



Appendix for test report



1 Appendix_A: Effective (Isotropic) Radiated Power Output Data

Part I - Test Results

Test Band	Test Mode	Test Channel	Conducte d Power [dBm]	ERP [dBm]	Limit [dBm]	Verdict
WCDMA850	UMTS/TM1	LCH	24.54	20.09	38.5	PASS
		MCH	24.44	19.99	38.5	PASS
		HCH	24.48	20.03	38.5	PASS

Test Band	Test Mode	Test Channel	Conducte d Power [dBm]	EIRP [dBm]	Limit [dBm]	Verdict
WCDMA1900	UMTS/TM1	LCH	23.84	23.64	30	PASS
		MCH	23.85	23.65	30	PASS
		HCH	23.89	23.69	30	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:

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

$$\text{SET RBW} = 1\% \text{ of the OBW, not to exceed 1MHz}$$

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

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	3.11	13	PASS
		MCH	2.58	13	PASS
		HCH	3.07	13	PASS
Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
WCDMA1900	UMTS/TM1	LCH	3.32	13	PASS
		MCH	3.58	13	PASS
		HCH	3.12	13	PASS

3Appendix_C: Modulation Characteristics

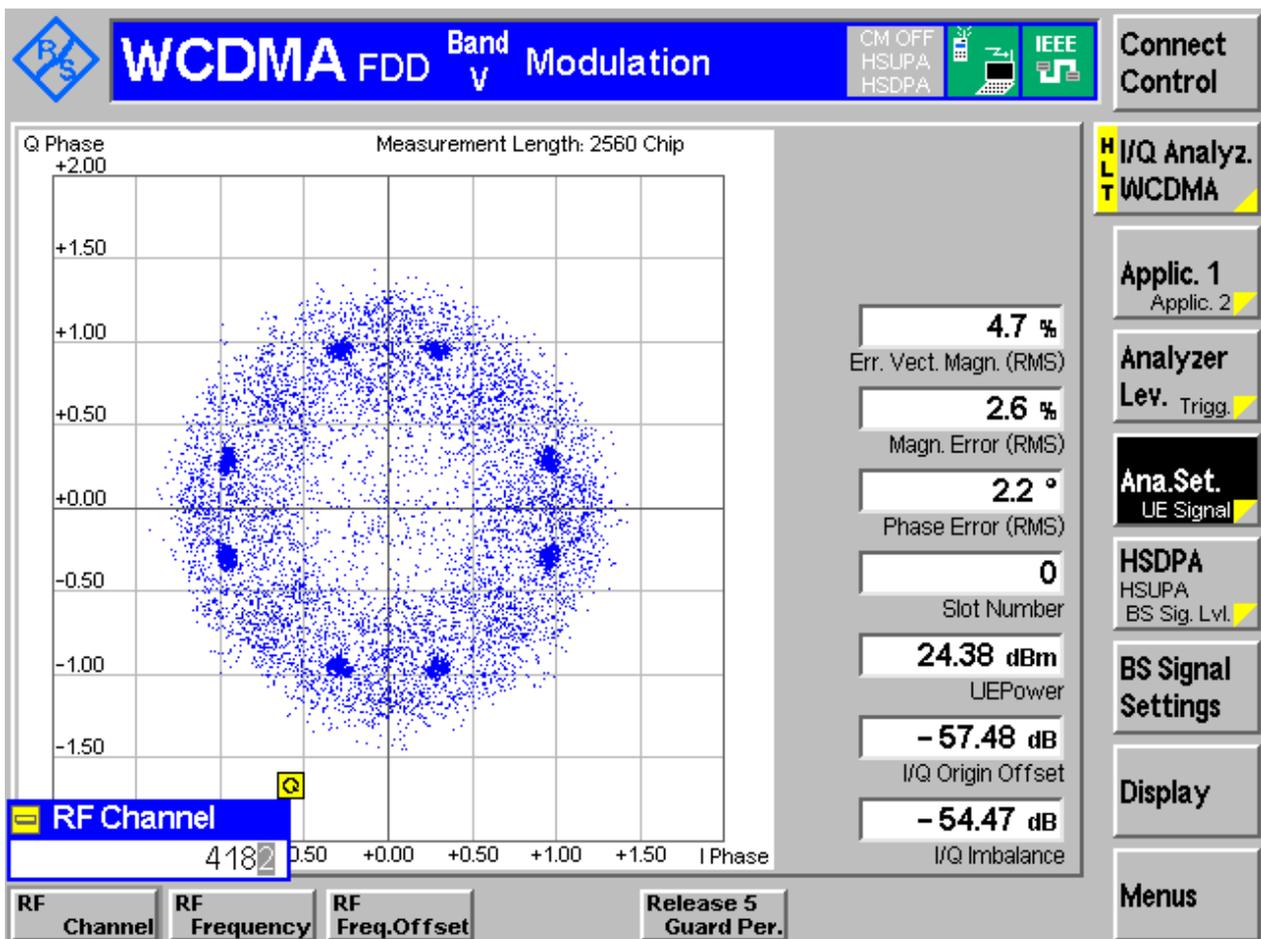
Part I - Test Plots

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

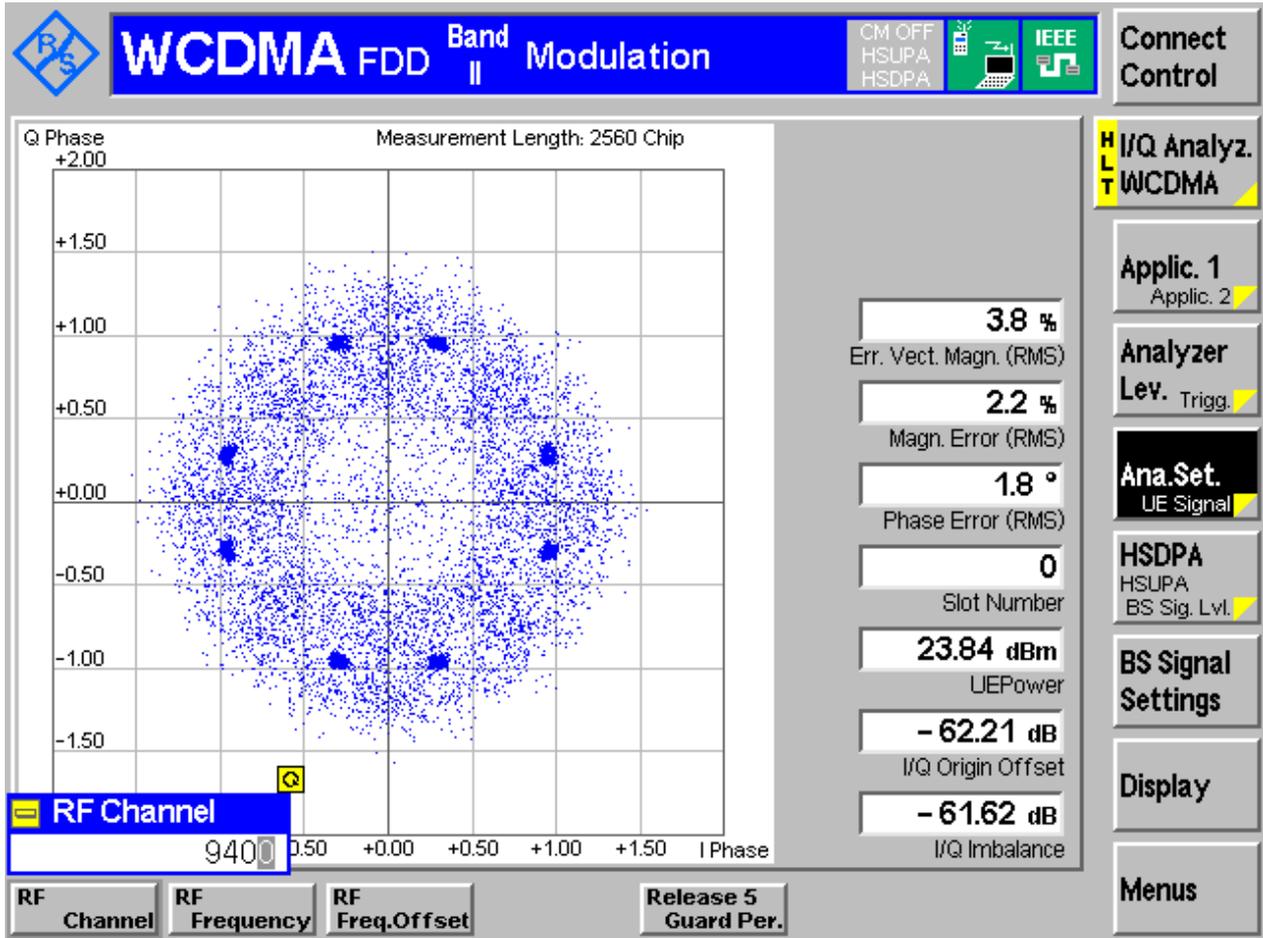


3.2 For UMTS

3.2.1 Test Band = WCDMA1900

3.2.1.1 Test Mode = UMTS/TM1

3.2.1.1.1 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/TM 1	LCH	4.11	4.69	Pass
		MCH	4.14	4.76	Pass
		HCH	4.13	4.67	Pass
WCDMA1900	UMTS/TM 1	LCH	4.11	4.69	Pass
		MCH	4.12	4.68	Pass
		HCH	4.13	4.70	Pass

