



Appendix for test report

1Appendix_A: Effective (Isotropic) Radiated Power Output Data

Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dBm]	EIRP [dBm]	Limit [dBm]	Verdict
WCDMA1900	UMTS/TM1	LCH	22.83	20.93	33	PASS
		MCH	22.89	20.99	33	PASS
		HCH	22.89	20.99	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:

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

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

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

$$\text{SET Sweep time} = \text{auto-couple.}$$

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	3.22	13	PASS
		MCH	3.22	13	PASS
		HCH	3.26	13	PASS

3Appendix_C: Modulation Characteristics

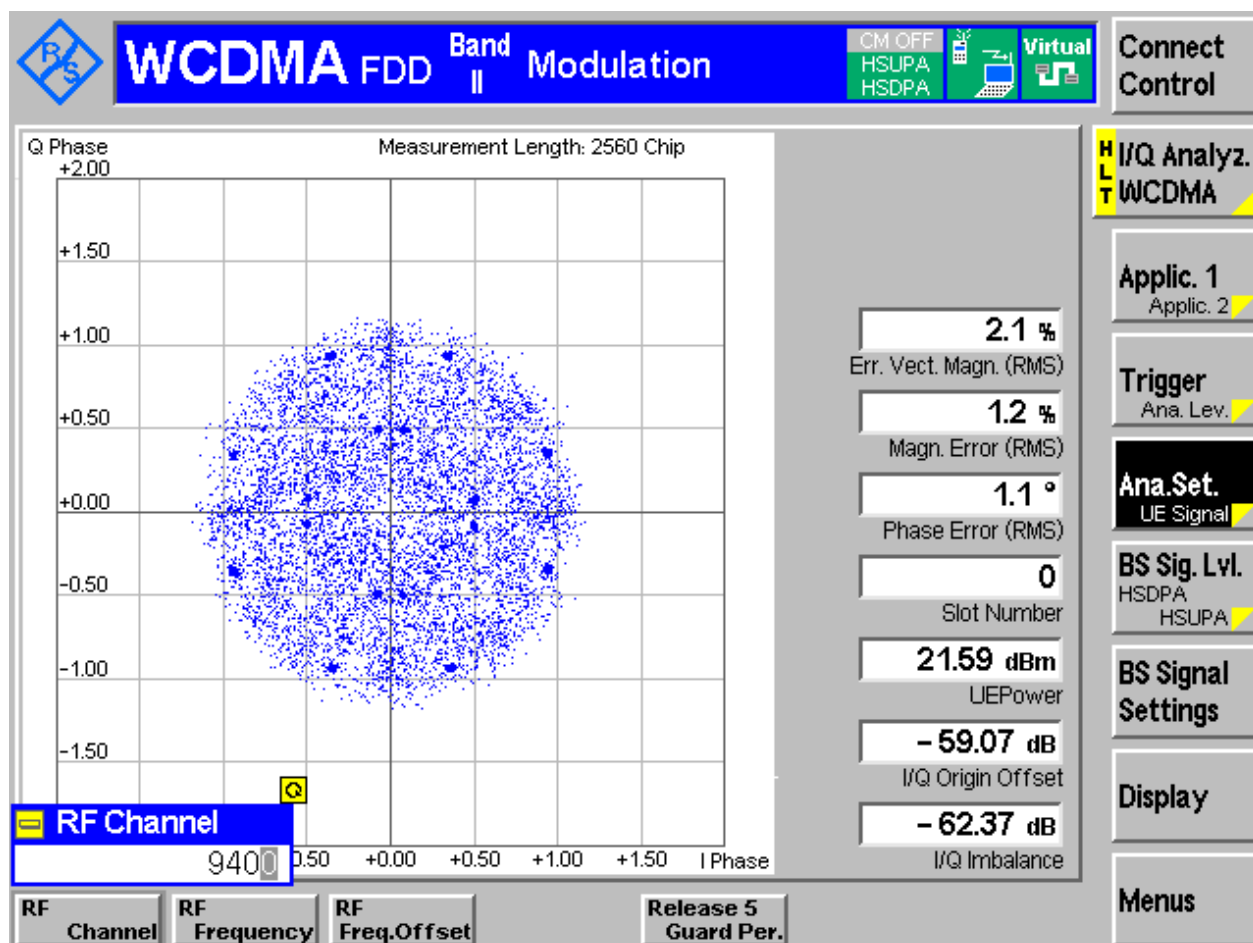
Part I - Test Plots

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





4Appendix_D: Bandwidth

Part I - Test Results

Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
WCDMA1900	UMTS/TM1	LCH	4.17	4.68	Pass
		MCH	4.16	4.67	Pass
		HCH	4.16	4.69	Pass

