Appendix for test report

1Appendix_A: Effective (Isotropic) Radiated Power Output Data

Part I - Test Results

Test Band	Test Mode	Test Channel	Conducted Power [dBm]	ERP [dBm]	Limit [dBm]	Verdict
WCDMA850	UMTS /TM1	LCH	23.96	23.31	38.5	PASS
		MCH	24.18	23.53	38.5	PASS
		HCH	24.04	23.39	38.5	PASS
WCDMA1700	UMTS /TM1	LCH	24.07	25.27	33	PASS
		MCH	24.14	25.34	33	PASS
		HCH	24.2	25.4	33	PASS
WCDMA1900	UMTS /TM1	LCH	23.58	24.78	33	PASS
		MCH	23.59	24.79	33	PASS
		HCH	23.81	25.01	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,

ERP [dBm] = SGP [dBm] - Cable Loss [dB] + Gain [dBd]

EIRP [dBm] = SGP [dBm] - Cable Loss [dB] + Gain [dBi]

b, SGP=Signal Generator Level

Note2: RBW > emission bandwidth, VBW > 3 x RBW.

Detector: RMS

2Appendix_B: Peak-to-Average Ratio

Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
WCDMA1700	UMTS/TM1	LCH	3.16	13	PASS
		MCH	3.2	13	PASS
		HCH	3.19	13	PASS
WCDMA1900	UMTS/TM1	LCH	2.73	13	PASS
		MCH	3.13	13	PASS
		HCH	3.08	13	PASS

