



Appendix for test report

1Appendix_A: Effective (Isotropic) Radiated Power Output Data

Part I - Test Results

Test Band	Test Mode	Test Channel	Conducte d Power [dBm]	ERP/EIRP [dBm]	Limit [dBm]	Verdict
WCDMA1900	UMTS/TM1	LCH	23.17	24.83	33	PASS
		MCH	23.07	24.73	33	PASS
		HCH	23.12	24.78	33	PASS
WCDMA1700	UMTS/TM1	LCH	23.41	26.55	30	PASS
		MCH	23.37	26.51	30	PASS
		HCH	23.41	26.55	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:

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

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

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

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
WCDMA1900	UMTS/TM1	LCH	2.62	13	PASS
		MCH	2.84	13	PASS
		HCH	2.85	13	PASS
WCDMA1700	UMTS/TM1	LCH	2.86	13	PASS
		MCH	2.85	13	PASS
		HCH	3.01	13	PASS

3Appendix_C: Modulation Characteristics

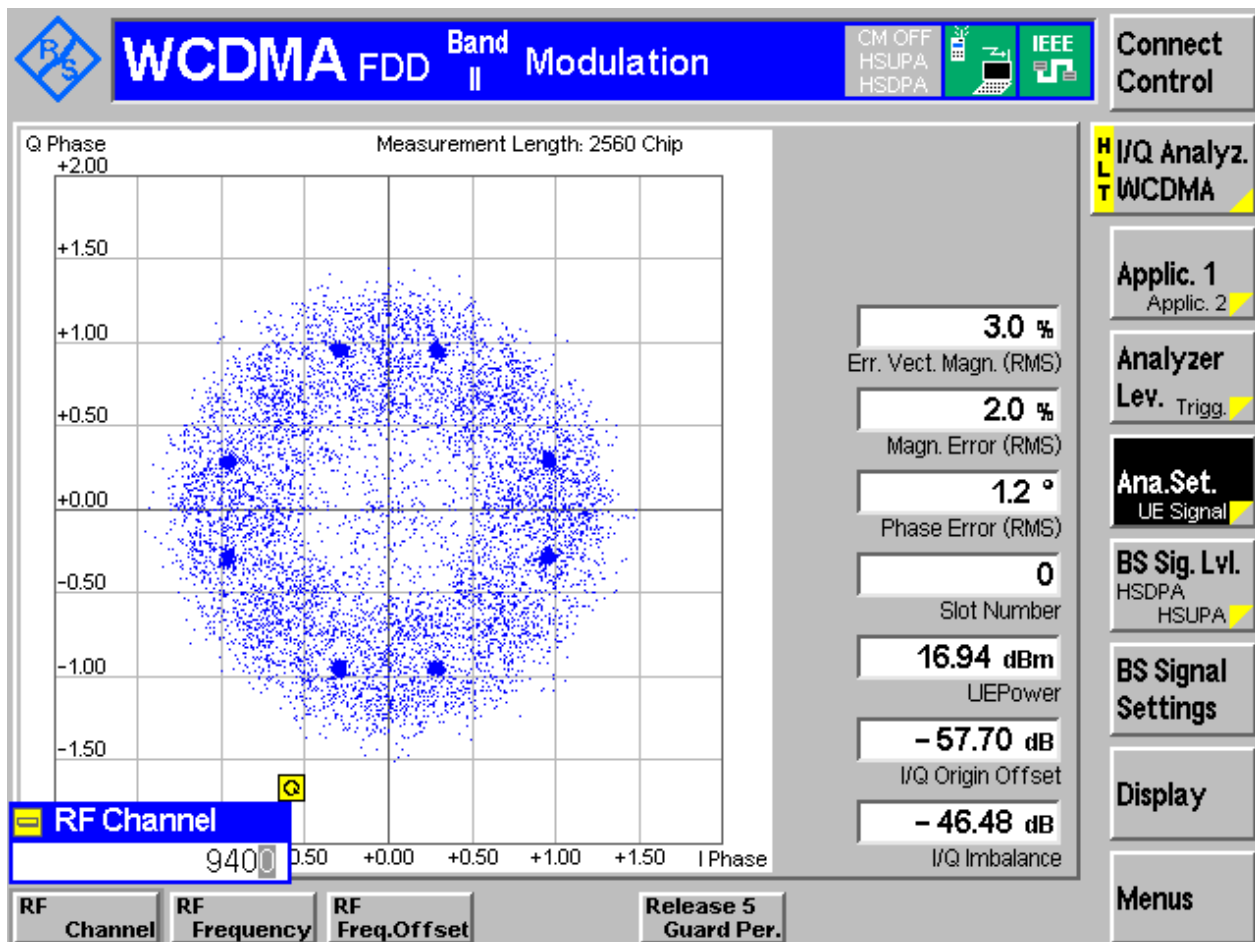
Part I - Test Plots

3.1 For UMTS

3.1.1 Test Band = WCDMA1900

3.1.1.1 Test Mode = UMTS/TM1

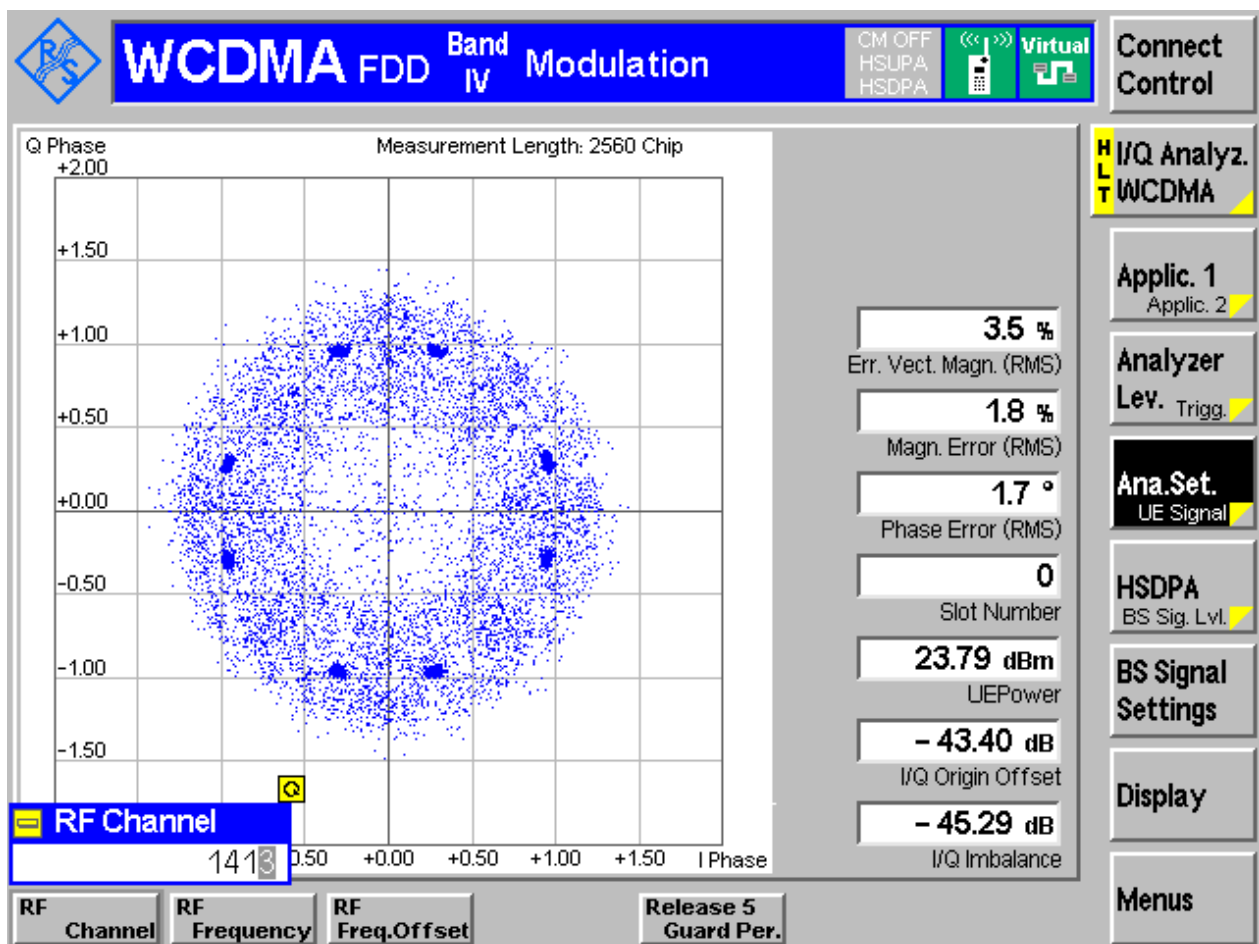
3.1.1.1.1 Test Channel = MCH



3.1.2 Test Band = WCDMA1700

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
WCDMA1900	UMTS/TM1	LCH	4.15	4.72	Pass
		MCH	4.15	4.70	Pass
		HCH	4.15	4.70	Pass
WCDMA1700	UMTS/TM1	LCH	4.15	4.71	Pass
		MCH	4.14	4.71	Pass
		HCH	4.15	4.70	Pass



