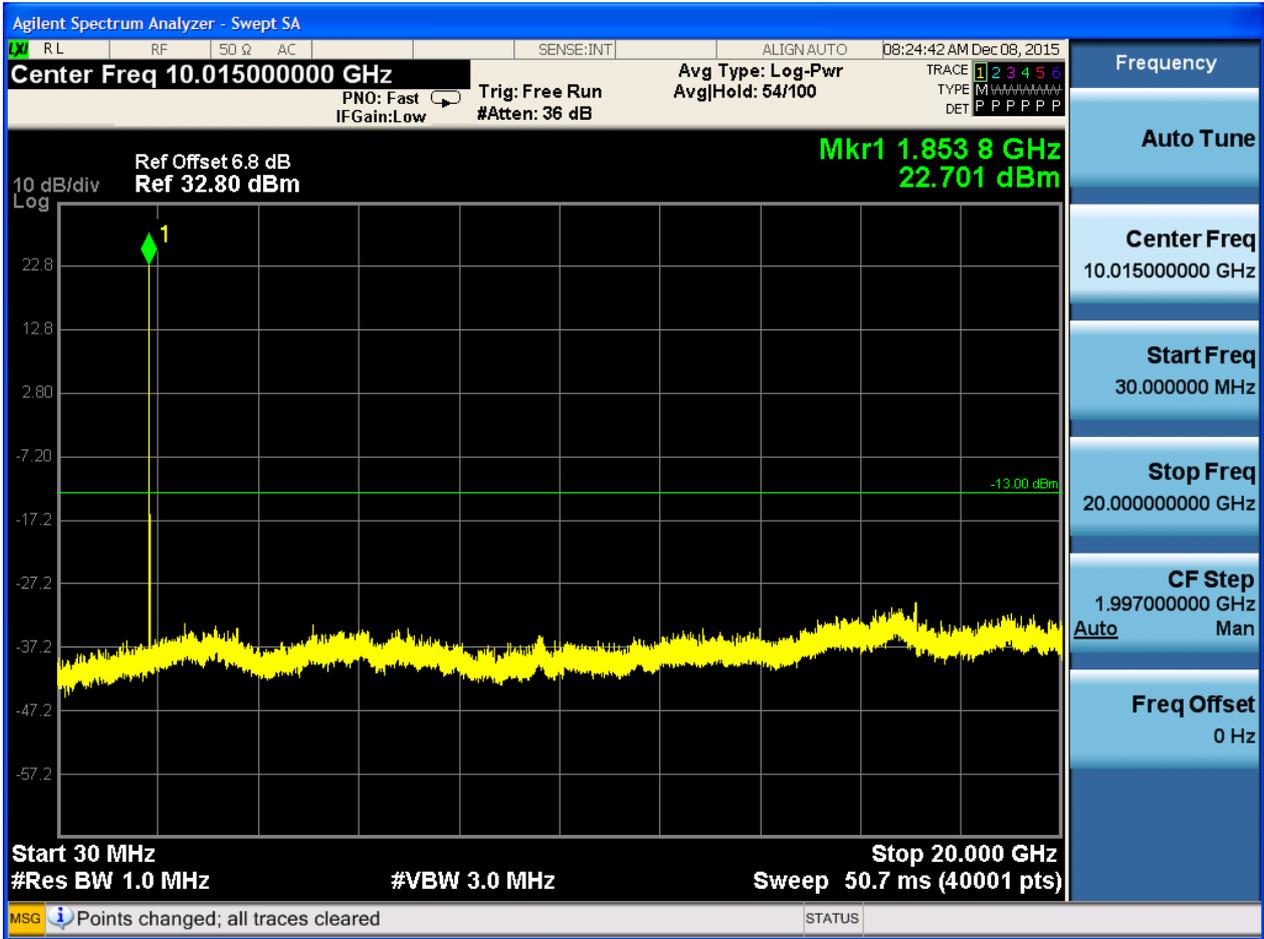
6.1.2 Test Band = WCDMA1900

6.1.2.1 Test Mode = UMTS/TM1