3Appendix_C: Modulation Characteristics

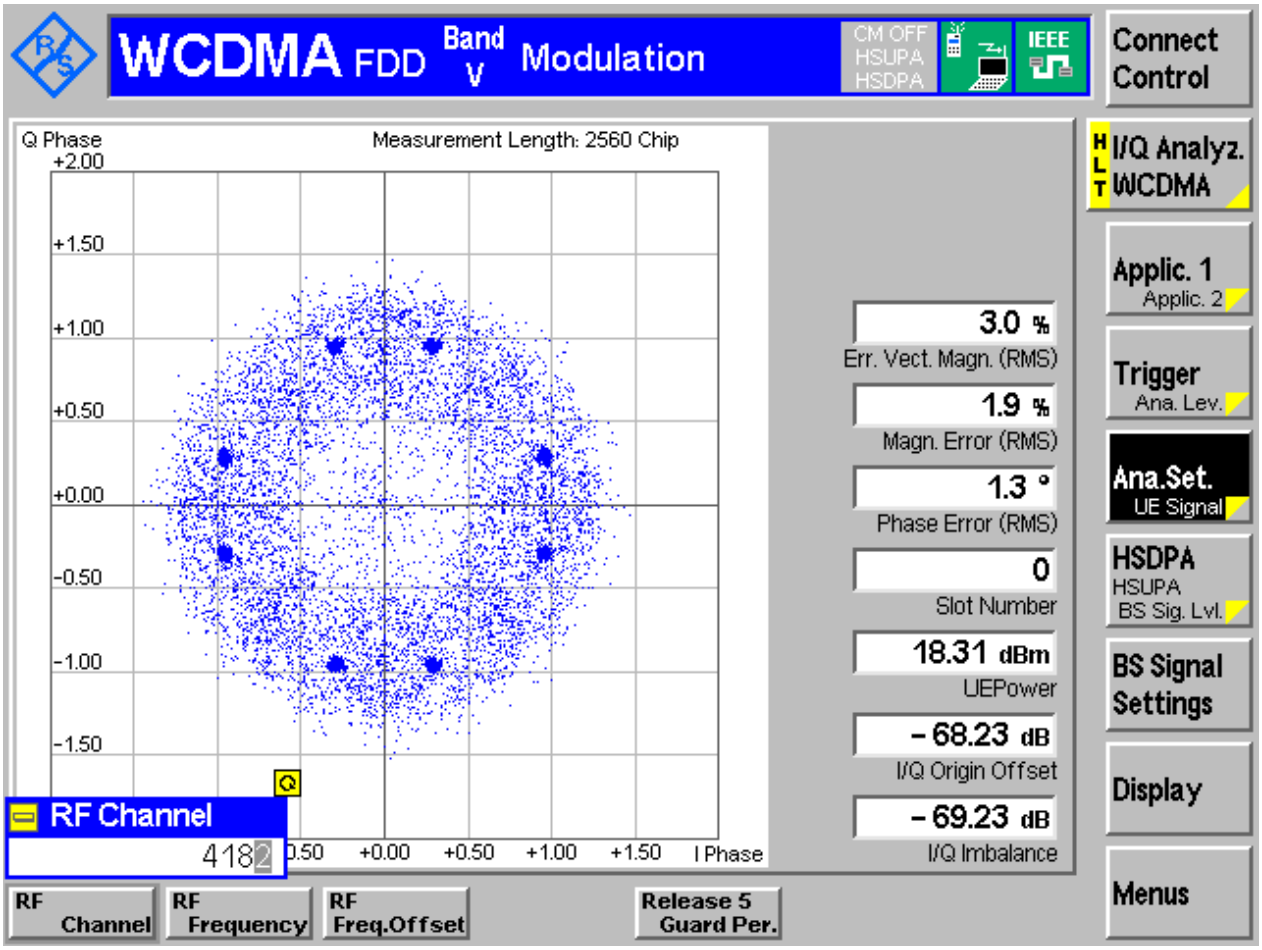
Part I - Test Plots

3.1 For UMTS

3.1.1 Test Band = WCDMA850

3.1.1.1 Test Mode = UMTS/TM1

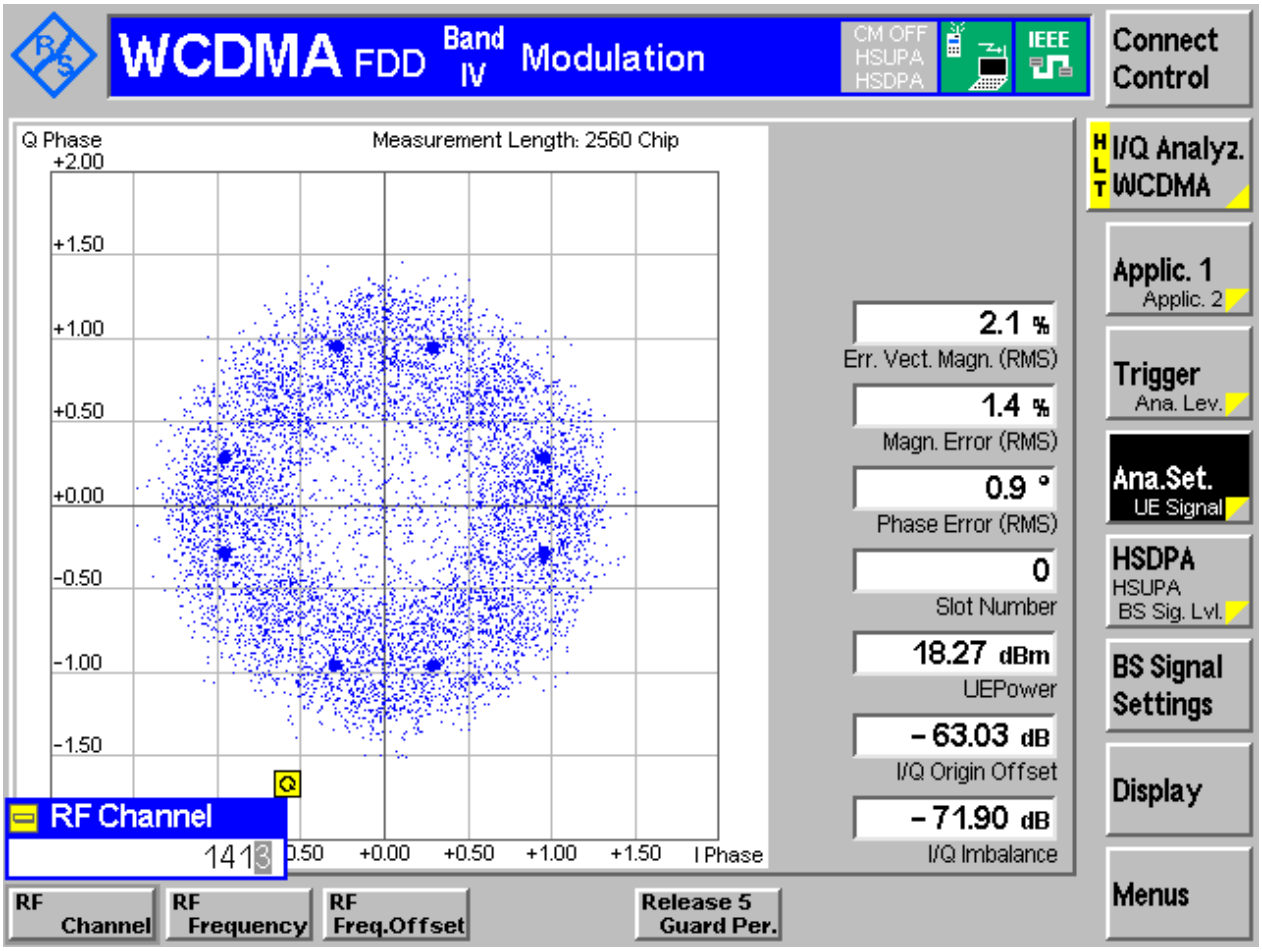
3.1.1.1.1 Test Channel = MCH



3.1.2 Test Band = WCDMA1700

3.1.2.1 Test Mode = UMTS/TM1

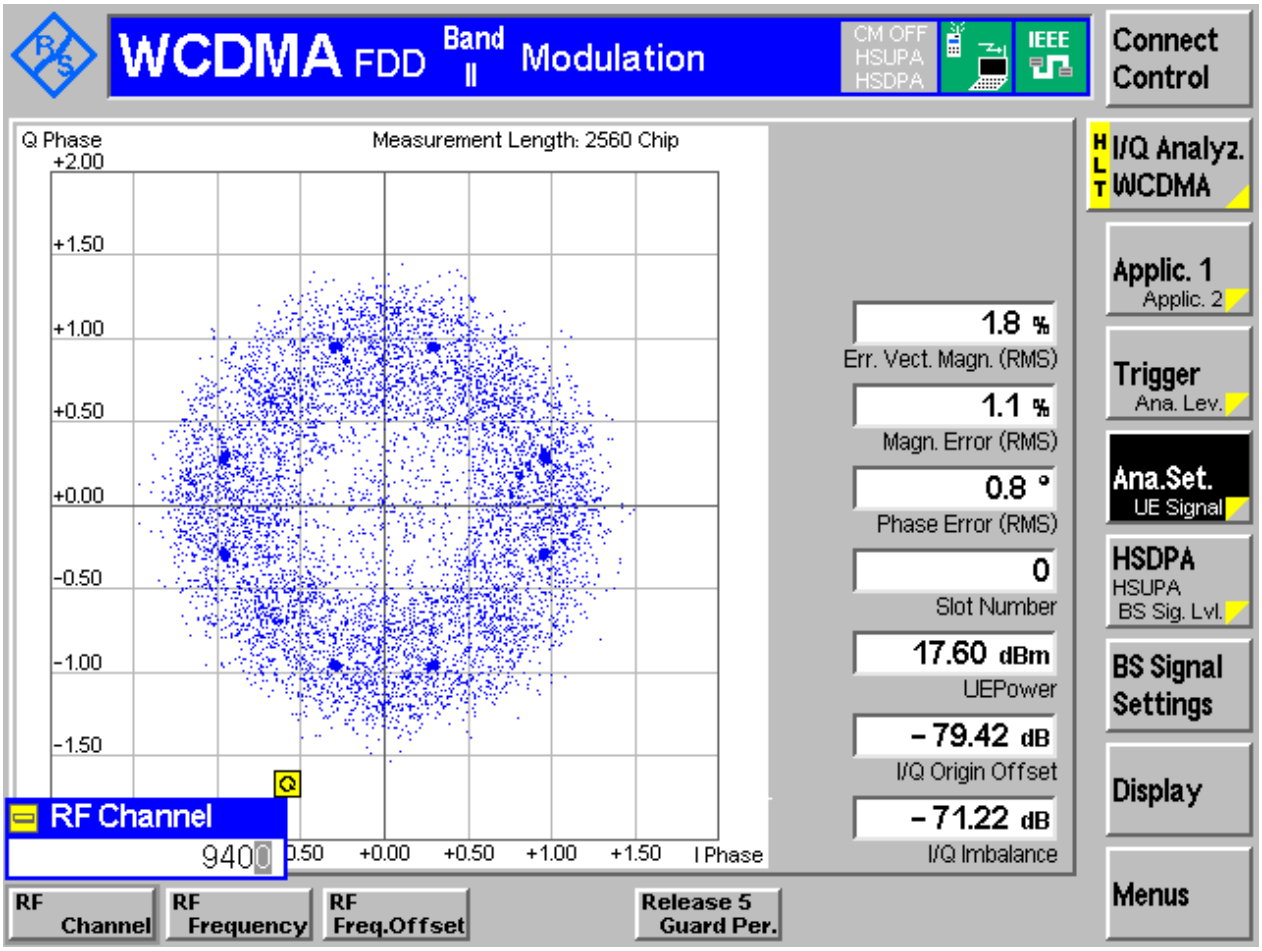
3.1.2.1.1 Test Channel = MCH



3.1.3 Test Band = WCDMA1900

3.1.3.1 Test Mode = UMTS/TM1

3.1.3.1.1 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	4.16	4.68	Pass
		MCH	4.15	4.66	Pass
		HCH	4.16	4.67	Pass
WCDMA1700	UMTS/TM1	LCH	4.18	4.70	Pass
		MCH	4.17	4.68	Pass
		HCH	4.18	4.68	Pass
WCDMA1900	UMTS/TM1	LCH	4.19	4.70	Pass
		MCH	4.17	4.69	Pass
		HCH	4.17	4.69	Pass