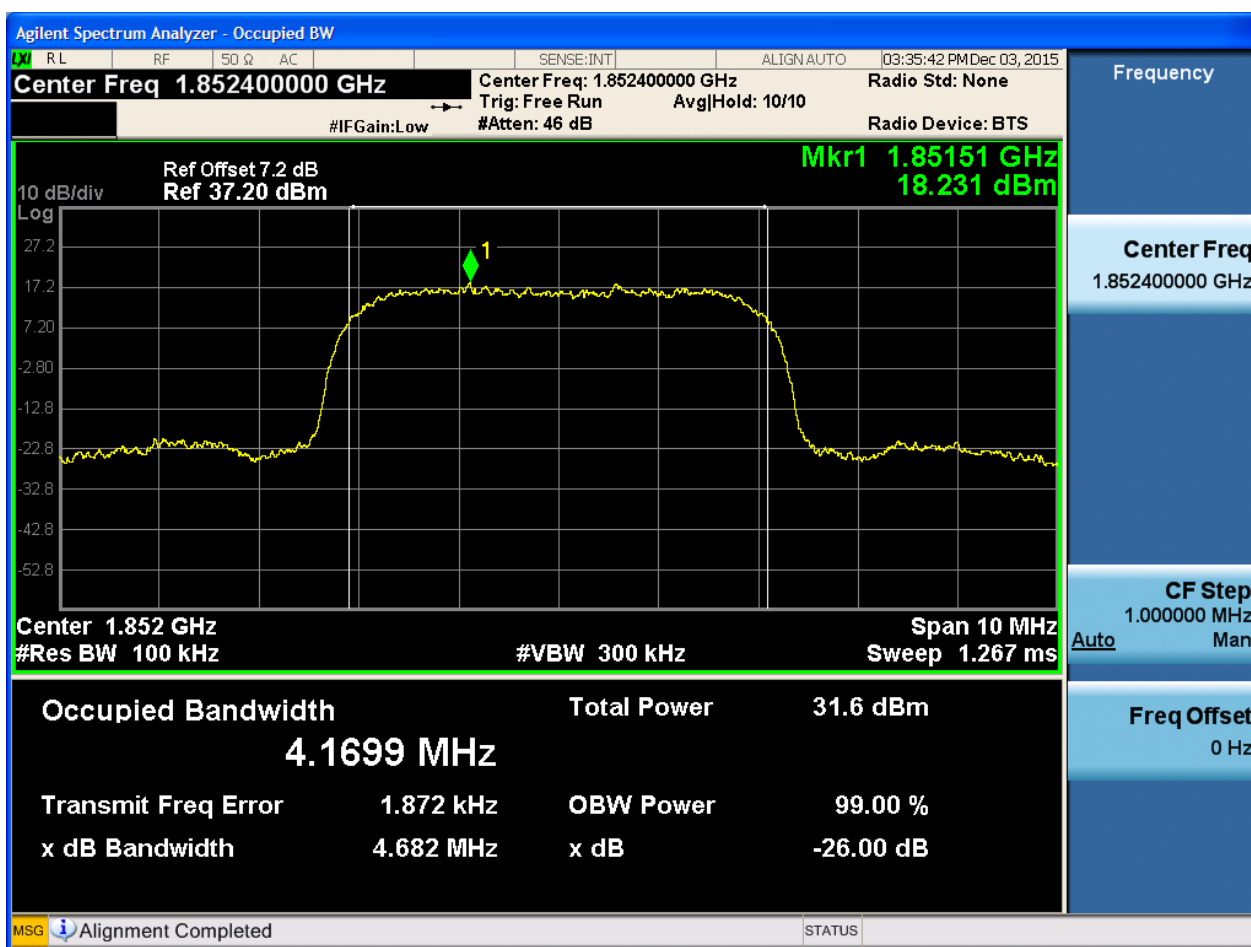
Part II - Test Plots

4.1 For UMTS

4.1.1 Test Band = WCDMA1900

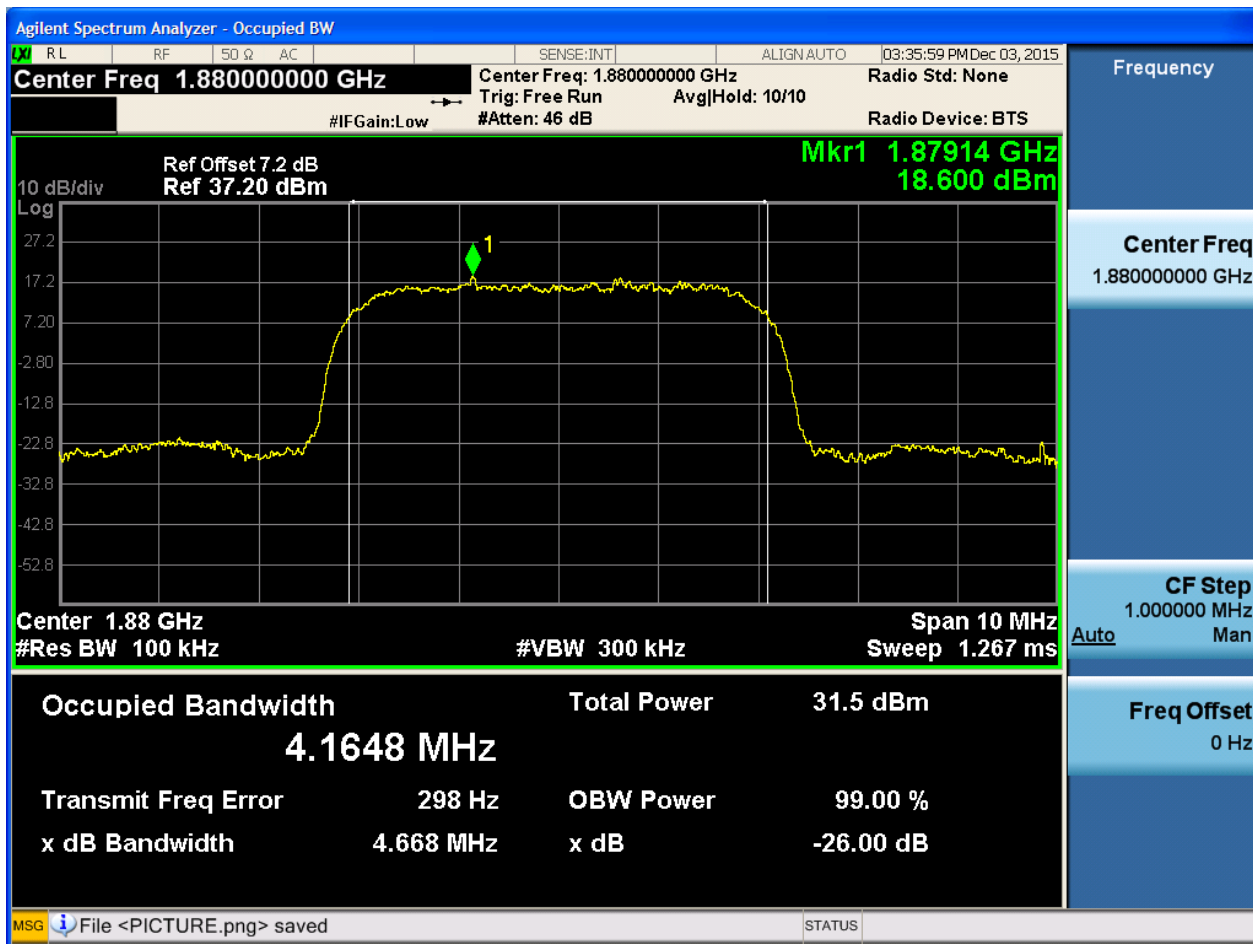
4.1.1.1 Test Mode = UMTS/TM1