6.1.2.1.1 Test Channel = LCH



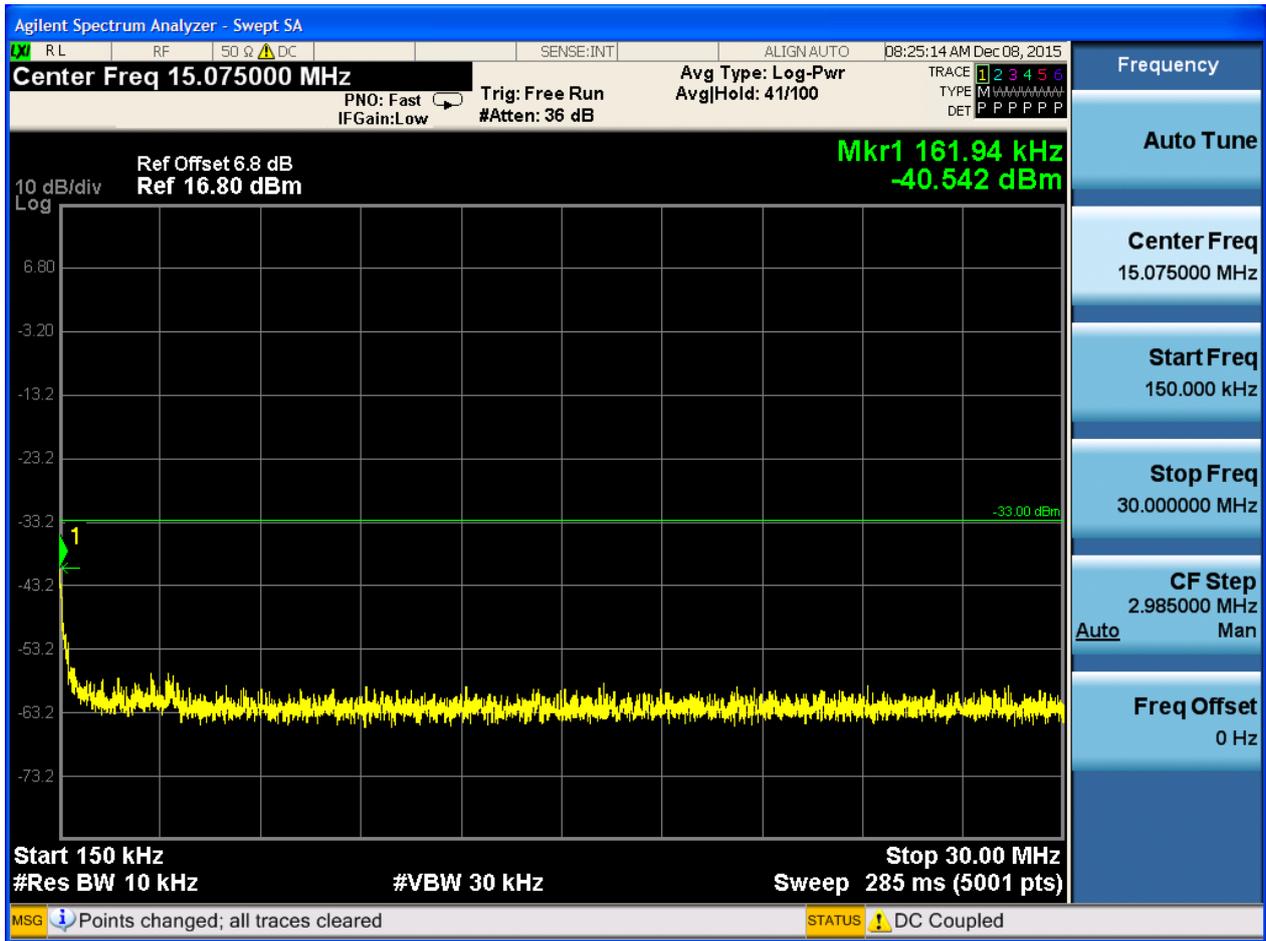


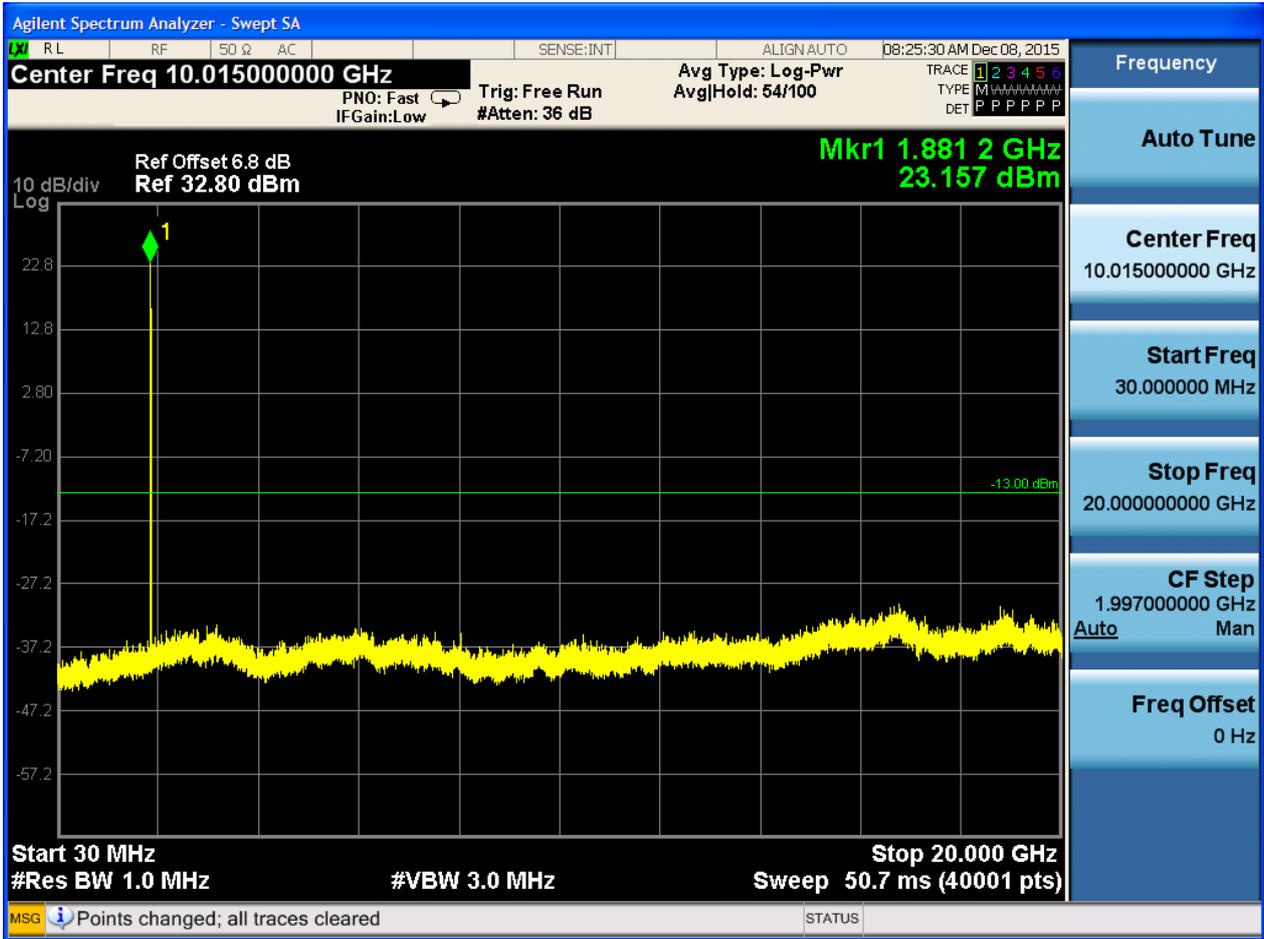