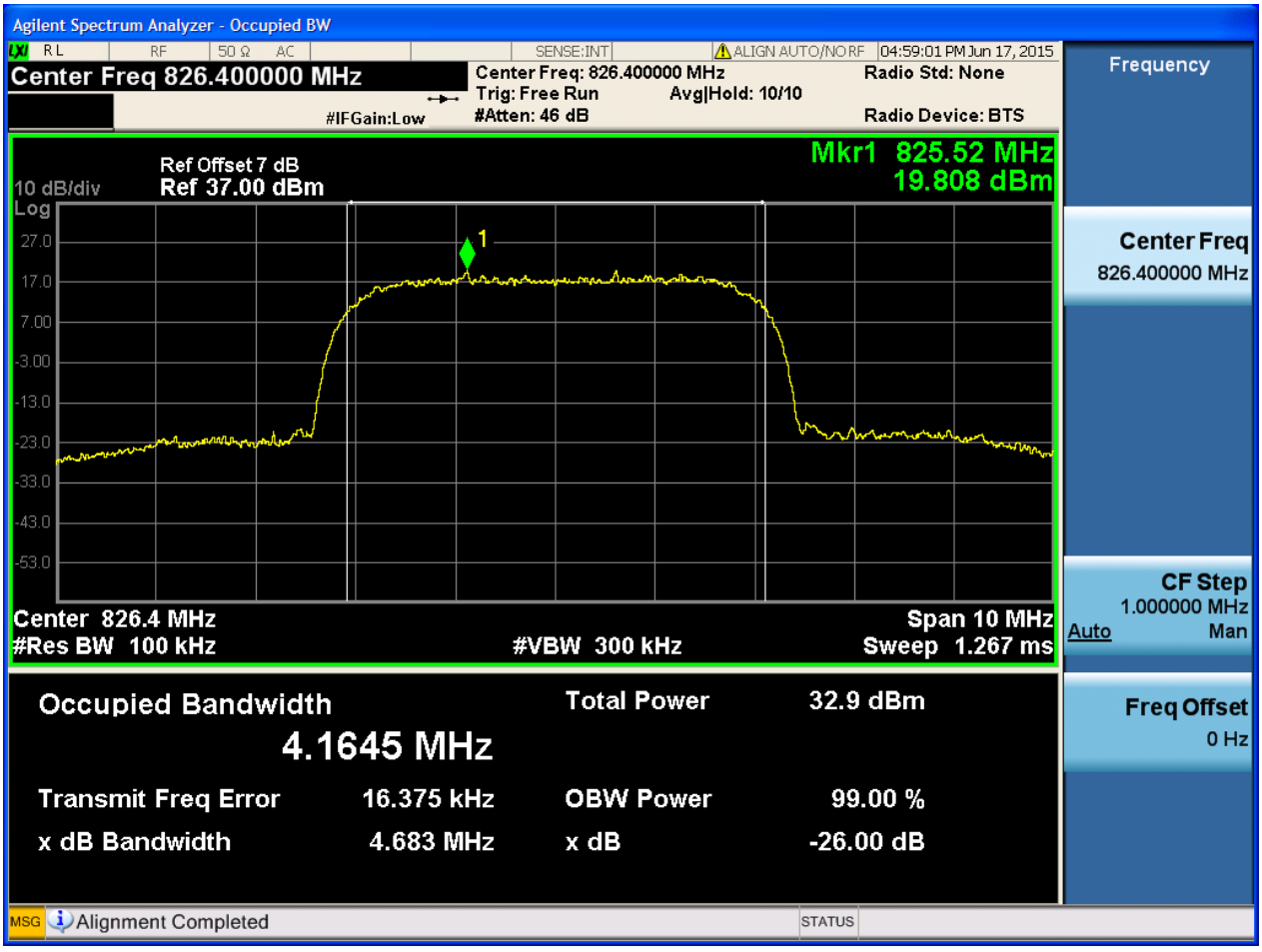
Part II - Test Plots

4.1 For UMTS

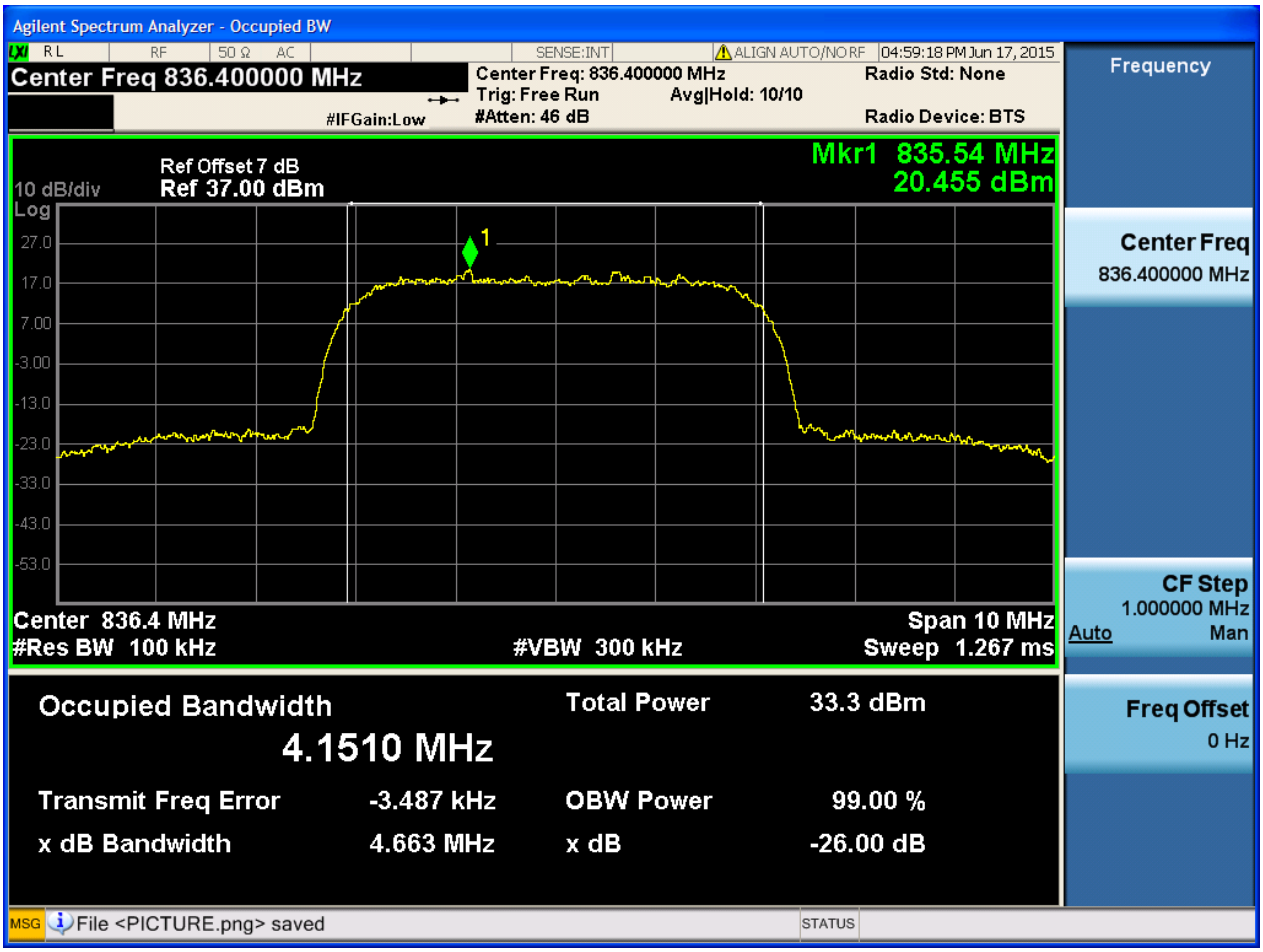
4.1.1 Test Band = WCDMA850

4.1.1.1 Test Mode = UMTS/TM1

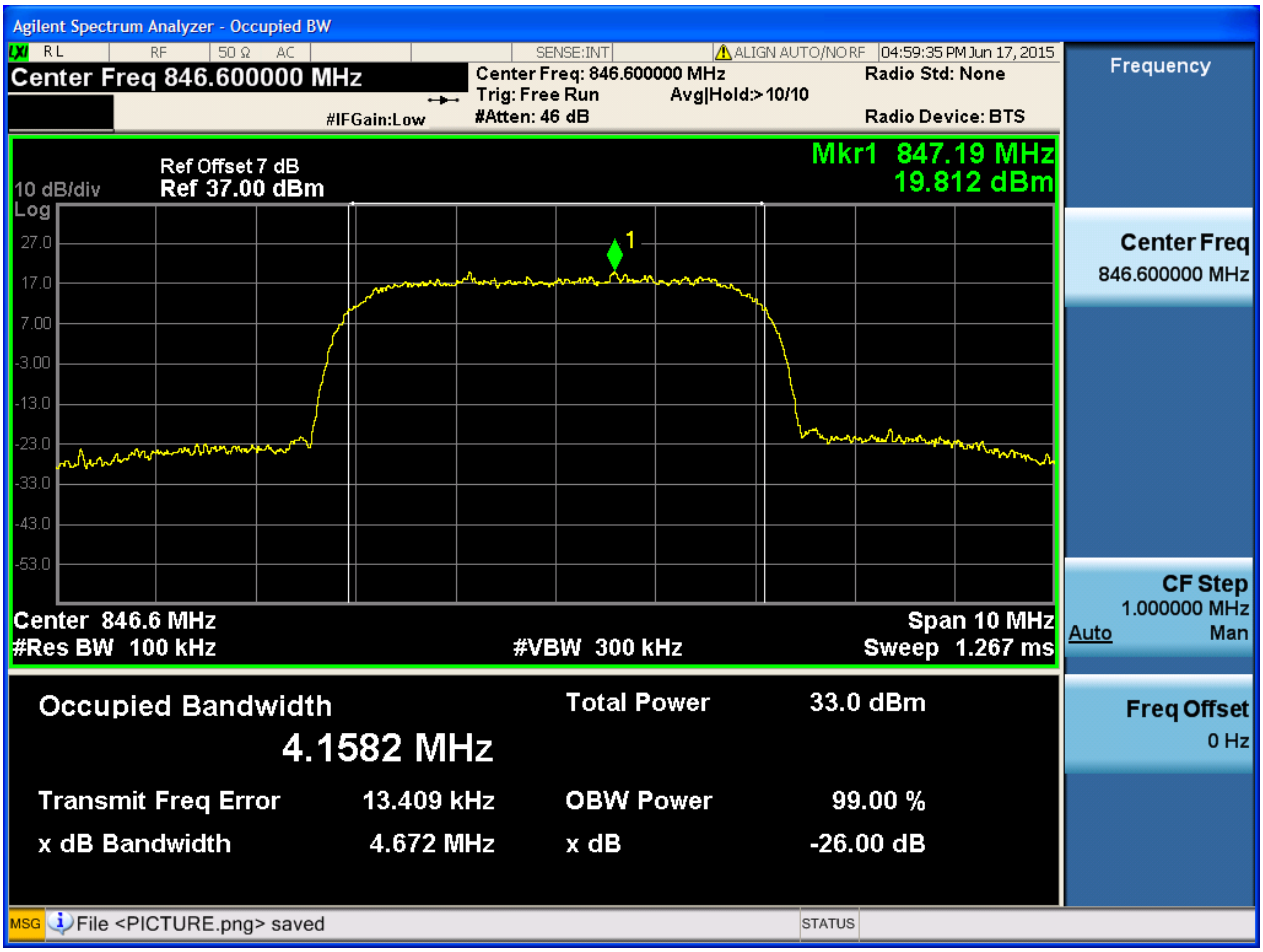
4.1.1.1.1 Test Channel = LCH



4.1.1.1.2 Test Channel = MCH