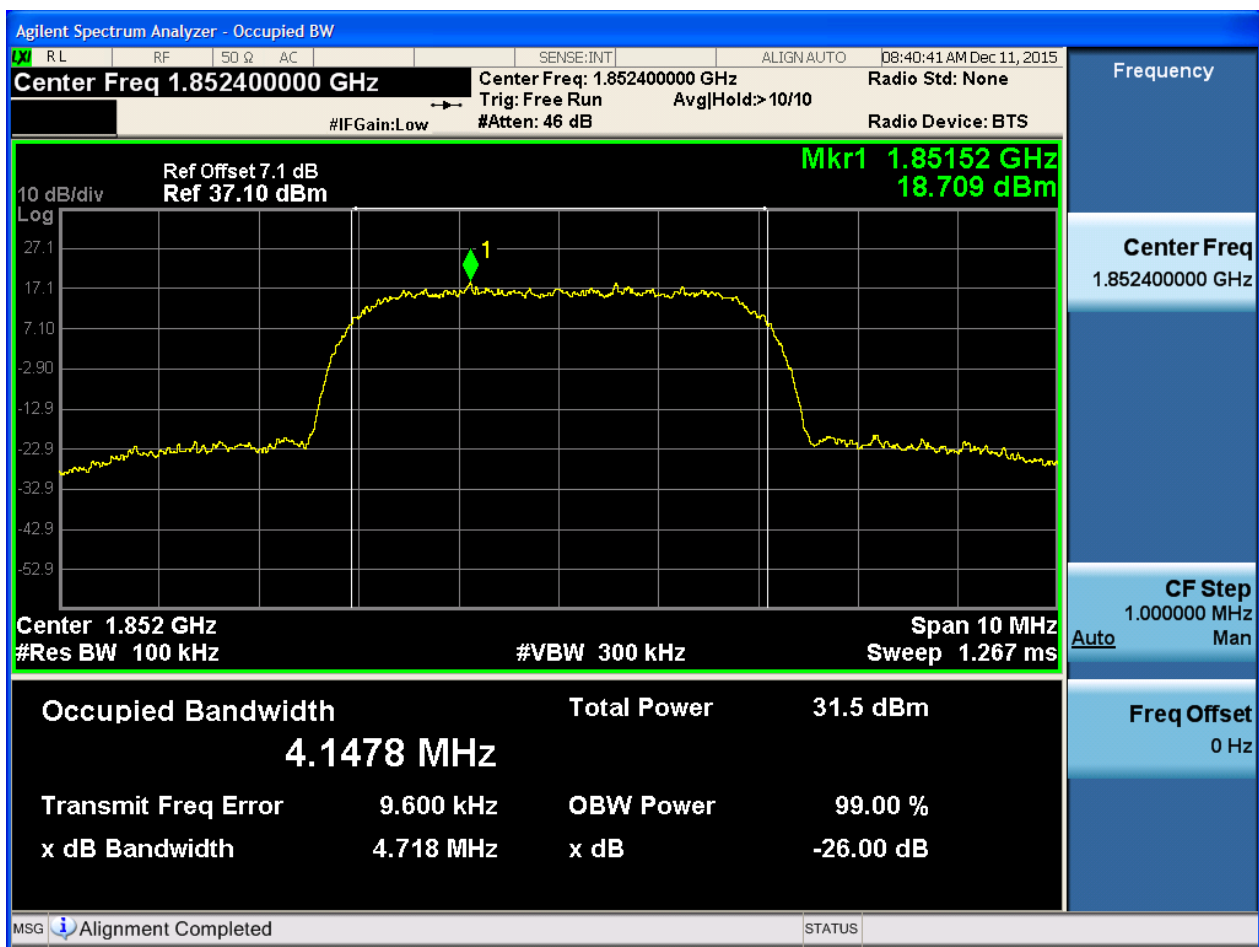
Part II - Test Plots

4.1 For UMTS

4.1.1 Test Band = WCDMA1900

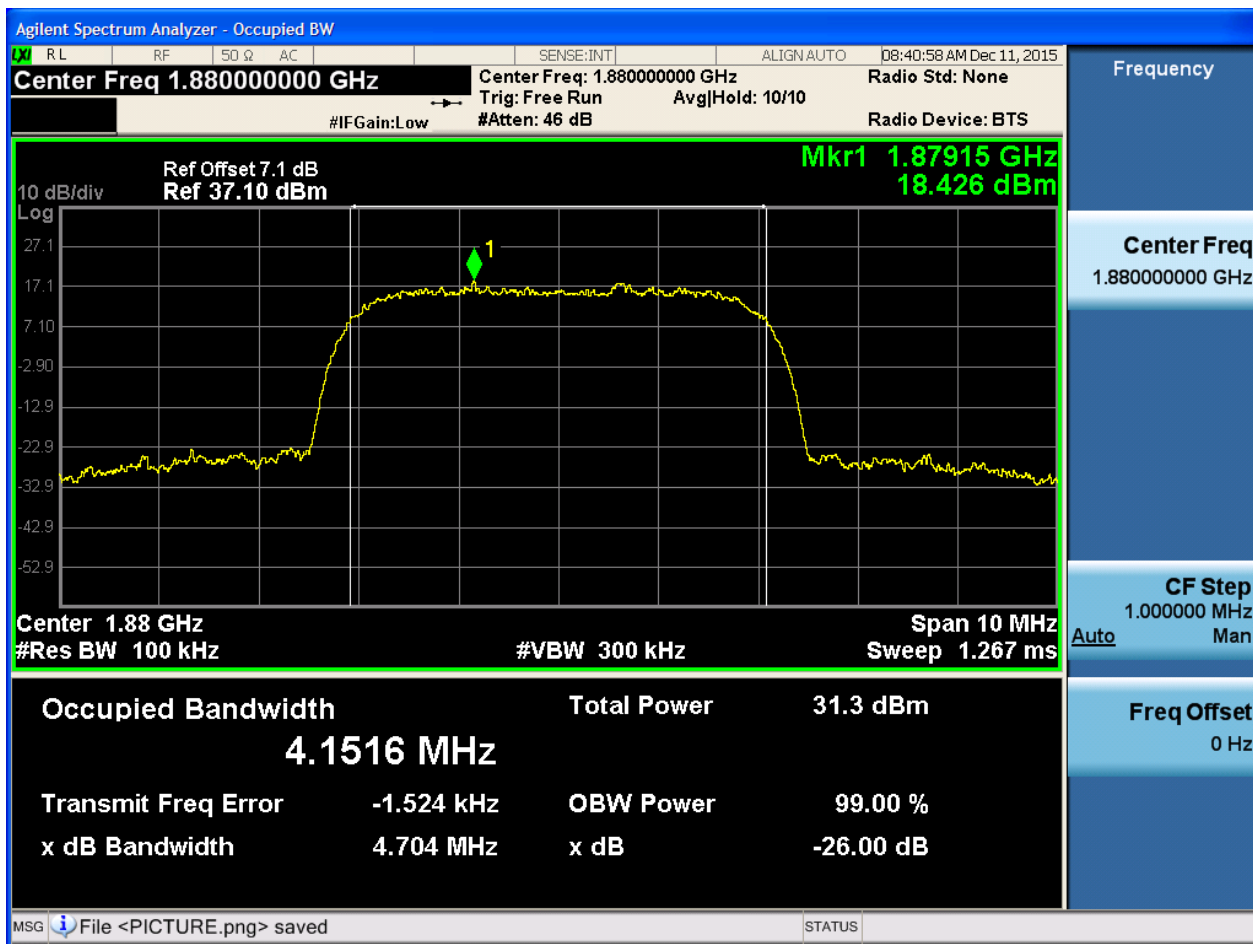
4.1.1.1 Test Mode = UMTS/TM1

4.1.1.1.1 Test Channel = LCH



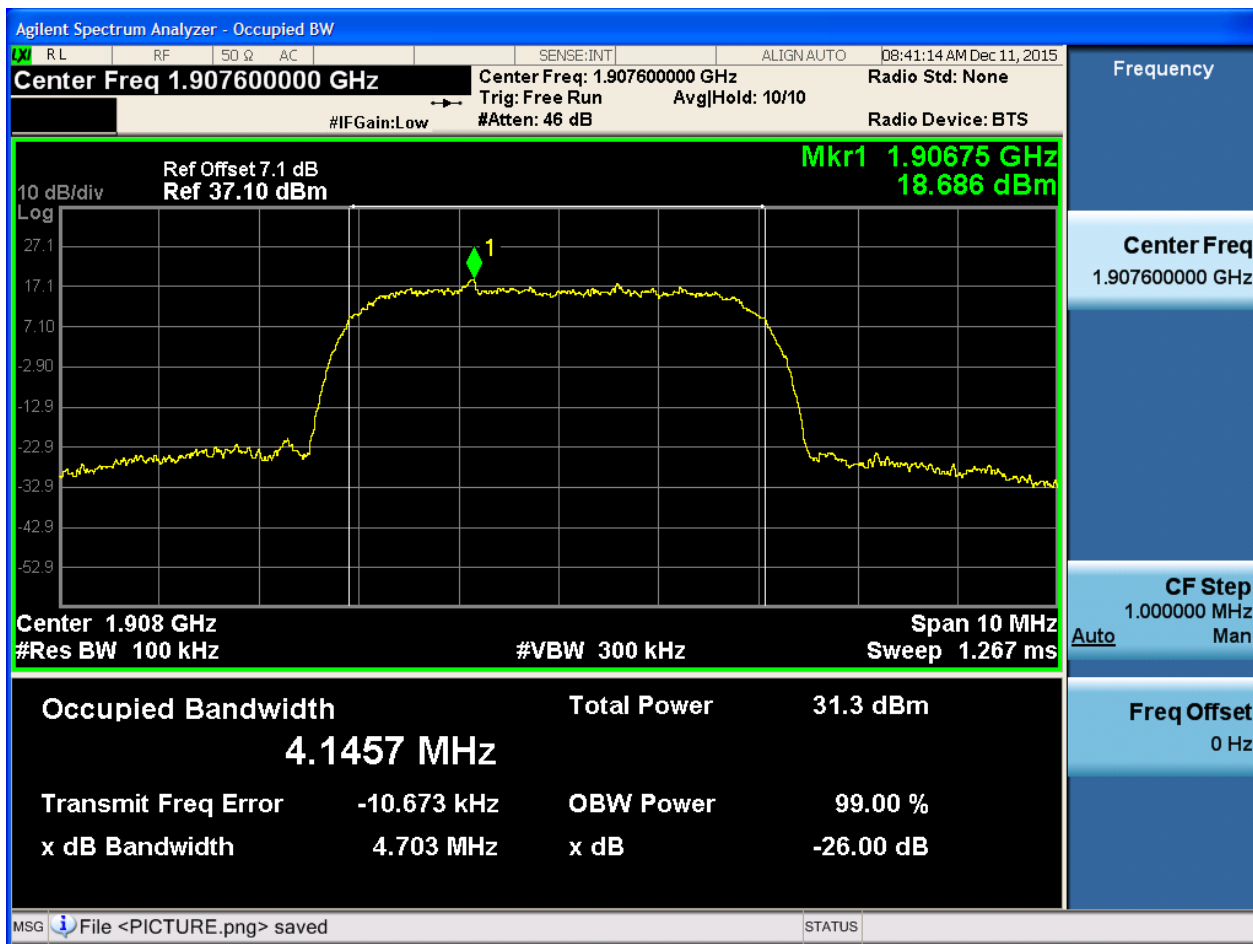


4.1.1.1.2 Test Channel = MCH





4.1.1.1.3 Test Channel = HCH

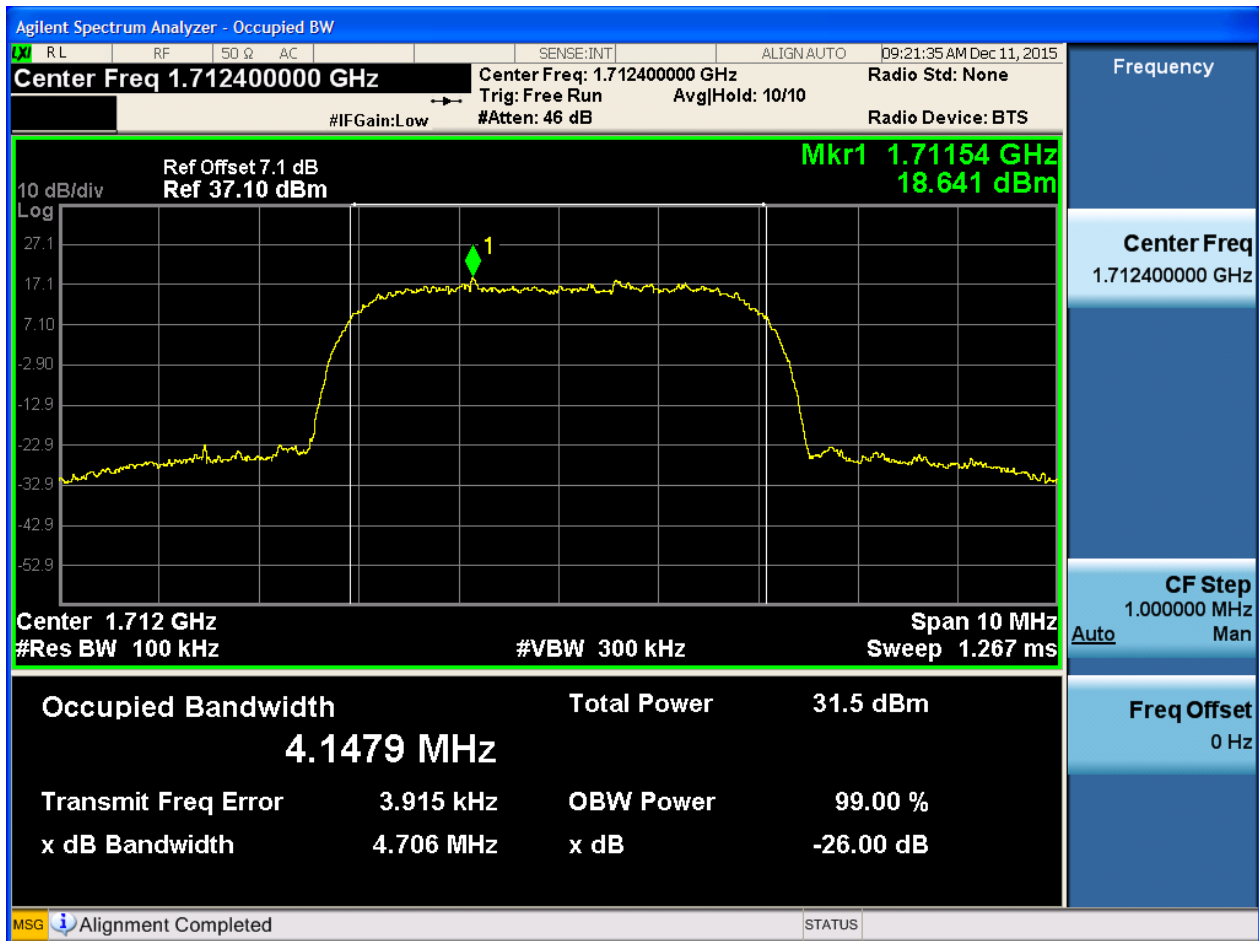




4.1.2 Test Band = WCDMA1700

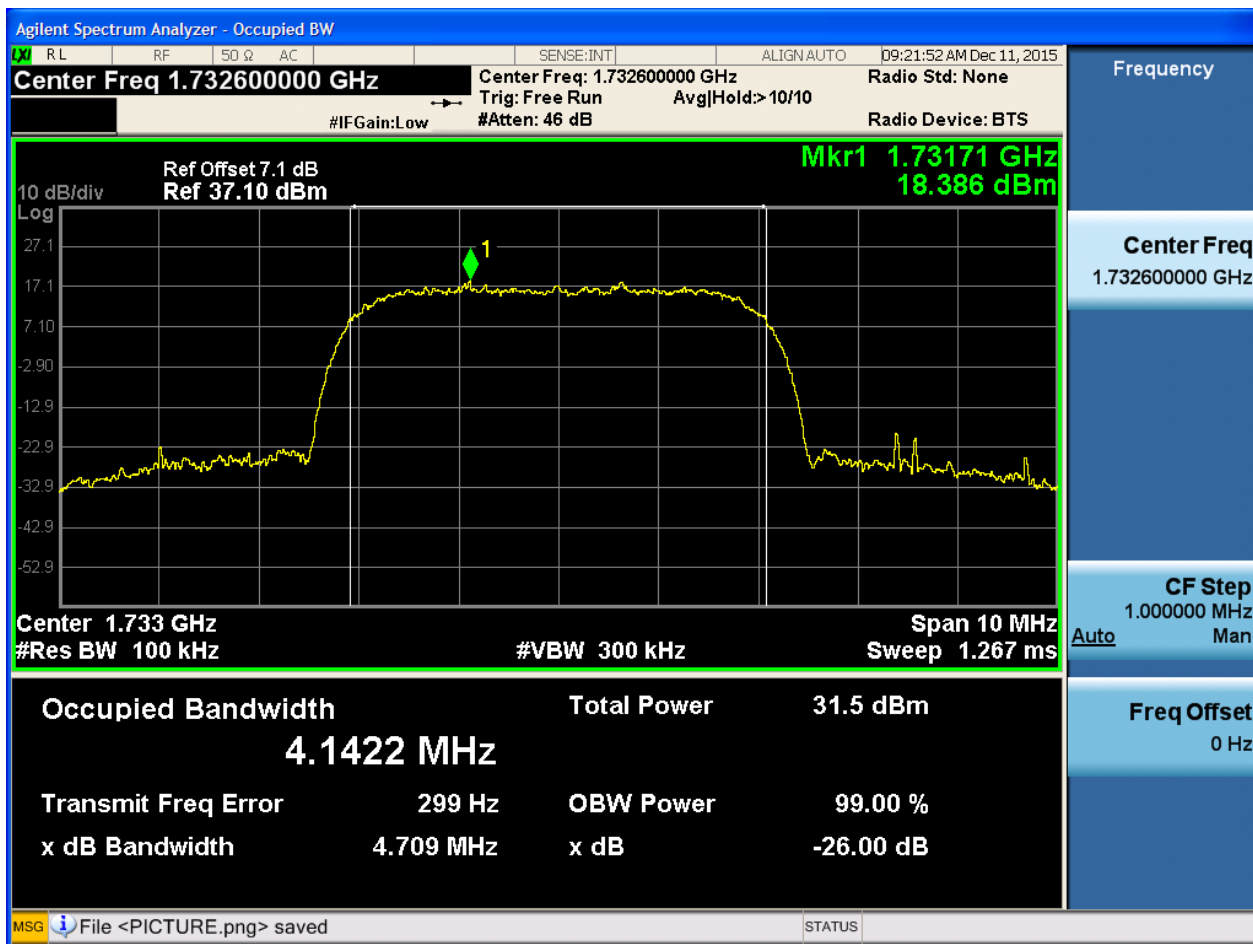