4.1.1.1.1 Test Channel = LCH



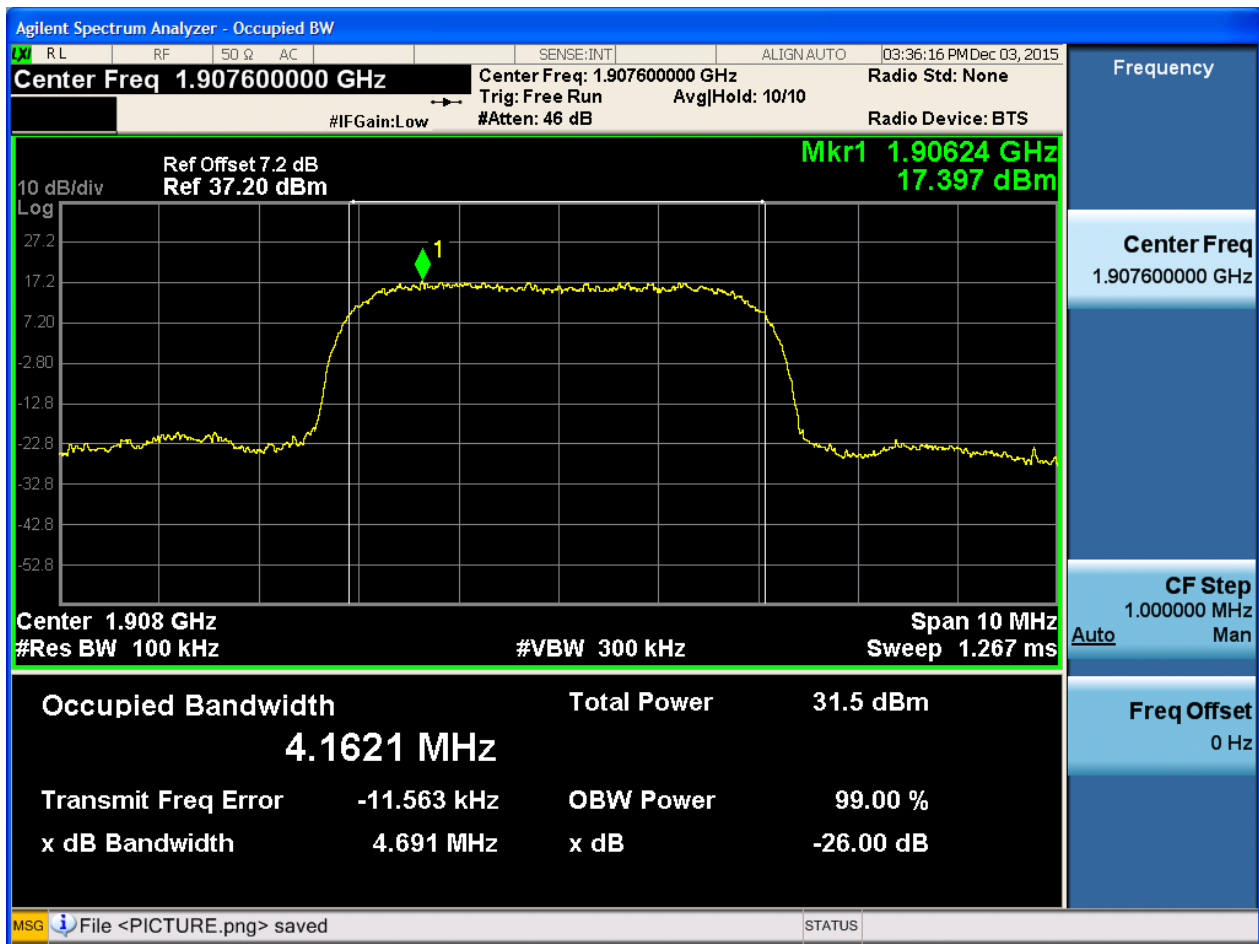


4.1.1.1.2 Test Channel = MCH





4.1.1.1.3 Test Channel = HCH





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