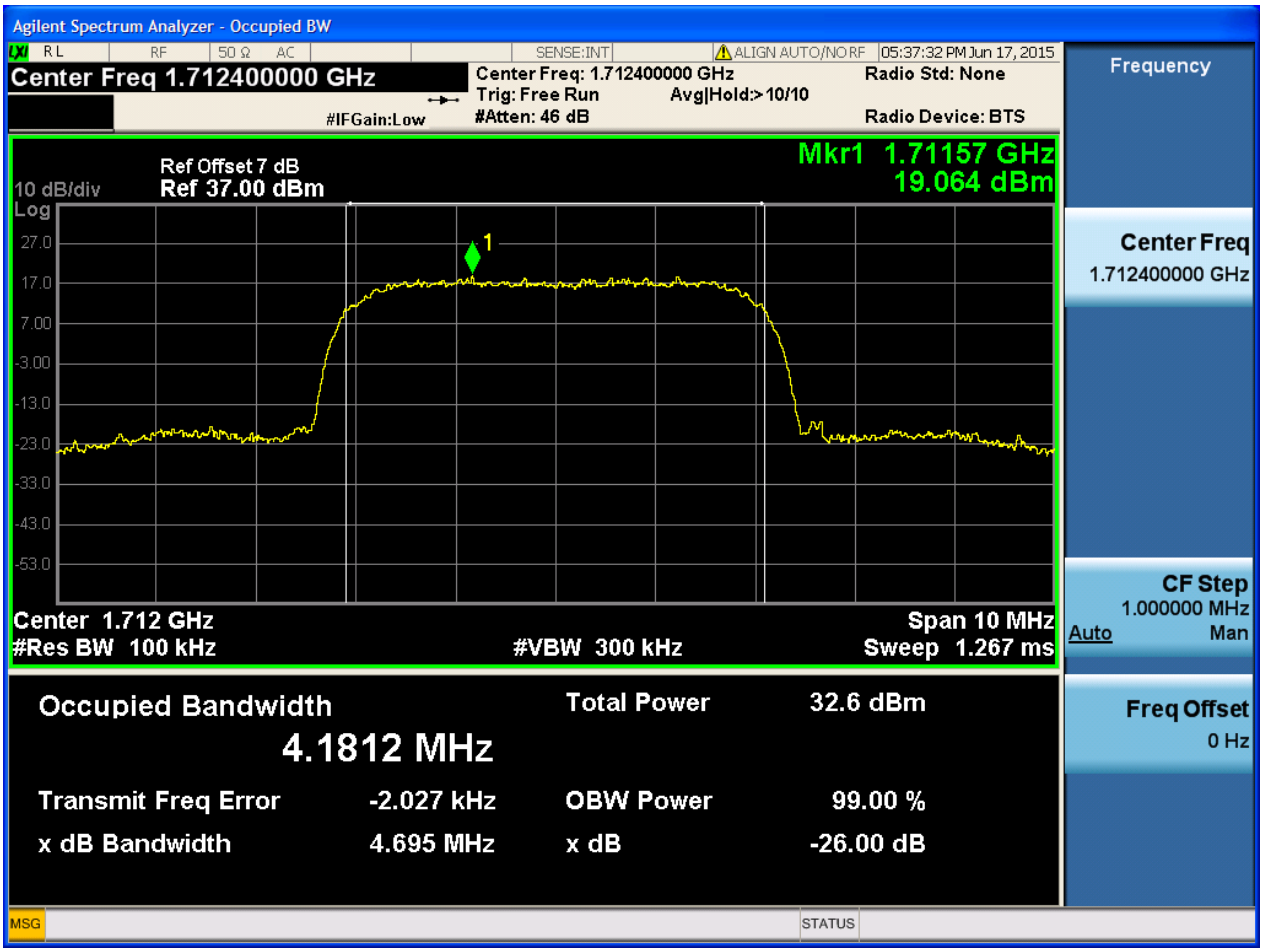
4.1.1.1.3 Test Channel = HCH



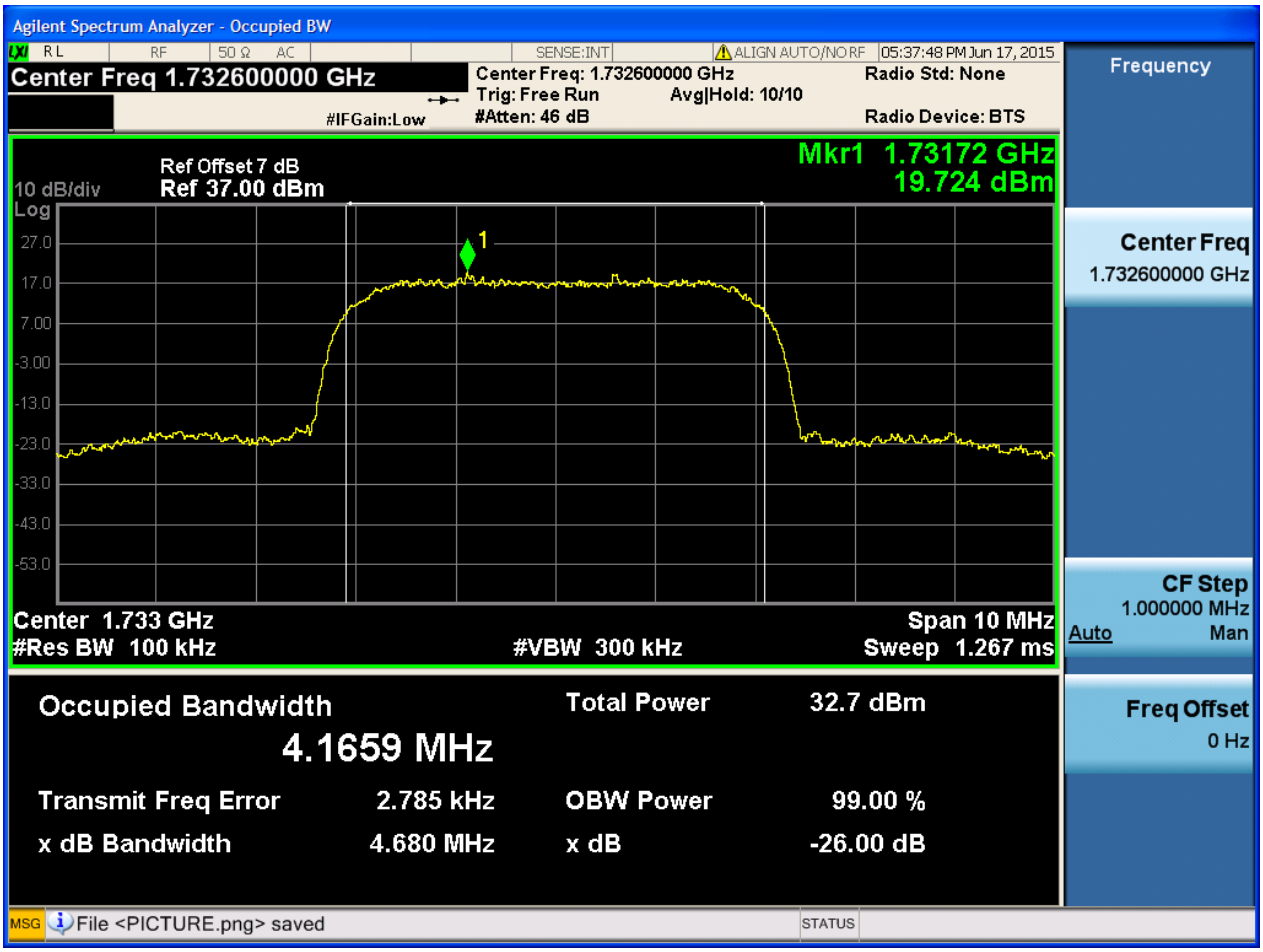
4.1.2 Test Band = WCDMA1700

4.1.2.1 Test Mode = UMTS/TM1

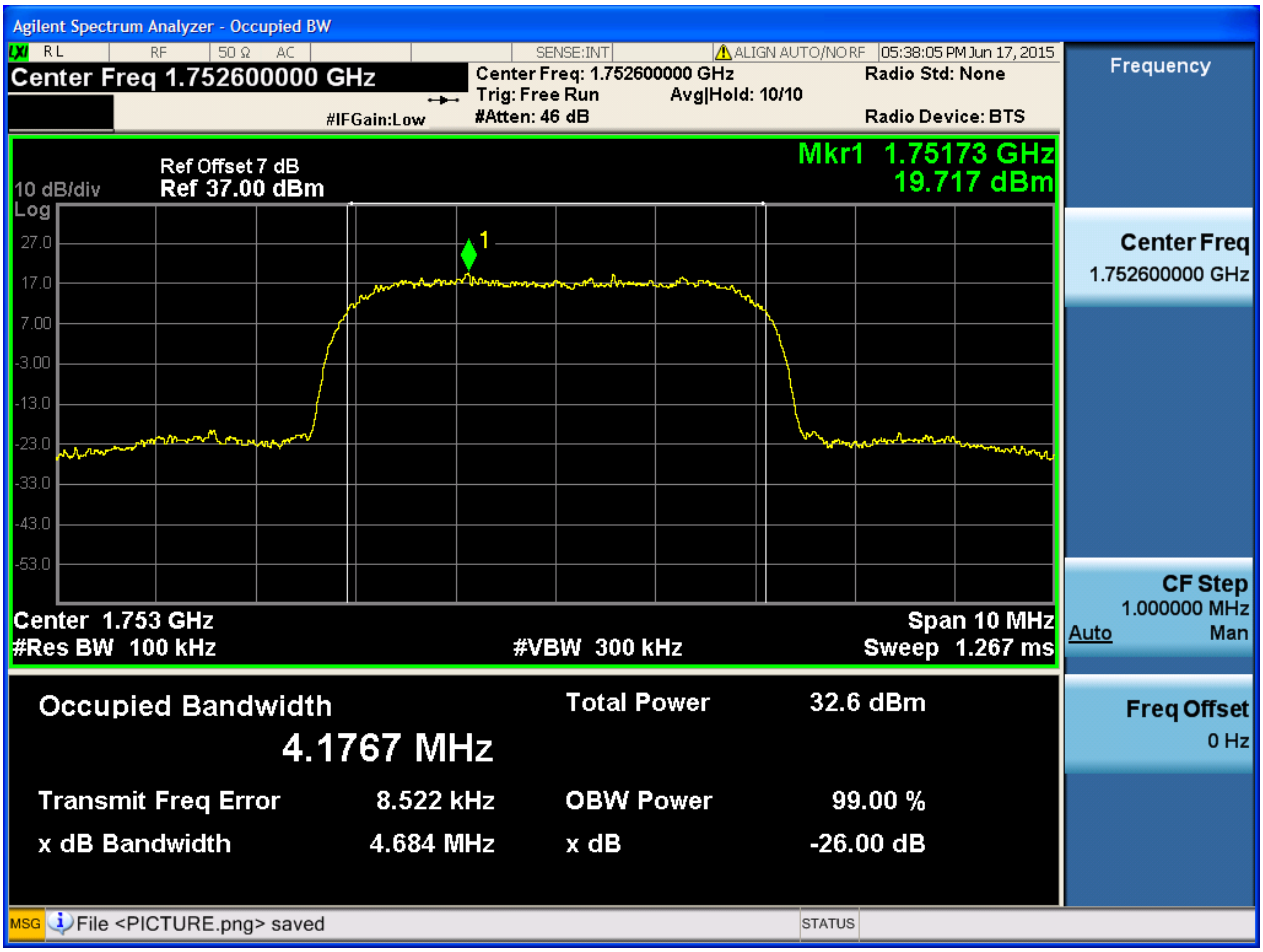
4.1.2.1.1 Test Channel = LCH



4.1.2.1.2 Test Channel = MCH