4.1.2.1 Test Mode = UMTS/TM1

4.1.2.1.1 Test Channel = LCH



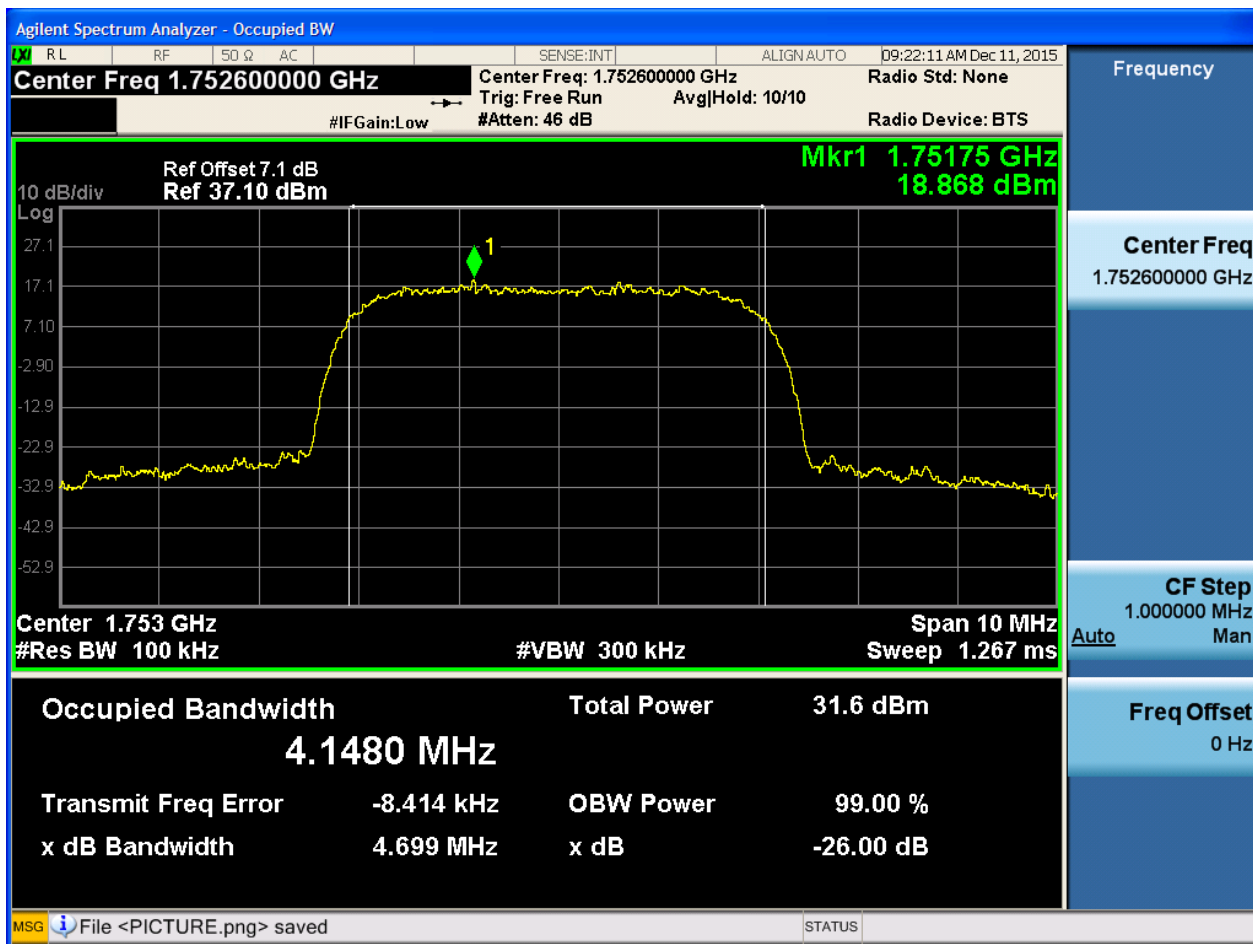


4.1.2.1.2 Test Channel = MCH





4.1.2.1.3 Test Channel = HCH



5Appendix_E: Band Edges Compliance

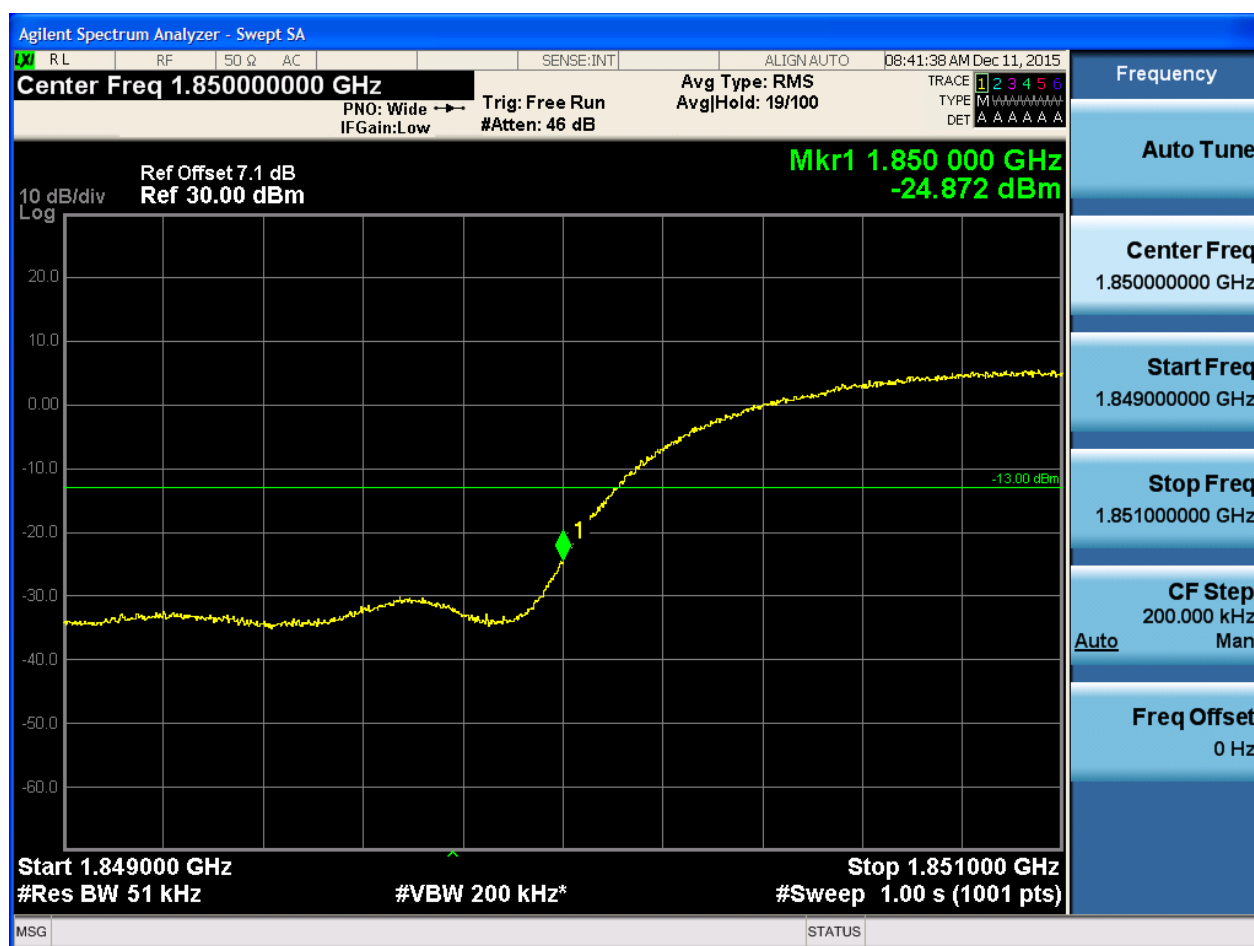
Part I - Test Plots

5.1 For UMTS

5.1.1 Test Band = 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





5.1.2 Test Band = WCDMA1700

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.