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

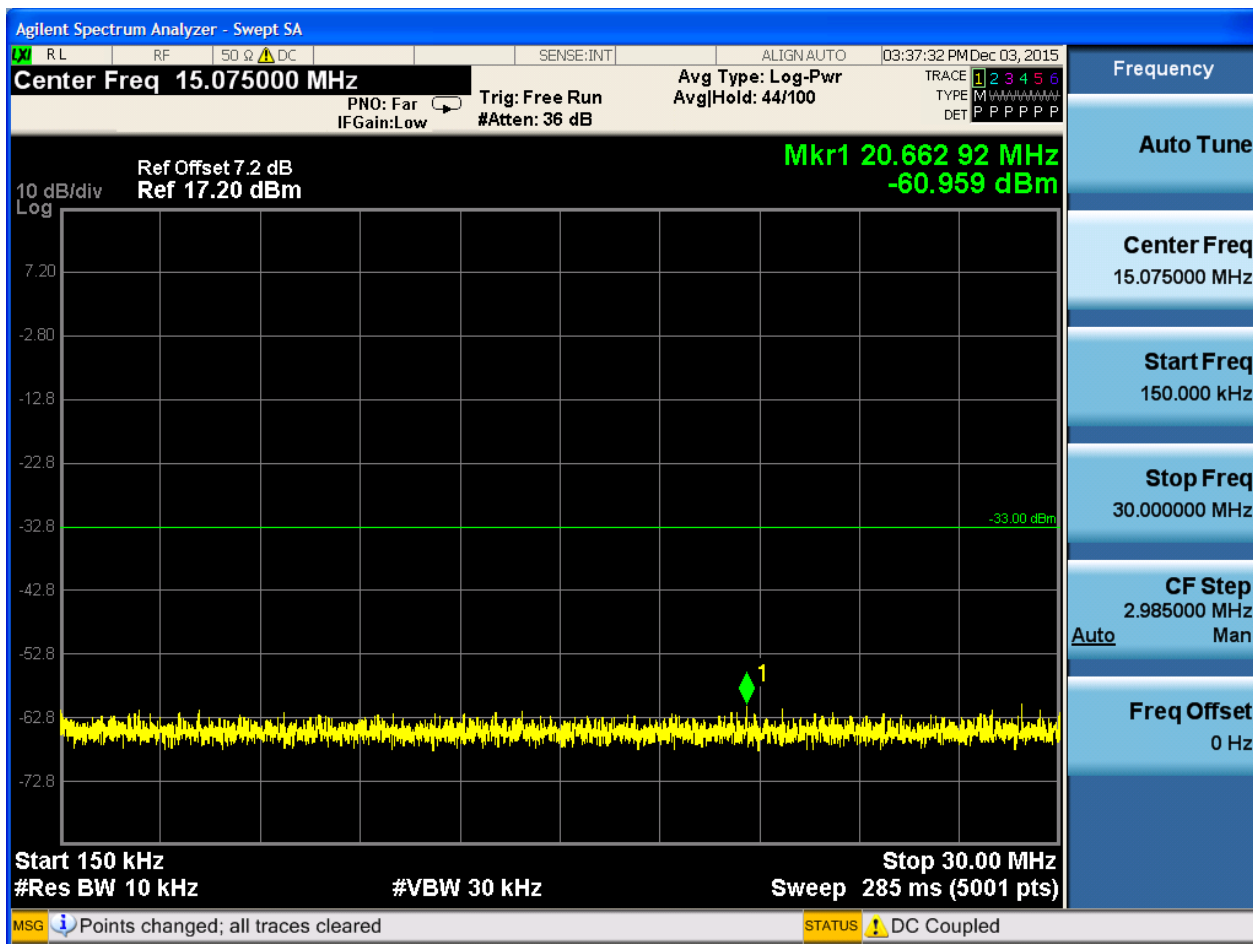
6.1 For UMTS

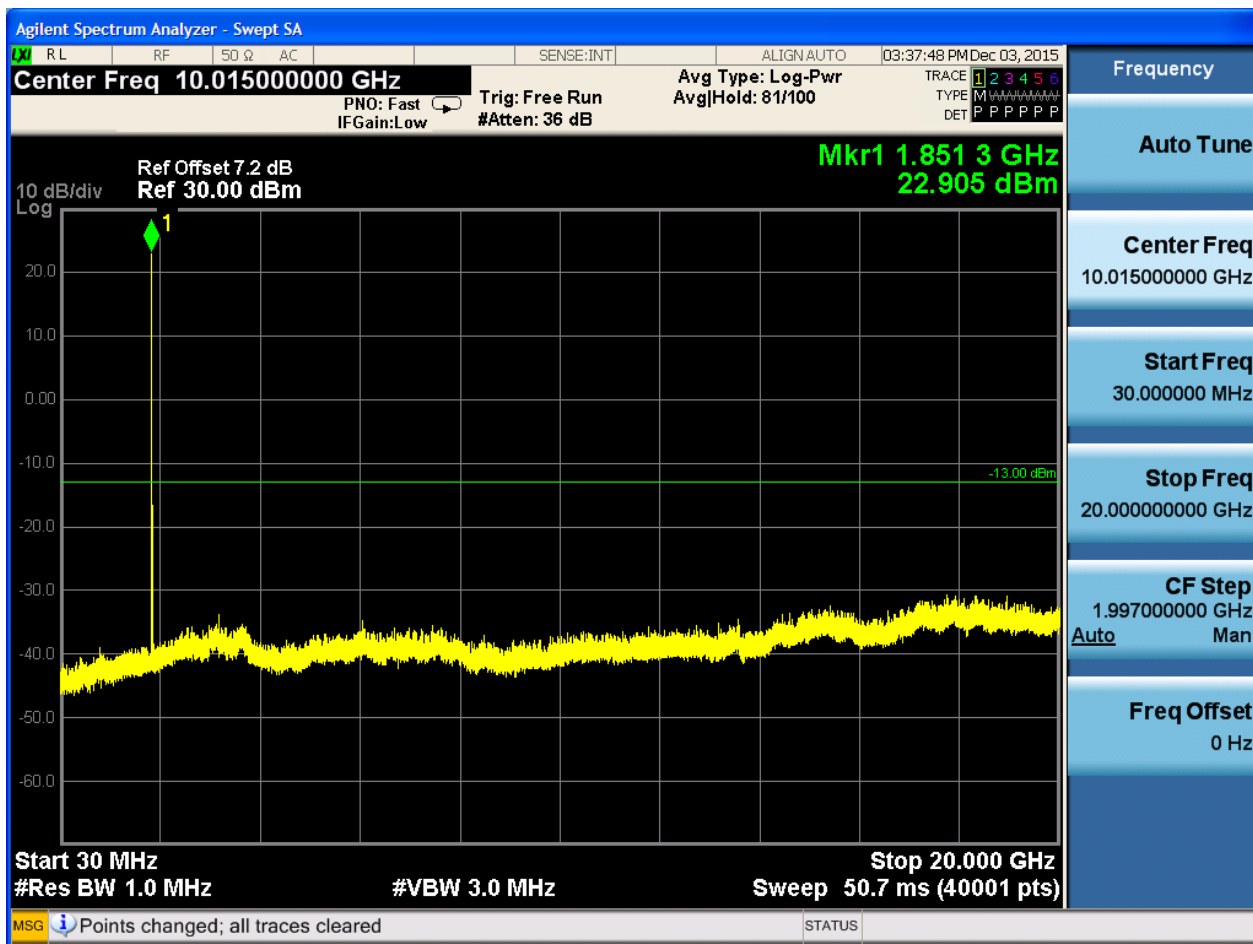
6.1.1 Test Band = WCDMA1900