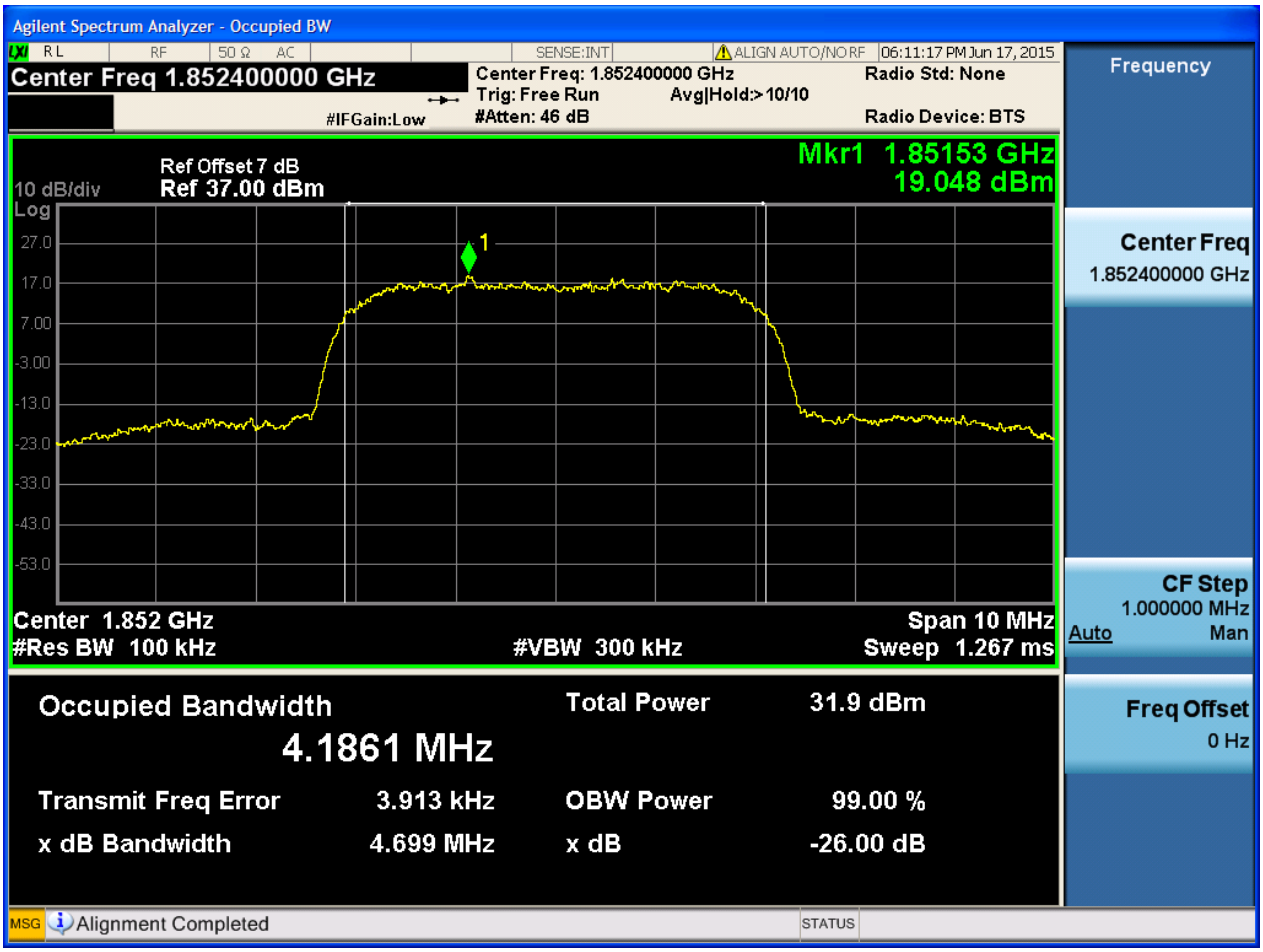
4.1.2.1.3 Test Channel = HCH



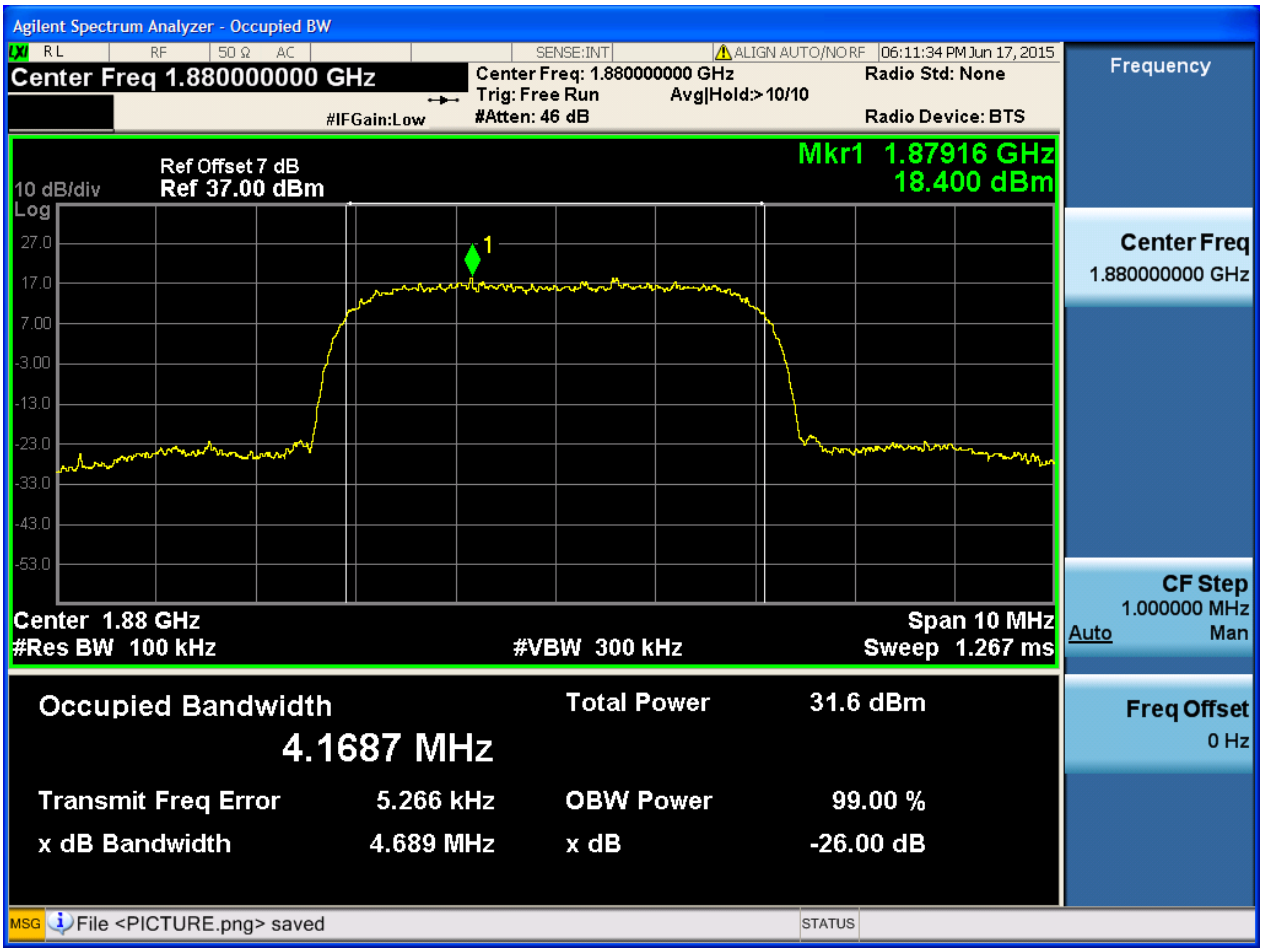
4.1.3 Test Band = WCDMA1900

4.1.3.1 Test Mode = UMTS/TM1

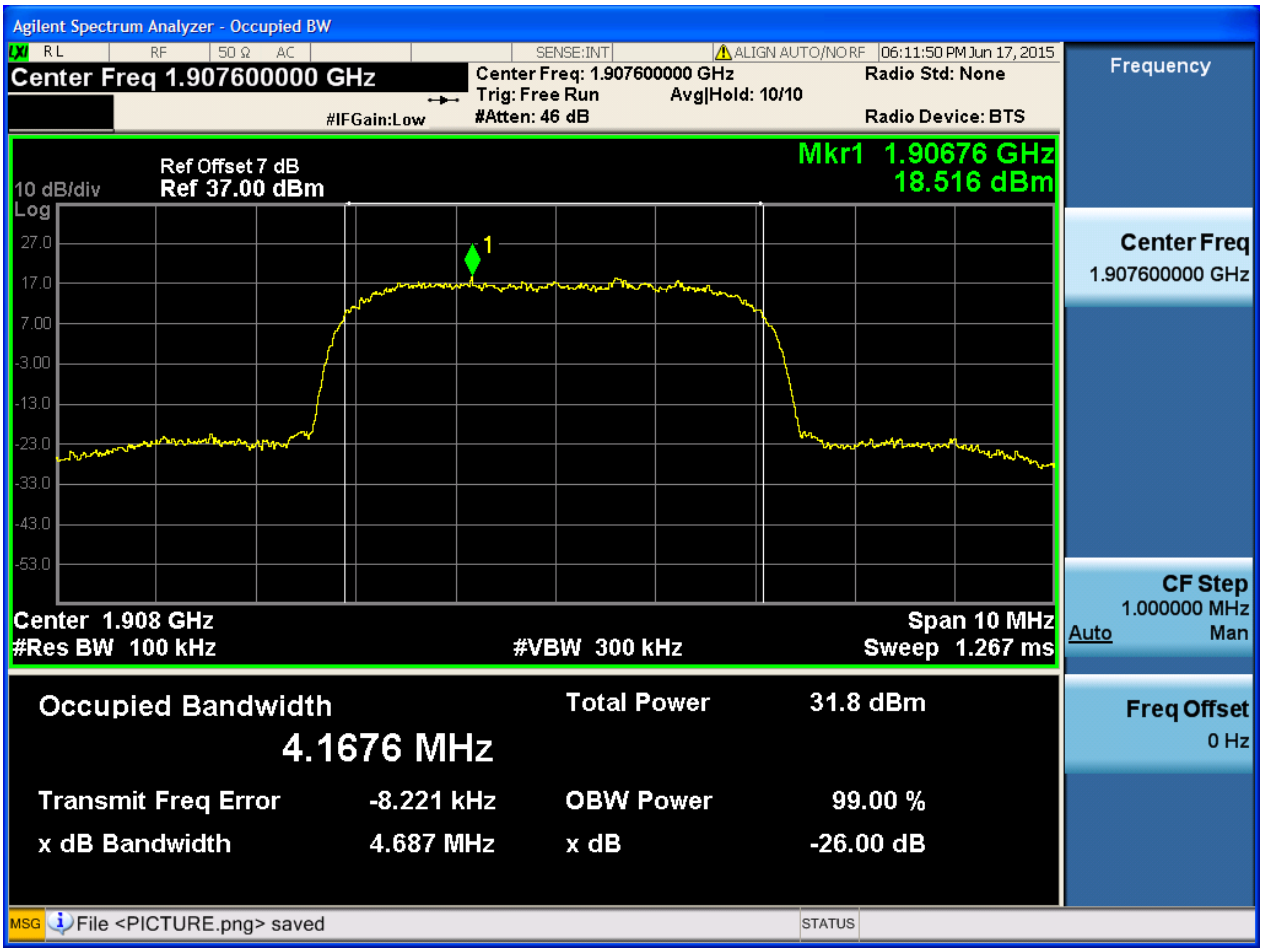
4.1.3.1.1 Test Channel = LCH



4.1.3.1.2 Test Channel = MCH