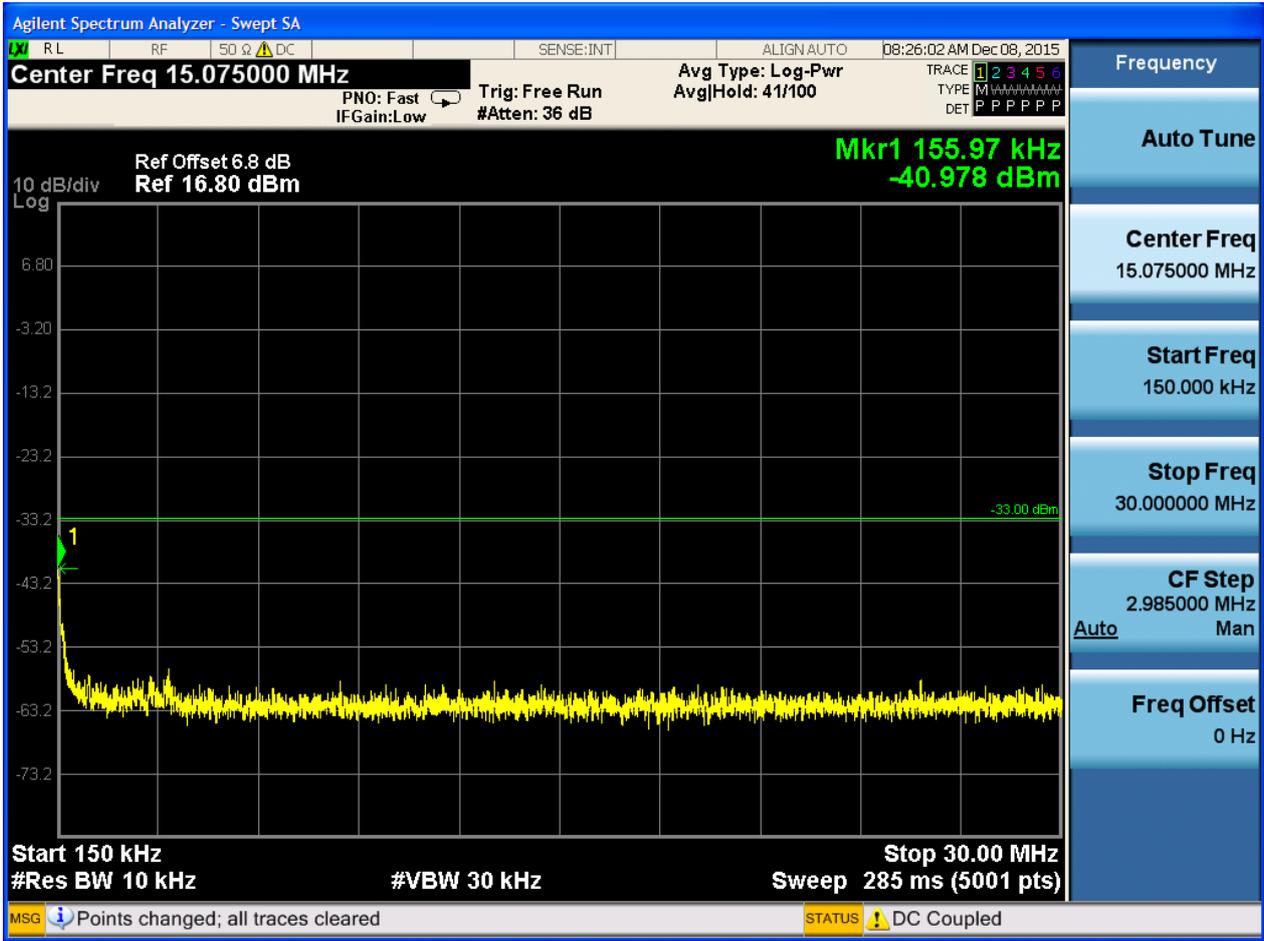


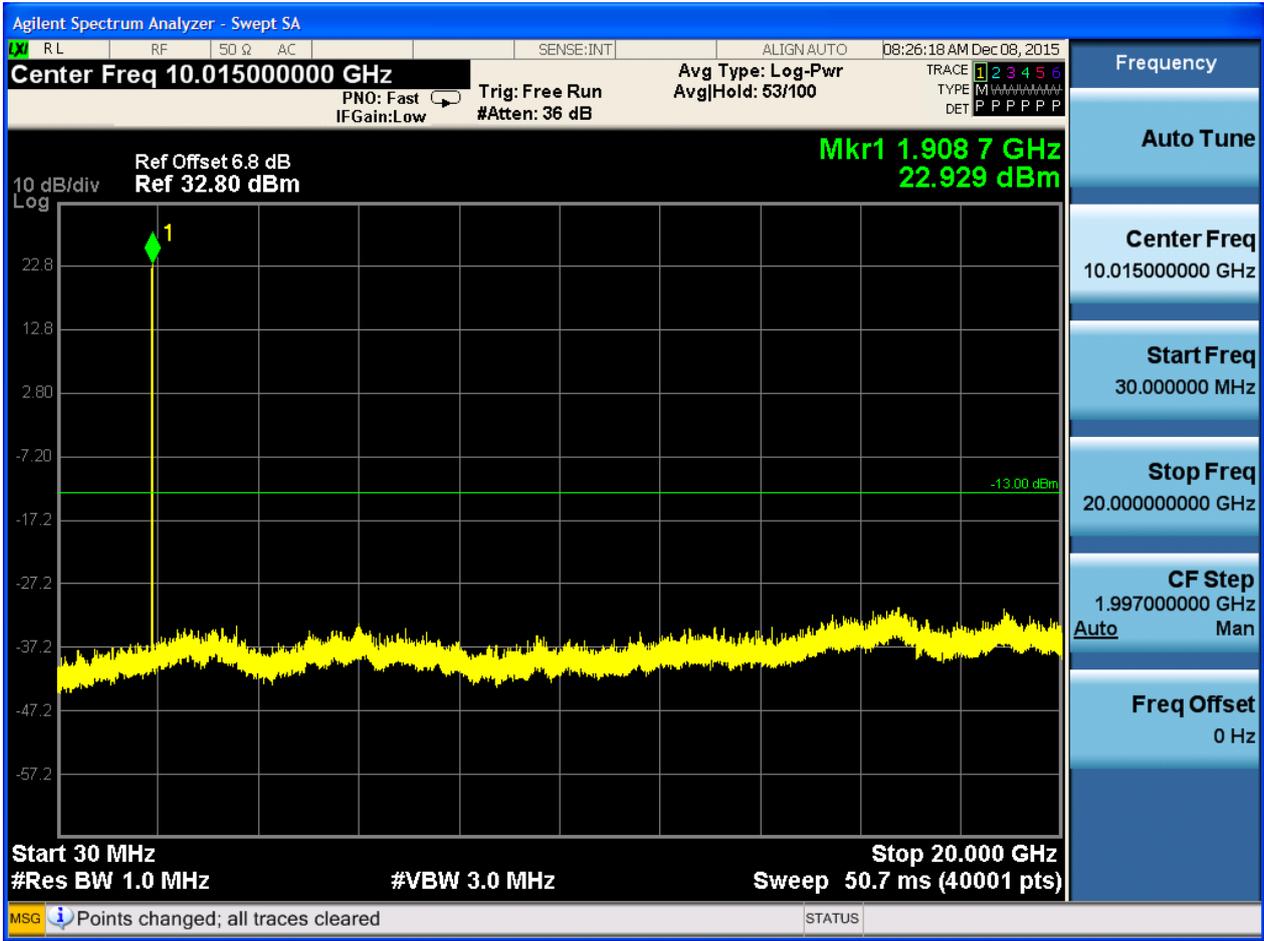
6.1.2.1.2 Test Channel = MCH











7Appendix_G: Field Strength of Spurious Radiation

Note:

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

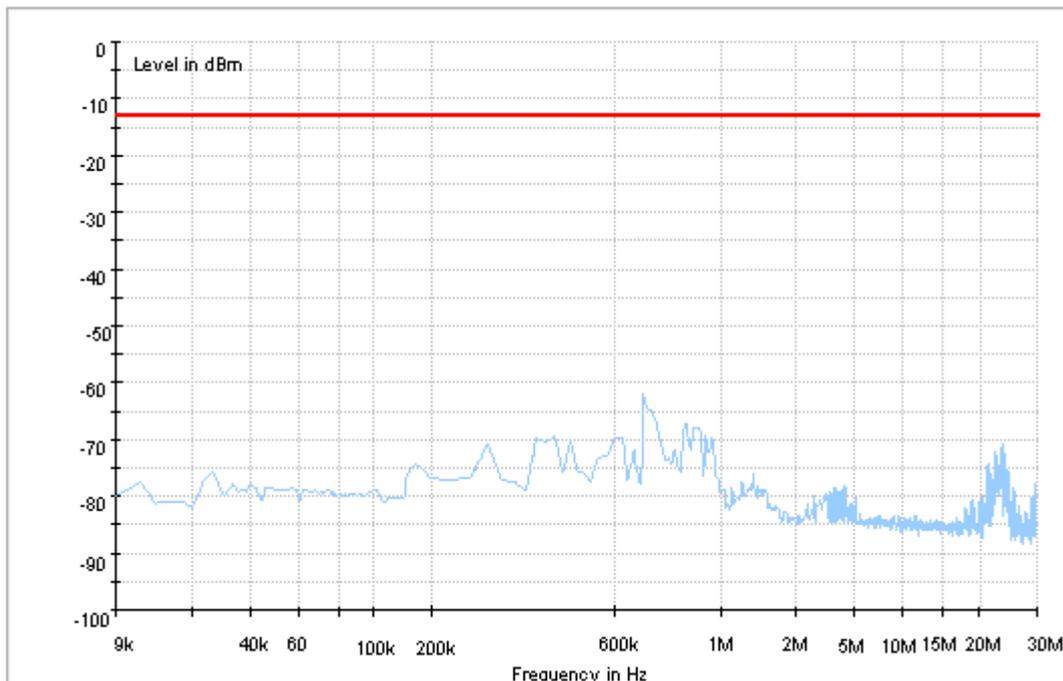
Above 1GHz, RBW = 1 MHz, VBW = 3 MHz. Detector: PK