6.1.1.1 Test Mode = UMTS/TM1

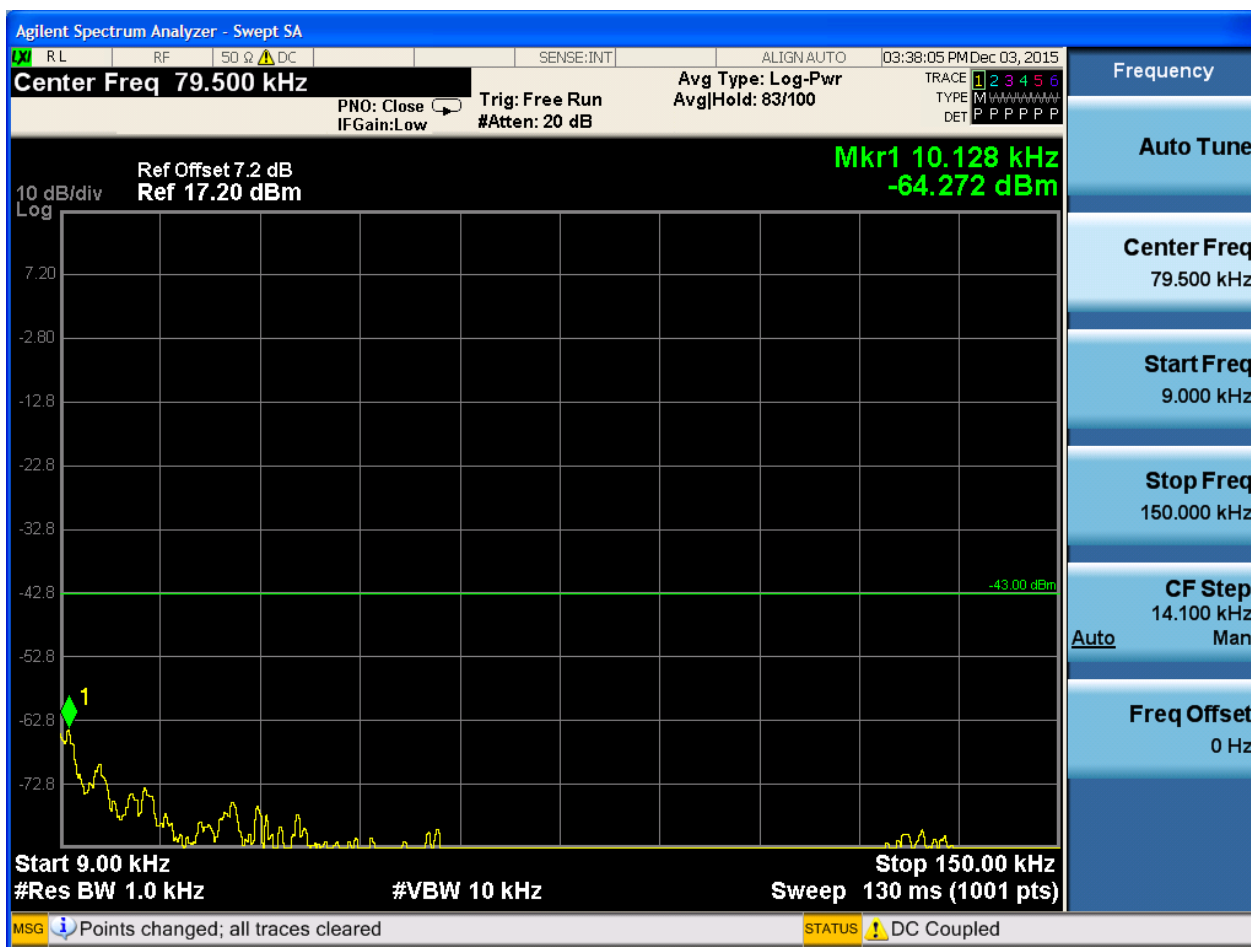
6.1.1.1.1 Test Channel = LCH

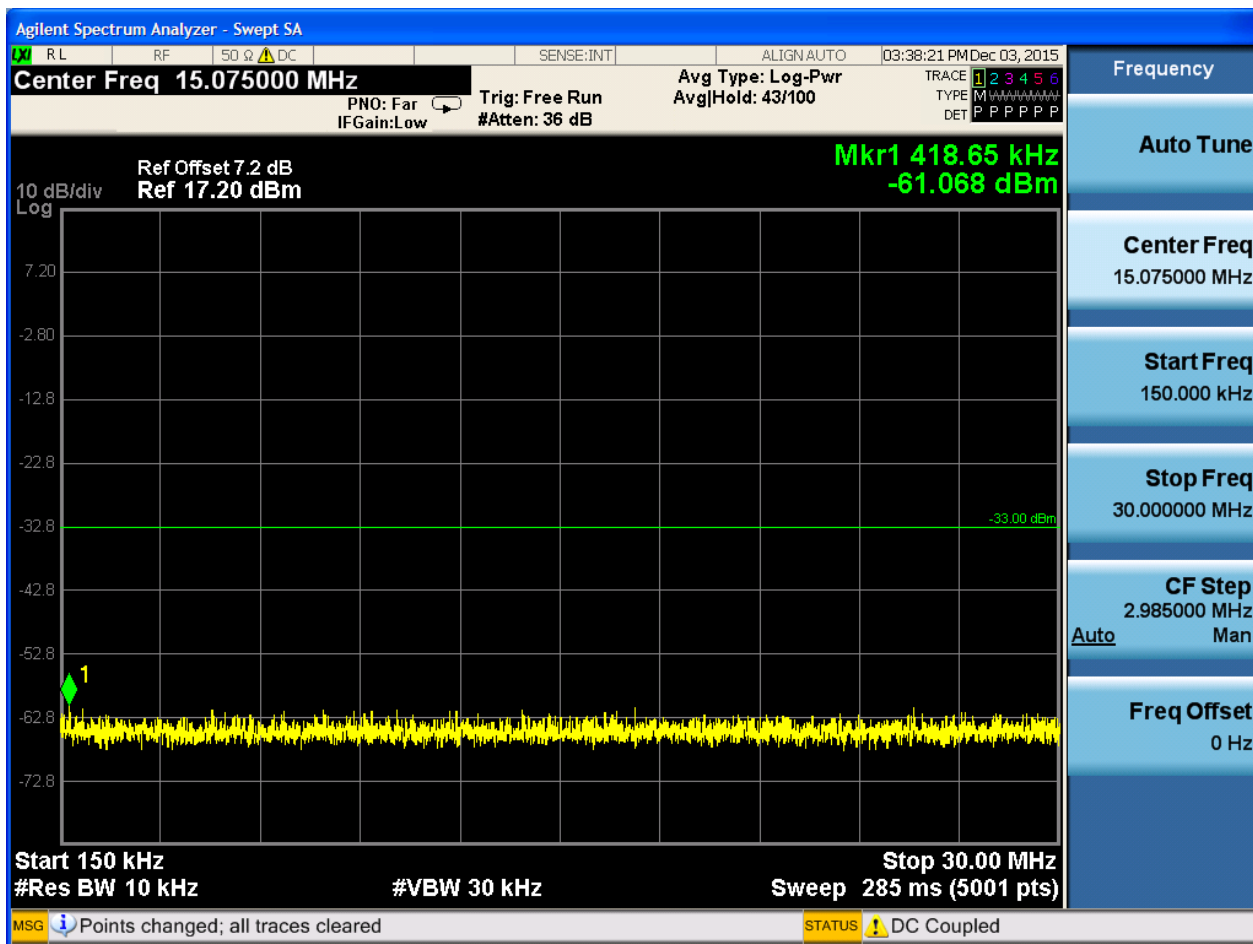


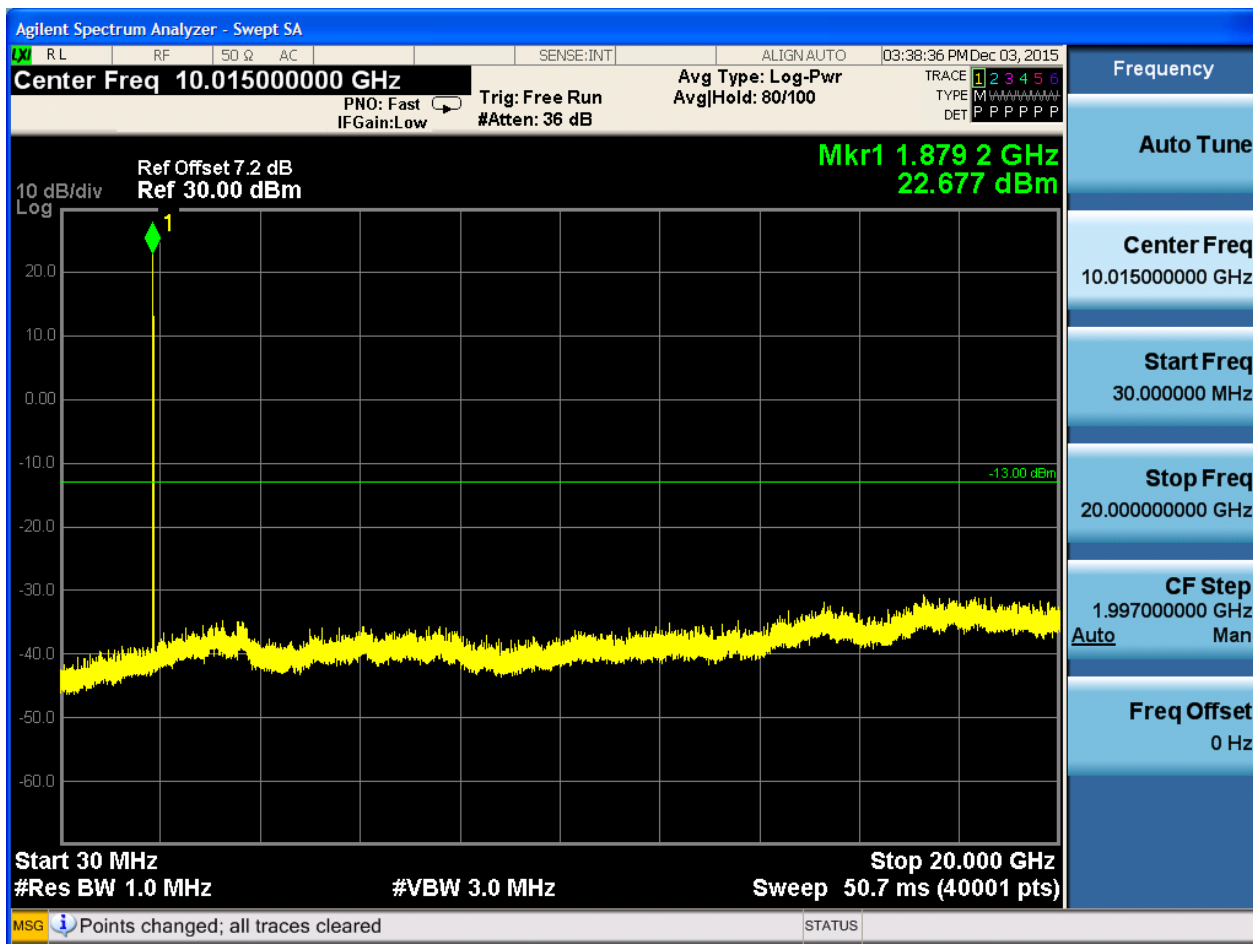