4.1.3.1.3 Test Channel = HCH



5Appendix_E: Band Edges Compliance

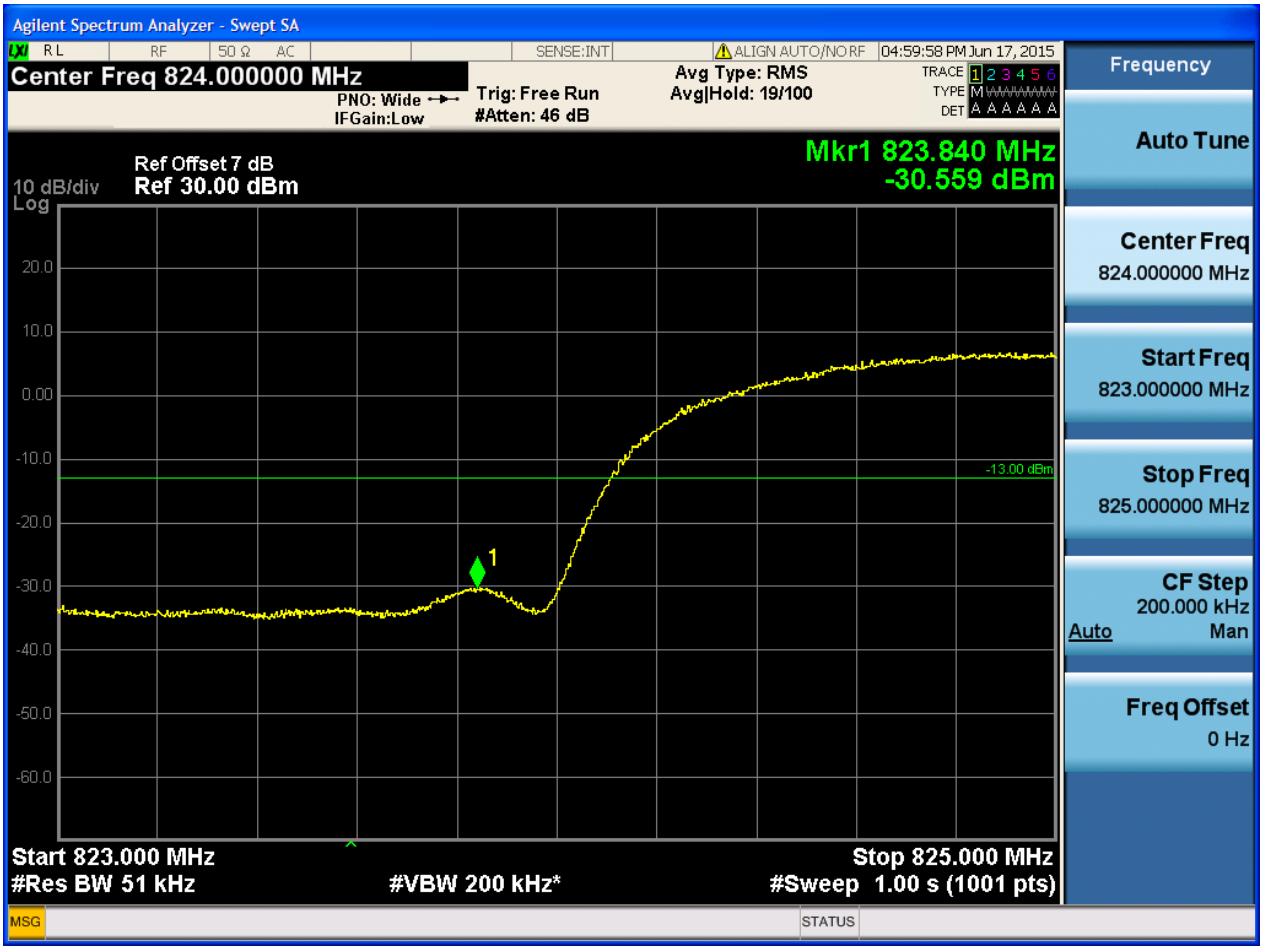
Part I - Test Plots

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

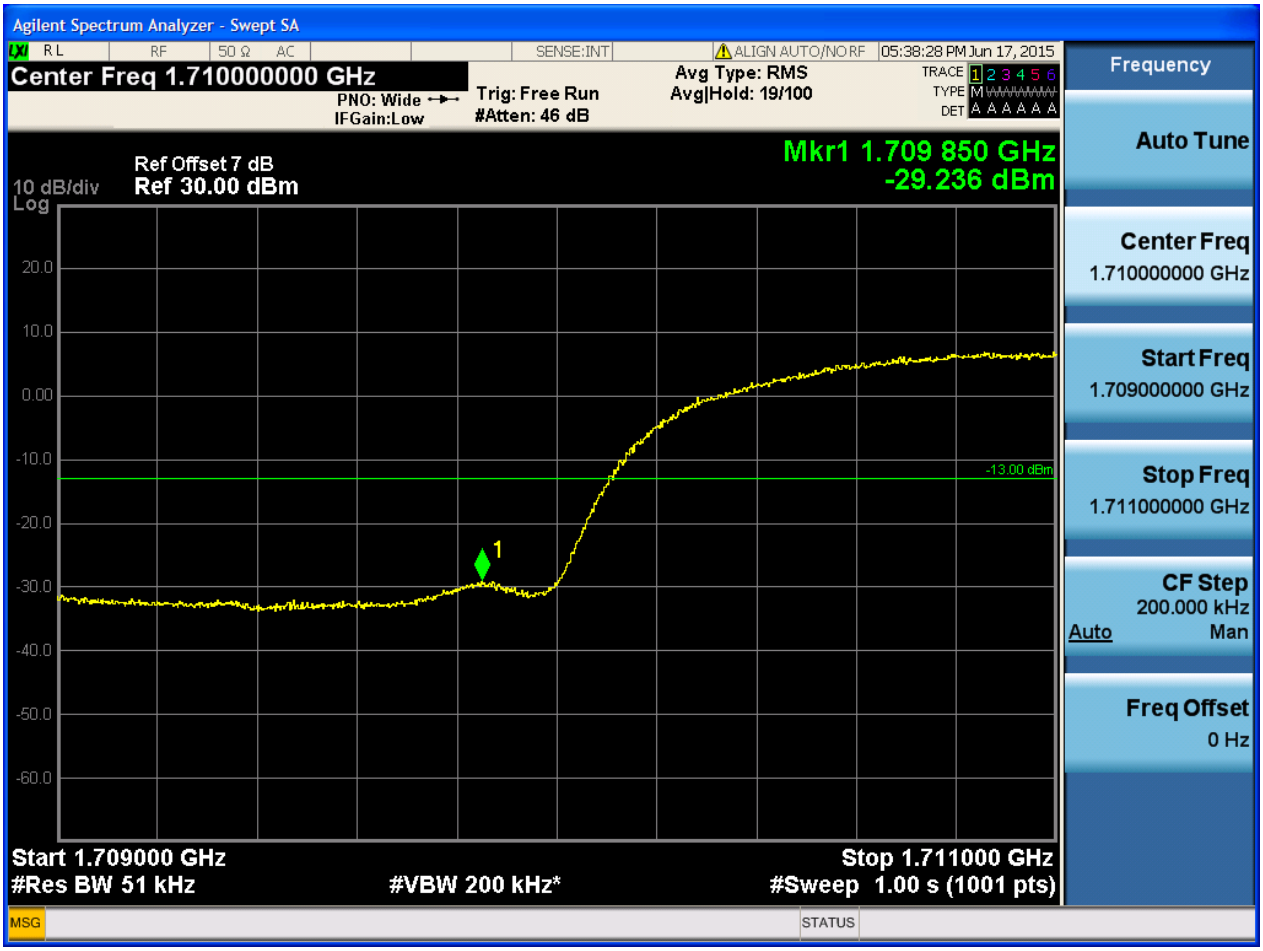


5.1.1.1.2 Test Channel = HCH

5.1.2 Test Band = WCDMA1700