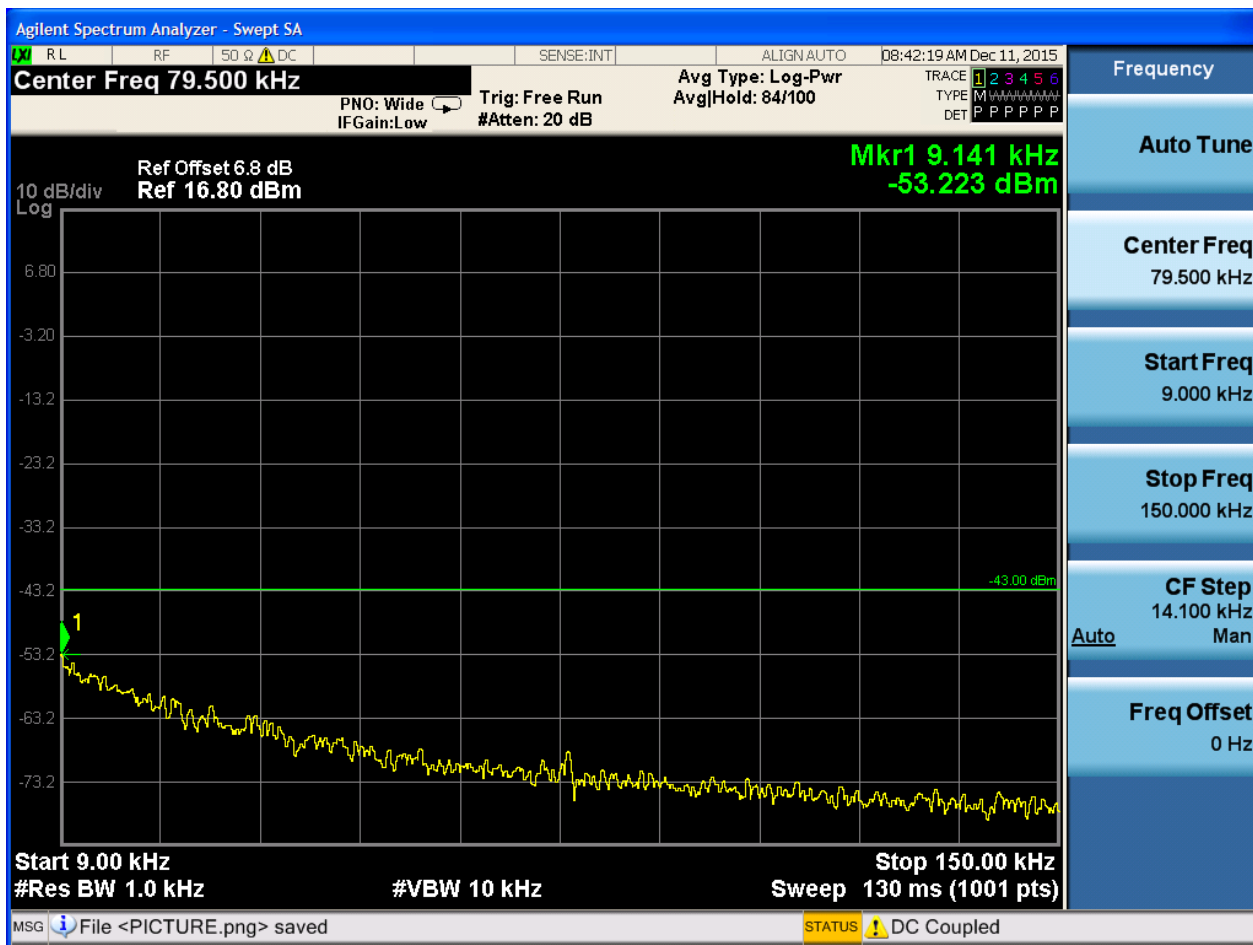
Part I - Test Plots

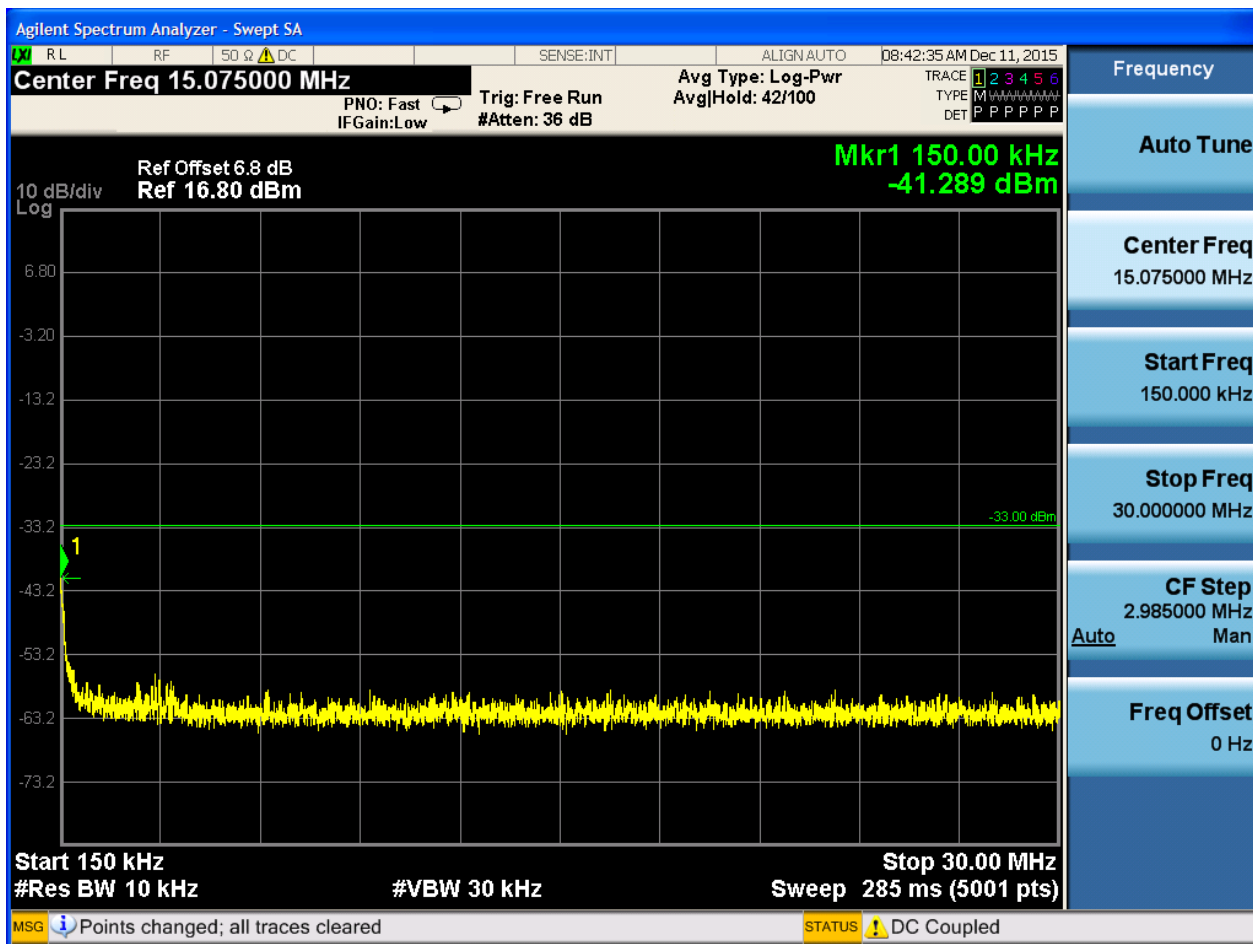
6.1 For UMTS

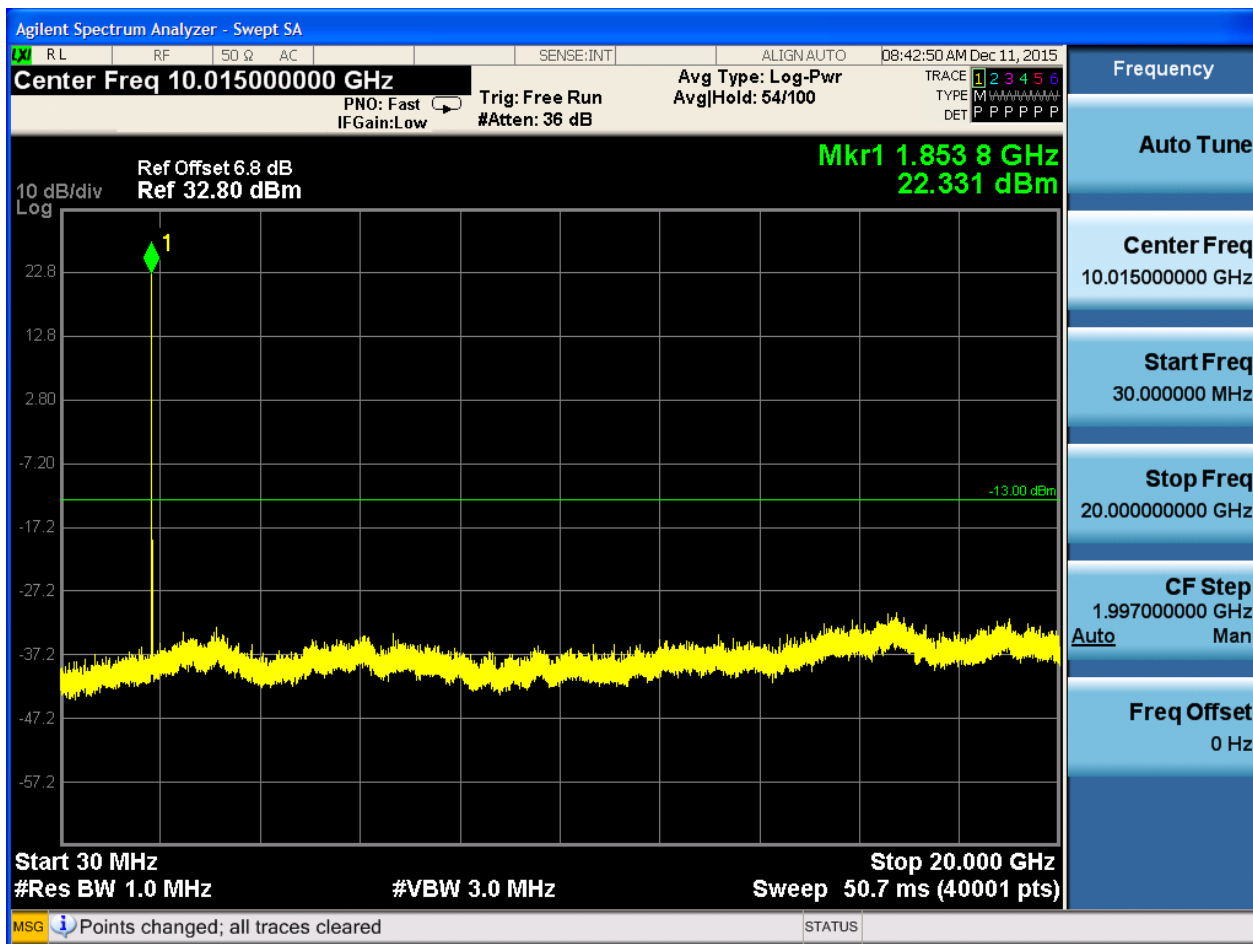
6.1.1 Test Band = WCDMA1900

6.1.1.1 Test Mode = UMTS/TM1

6.1.1.1.1 Test Channel = LCH

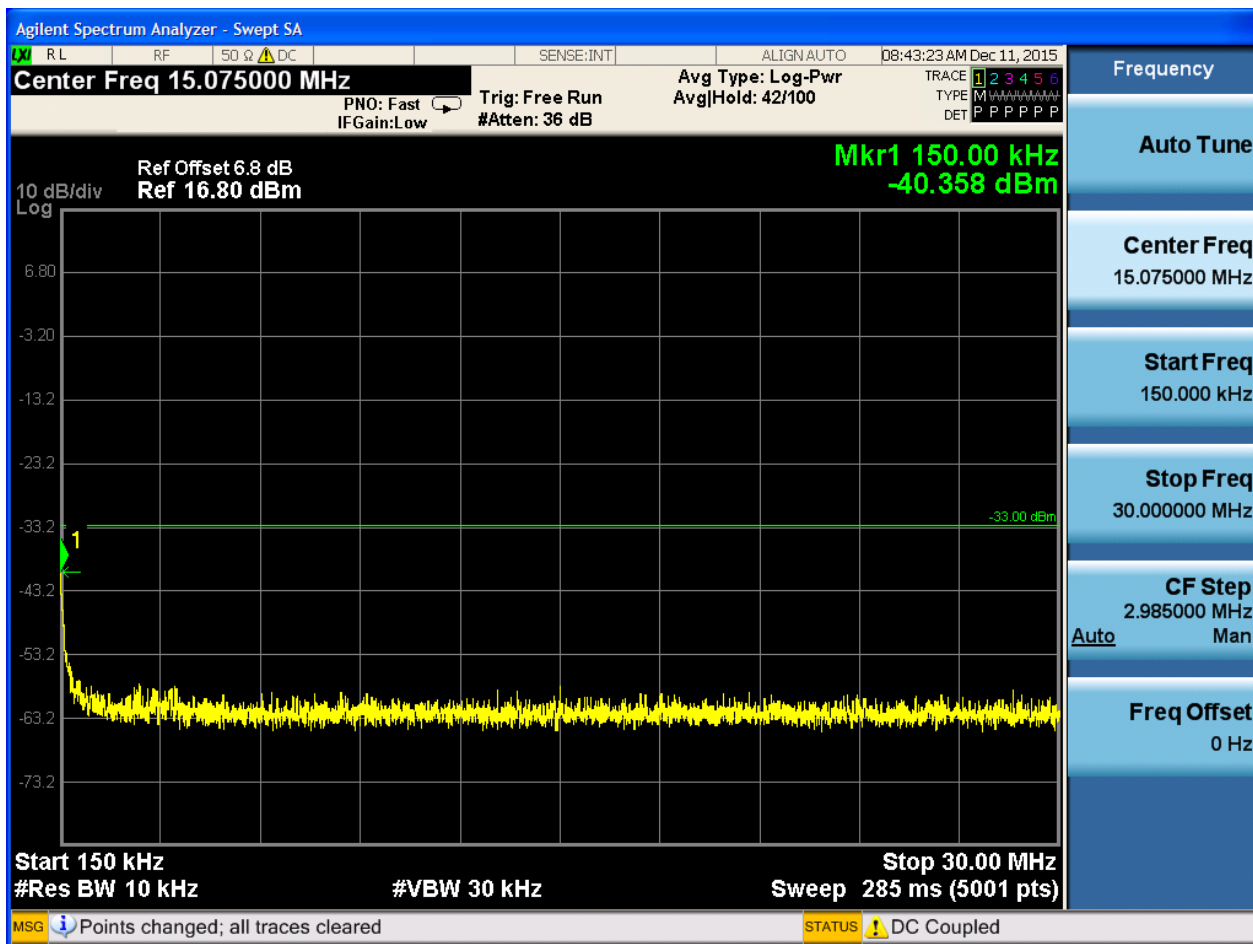