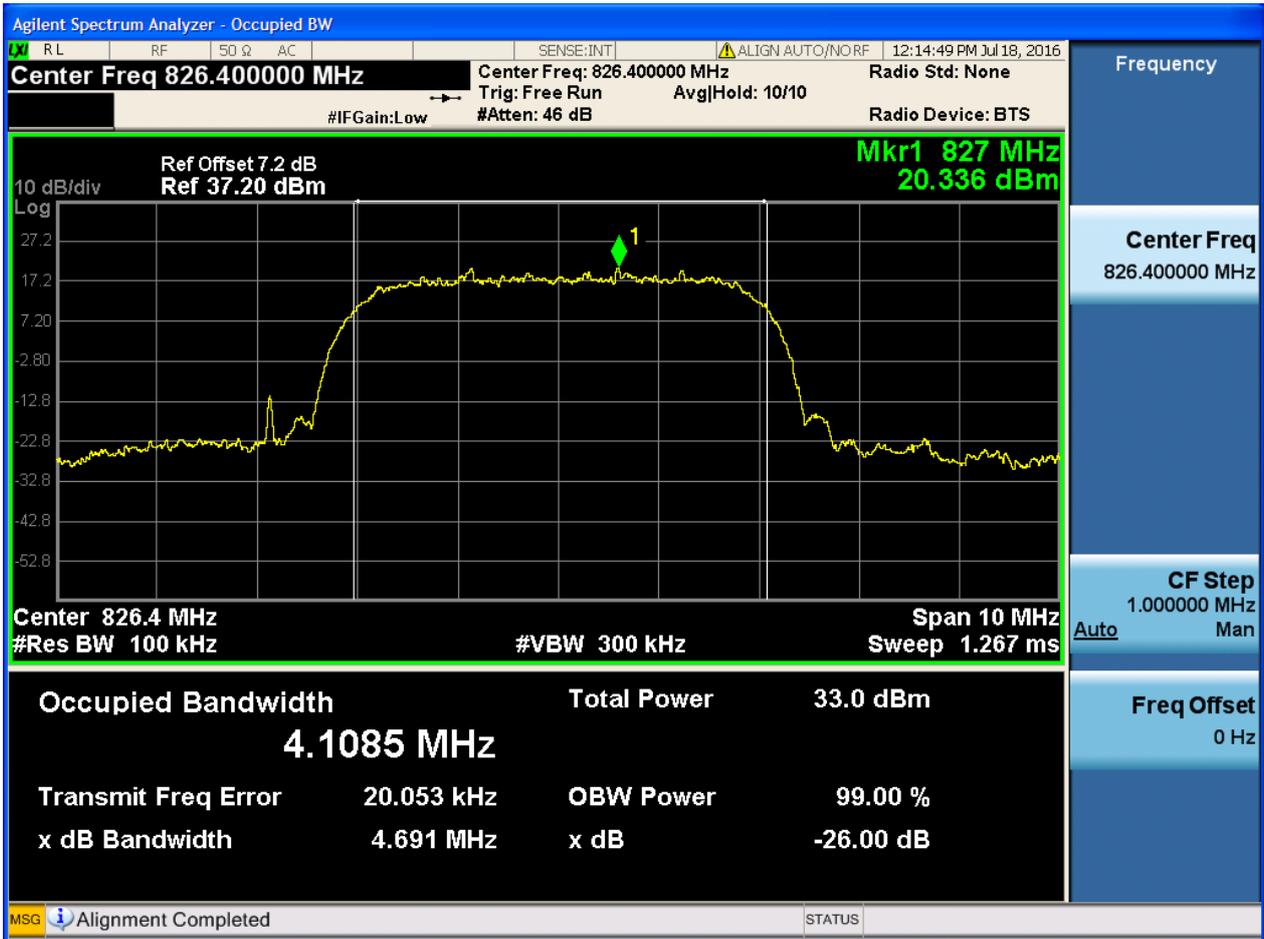


4.2 For UMTS

4.2.1 Test Band = WCDMA850

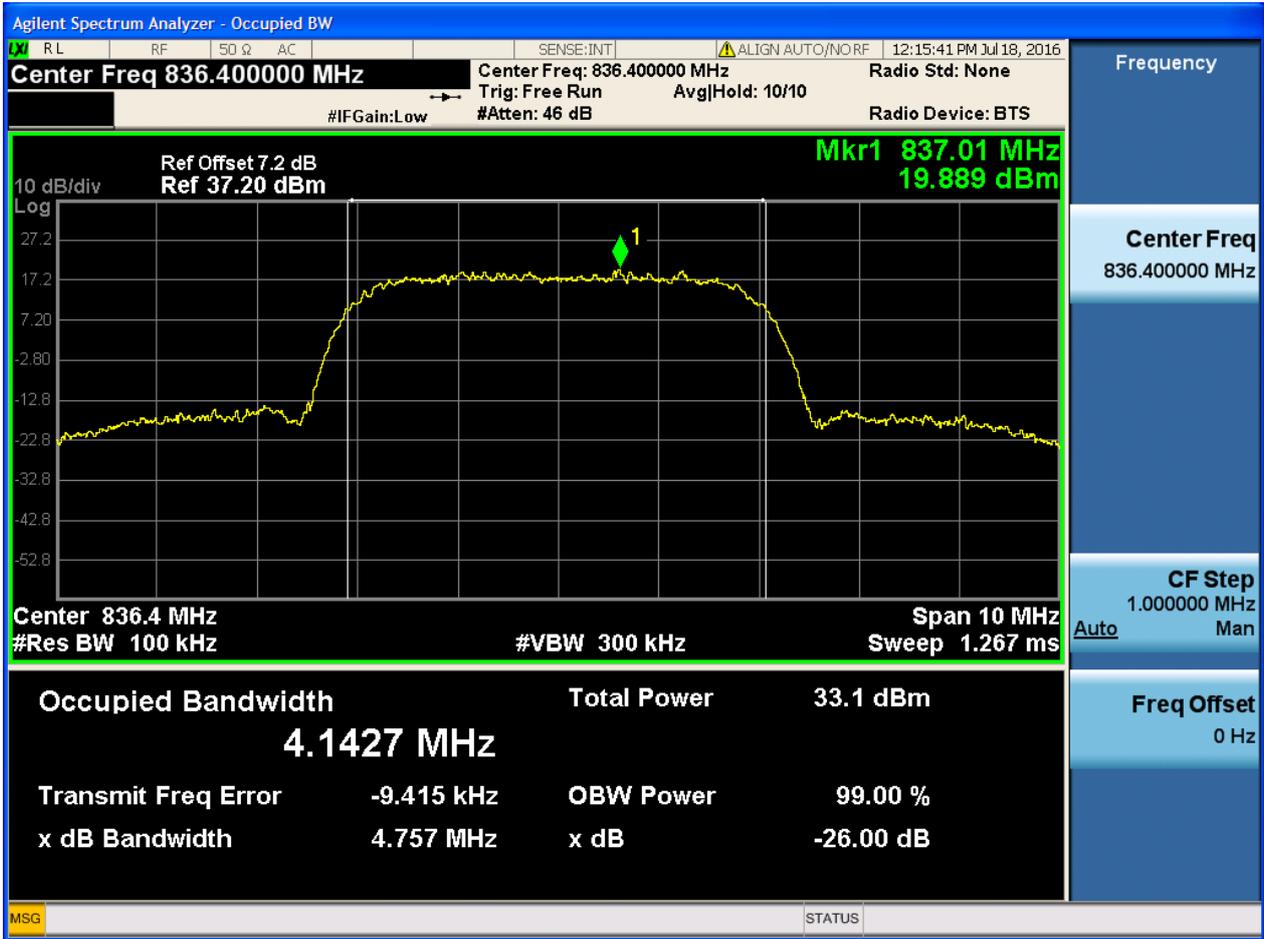
4.2.1.1 Test Mode = UMTS/TM1

4.2.1.1.1 Test Channel = LCH



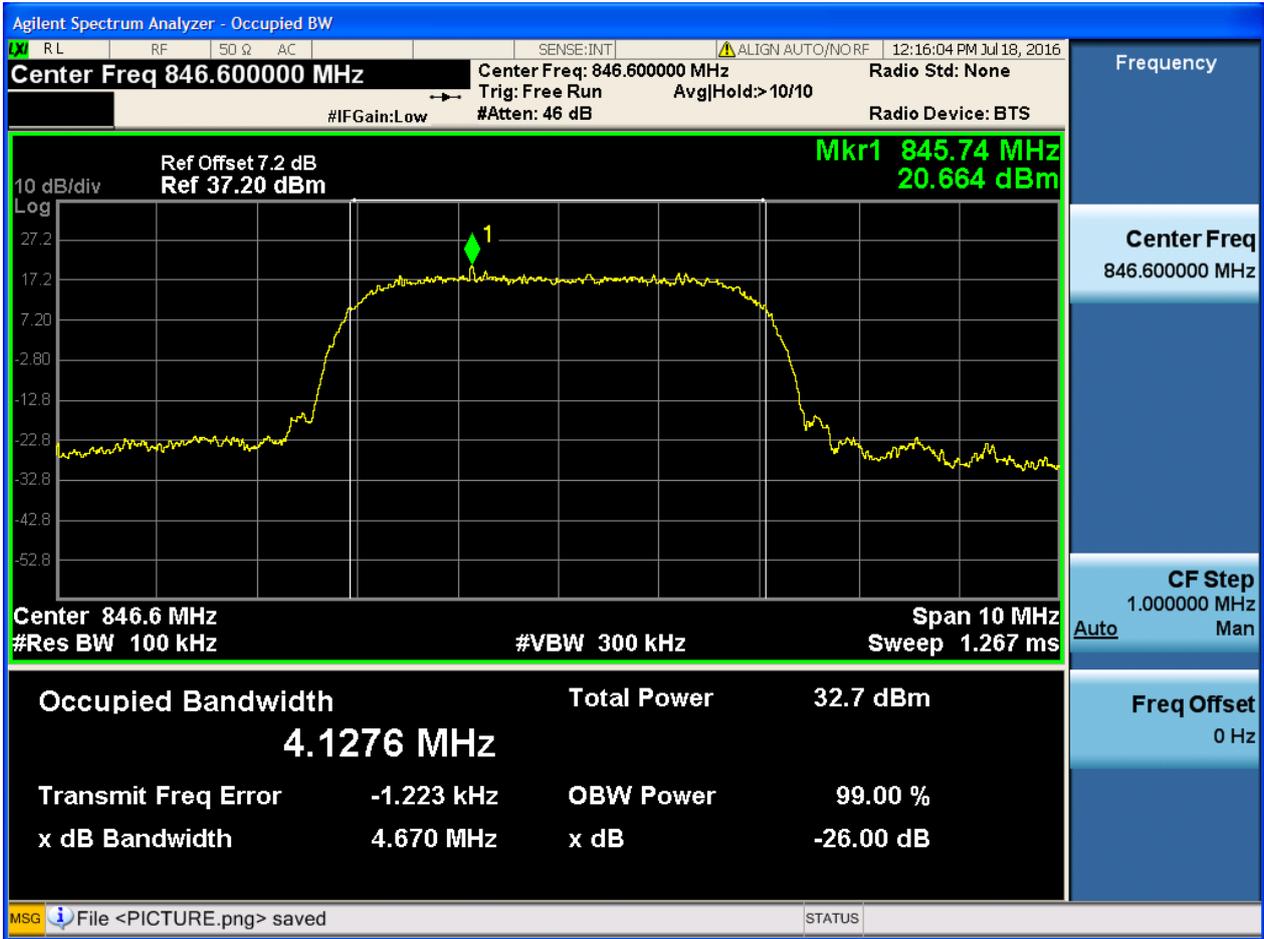


4.2.1.1.2 Test Channel = MCH





4.2.1.1.3 Test Channel = HCH

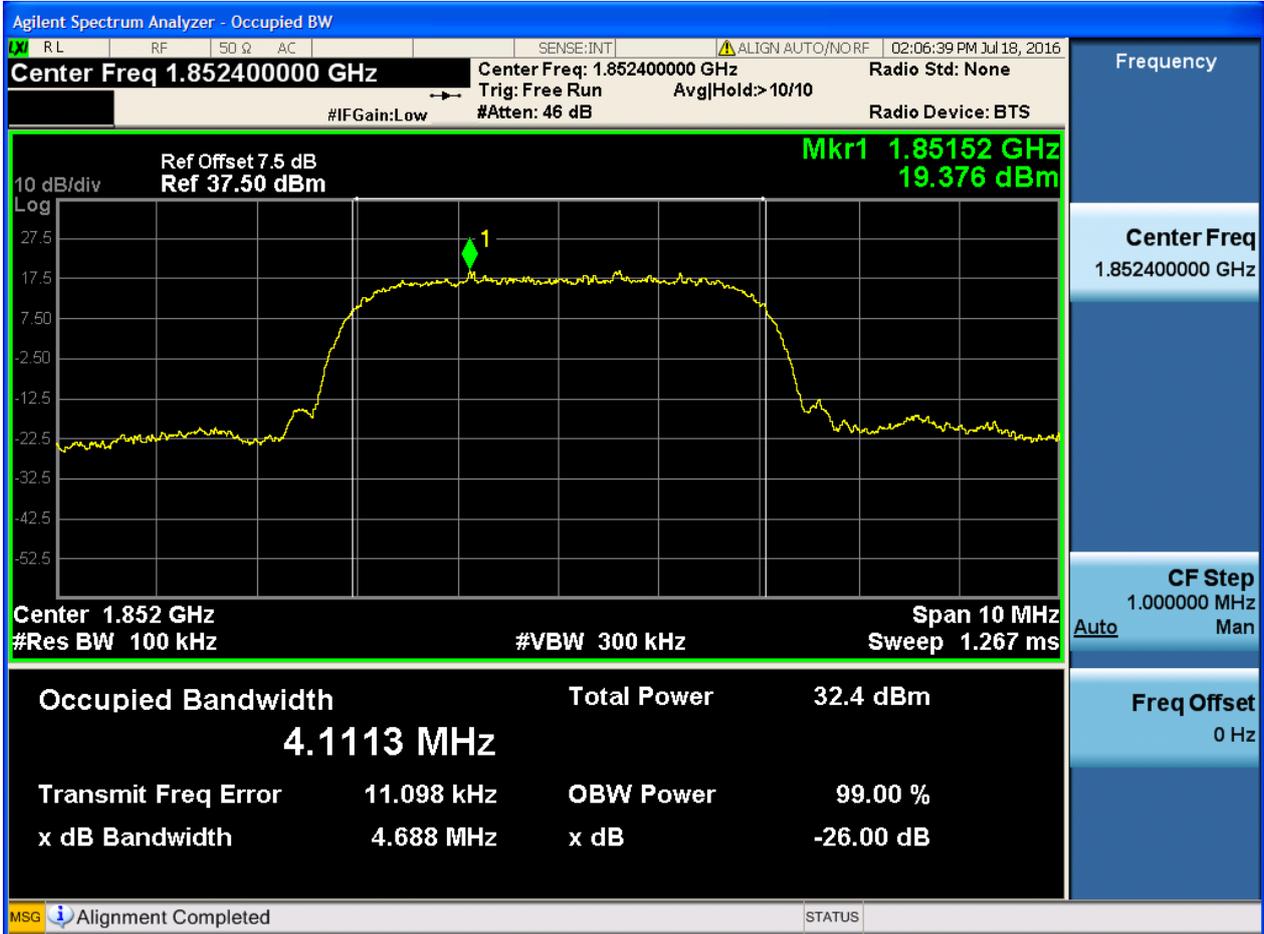




4.2.2 Test Band = WCDMA1900

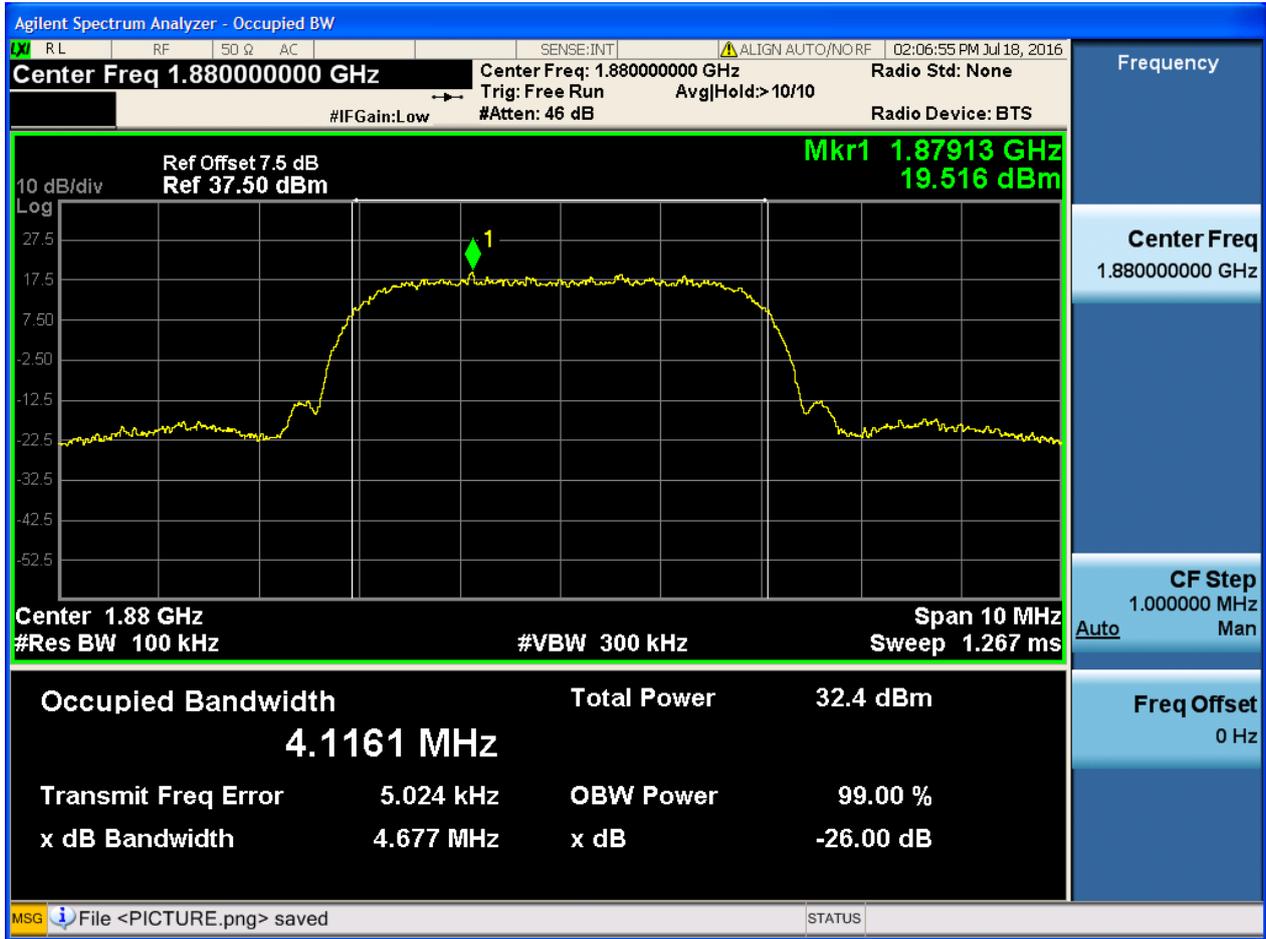
4.2.2.1 Test Mode = UMTS/TM1

4.2.2.1.1 Test Channel = LCH



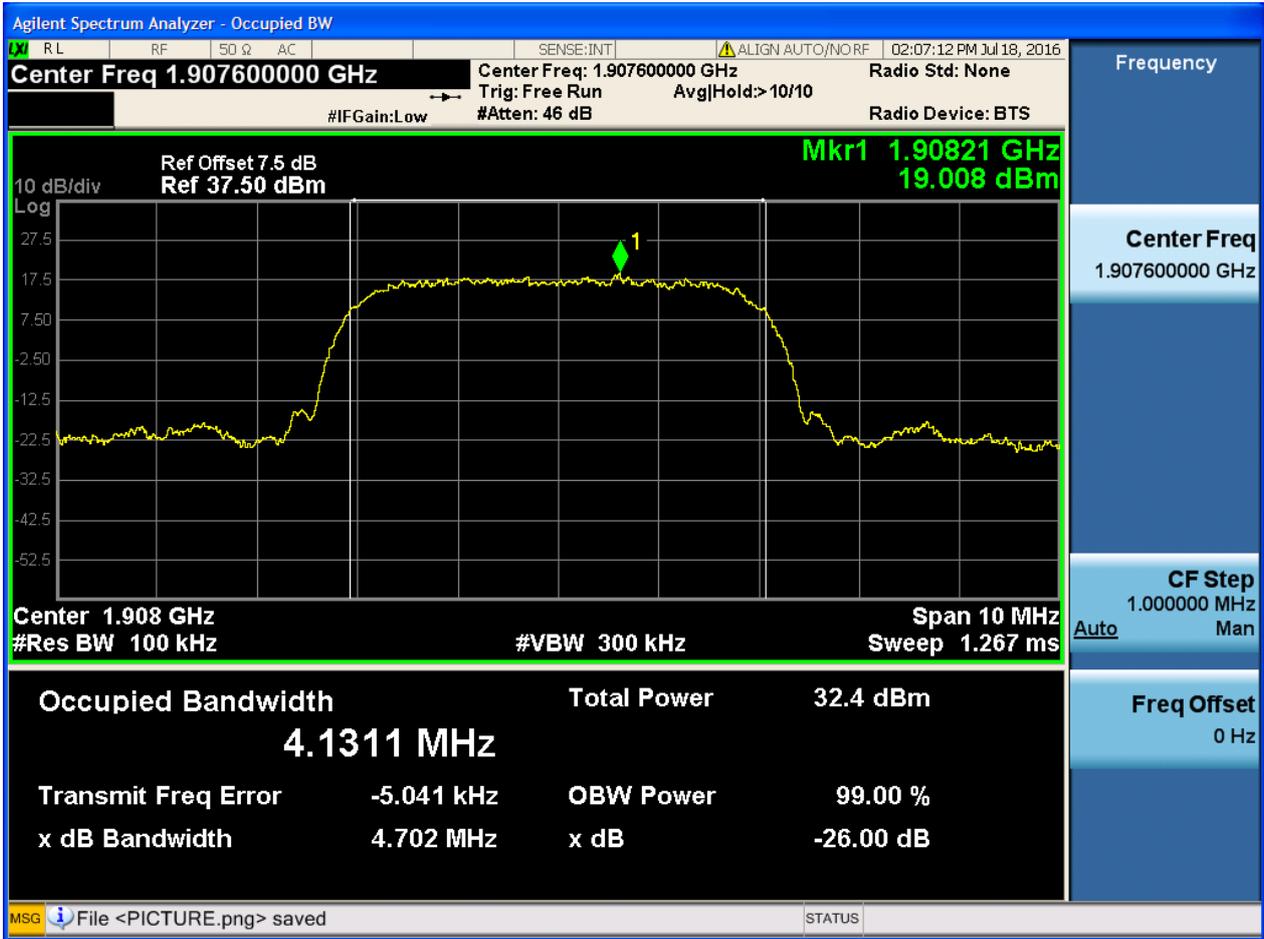


4.2.2.1.2 Test Channel = MCH





4.2.2.1.3 Test Channel = HCH





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





5.2 For UMTS

5.2.1 Test Band = WCDMA1900

5.2.1.1 Test Mode = UMTS/TM1

5.2.1.1.1 Test Channel = LCH





5.2.1.1.2 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.