5.1.2.1 Test Mode = UMTS/TM1

5.1.2.1.1 Test Channel = LCH

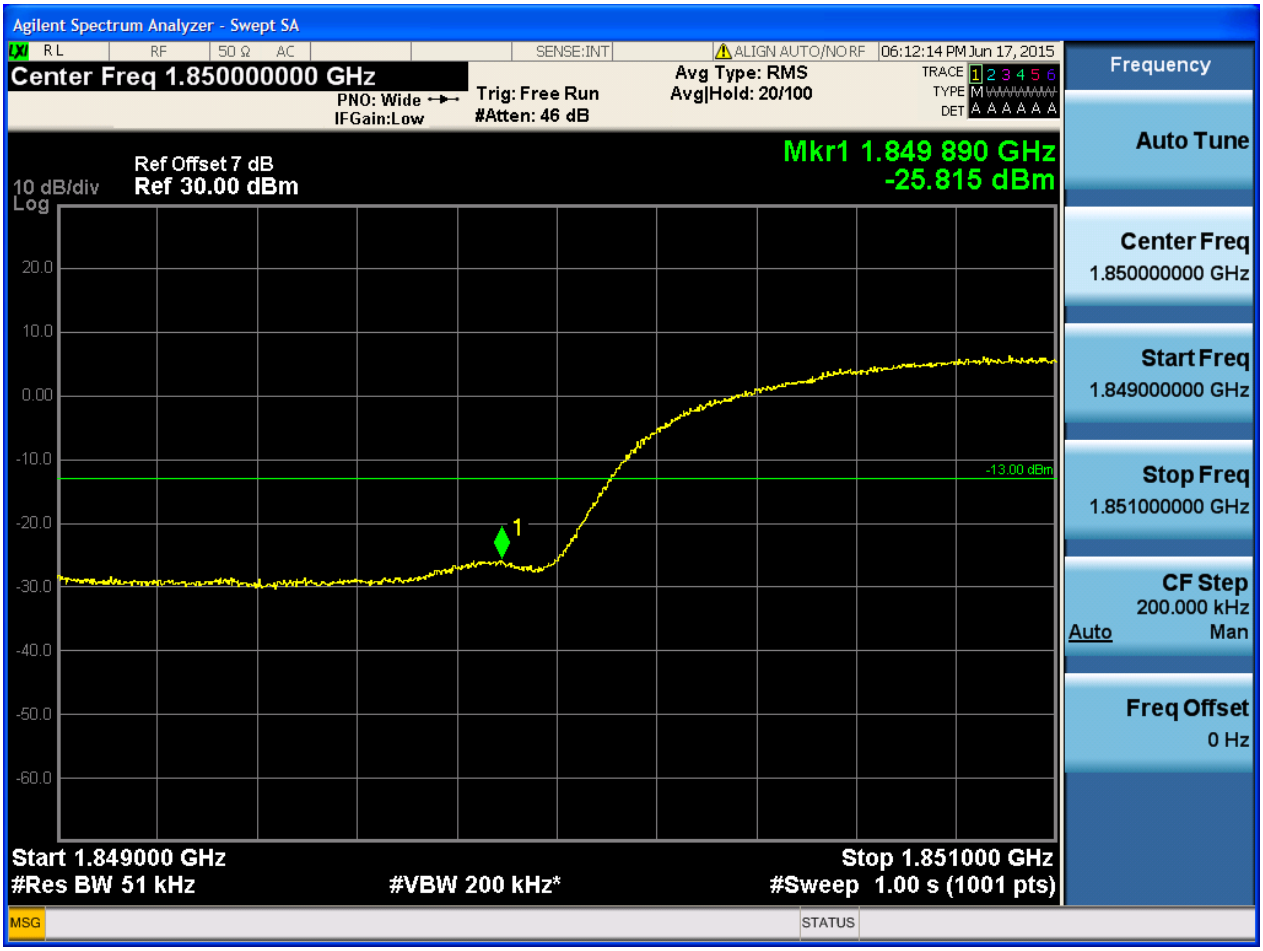


5.1.2.1.2 Test Channel = HCH

5.1.3 Test Band = WCDMA1900

5.1.3.1 Test Mode = UMTS/TM1

5.1.3.1.1 Test Channel = LCH



5.1.3.1.2 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.