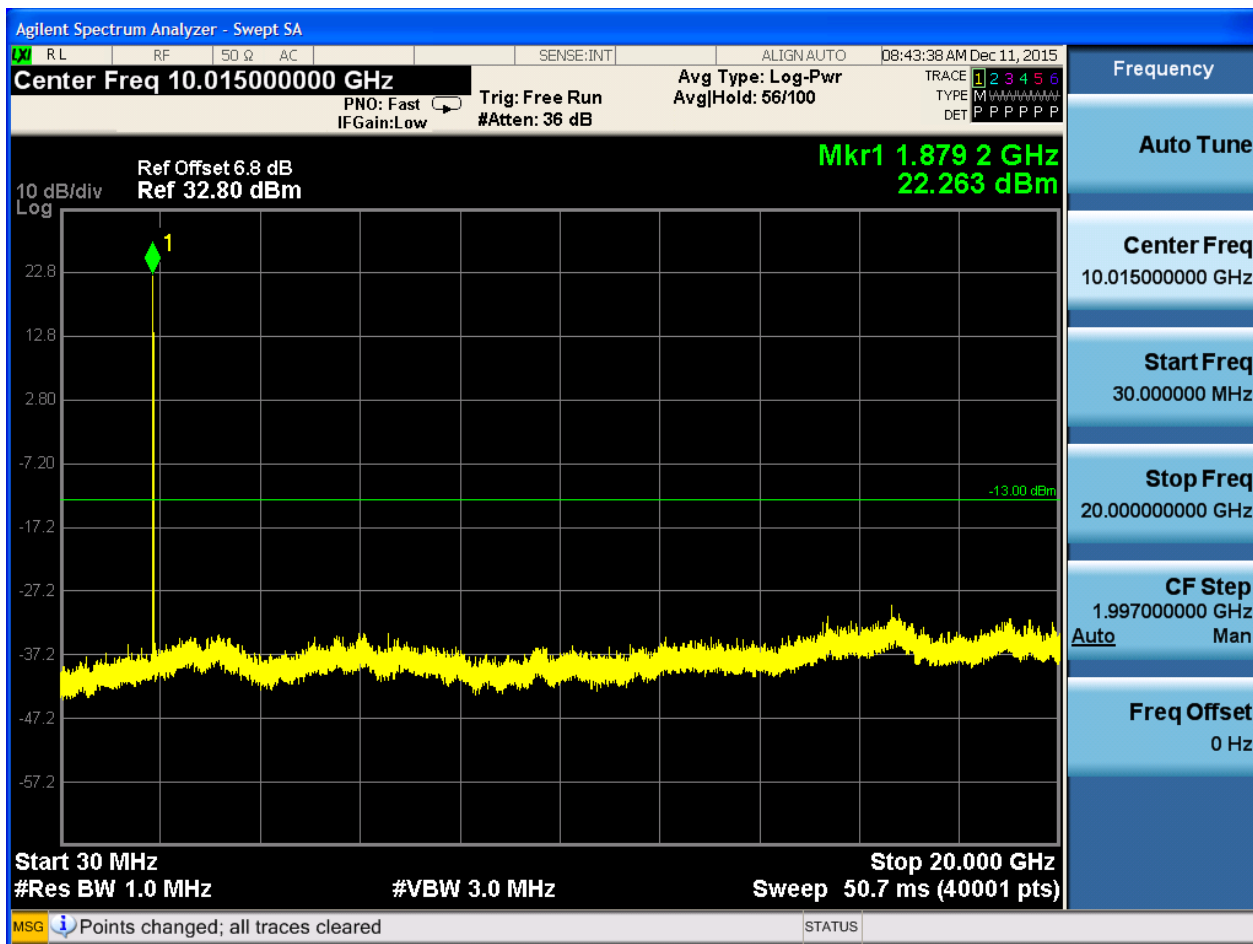




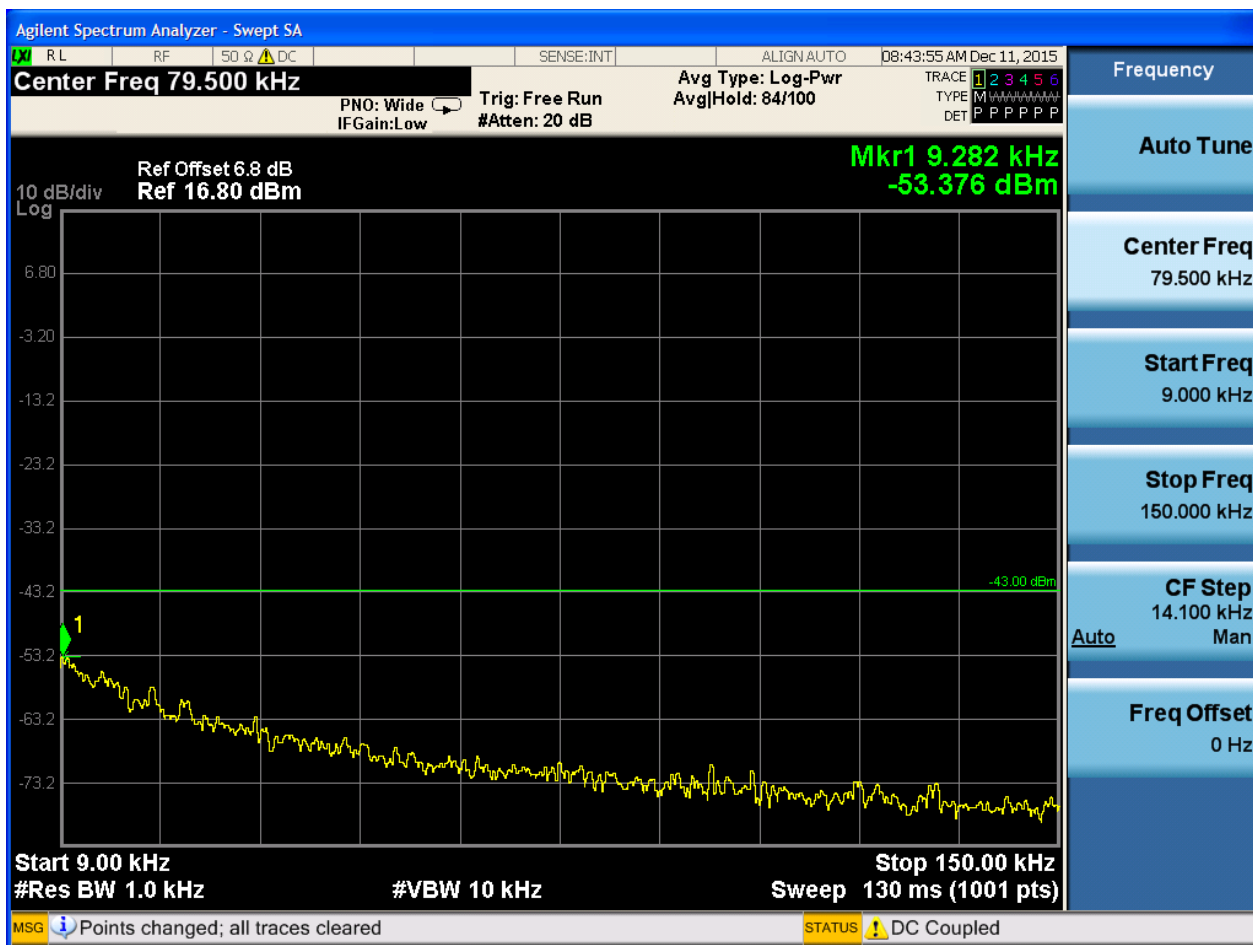
6.1.1.1.2 Test Channel = MCH

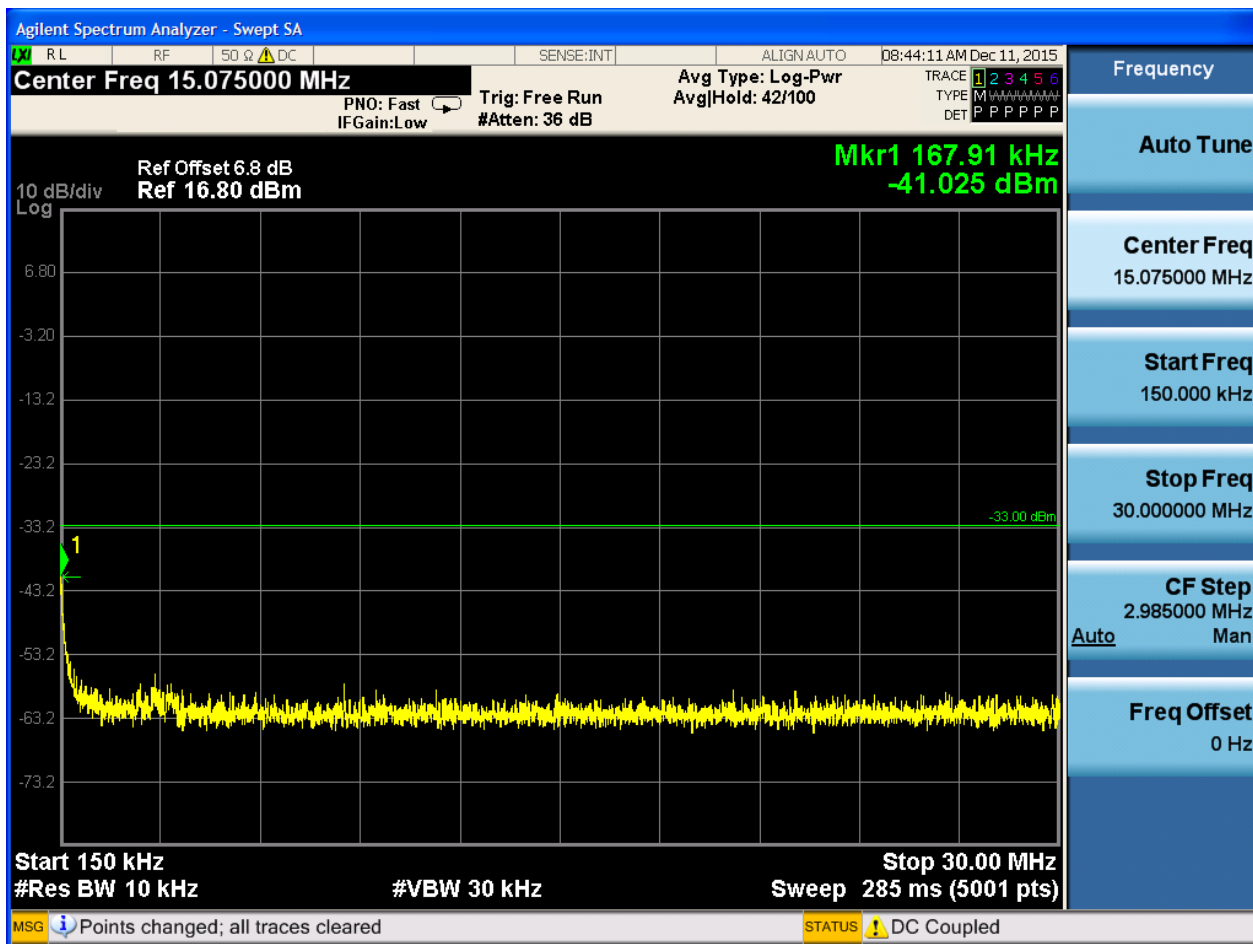


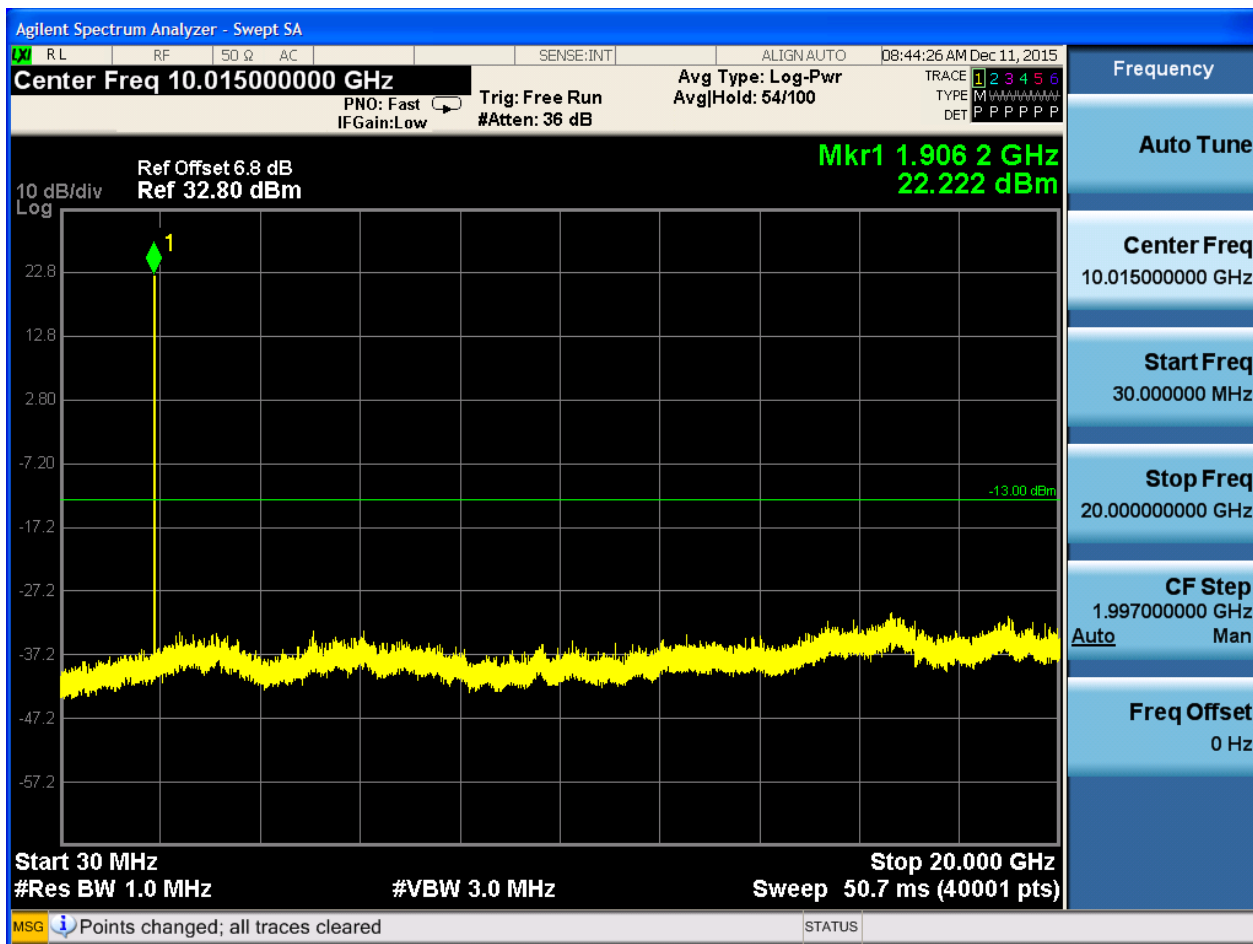




6.1.1.1.3 Test Channel = HCH





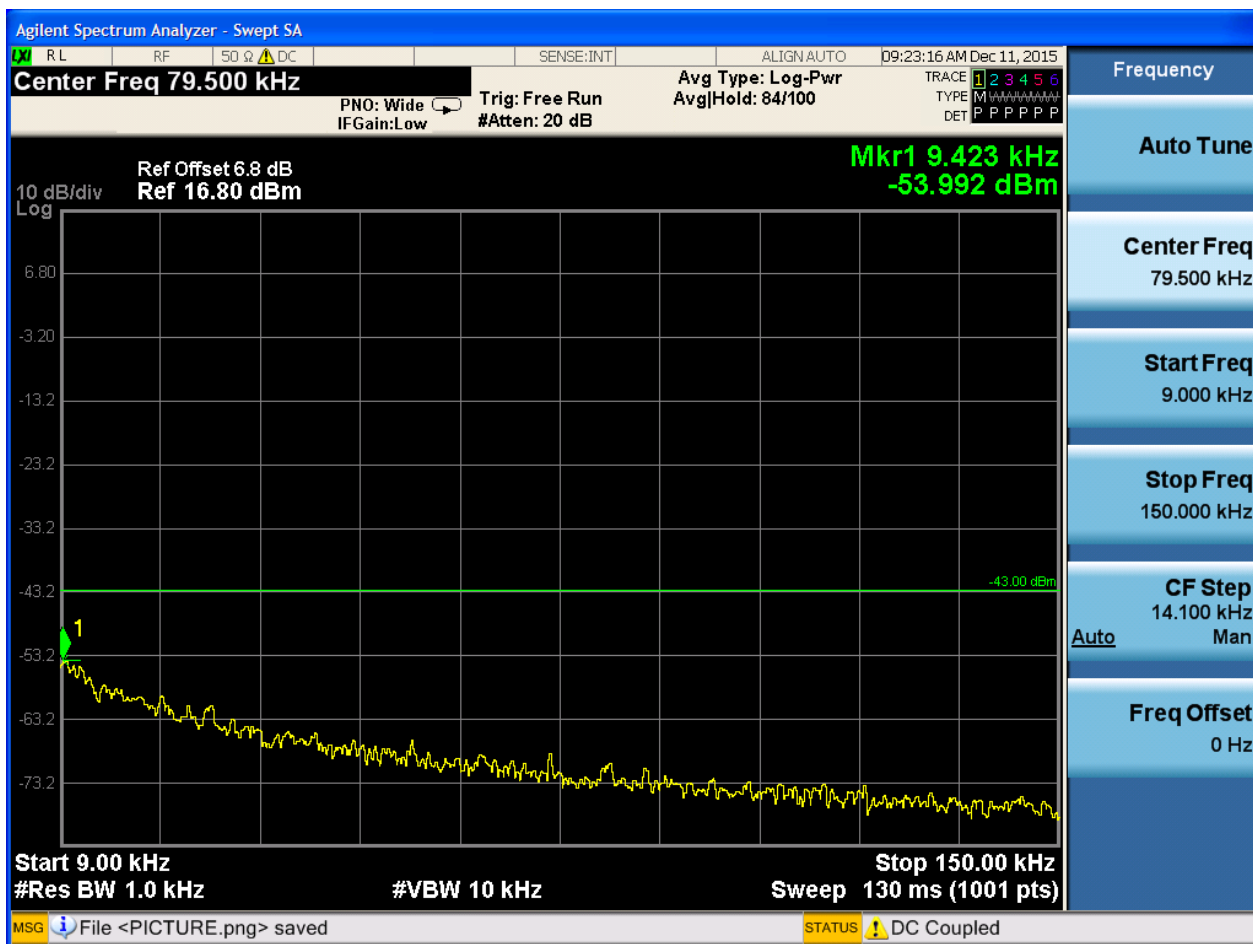