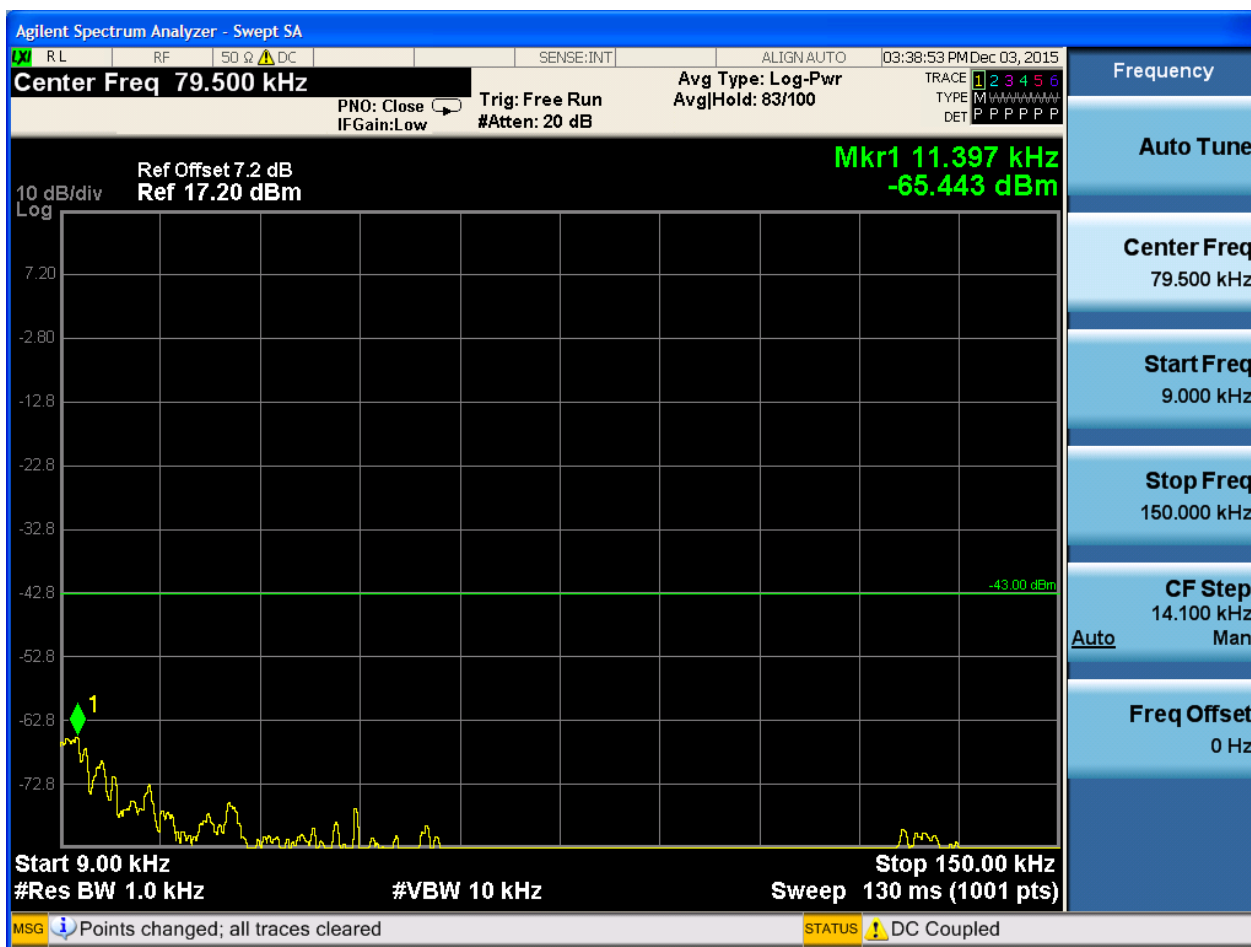
6.1.1.1.2 Test Channel = MCH

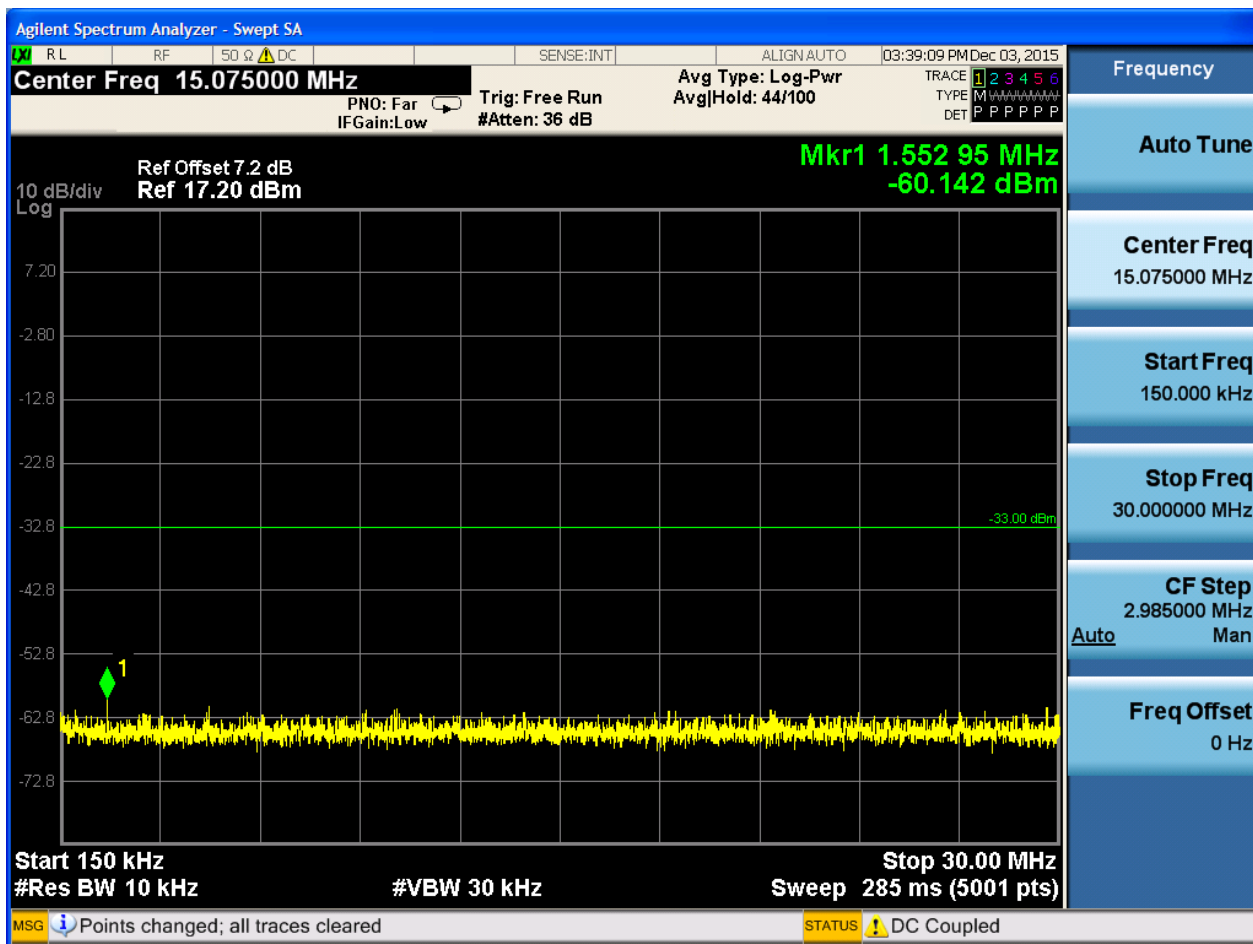


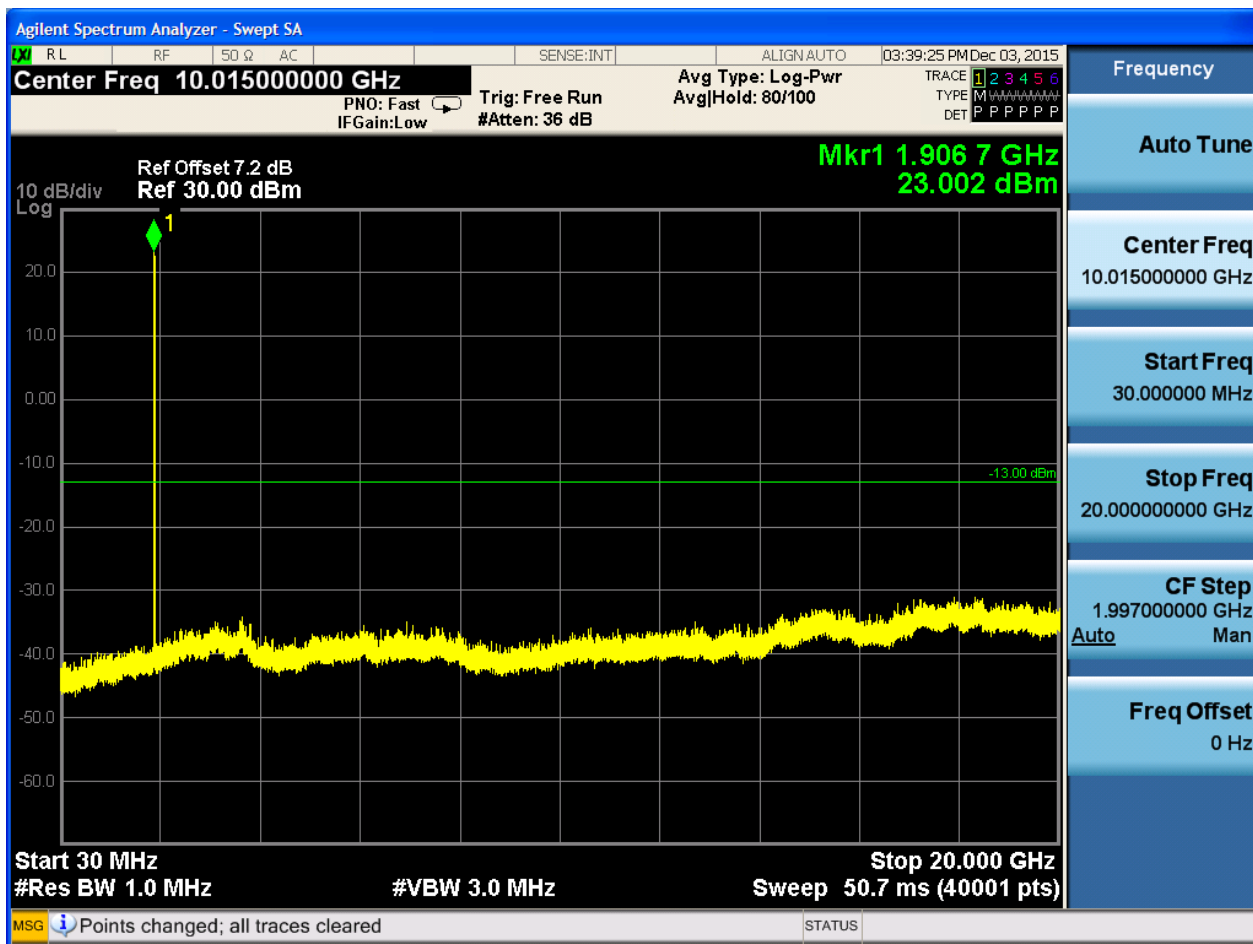