Part I - Test Plots

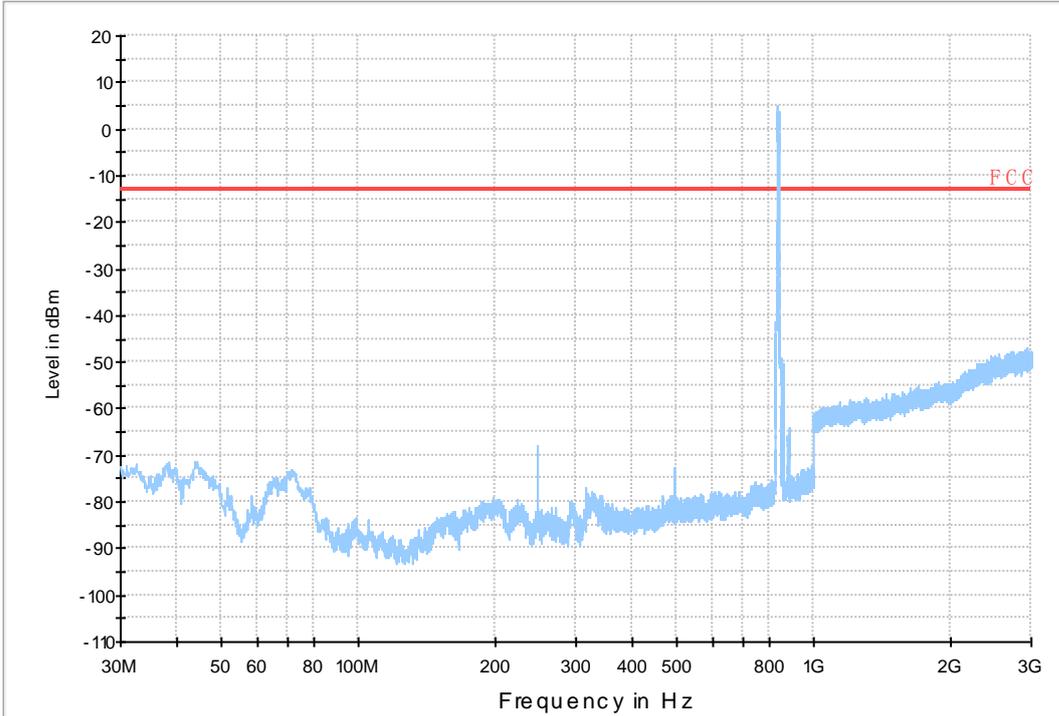
7.1 For UMTS

7.1.1 Test Band = WCDMA850

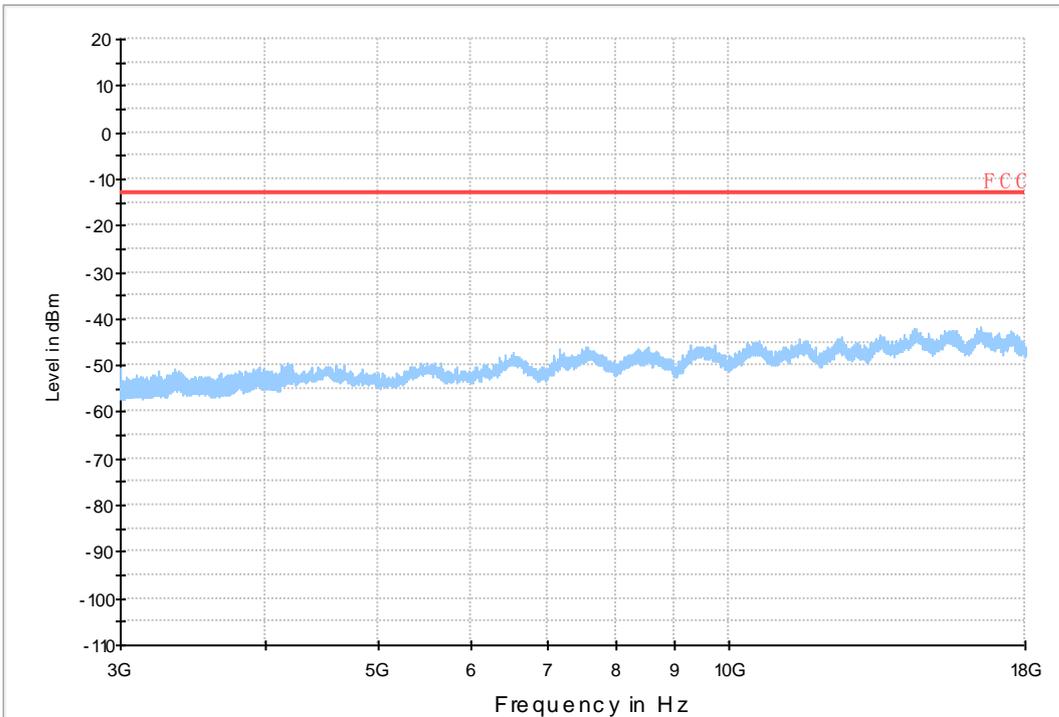
7.1.1.1 Test Mode = UMTS/TM1



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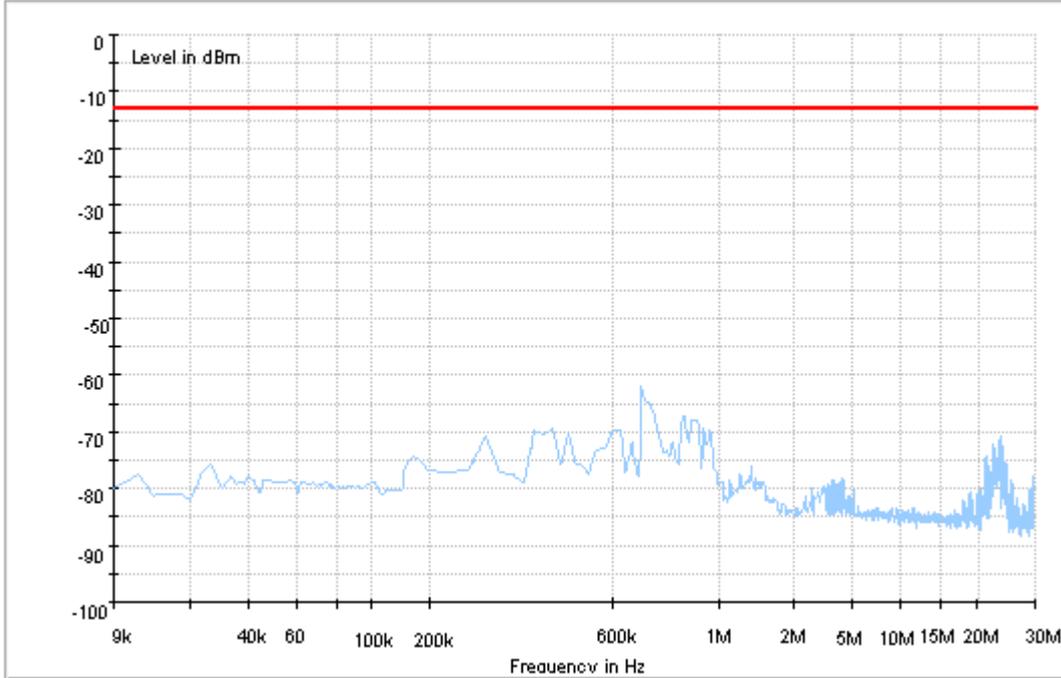