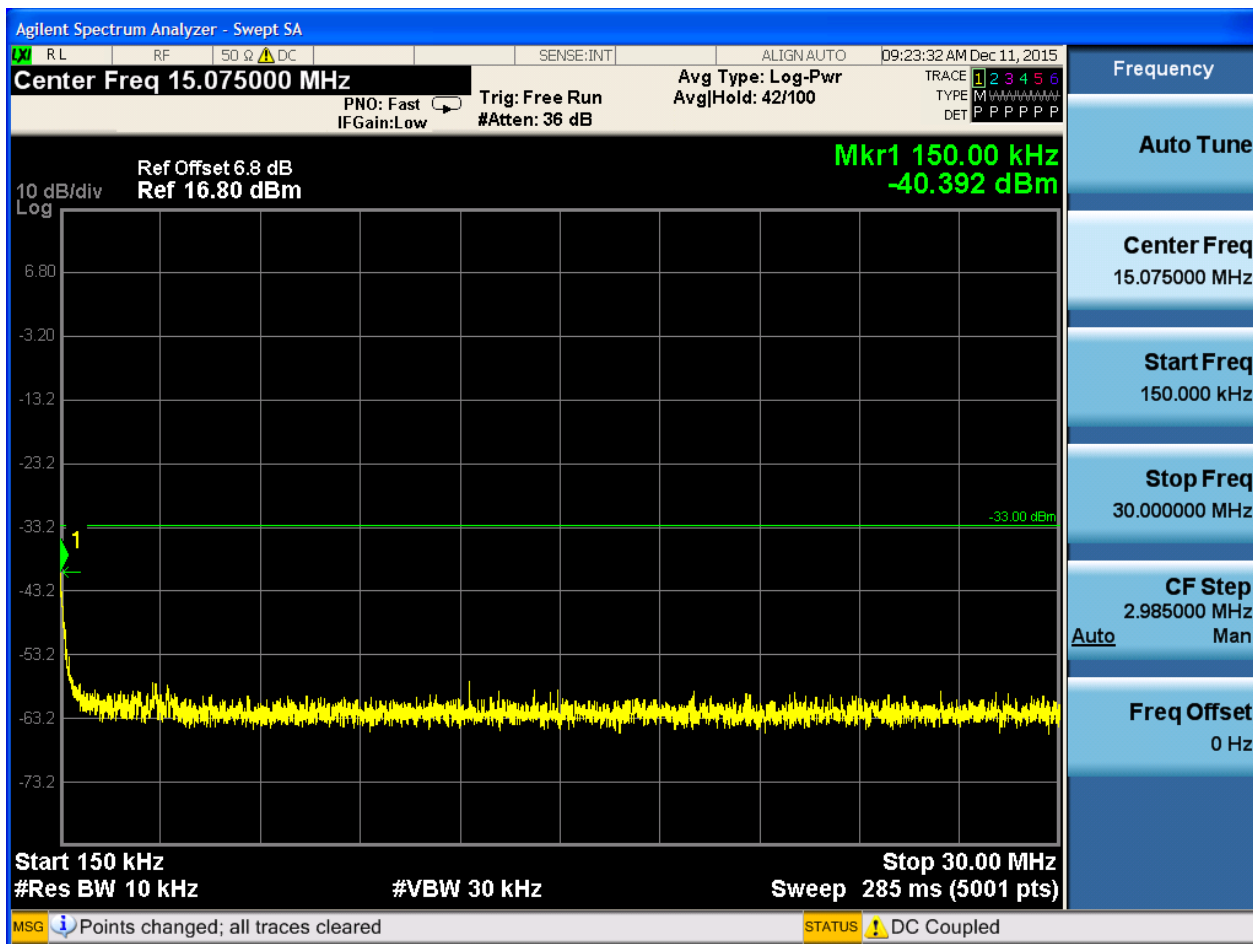


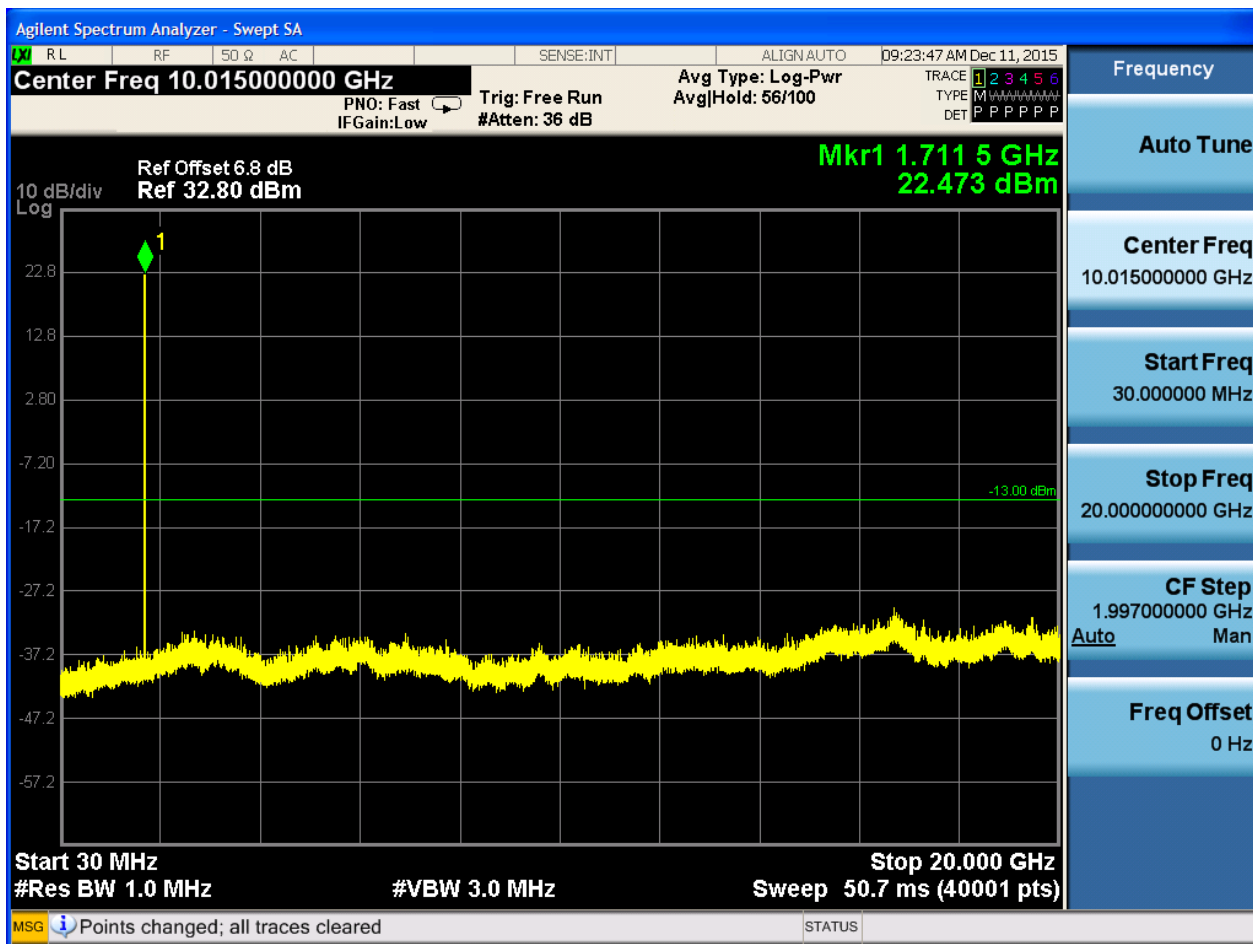
6.1.2 Test Band = WCDMA1700

6.1.2.1 Test Mode = UMTS/TM1

6.1.2.1.1 Test Channel = LCH

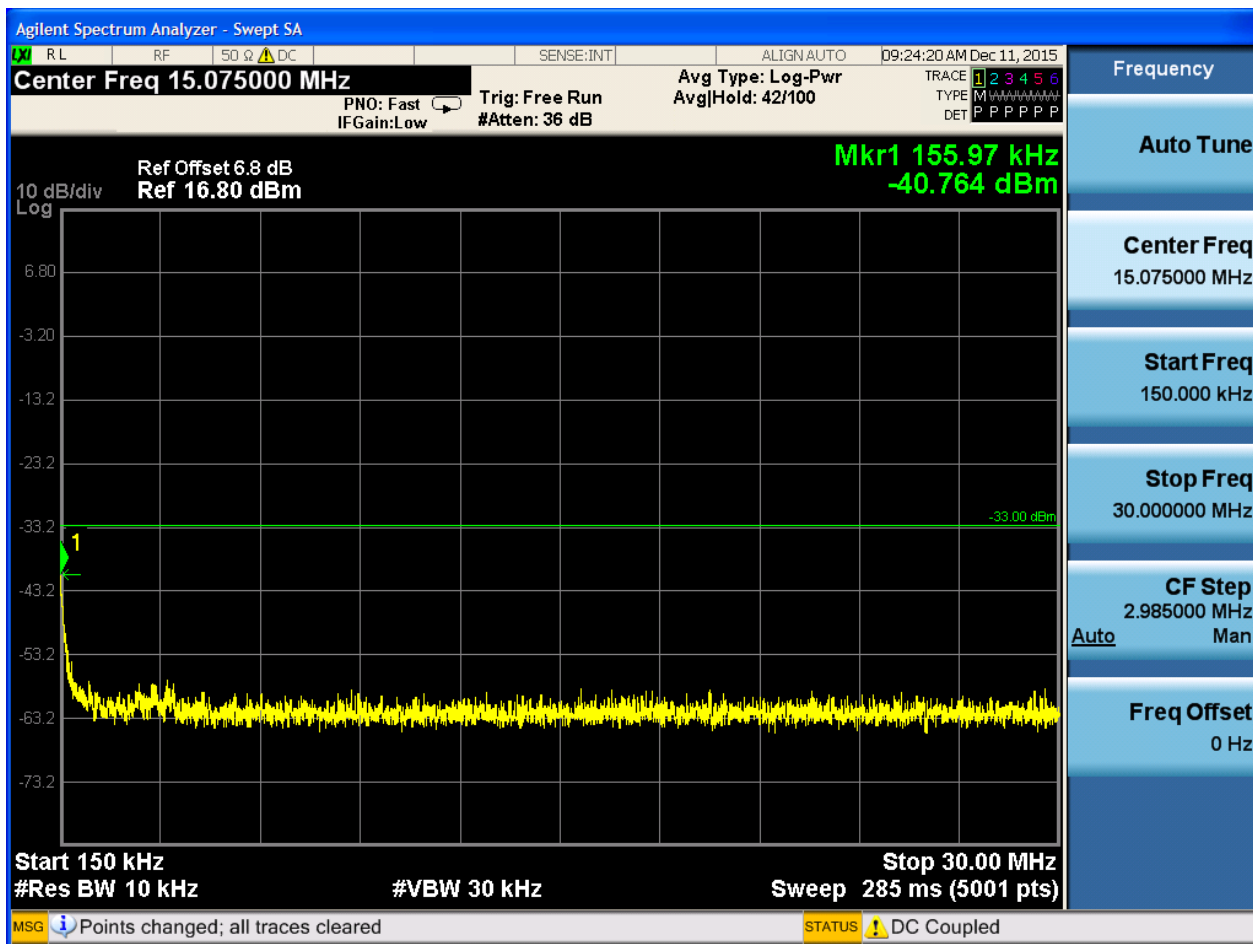


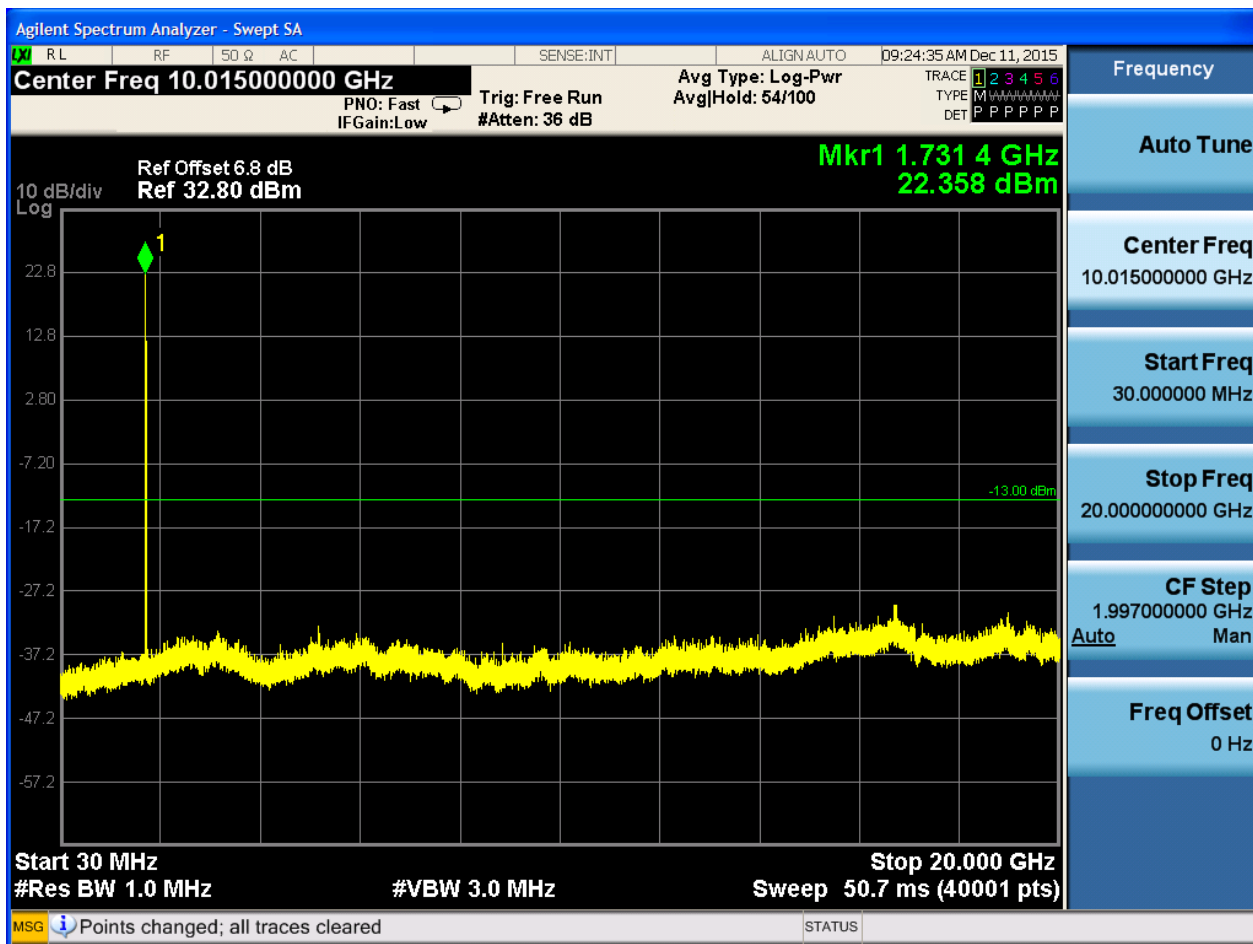




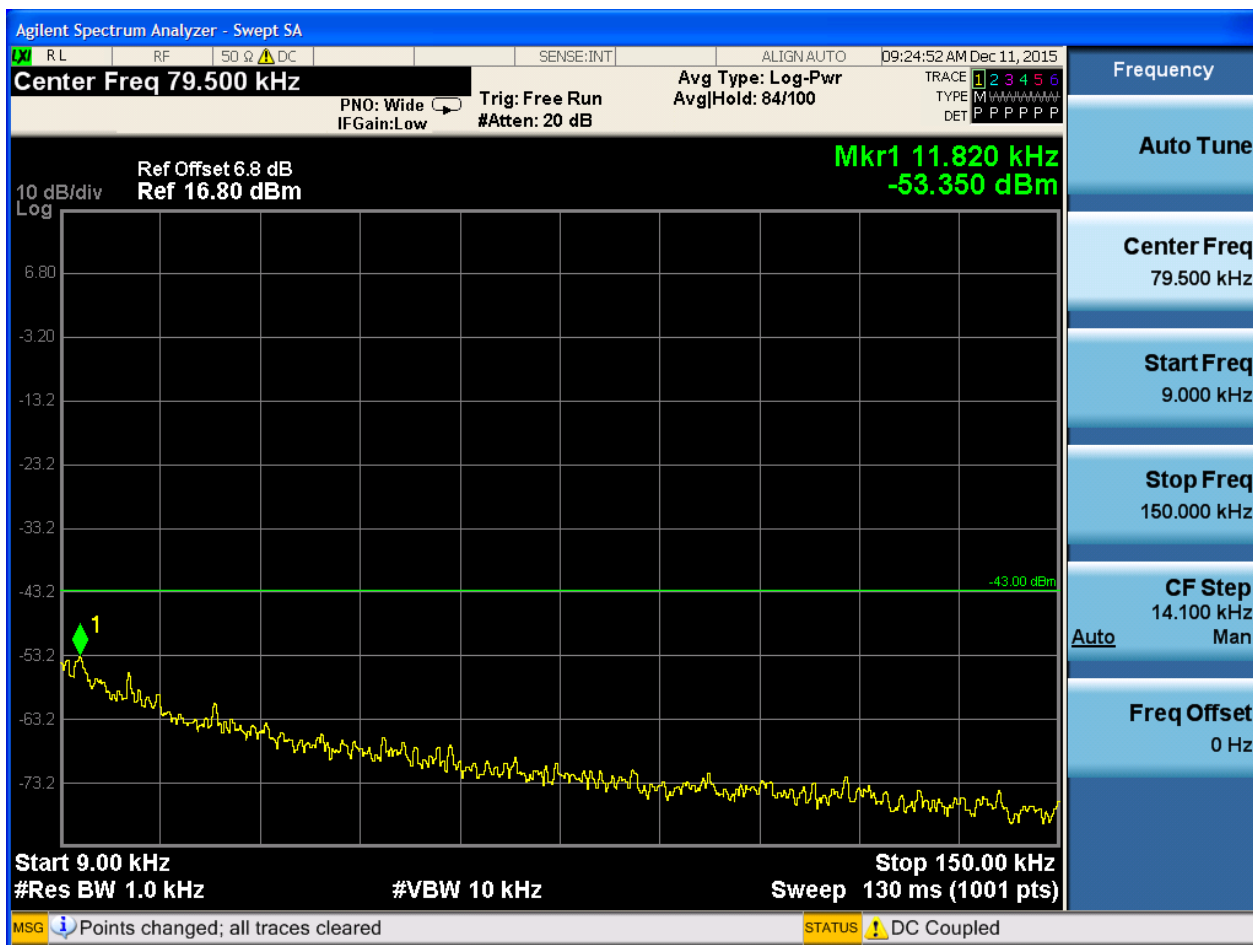