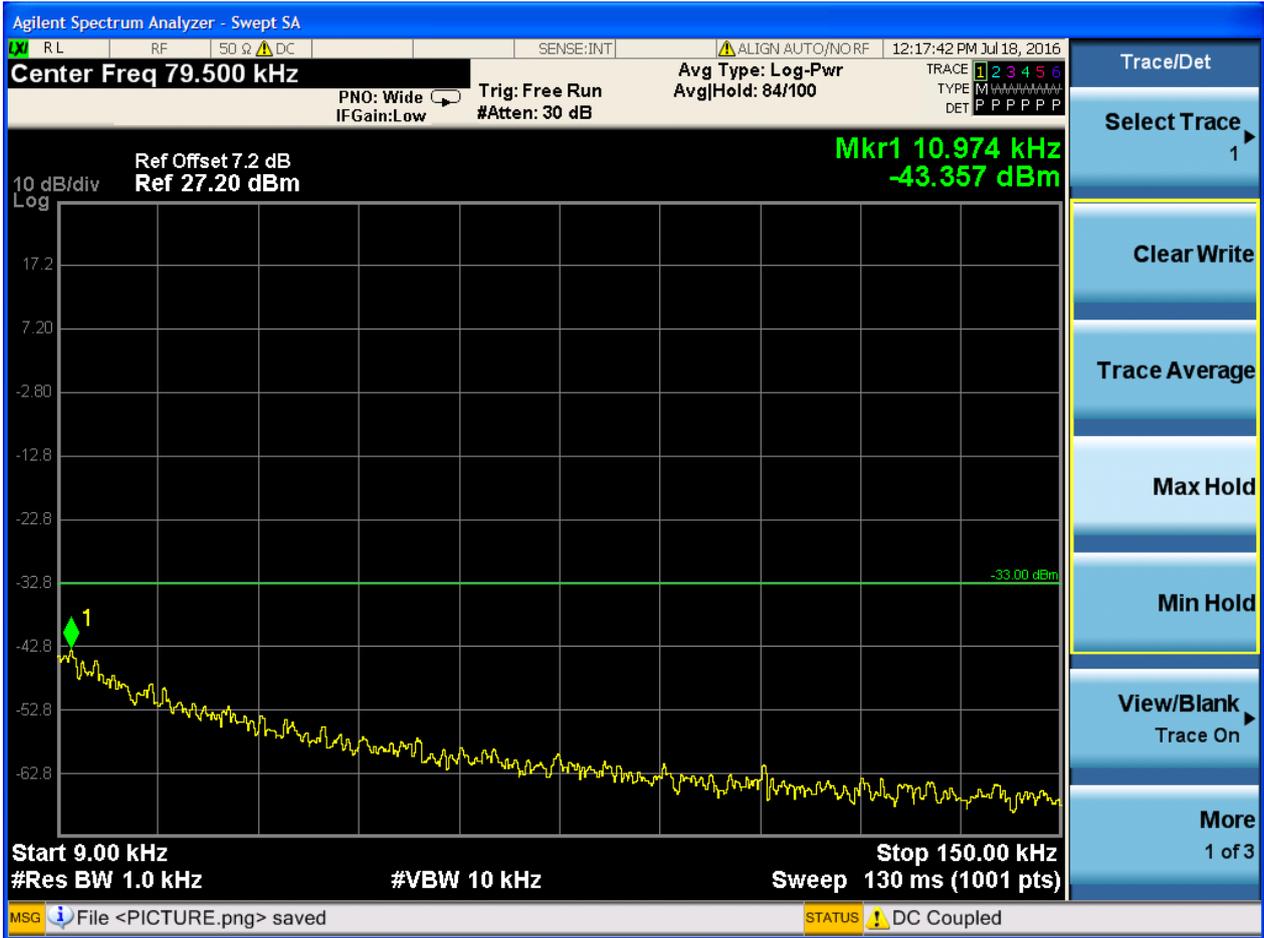
Part I - Test Plots

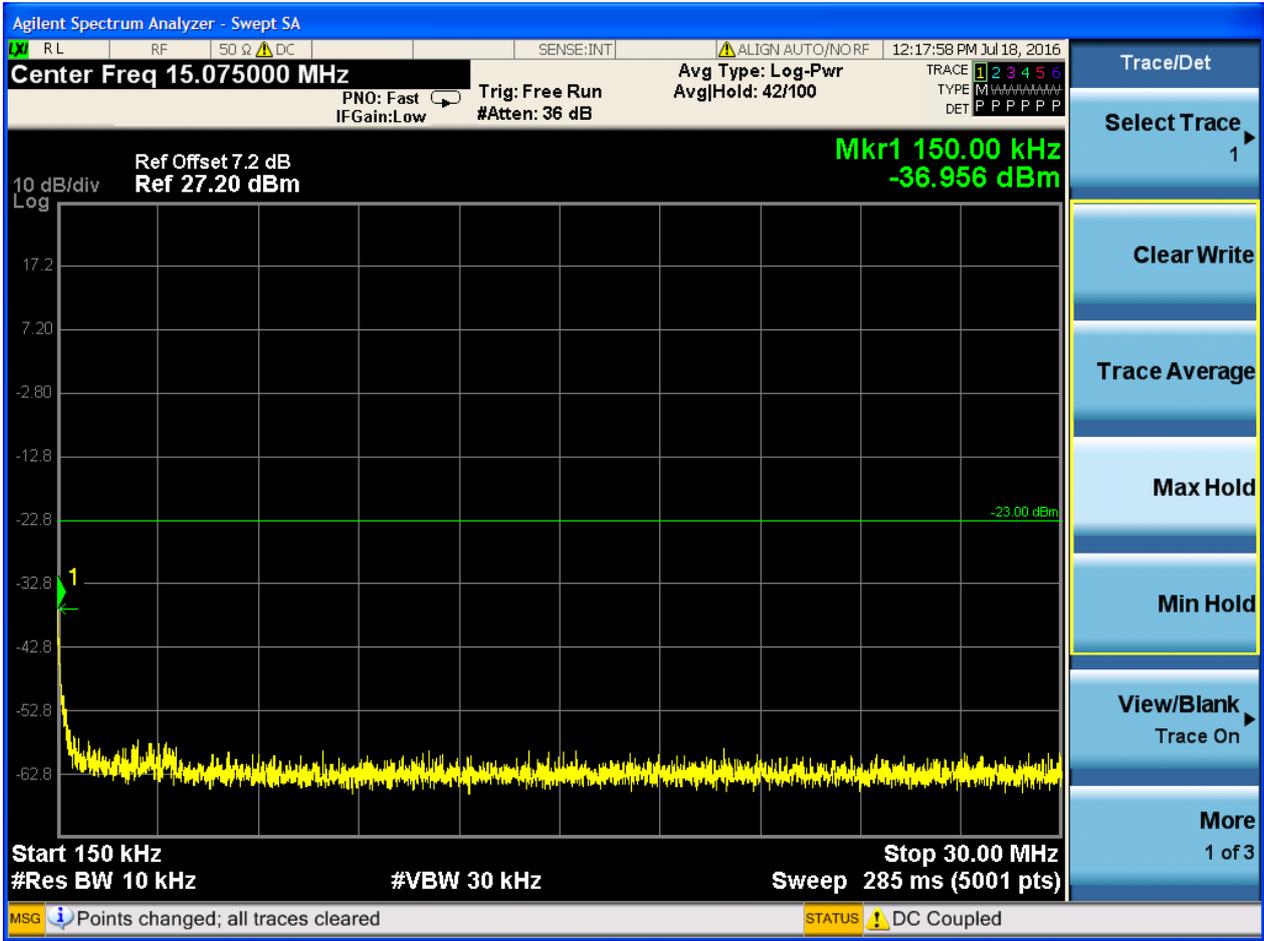
6.1 For UMTS

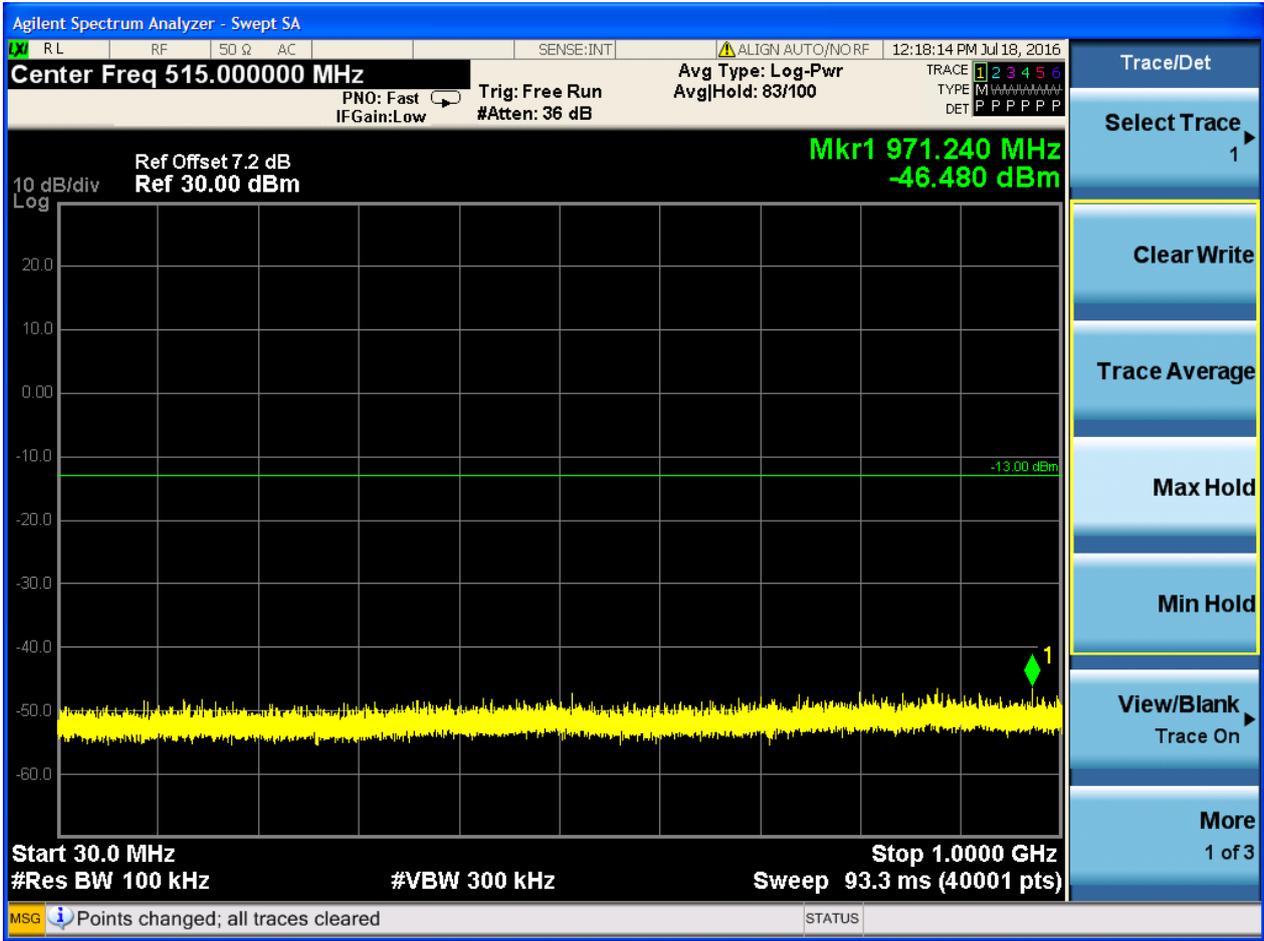
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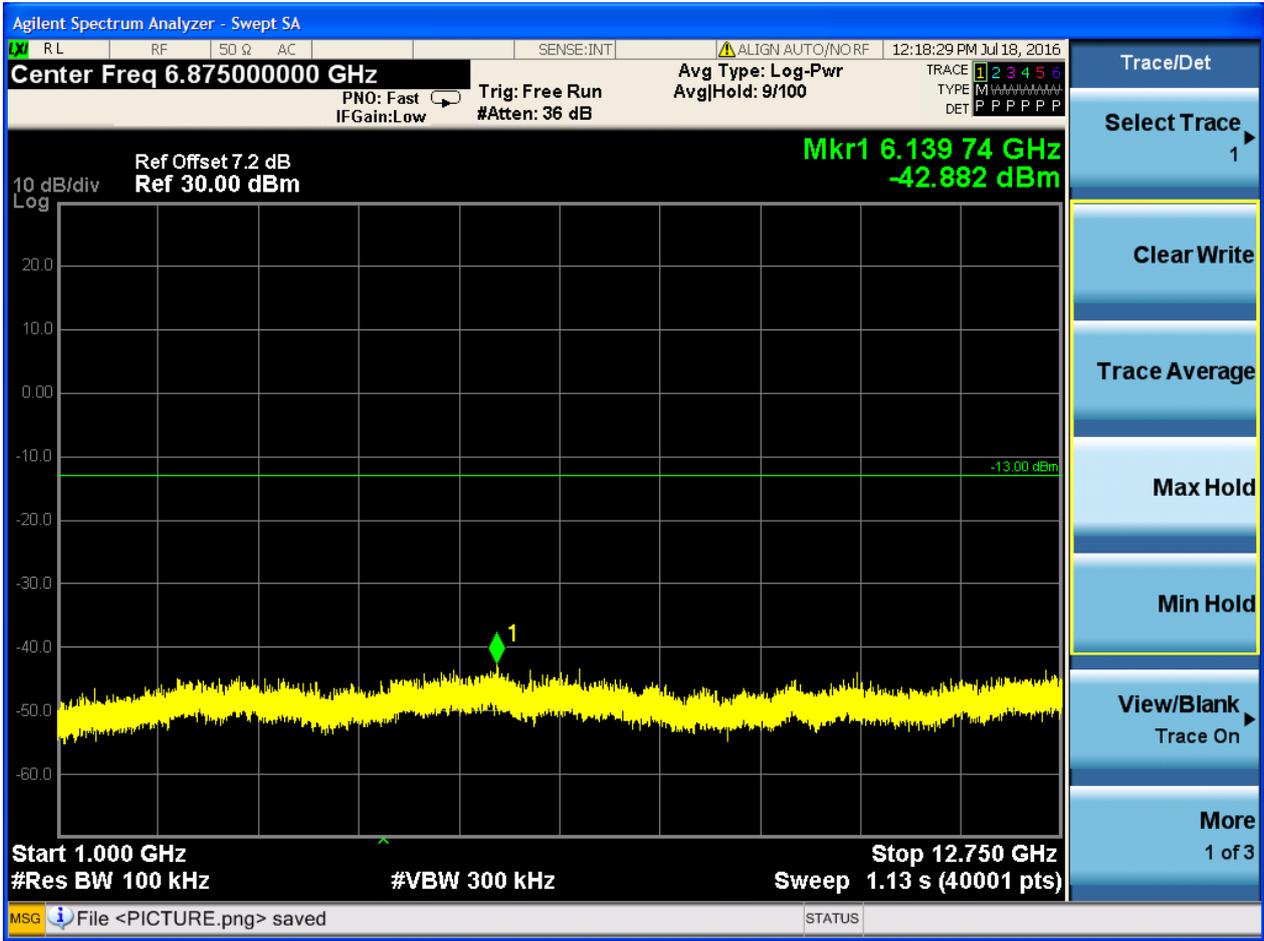
6.1.1.1 Test Mode = UMTS/TM1