6.1.1.1.3 Test Channel = HCH







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

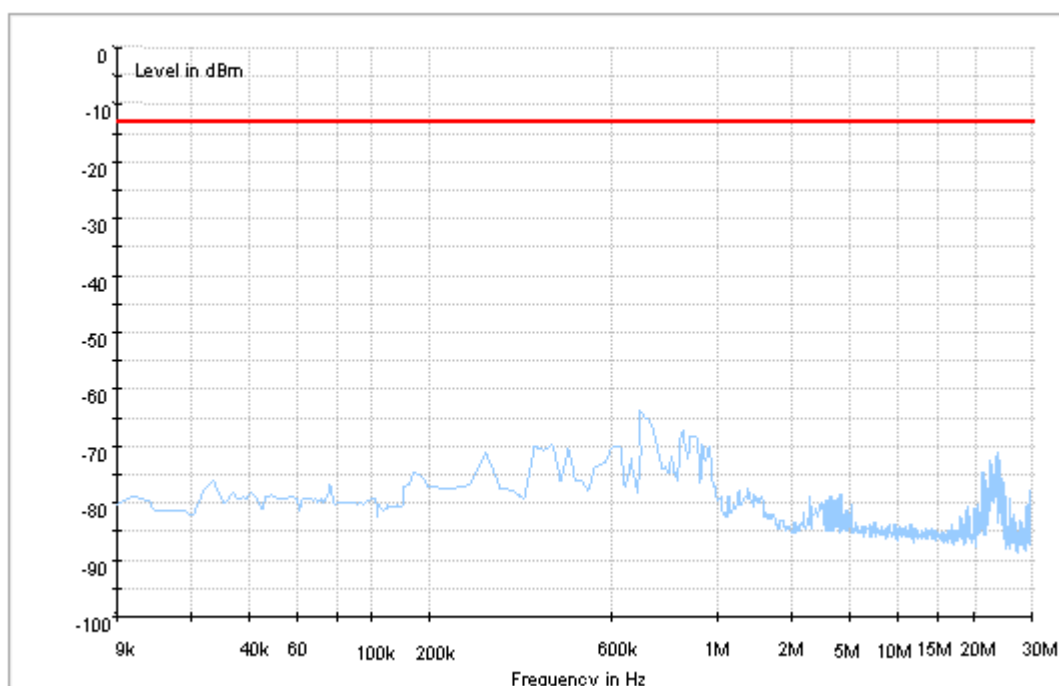
Above 1GHz, RBW = 1 MHz, VBW = 3 MHz. Detector: PK