Copy of FCC PART22 W CDMA850_H

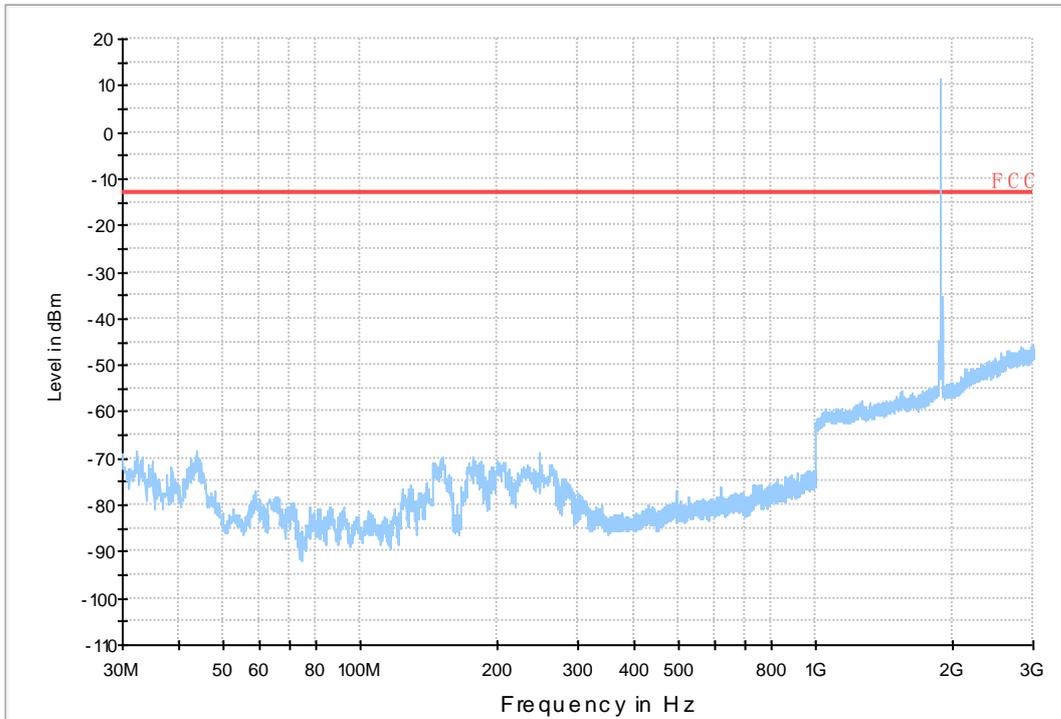


7.1.2 Test Band = WCDMA1900

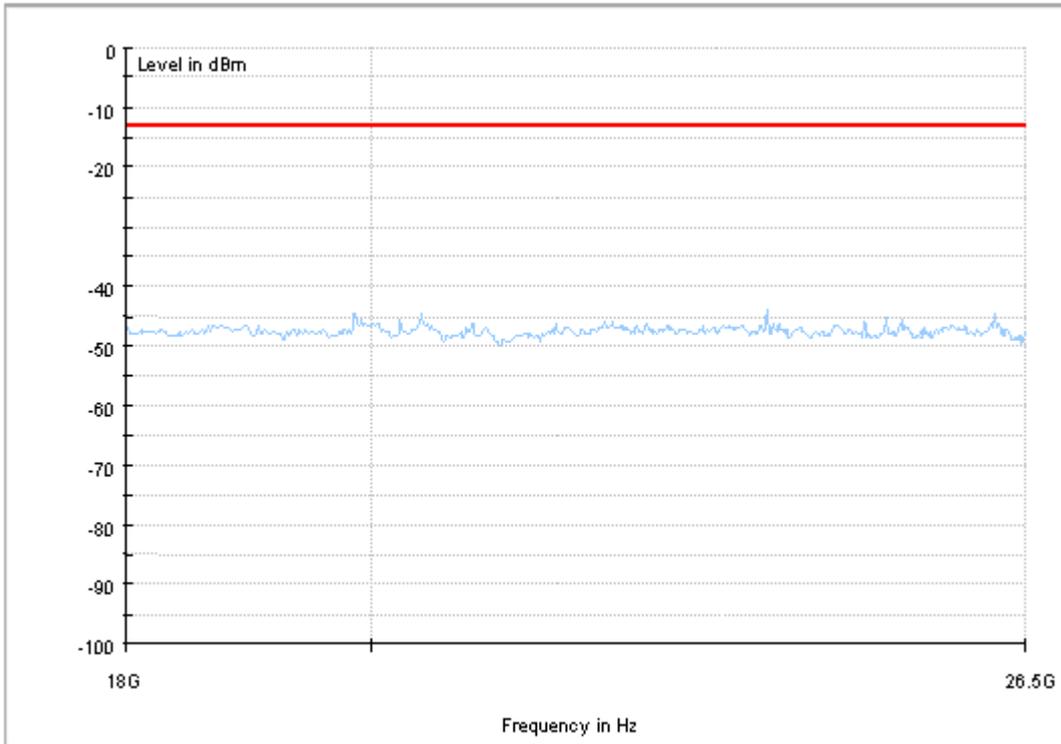
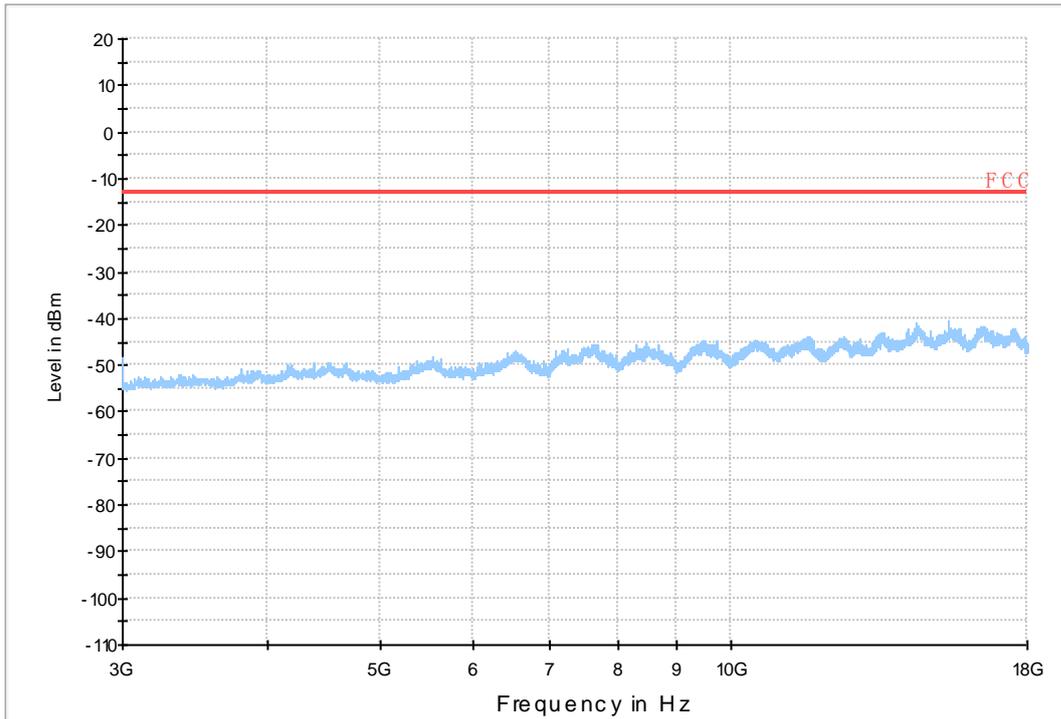
7.1.2.1 Test Mode = UMTS/TM1