6.1.1.1.1 Test Channel = LCH



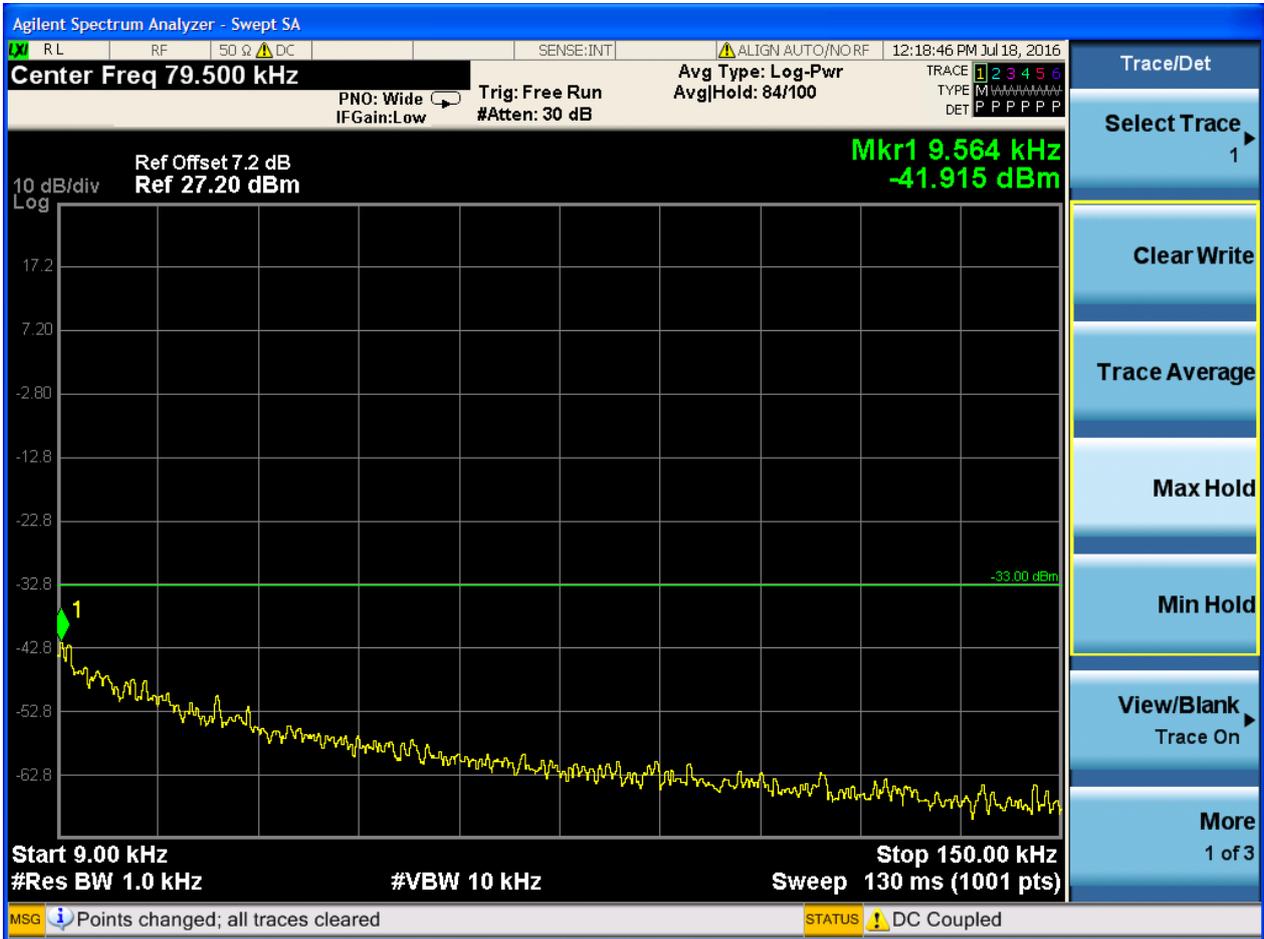


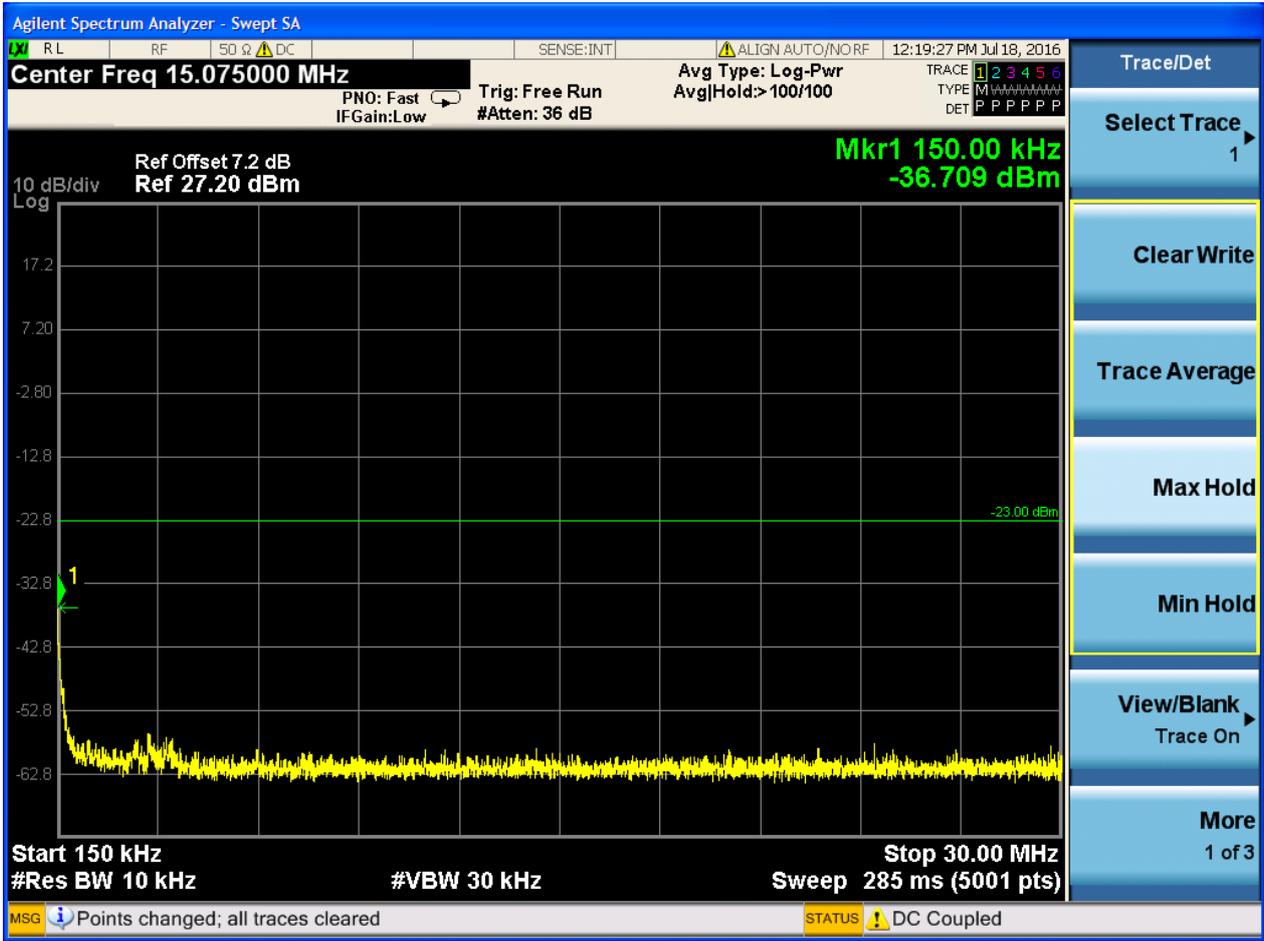


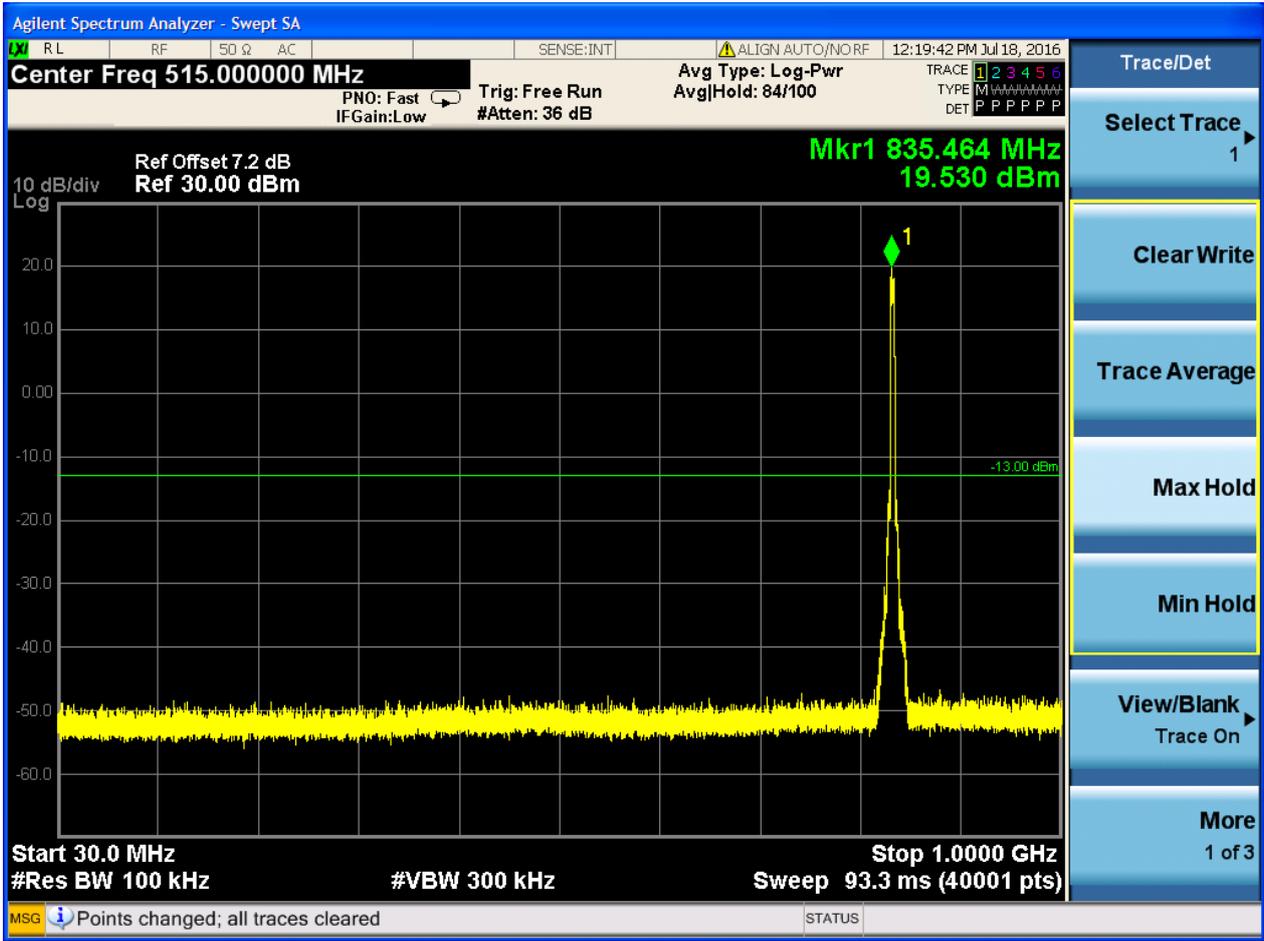


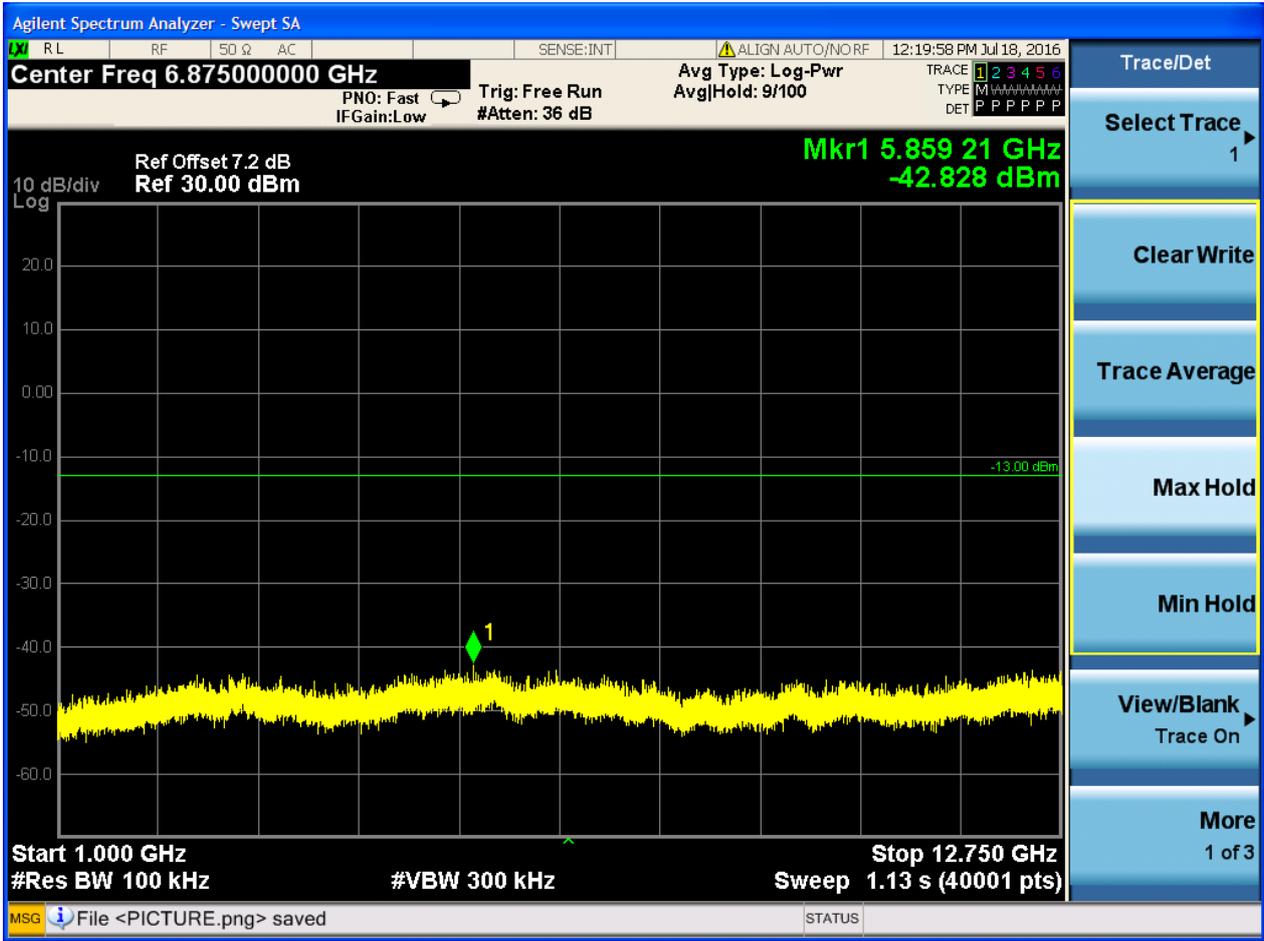


6.1.1.1.2 Test Channel = MCH

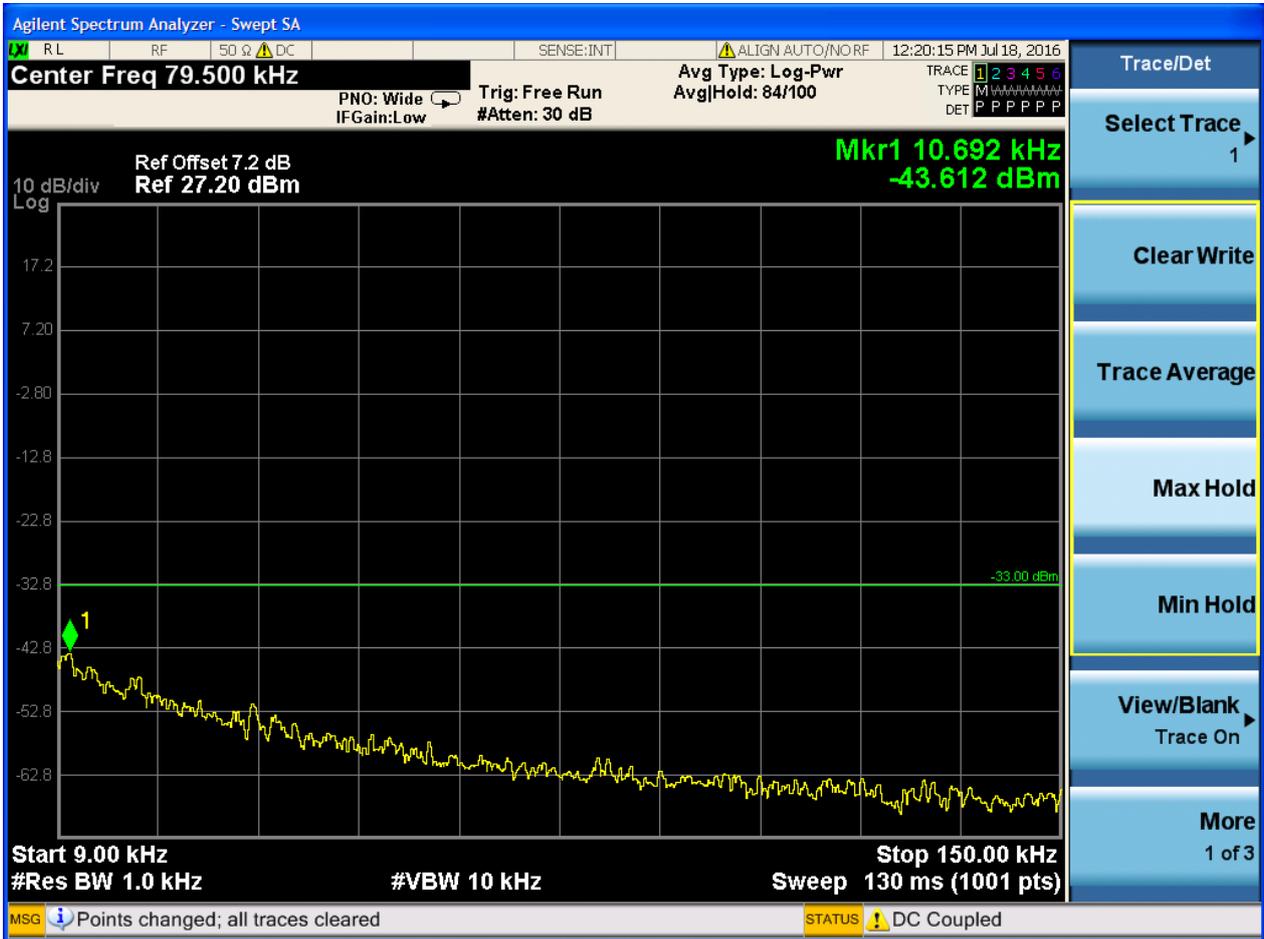


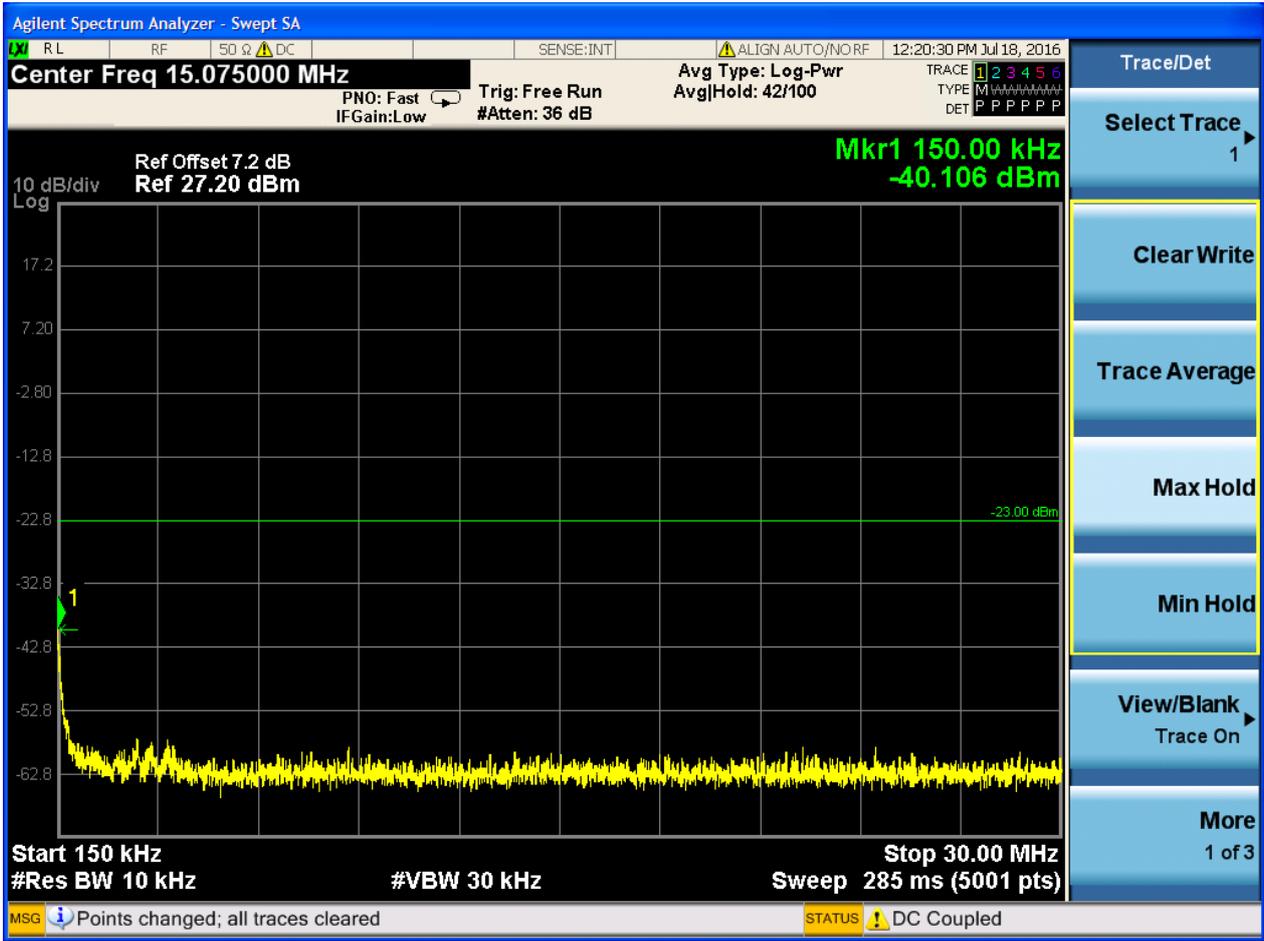


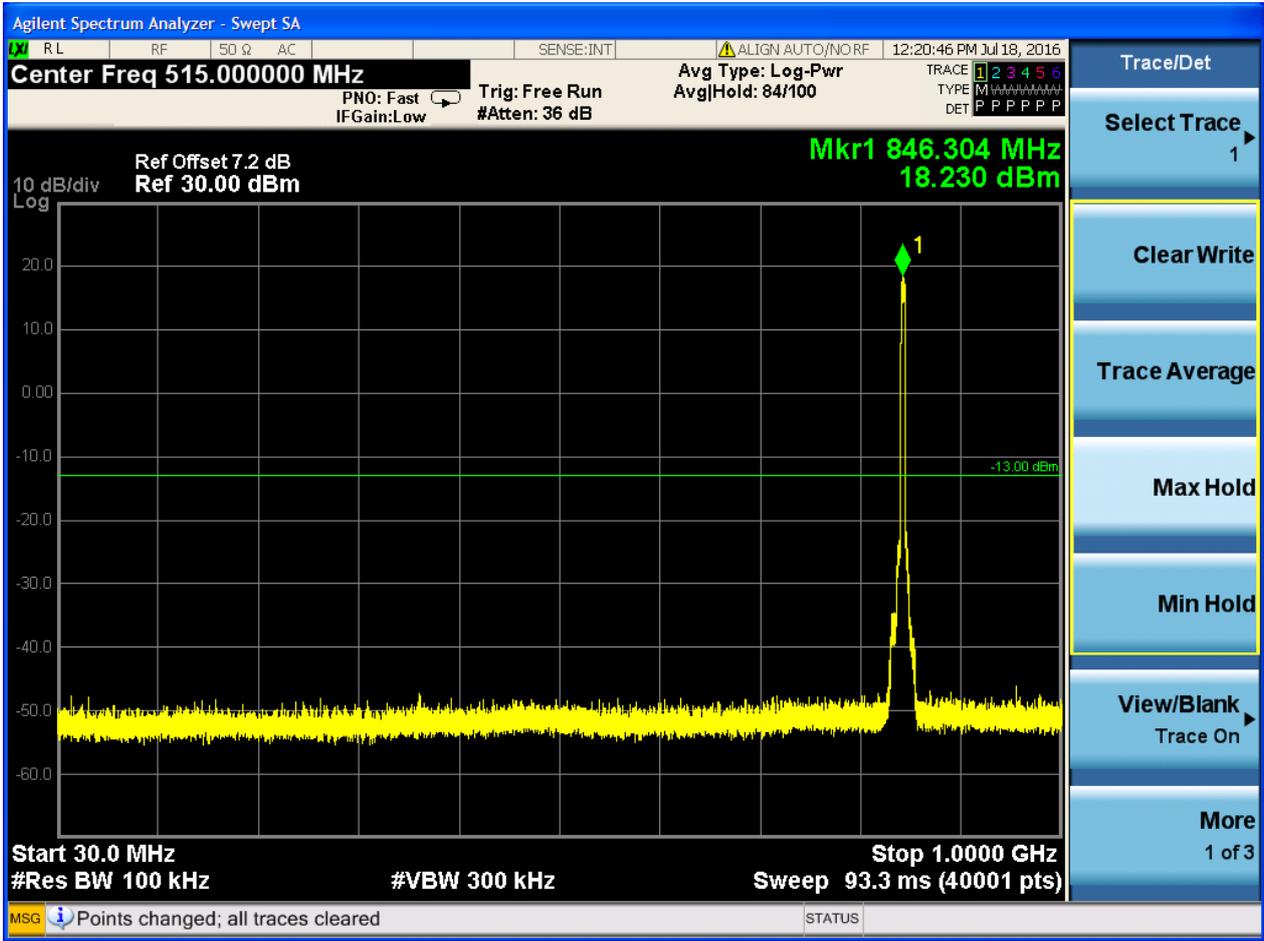