6.1.2.1.2 Test Channel = MCH

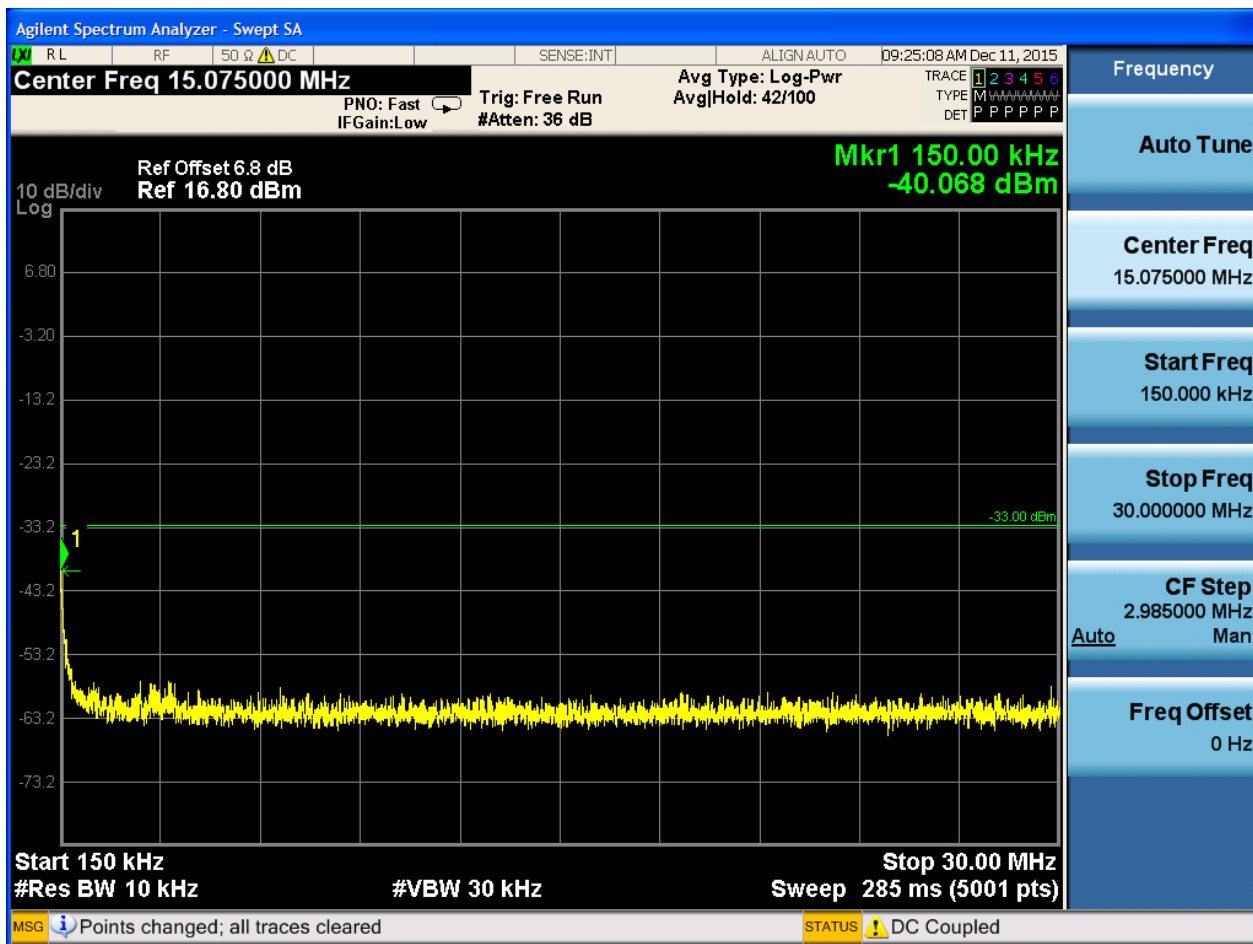


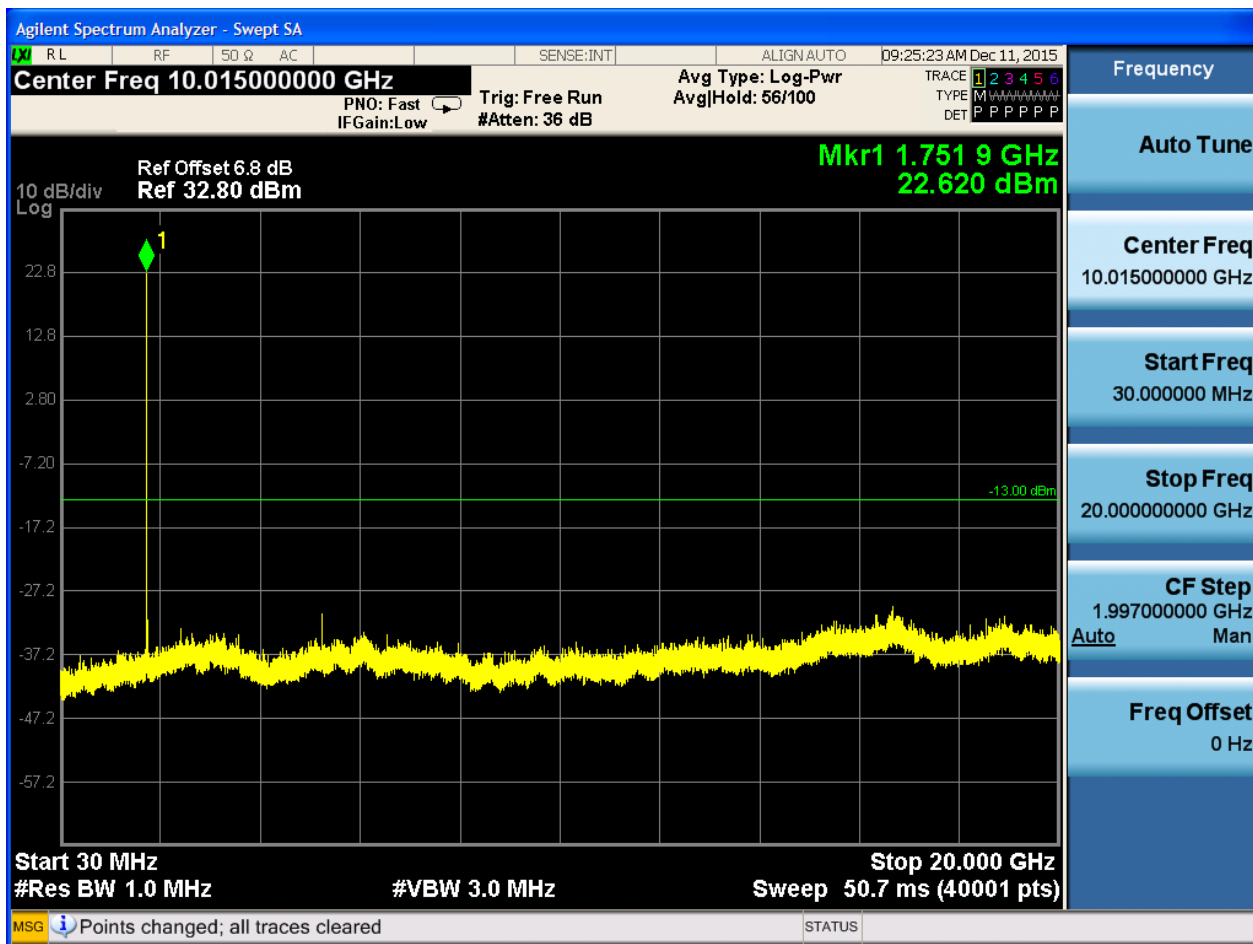




6.1.2.1.3 Test Channel = HCH







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

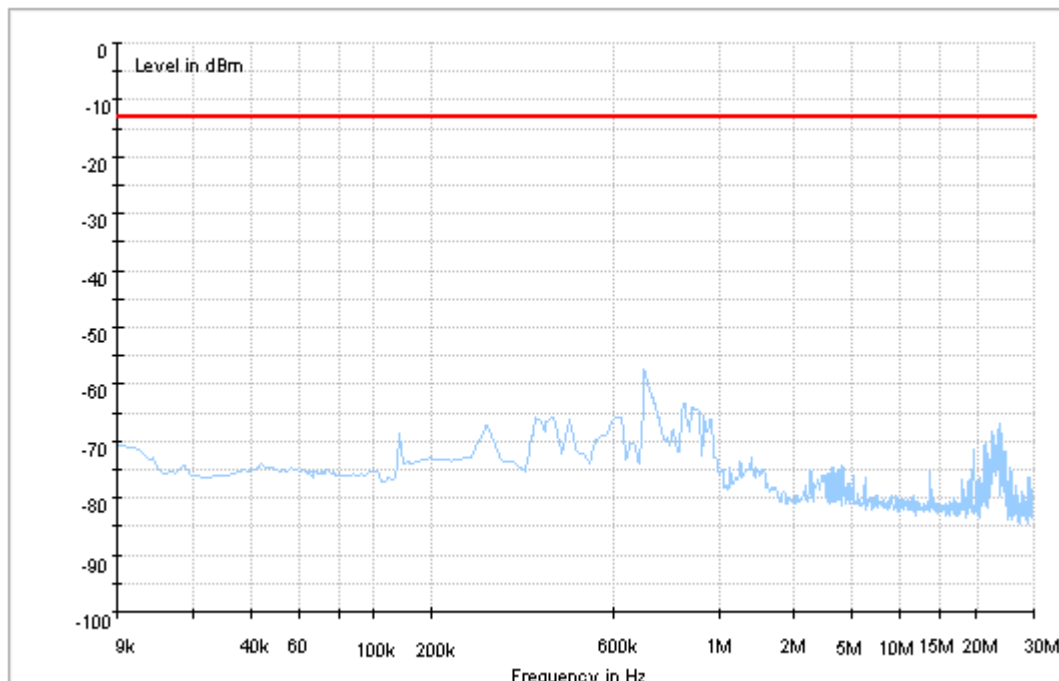
Above 1GHz, RBW = 1 MHz, VBW = 3 MHz. Detector: PK