Copy of FCC PART24 W CDMA1900_L



Copy of FCC PART24 W CDMA1900_H





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
WCDMA850	UMTS/TM1	LCH	TN	VL	-7.61	-0.00921	PASS
				VN	3.72	0.0045	PASS
				VH	6.59	0.00797	PASS
		MCH	TN	VL	-15.44	-0.01846	PASS
				VN	-4.91	-0.00587	PASS
				VH	0.66	0.00079	PASS
		HCH	TN	VL	-9.69	-0.01145	PASS
				VN	-3.69	-0.00436	PASS
				VH	-6.09	-0.00719	PASS
WCDMA1900	UMTS/TM1	LCH	TN	VL	-12.63	-0.00682	PASS
				VN	6.99	0.00377	PASS
				VH	5.40	0.00292	PASS
		MCH	TN	VL	-10.01	-0.00532	PASS
				VN	-1.19	-0.00063	PASS
				VH	-4.00	-0.00213	PASS
		HCH	TN	VL	-13.67	-0.00717	PASS
				VN	-2.82	-0.00148	PASS
				VH	5.13	0.00269	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
WCDMA850	UMTS/TM1	LCH	VN	-30	-17.04	-0.02062	PASS
				-20	-4.21	-0.00509	PASS
				-10	2.32	0.00281	PASS
				0	1.28	0.00155	PASS
				10	0.93	0.00113	PASS
				20	-5.77	-0.00698	PASS
				30	-3.14	-0.0038	PASS



Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				40	-4.91	-0.00594	PASS
				50	-3.39	-0.0041	PASS
		MCH	VN	-30	-11.17	-0.01335	PASS
				-20	-4.09	-0.00489	PASS
				-10	-10.85	-0.01297	PASS
				0	0.49	0.00059	PASS
				10	-5.33	-0.00637	PASS
				20	1.75	0.00209	PASS
				30	4.46	0.00533	PASS
				40	-2.32	-0.00277	PASS
				50	-6.26	-0.00748	PASS
				HCH	VN	-30	-11.75
		-20	3.23			0.00382	PASS
		-10	-1.48			-0.00175	PASS
		0	-4.75			-0.00561	PASS
		10	-1.69			-0.002	PASS
		20	-7.03			-0.0083	PASS
		30	-8.29			-0.00979	PASS
		40	-2.41			-0.00285	PASS
		50	-6.20	-0.00732	PASS		
WCDMA1900	UMTS/TM1	LCH	VN	-30	-10.04	-0.00542	PASS
				-20	2.41	0.0013	PASS
				-10	-3.78	-0.00204	PASS
				0	-0.76	-0.00041	PASS
				10	-6.53	-0.00353	PASS
				20	7.03	0.0038	PASS
				30	0.99	0.00053	PASS
				40	-0.96	-0.00052	PASS
				50	-6.16	-0.00333	PASS
				MCH	VN	-30	-5.81
		-20	2.73			0.00145	PASS
		-10	-4.97			-0.00264	PASS
		0	-8.90			-0.00473	PASS
		10	4.06			0.00216	PASS
		20	3.94			0.0021	PASS
		30	-3.86			-0.00205	PASS
		40	-3.51			-0.00187	PASS
		50	0.85	0.00045	PASS		
		HCH	VN	-30	-3.04	-0.00159	PASS
				-20	15.12	0.00793	PASS



Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				-10	2.98	0.00156	PASS
				0	-1.71	-0.0009	PASS
				10	-0.24	-0.00013	PASS
				20	-1.31	-0.00069	PASS
				30	-4.14	-0.00217	PASS
				40	0.50	0.00026	PASS
				50	-1.14	-0.0006	PASS

END