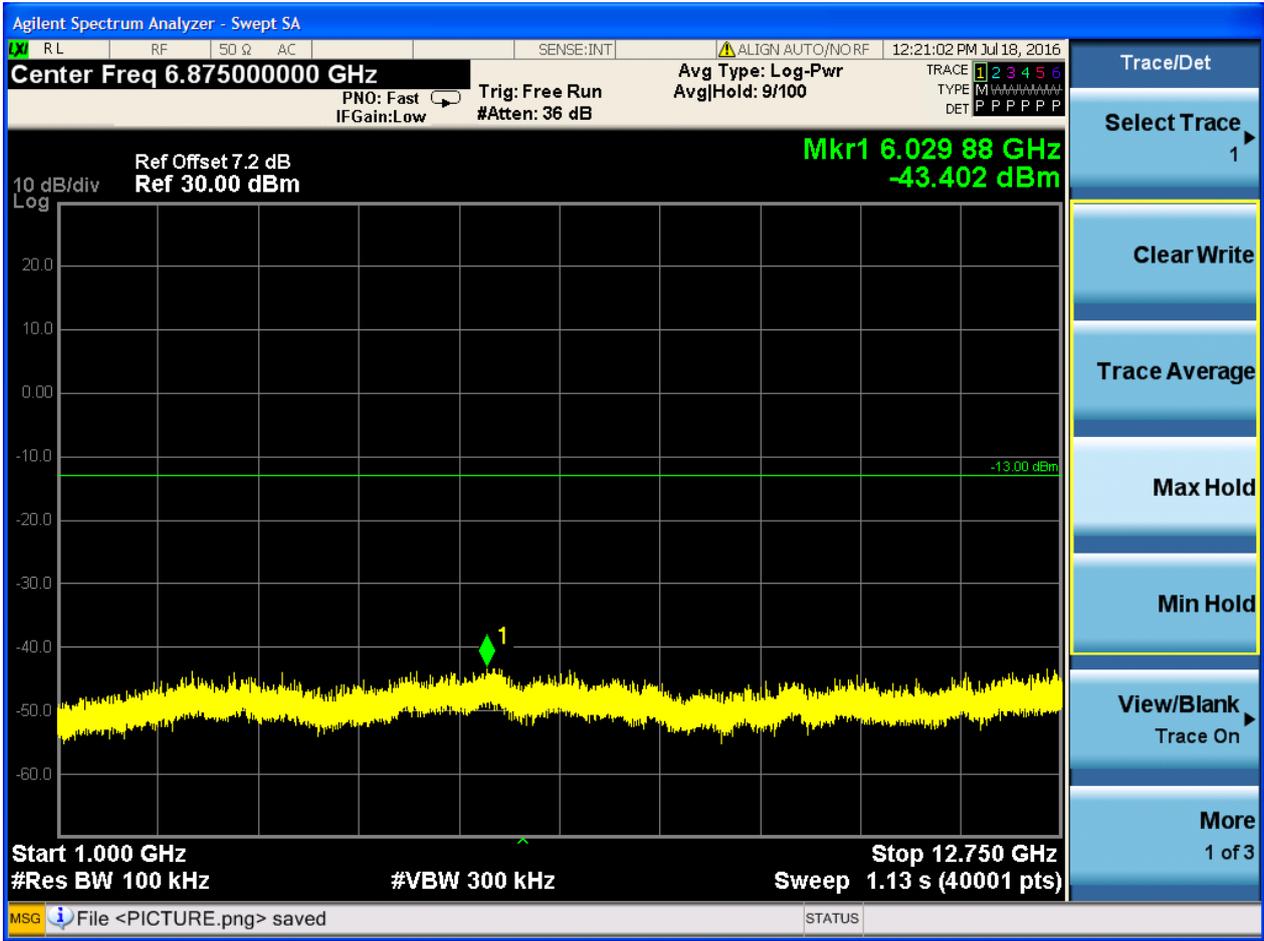


6.1.1.1.3 Test Channel = HCH









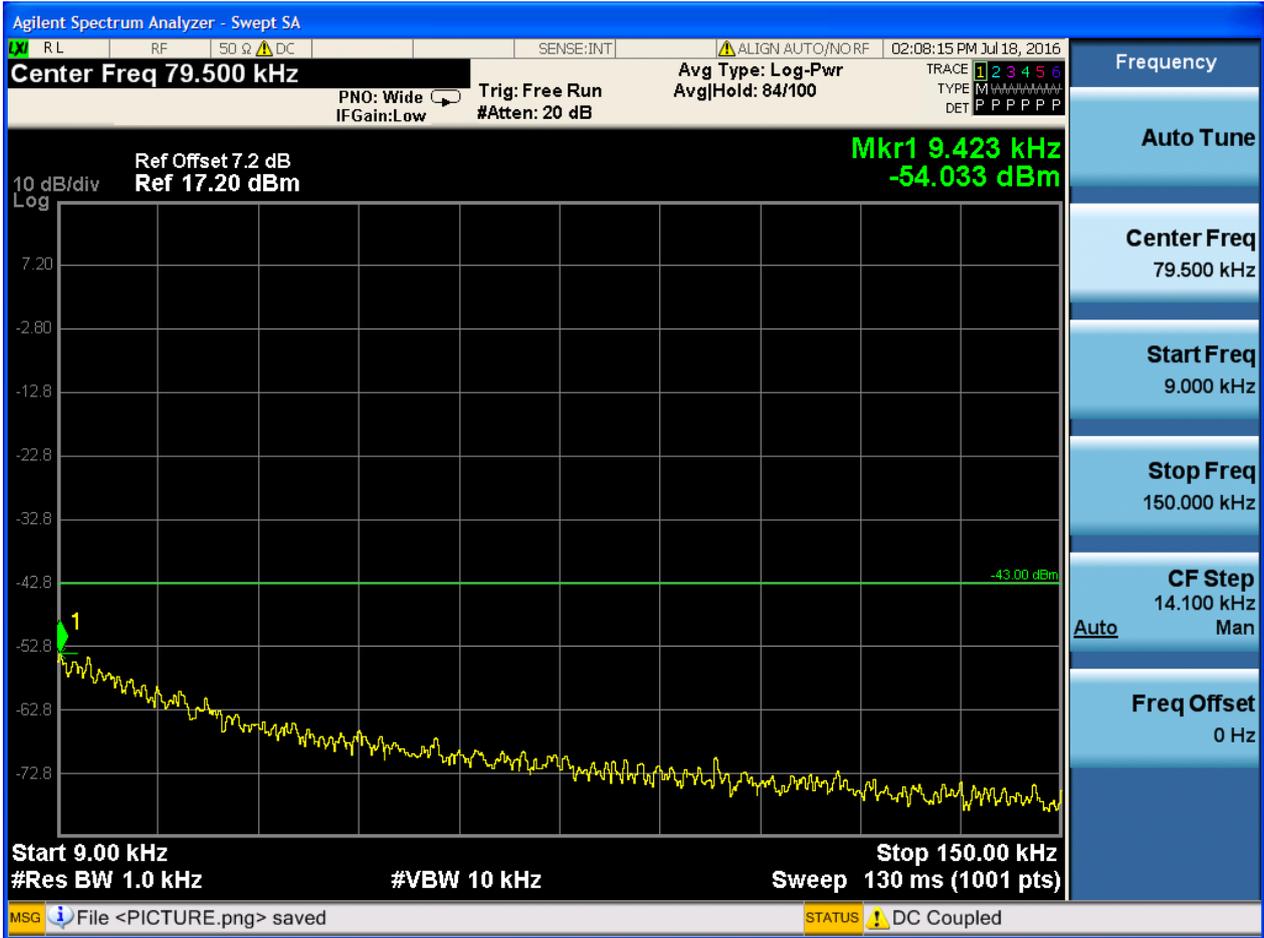


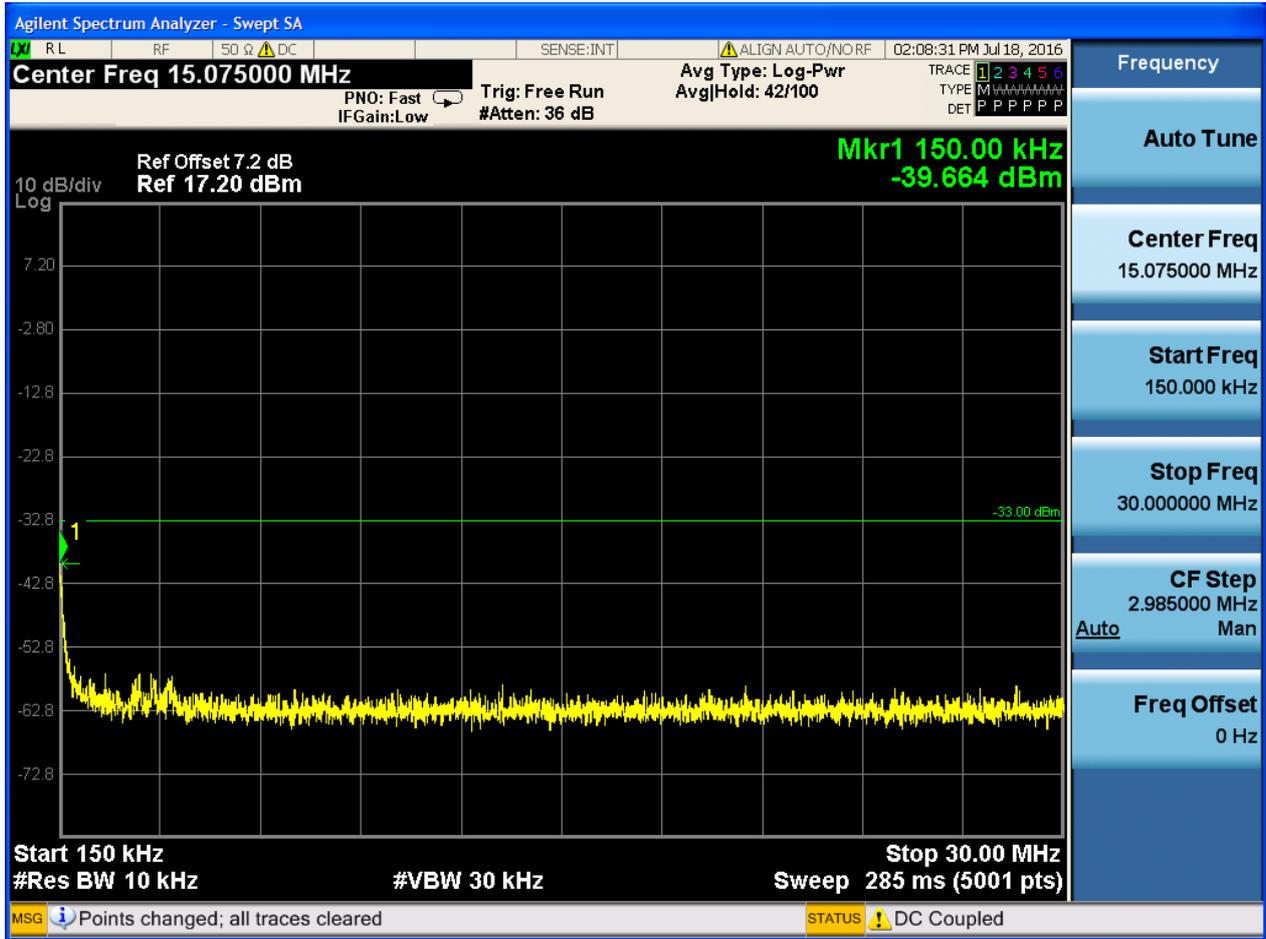
6.2 For UMTS

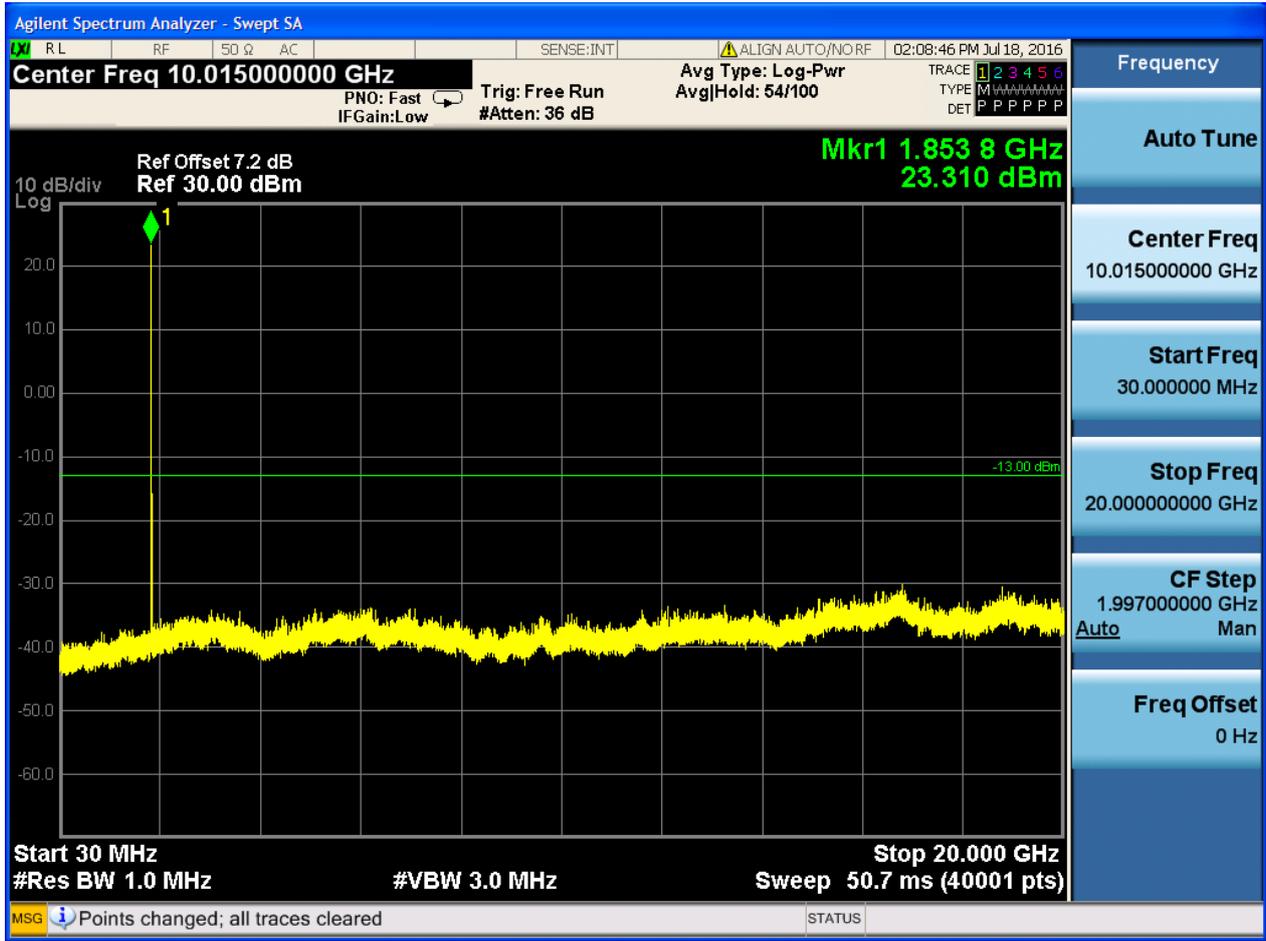
6.2.1 Test Band = WCDMA1900

6.2.1.1 Test Mode = UMTS/TM1

6.2.1.1.1 Test Channel = LCH