Part I - Test Plots

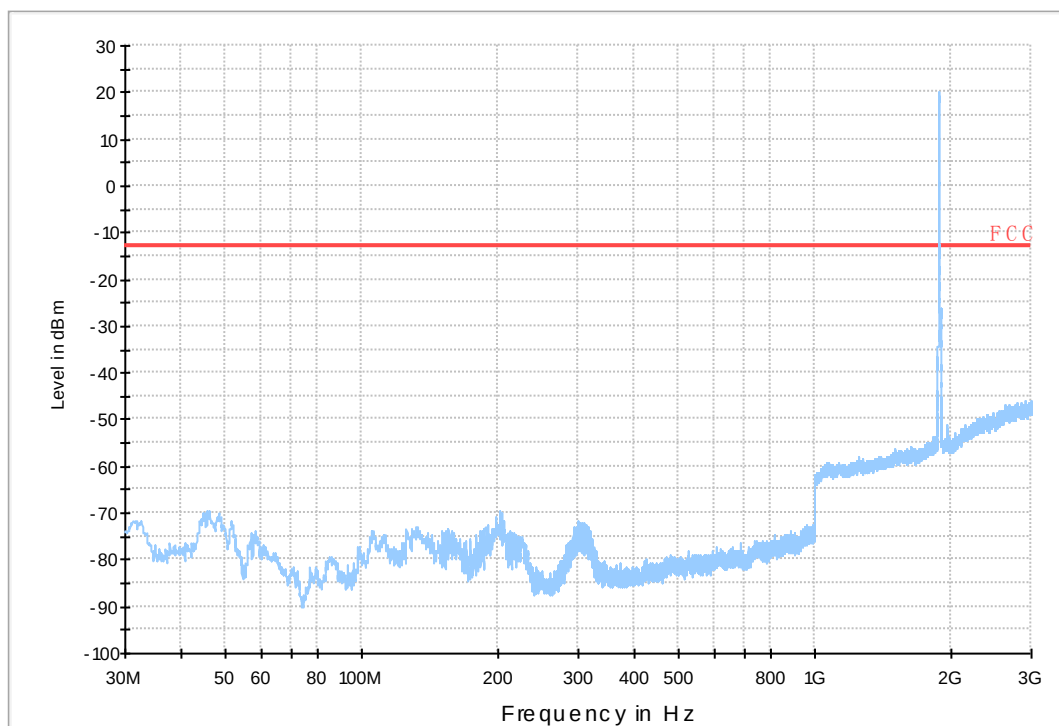
7.1 For UMTS

7.1.1 Test Band = WCDMA1900

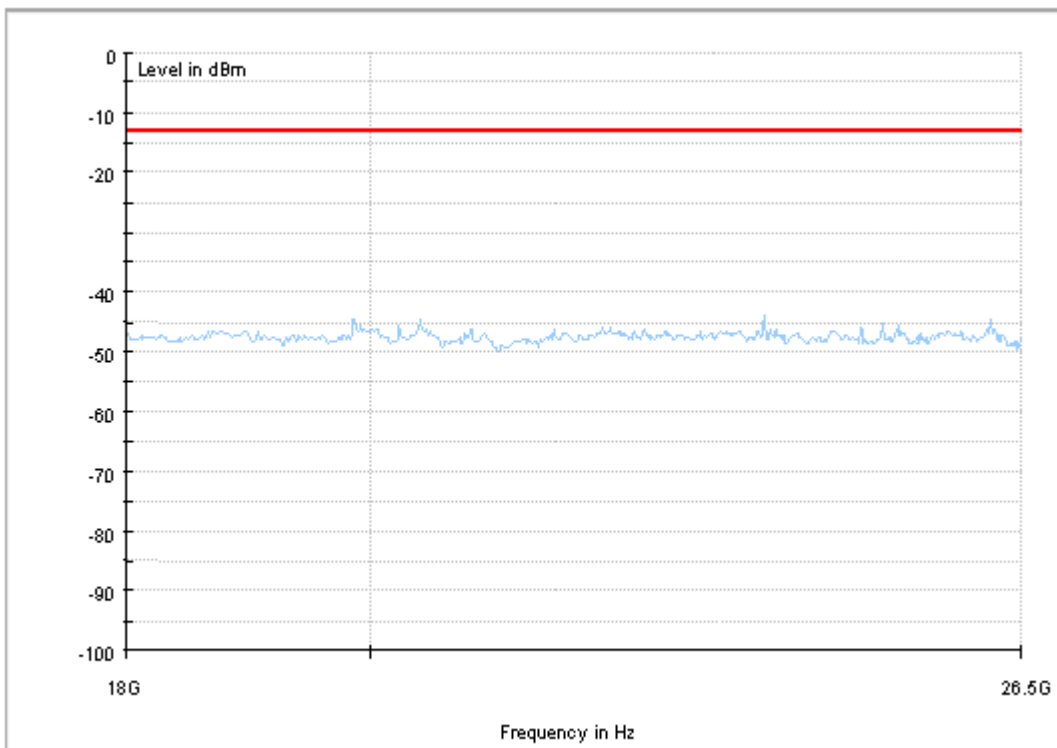
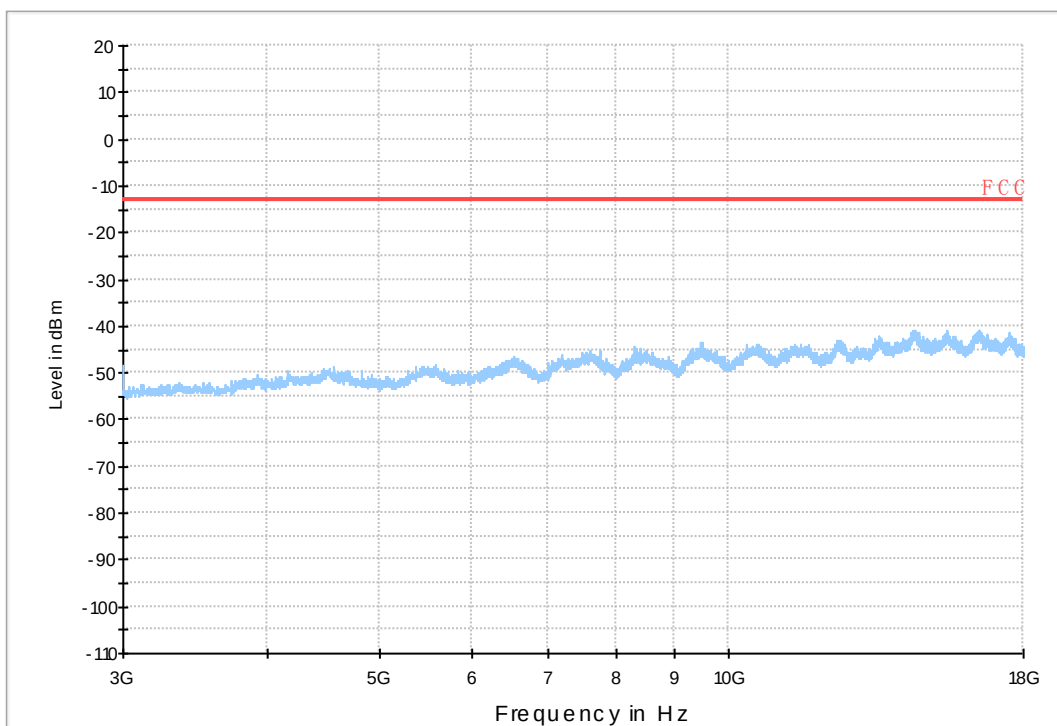
7.1.1.1 Test Mode = UMTS/TM1



Copy of FCC PART24 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
WCDMA1900	UMTS/TM1	LCH	TN	VL	-0.23	-0.00012	PASS
				VN	-1.16	-0.00063	PASS
				VH	2.98	0.00161	PASS
		MCH	TN	VL	3.46	0.00184	PASS
				VN	-2.01	-0.00107	PASS
				VH	-2.47	-0.00131	PASS
		HCH	TN	VL	-1.04	-0.00055	PASS
				VN	1.07	0.00056	PASS
				VH	-1.19	-0.00062	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	0.49	0.00026	PASS
				-20	-2.88	-0.00155	PASS
				-10	0.93	0.0005	PASS
				0	1.79	0.00097	PASS
				10	-0.49	-0.00026	PASS
				20	-0.38	-0.00021	PASS
				30	4.82	0.0026	PASS
				40	1.27	0.00069	PASS
				50	-0.27	-0.00015	PASS
		MCH	VN	-30	-0.75	-0.0004	PASS
				-20	2.44	0.0013	PASS
				-10	1.80	0.00096	PASS
				0	0.03	0.00002	PASS
				10	-1.91	-0.00102	PASS
				20	-2.21	-0.00118	PASS
				30	-2.35	-0.00125	PASS
				40	1.46	0.00078	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
		HCH	VN	50	-1.75	-0.00093	PASS
				-30	-1.69	-0.00089	PASS
				-20	-0.95	-0.0005	PASS
				-10	1.65	0.00086	PASS
				0	-0.72	-0.00038	PASS
				10	0.92	0.00048	PASS
				20	-1.43	-0.00075	PASS
				30	-4.59	-0.00241	PASS
				40	0.56	0.00029	PASS
				50	-2.90	-0.00152	PASS

END