Part I - Test Plots

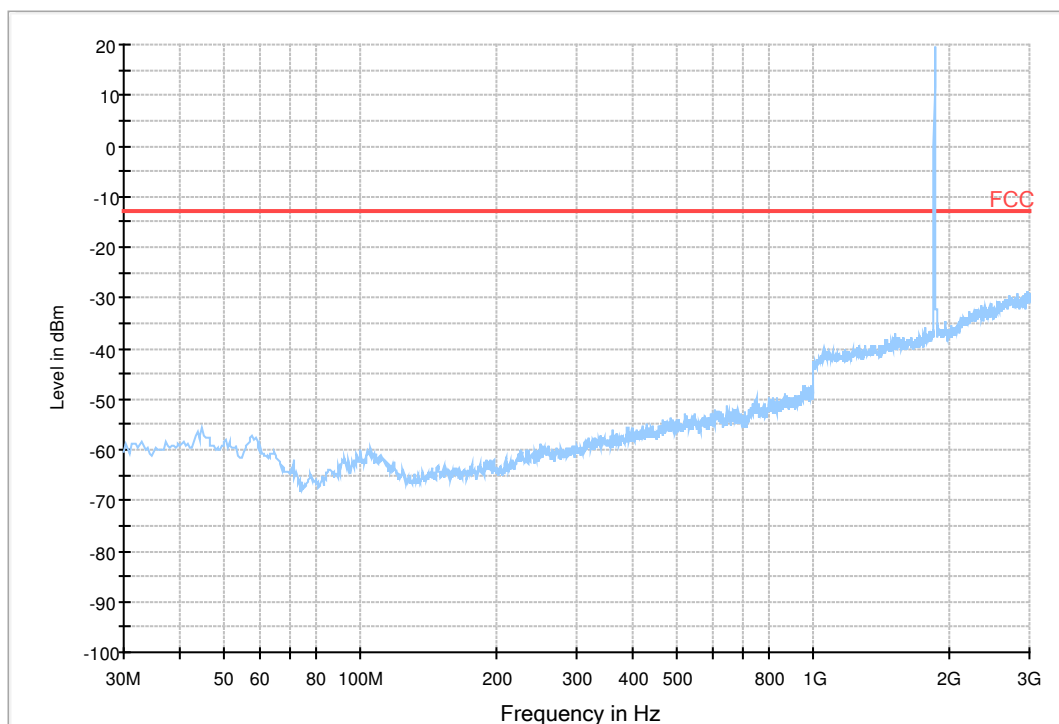
7.1 For UMTS

7.1.1 Test Band = WCDMA1900

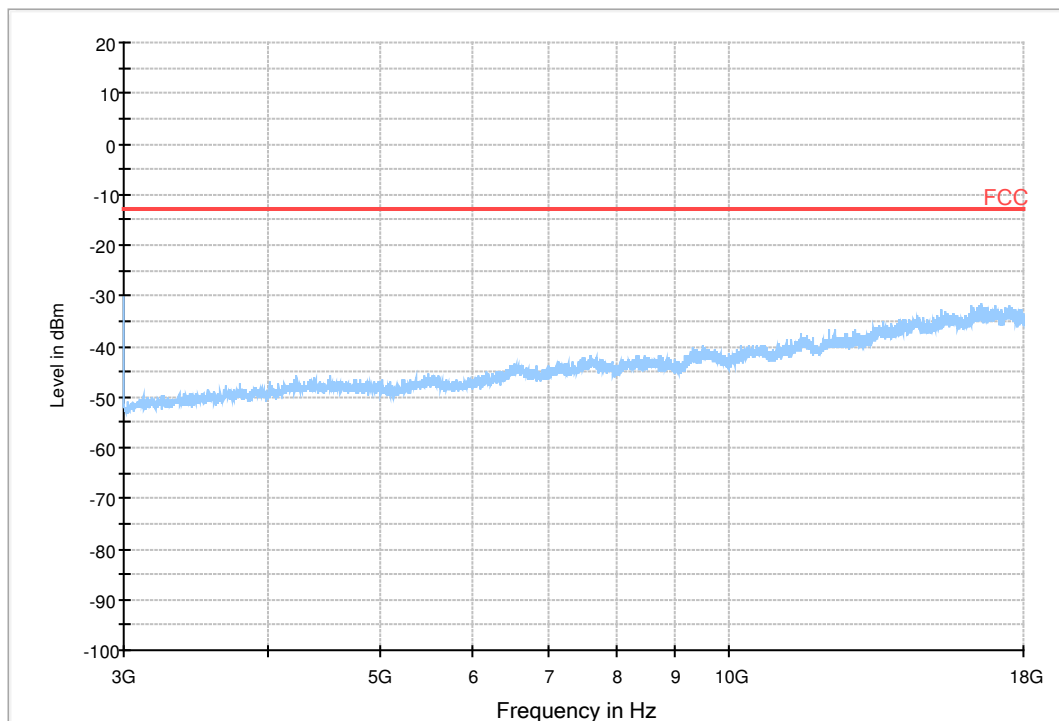
7.1.1.1 Test Mode = UMTS/TM1

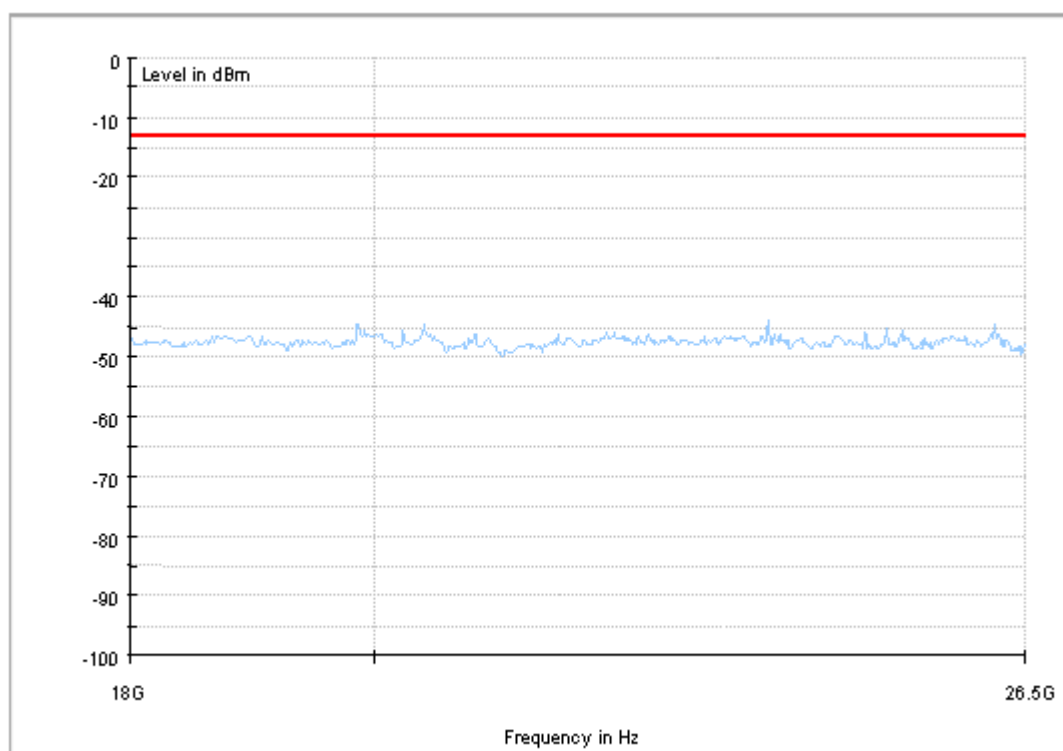


Copy of RSE-TX-DIRECTOR ABOVE 1.5G_L



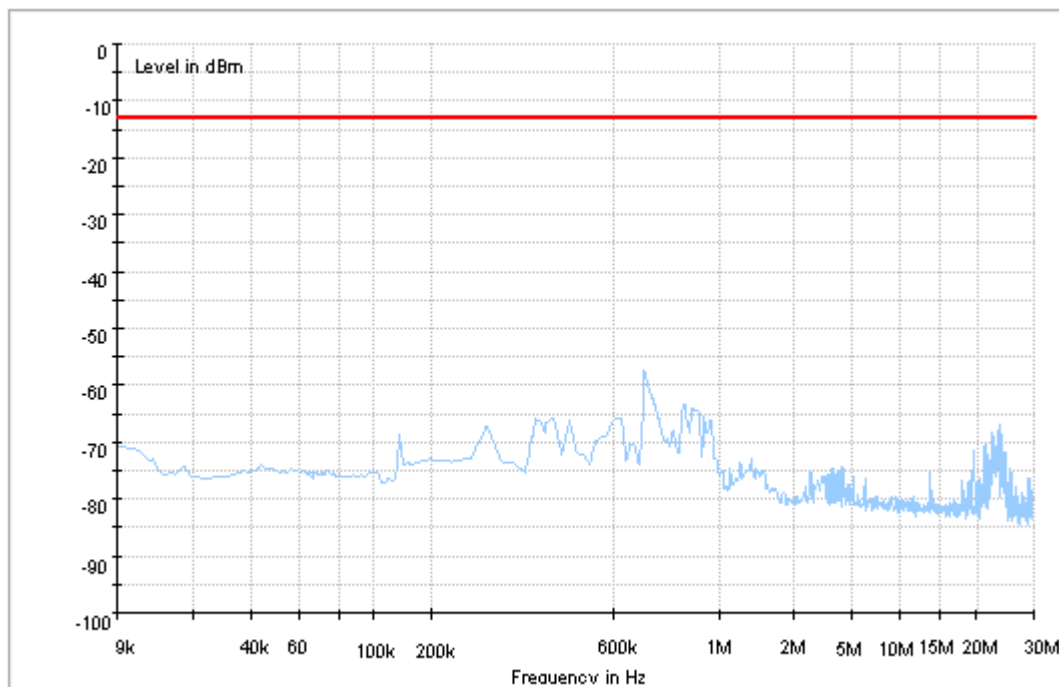
Copy of RSE-TX-DIRECTOR ABOVE 1.5G_H



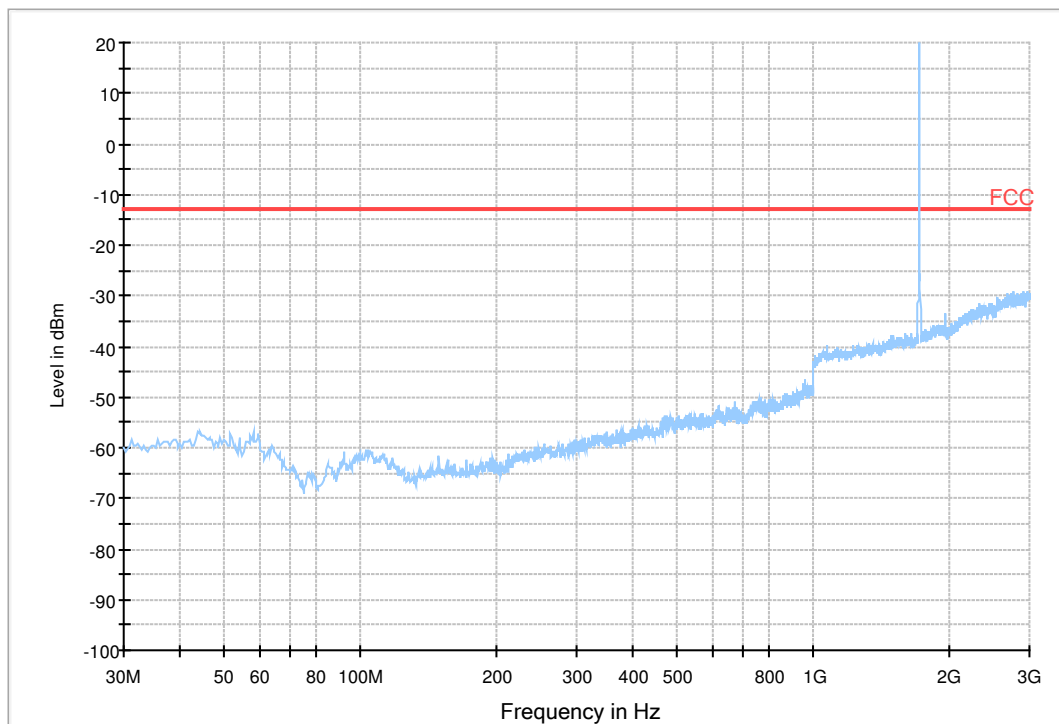


7.1.2 Test Band = WCDMA1700

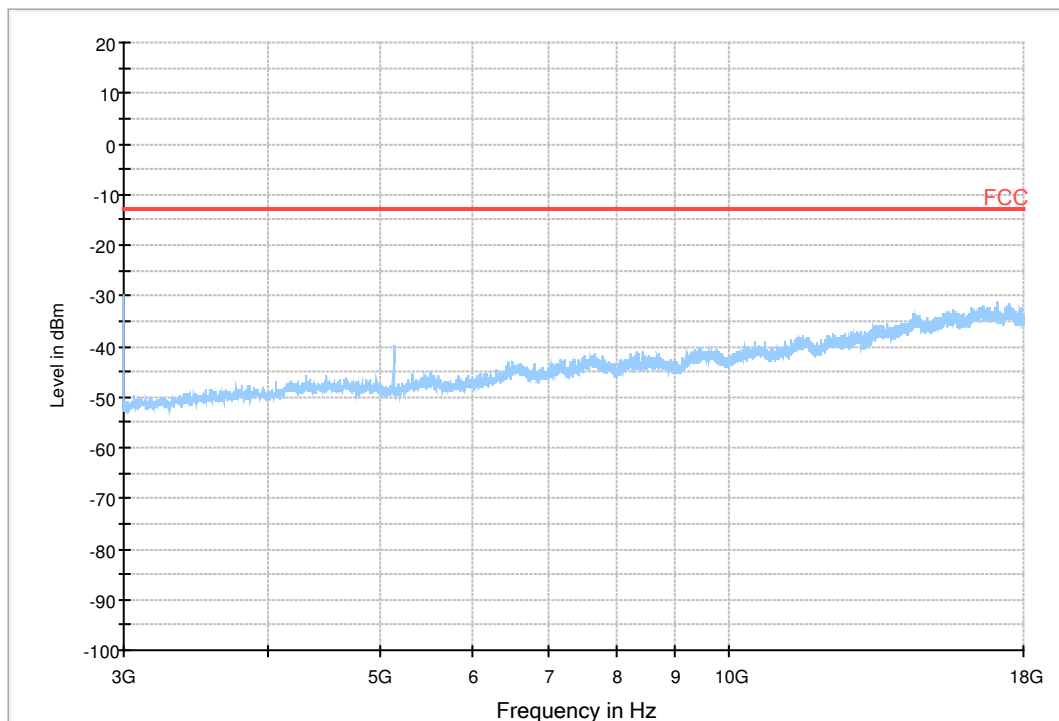
7.1.2.1 Test Mode = UMTS/TM1



Copy of RSE-TX-DIRECTOR ABOVE 1.5G_L



Copy of RSE-TX-DIRECTOR ABOVE 1.5G_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	2.9	0.00157	PASS
				VN	1.88	0.00101	PASS
				VH	3.85	0.00208	PASS
		MCH	TN	VL	-2.3	-0.00122	PASS
				VN	-1.68	-0.00089	PASS
				VH	-6.32	-0.00336	PASS
		HCH	TN	VL	5.81	0.00305	PASS
				VN	-0.69	-0.00036	PASS
				VH	-0.35	-0.00018	PASS
WCDMA1700	UMTS/TM1	LCH	TN	VL	-11.75	-0.00686	PASS
				VN	1.6	0.00093	PASS
				VH	-3.48	-0.00203	PASS
		MCH	TN	VL	-1.89	-0.00109	PASS
				VN	-0.4	-0.00023	PASS
				VH	4.01	0.00231	PASS
		HCH	TN	VL	-10.6	-0.00605	PASS
				VN	-0.72	-0.00041	PASS
				VH	-5.02	-0.00286	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	-1.74	-0.00094	PASS
				-20	-0.05	-0.00003	PASS
				-10	0.08	0.00004	PASS
				0	3.14	0.0017	PASS
				10	0.69	0.00037	PASS
				20	-3.49	-0.00188	PASS
				30	2.38	0.00128	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				40	-1.25	-0.00067	PASS
				50	1.79	0.00097	PASS
		MCH	VN	-30	2.5	0.00133	PASS
				-20	1.8	0.00096	PASS
				-10	-0.85	-0.00045	PASS
				0	-2.21	-0.00118	PASS
				10	-0.47	-0.00025	PASS
				20	-6	-0.00319	PASS
				30	3.34	0.00178	PASS
				40	2.44	0.0013	PASS
				50	-1.31	-0.0007	PASS
		HCH	VN	-30	1.88	0.00099	PASS
				-20	2.69	0.00141	PASS
				-10	9.11	0.00478	PASS
				0	-1.65	-0.00086	PASS
				10	3.02	0.00158	PASS
				20	-3.74	-0.00196	PASS
				30	8.41	0.00441	PASS
				40	-5.66	-0.00297	PASS
				50	-0.46	-0.00024	PASS
WCDMA1700	UMTS/TM1	LCH	VN	-30	-2.82	-0.00165	PASS
				-20	-2.12	-0.00124	PASS
				-10	4.32	0.00252	PASS
				0	-1.85	-0.00108	PASS
				10	4.99	0.00291	PASS
				20	1.05	0.00061	PASS
				30	2.21	0.00129	PASS
				40	-0.52	-0.0003	PASS
				50	1.95	0.00114	PASS
		MCH	VN	-30	-5.63	-0.00325	PASS
				-20	-11.63	-0.00671	PASS
				-10	-5.4	-0.00312	PASS
				0	-8.91	-0.00514	PASS
				10	1.46	0.00084	PASS
				20	7.32	0.00422	PASS
				30	12.79	0.00738	PASS
				40	-3.74	-0.00216	PASS
				50	4.62	0.00267	PASS
		HCH	VN	-30	-15.76	-0.00899	PASS
				-20	-0.08	-0.00005	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				-10	-5.16	-0.00294	PASS
				0	-3.89	-0.00222	PASS
				10	0.98	0.00056	PASS
				20	-3.66	-0.00209	PASS
				30	5.33	0.00304	PASS
				40	-2.99	-0.00171	PASS
				50	5.31	0.00303	PASS

END