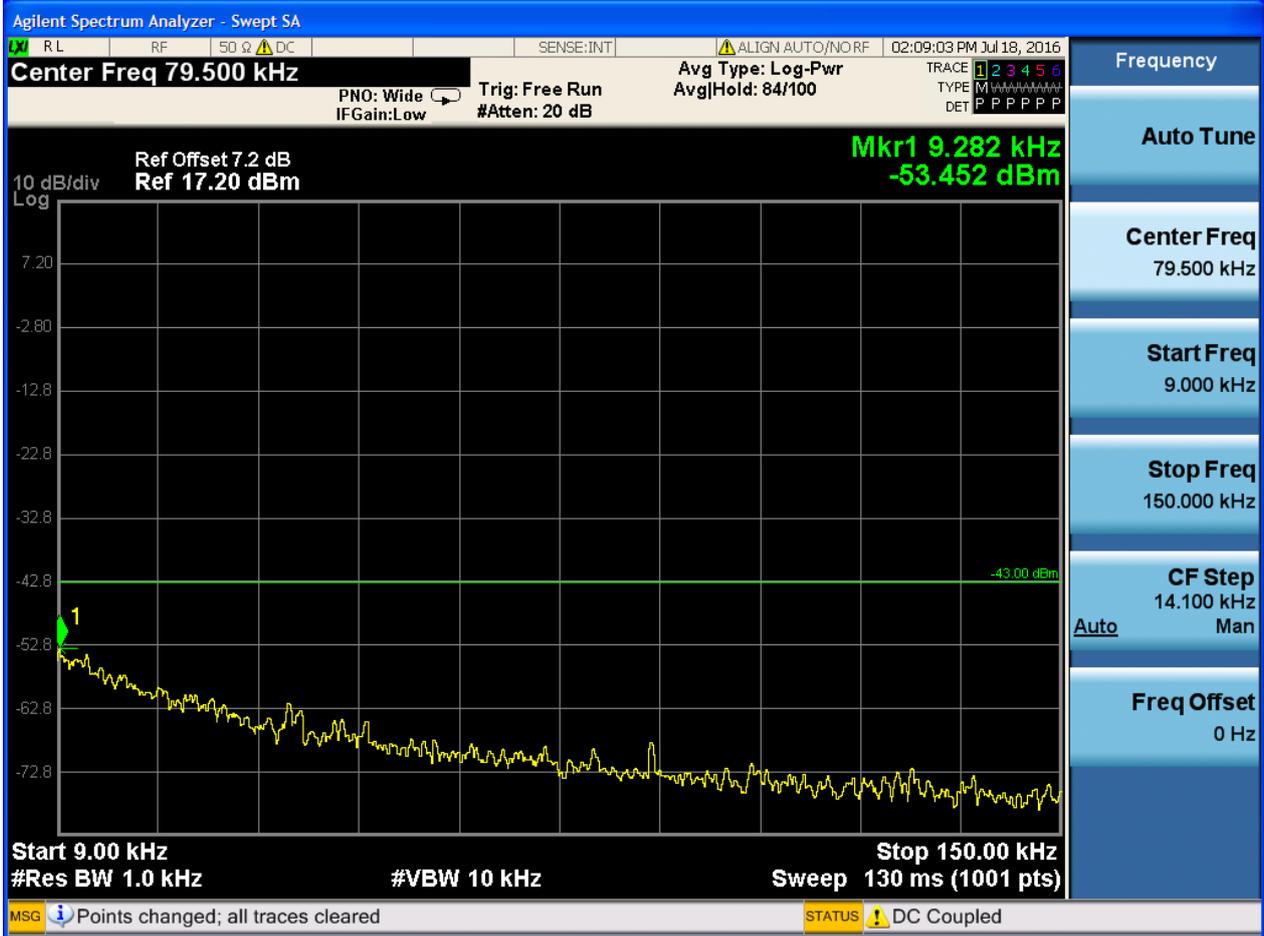


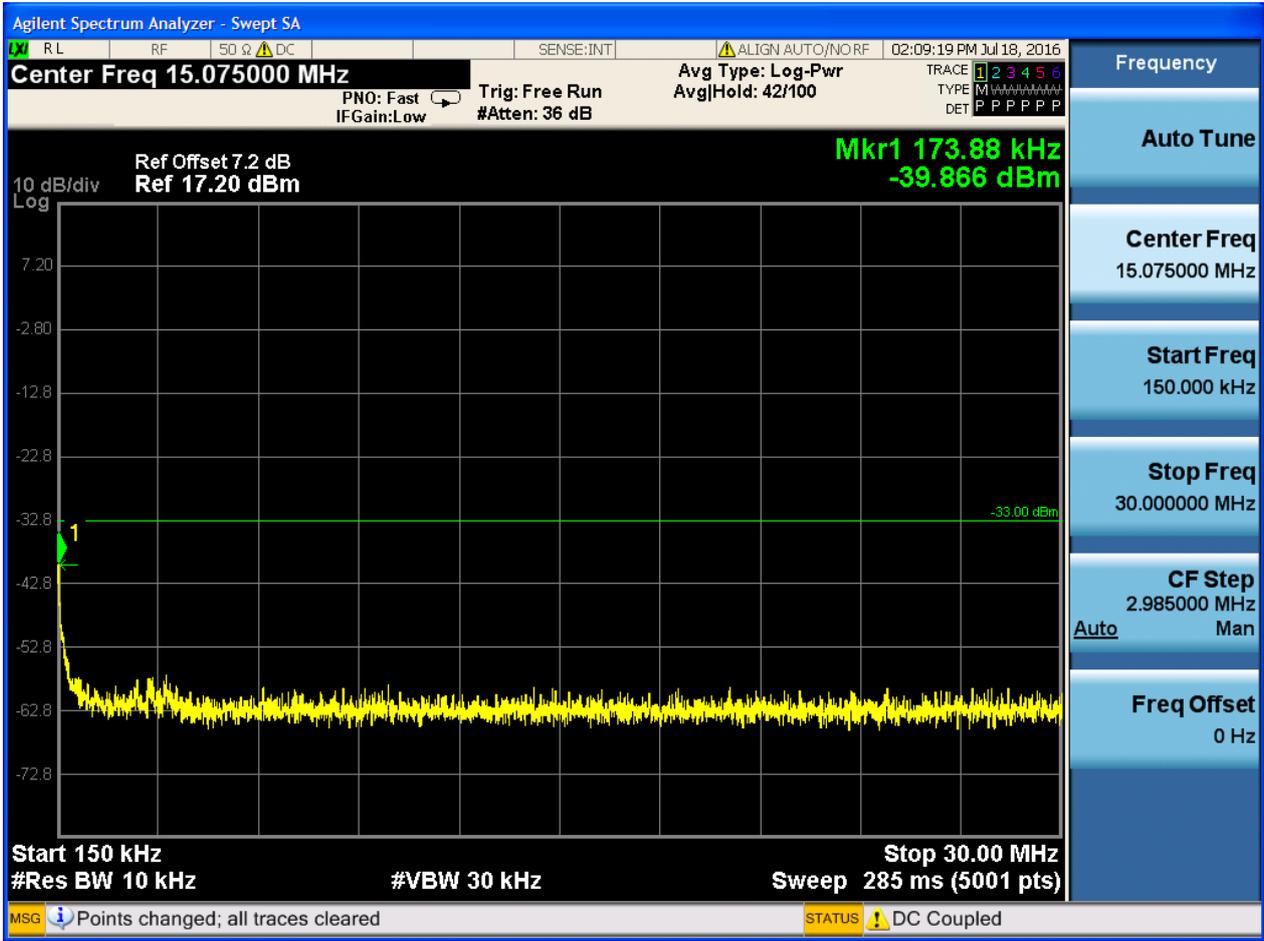


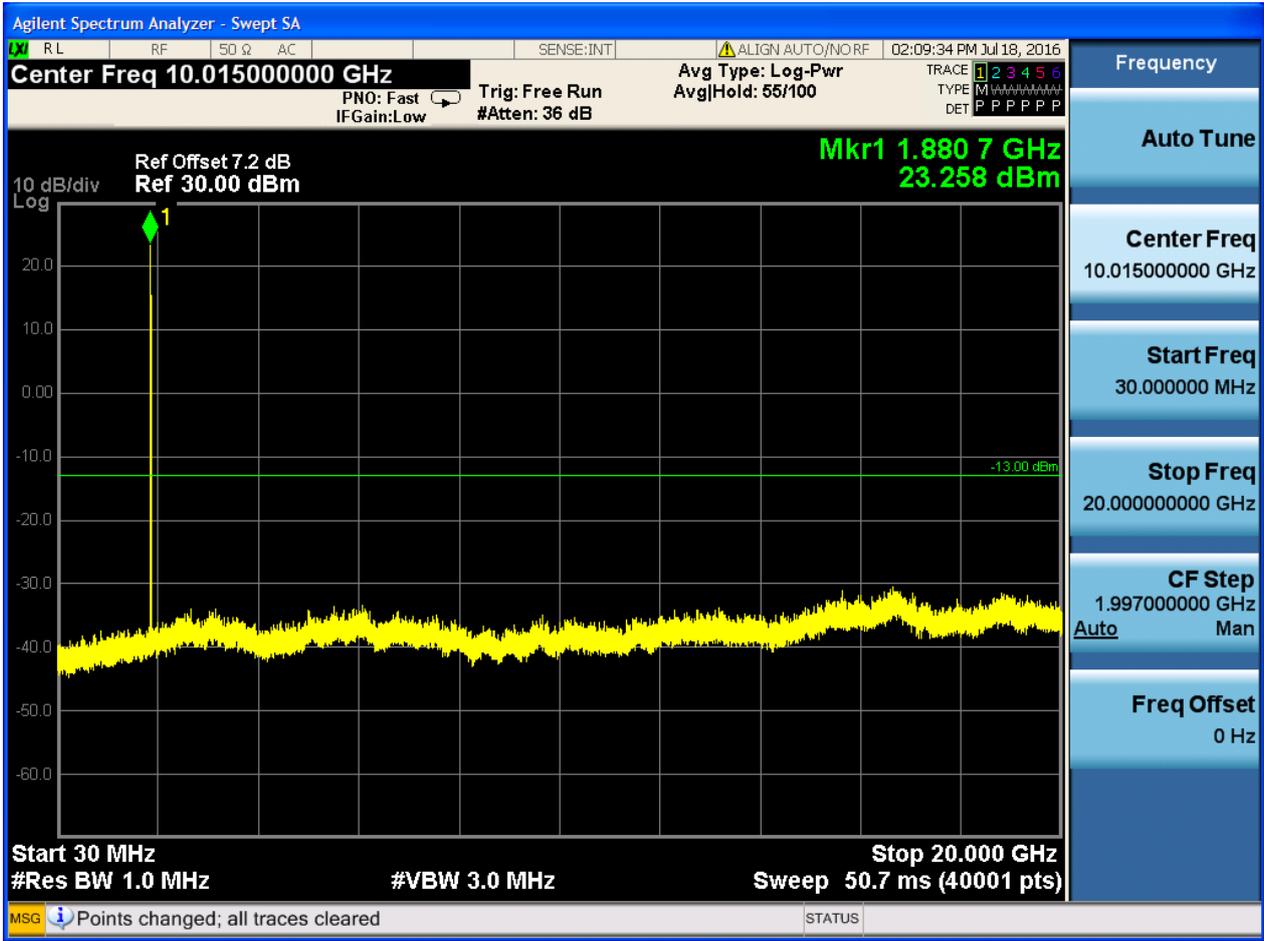




6.2.1.1.2 Test Channel = MCH



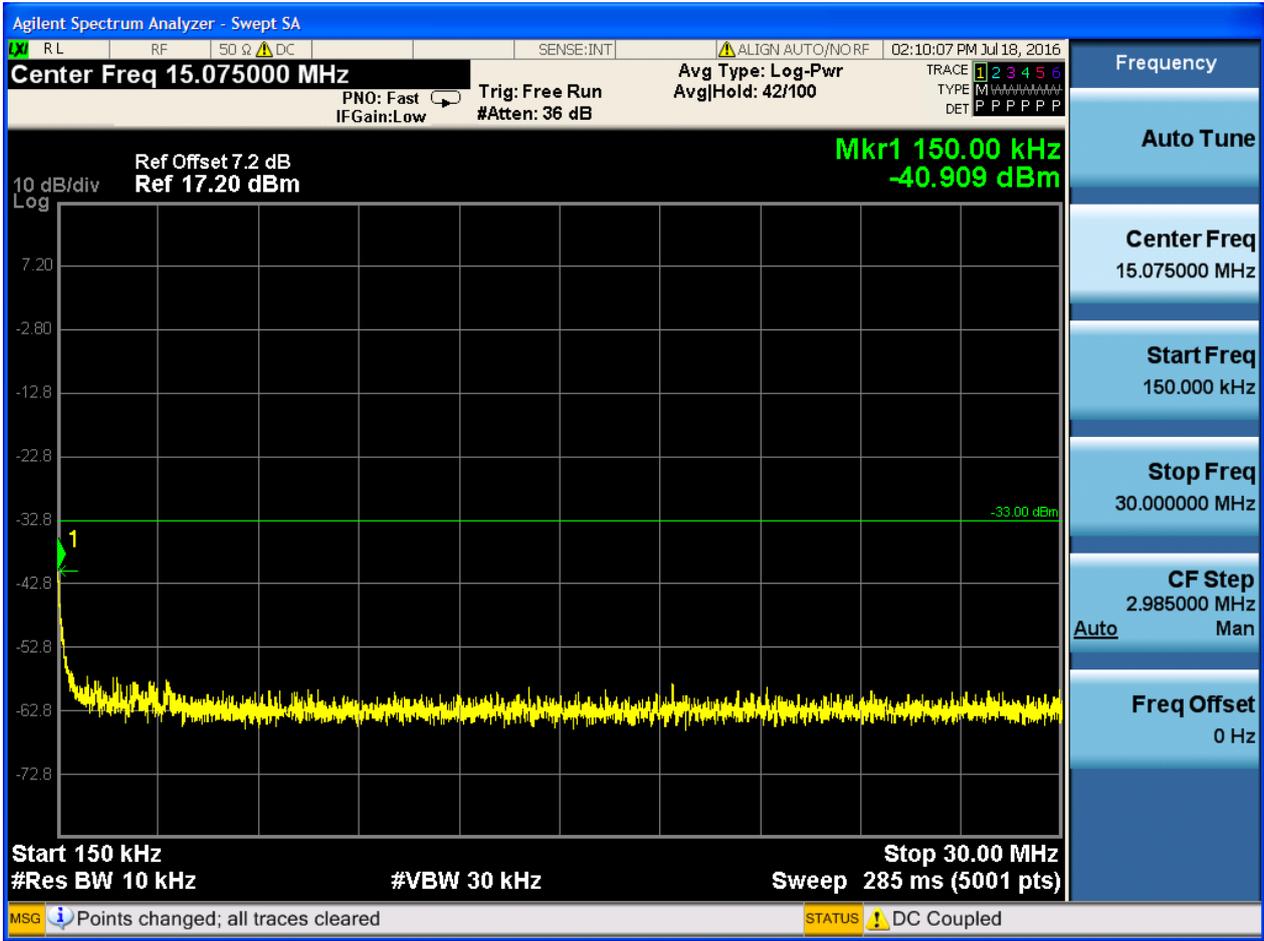


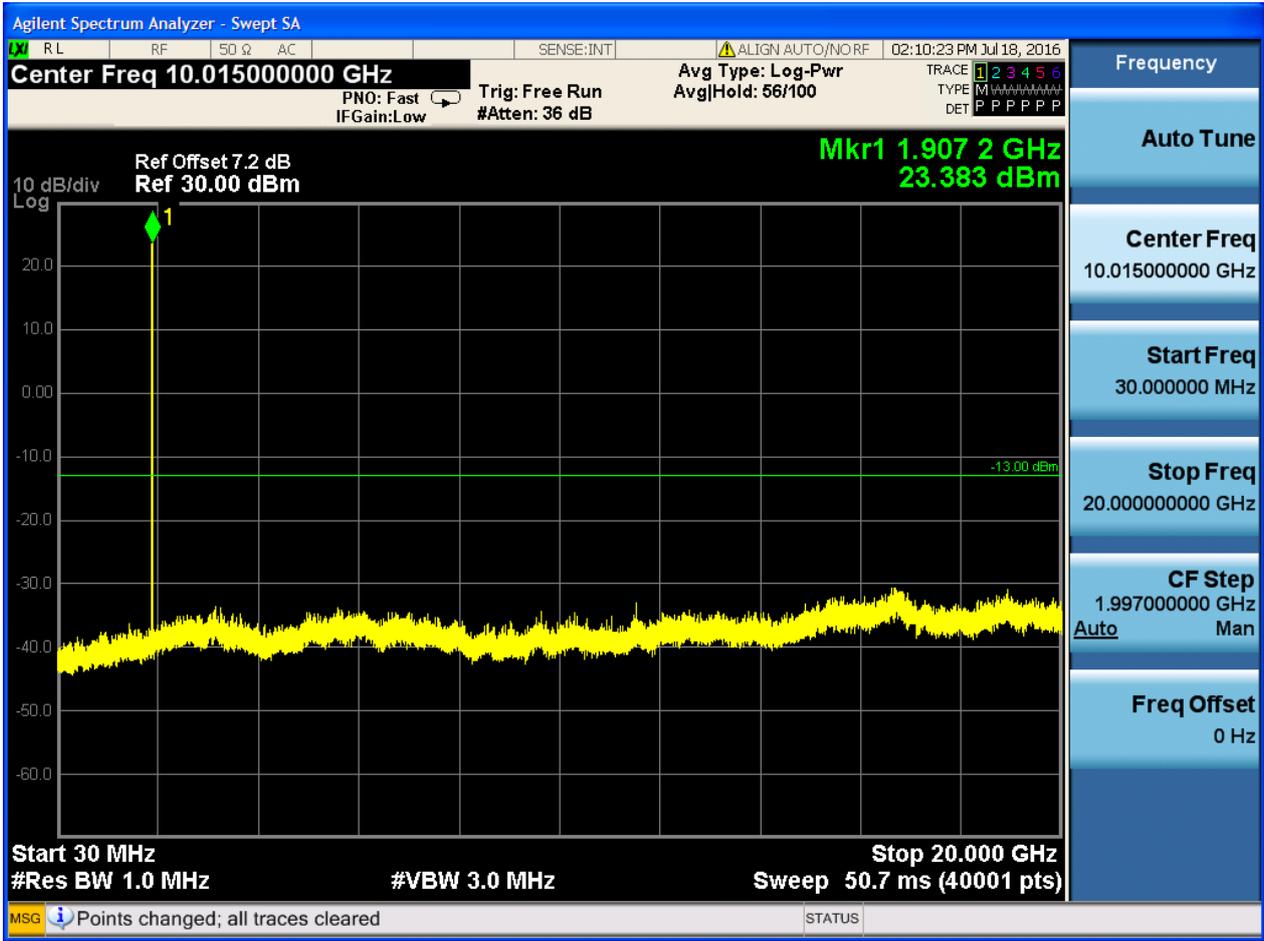




6.2.1.1.3 Test Channel = HCH







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

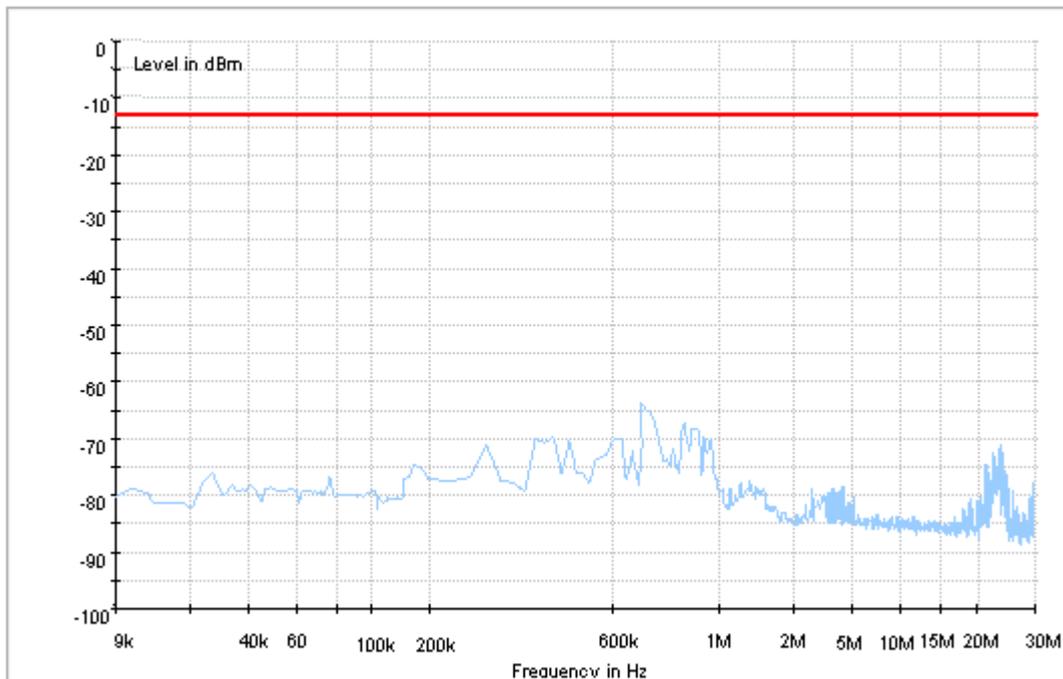
Above 1GHz, RBW = 1 MHz, VBW = 3 MHz. Detector: PK

Part I - Test Plots

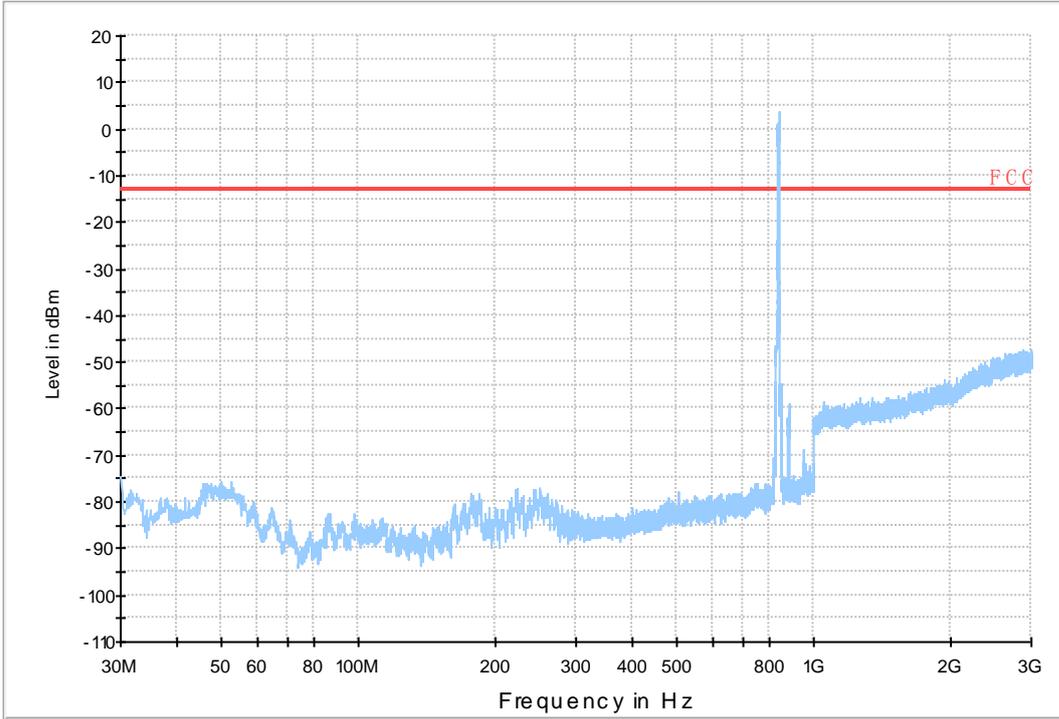
7.1 For UMTS

7.1.1 Test Band = WCDMA850-ANT1

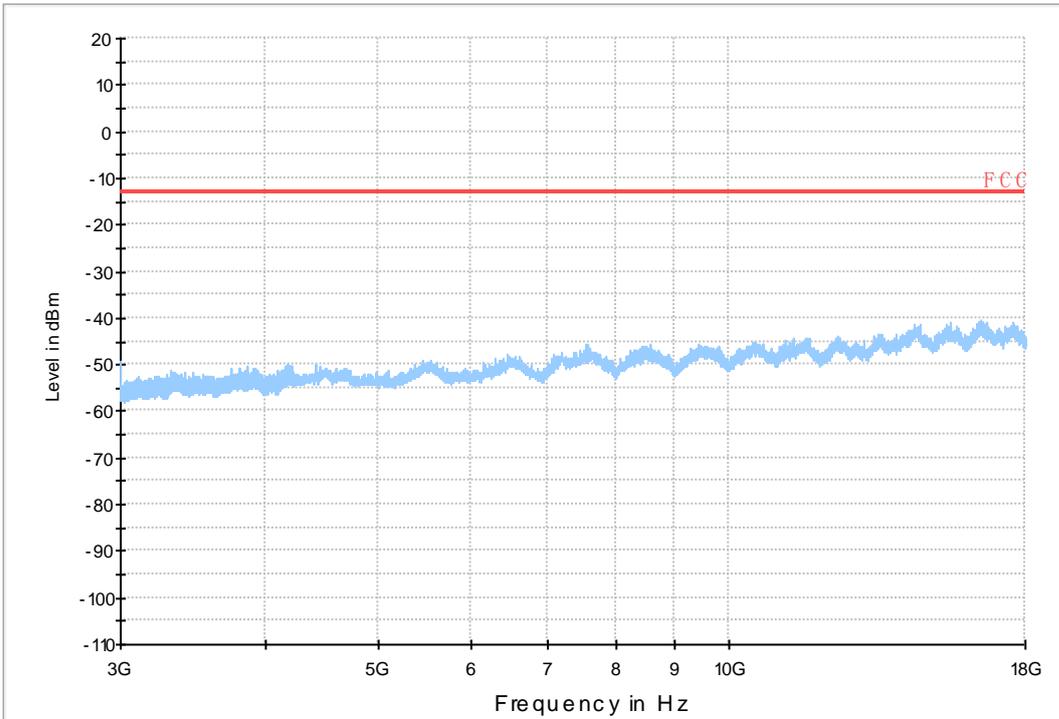
7.1.1.1 Test Mode = UMTS/TM1



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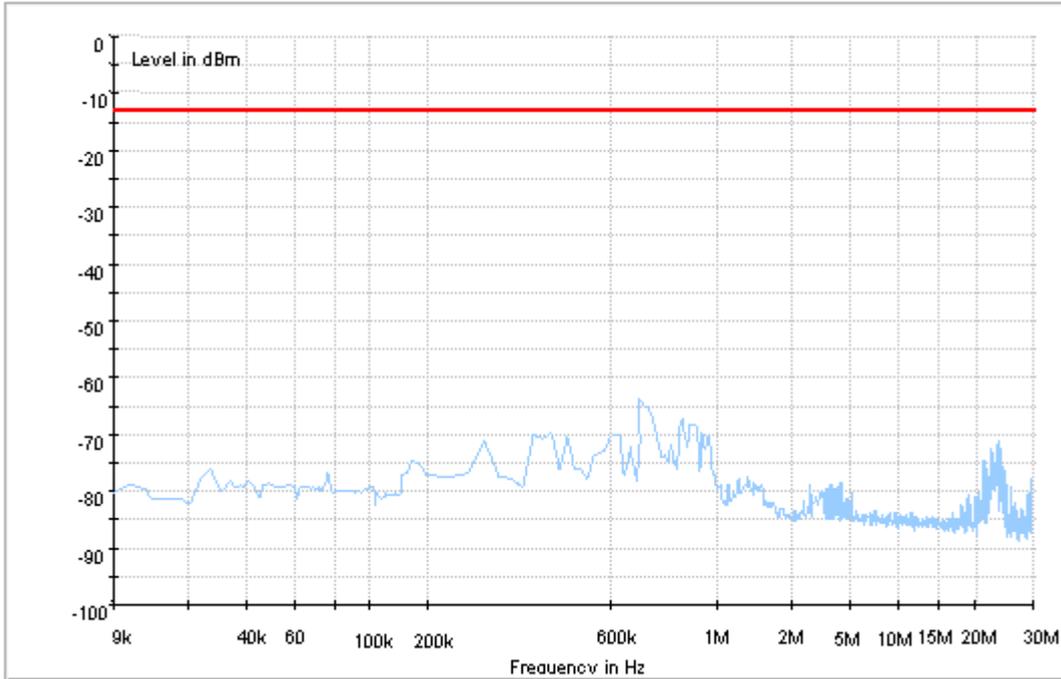


Copy of FCC PART22 W CDM A850_H

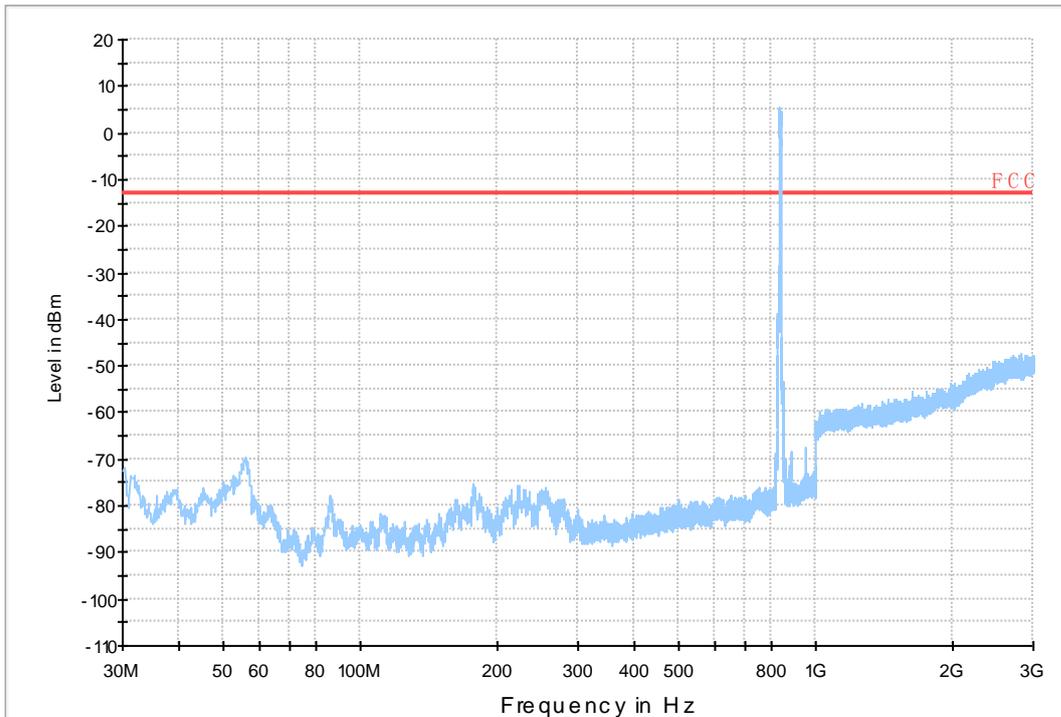


7.1.2 Test Band = WCDMA850-ANT2

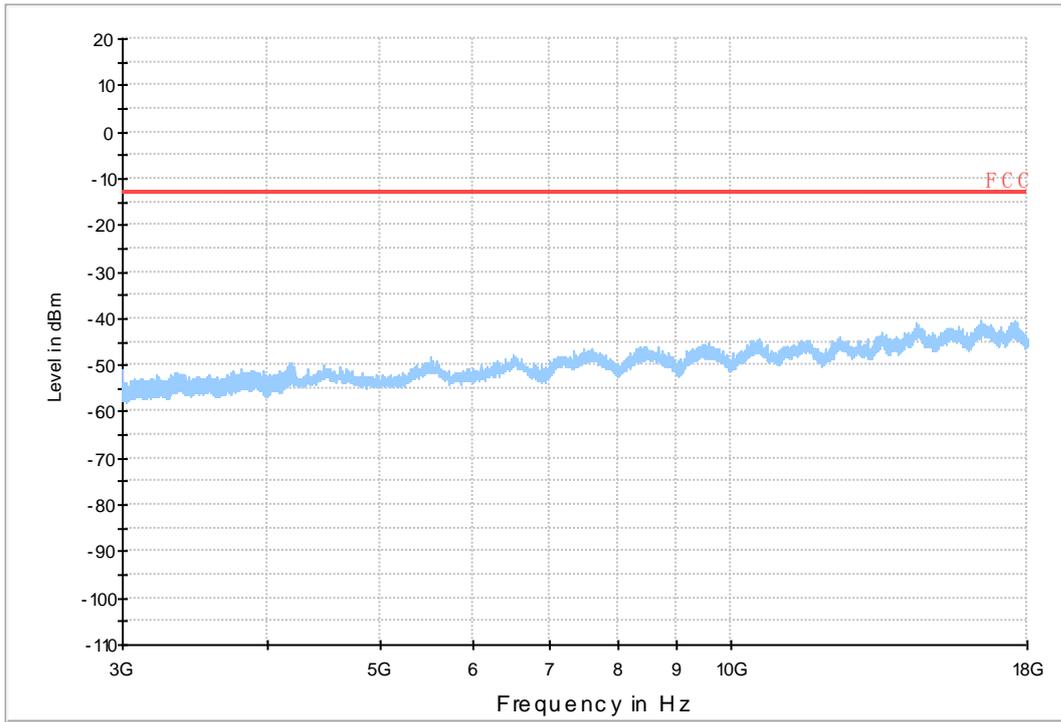
7.1.2.1 Test Mode = UMTS/TM1



Copy of FCC PART22 WCDMA850_L



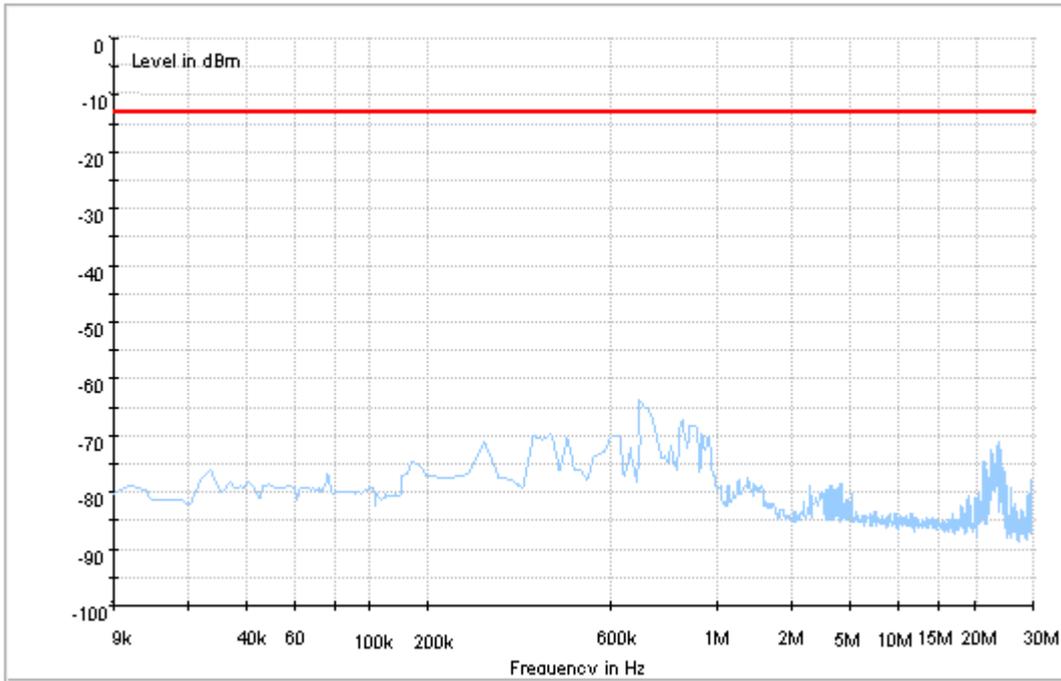
Copy of FCC PART22 W CDM A850_H



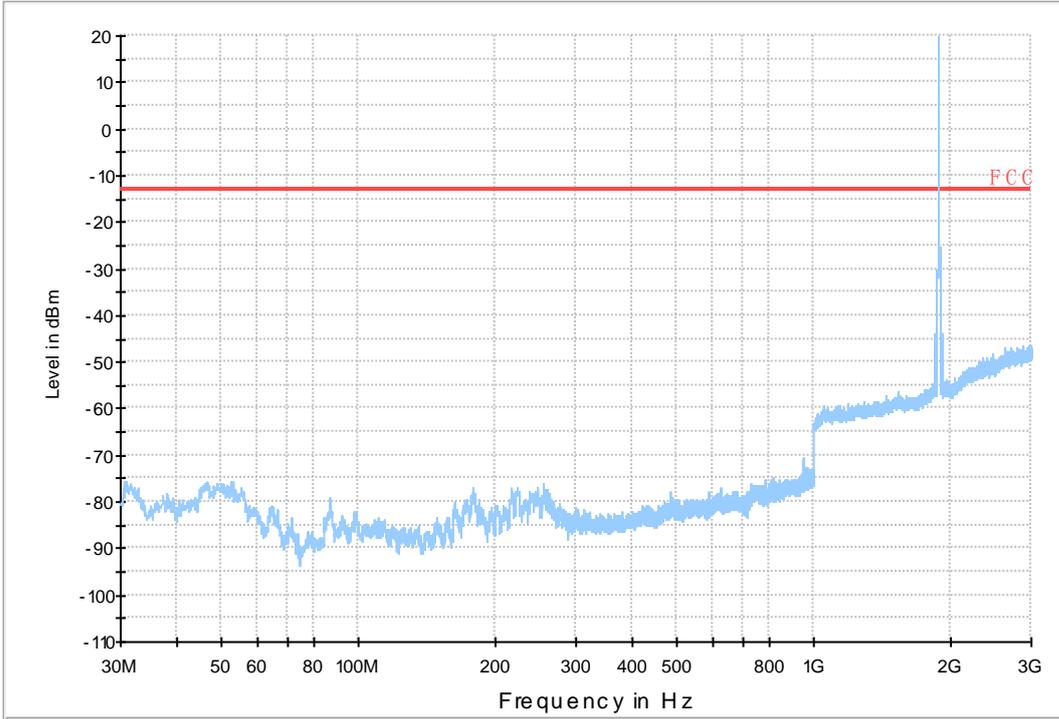
7.2 For UMTS

7.2.1 Test Band = WCDMA1900

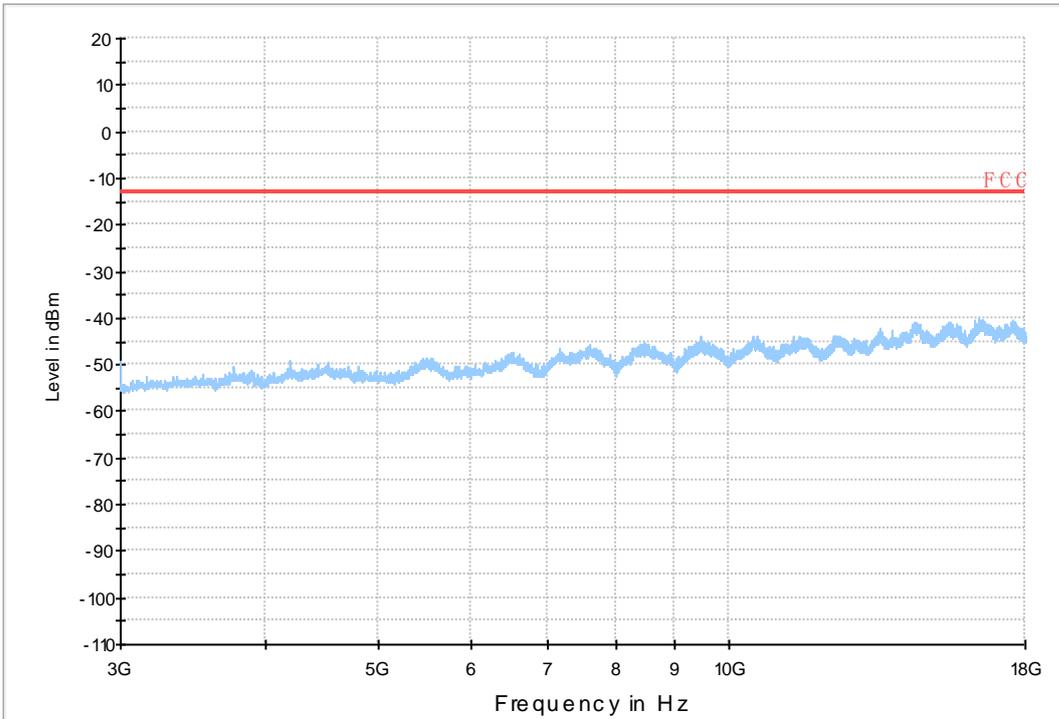
7.2.1.1 Test Mode = UMTS/TM1

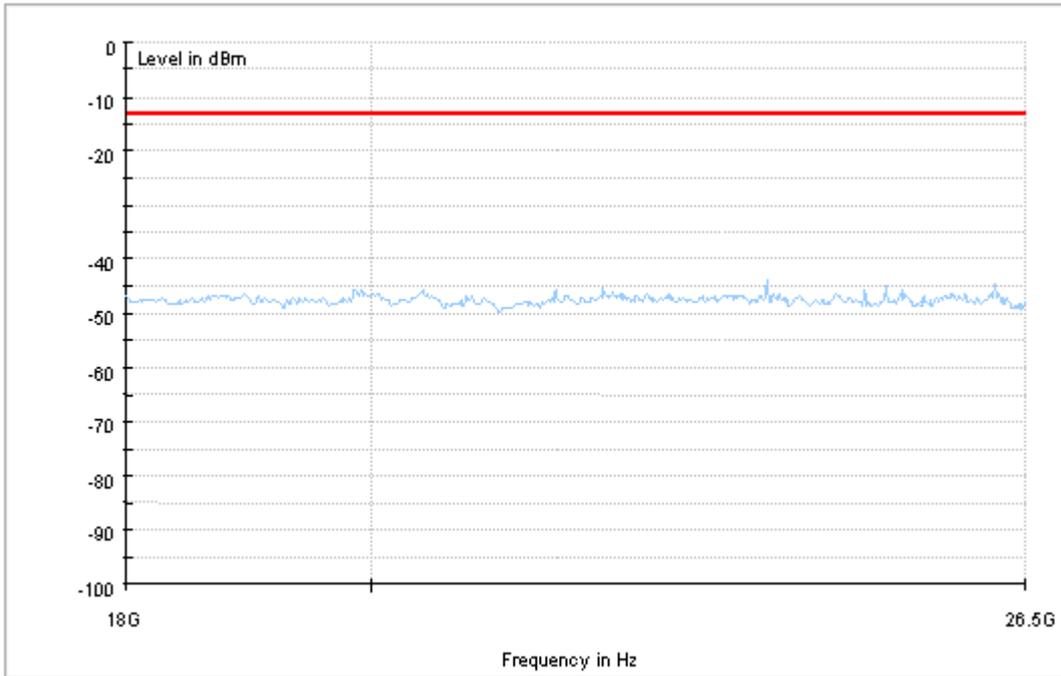


Copy of FCC PART24 W CDMA1900_L



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/TM 1	LCH	TN	VL	-1.11	-0.00134	PASS
				VN	-1.11	-0.00134	PASS
				VH	0.73	0.00088	PASS
		MCH	TN	VL	0.37	0.00044	PASS
				VN	-0.41	-0.00049	PASS
				VH	-0.41	-0.00049	PASS
		HCH	TN	VL	-4.26	-0.00503	PASS
				VN	-2.64	-0.00312	PASS
				VH	-2.27	-0.00268	PASS
WCDMA1900	UMTS/TM 1	LCH	TN	VL	1.72	0.00093	PASS
				VN	3.56	0.00192	PASS
				VH	1.51	0.00082	PASS
		MCH	TN	VL	-0.6	-0.00032	PASS
				VN	-1.79	-0.00095	PASS
				VH	-0.21	-0.00011	PASS
		HCH	TN	VL	-2.78	-0.00146	PASS
				VN	-4.99	-0.00262	PASS
				VH	-5.71	-0.00299	PASS



8.1.2 Frequency Error vs. Temperature:

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
WCDMA850	UMTS/T M1	LCH	VN	-30	0.26	0.00031	PASS
				-20	1.68	0.00203	PASS
				-10	-0.89	-0.00108	PASS
				0	1.82	0.0022	PASS
				10	1.05	0.00127	PASS
				20	1.59	0.00192	PASS
				30	2.49	0.00301	PASS
				40	0.64	0.00077	PASS
				50	-1.08	-0.00131	PASS
		MCH	VN	-30	0.29	0.00035	PASS
				-20	-3.02	-0.00361	PASS
				-10	-2.09	-0.0025	PASS
				0	-4.01	-0.00479	PASS
				10	-0.9	-0.00108	PASS
				20	-2.14	-0.00256	PASS
				30	-1.92	-0.0023	PASS
				40	-2	-0.00239	PASS
				50	-2.38	-0.00285	PASS
		HCH	VN	-30	-1.68	-0.00198	PASS
				-20	-3.39	-0.004	PASS
				-10	2.59	0.00306	PASS
				0	-5.8	-0.00685	PASS
				10	-4.61	-0.00545	PASS
				20	-4.64	-0.00548	PASS
30	-0.66			-0.00078	PASS		
40	-2.93			-0.00346	PASS		
50	-3.94			-0.00465	PASS		
WCDMA1900	UMTS/T M1	LCH	VN	-30	4.32	0.00233	PASS
				-20	0.17	0.00009	PASS
				-10	2.59	0.0014	PASS
				0	2.88	0.00155	PASS
				10	2.33	0.00126	PASS
				20	2.72	0.00147	PASS
				30	1.1	0.00059	PASS
				40	3.57	0.00193	PASS
				50	1.92	0.00104	PASS
		MCH	VN	-30	-1.83	-0.00097	PASS



Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				-20	-1.36	-0.00072	PASS
				-10	-1.57	-0.00084	PASS
				0	2.53	0.00135	PASS
				10	-2.56	-0.00136	PASS
				20	-1.05	-0.00056	PASS
				30	-1.27	-0.00068	PASS
				40	0.06	0.00003	PASS
				50	-1.31	-0.0007	PASS
		HCH	VN	-30	-6.73	-0.00353	PASS
				-20	-5.23	-0.00274	PASS
				-10	-5.43	-0.00285	PASS
				0	-3.17	-0.00166	PASS
				10	-4.62	-0.00242	PASS
				20	-4.97	-0.00261	PASS
				30	-5.34	-0.0028	PASS
				40	-6.64	-0.00348	PASS
				50	-5.52	-0.00289	PASS

END