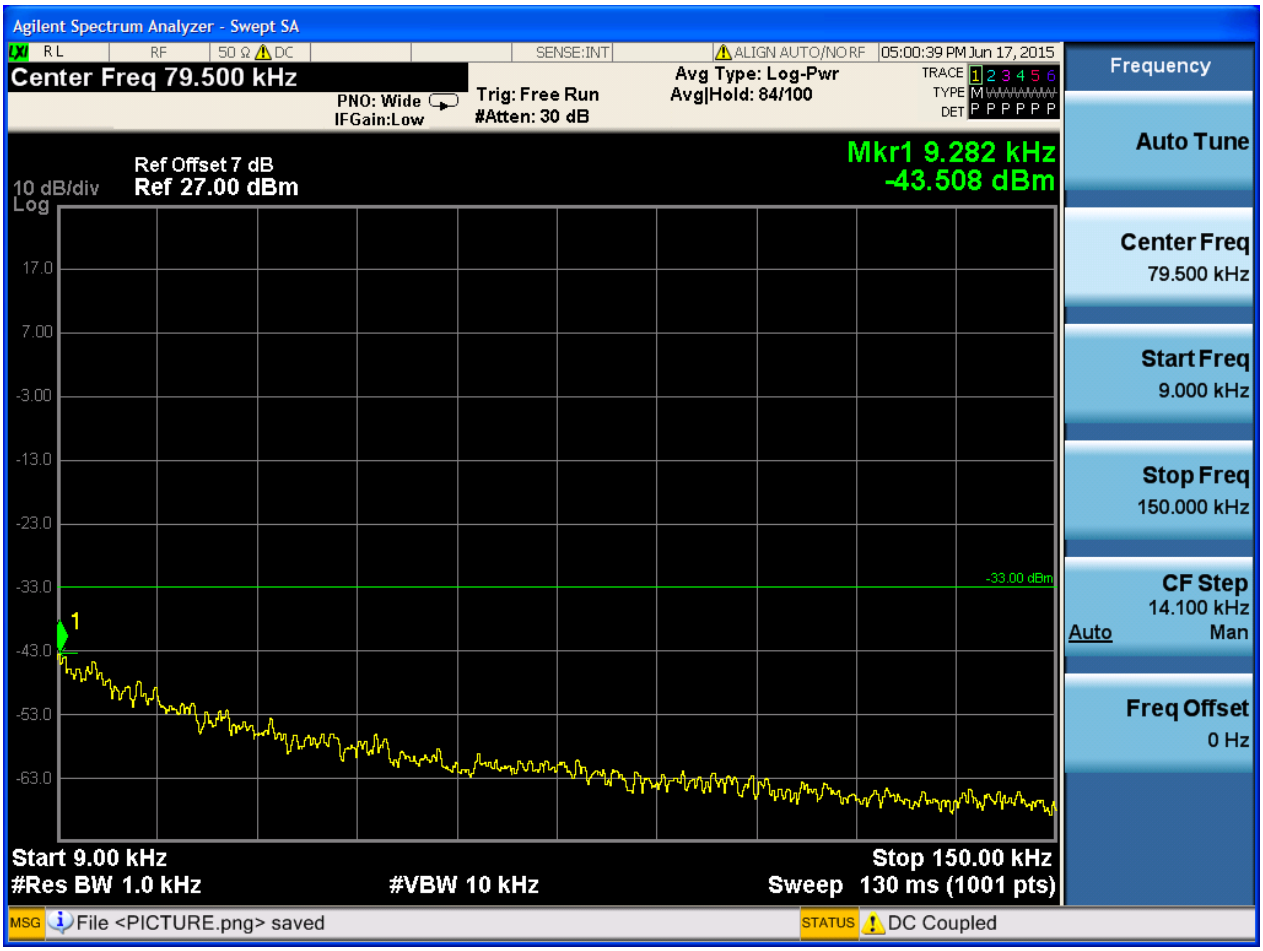
Part I - Test Plots

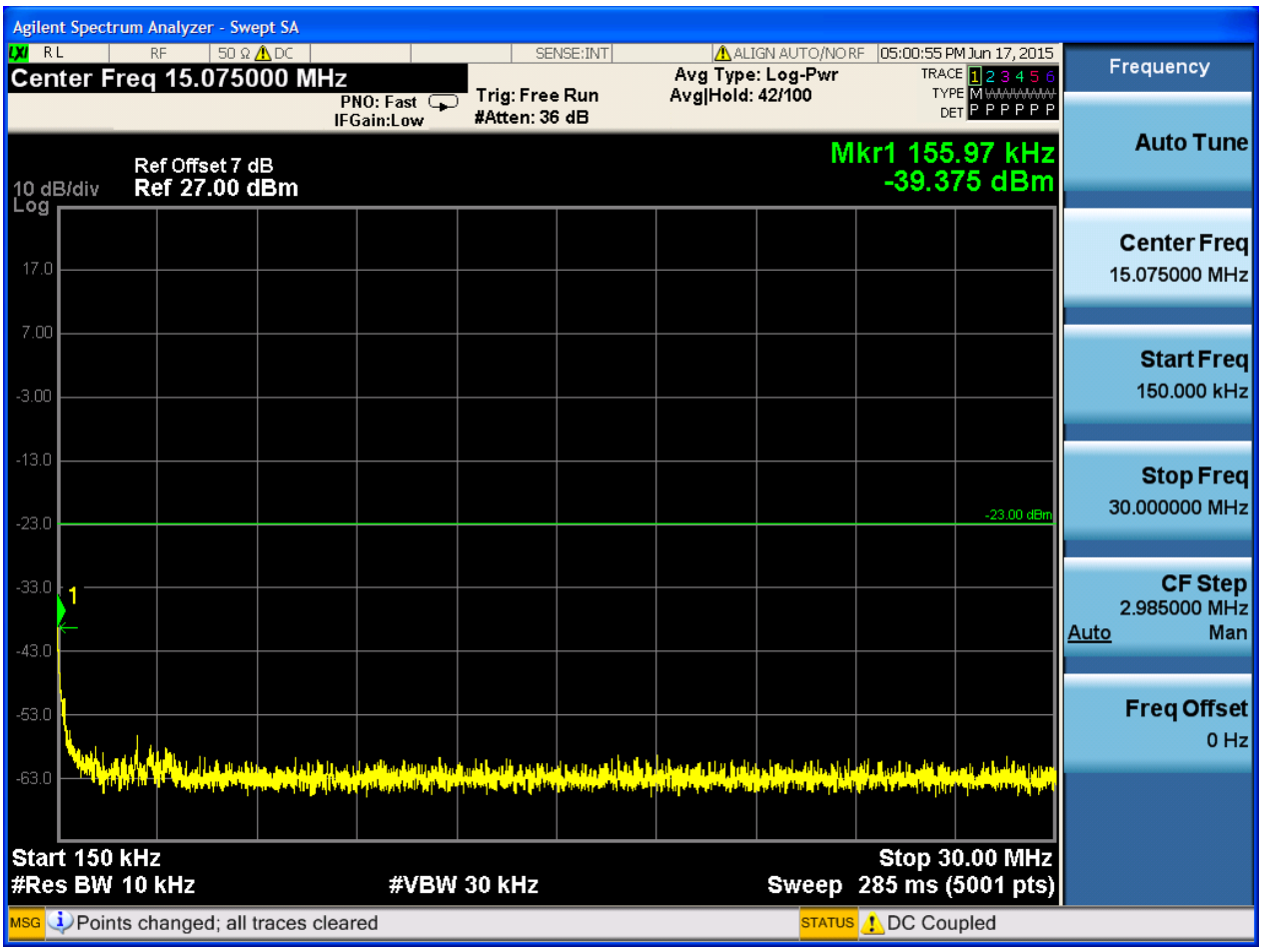
6.1 For UMTS

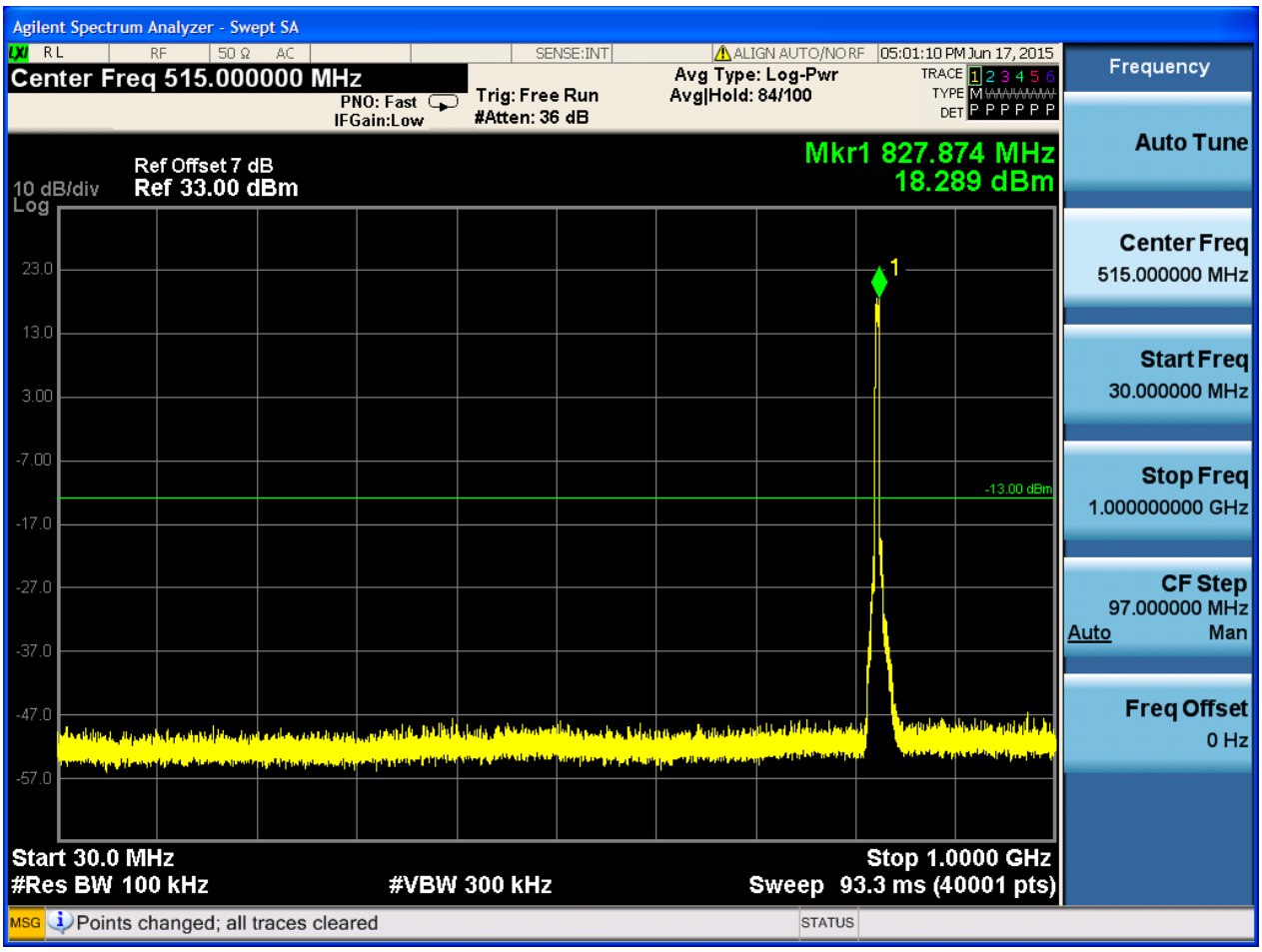
6.1.1 Test Band = WCDMA850

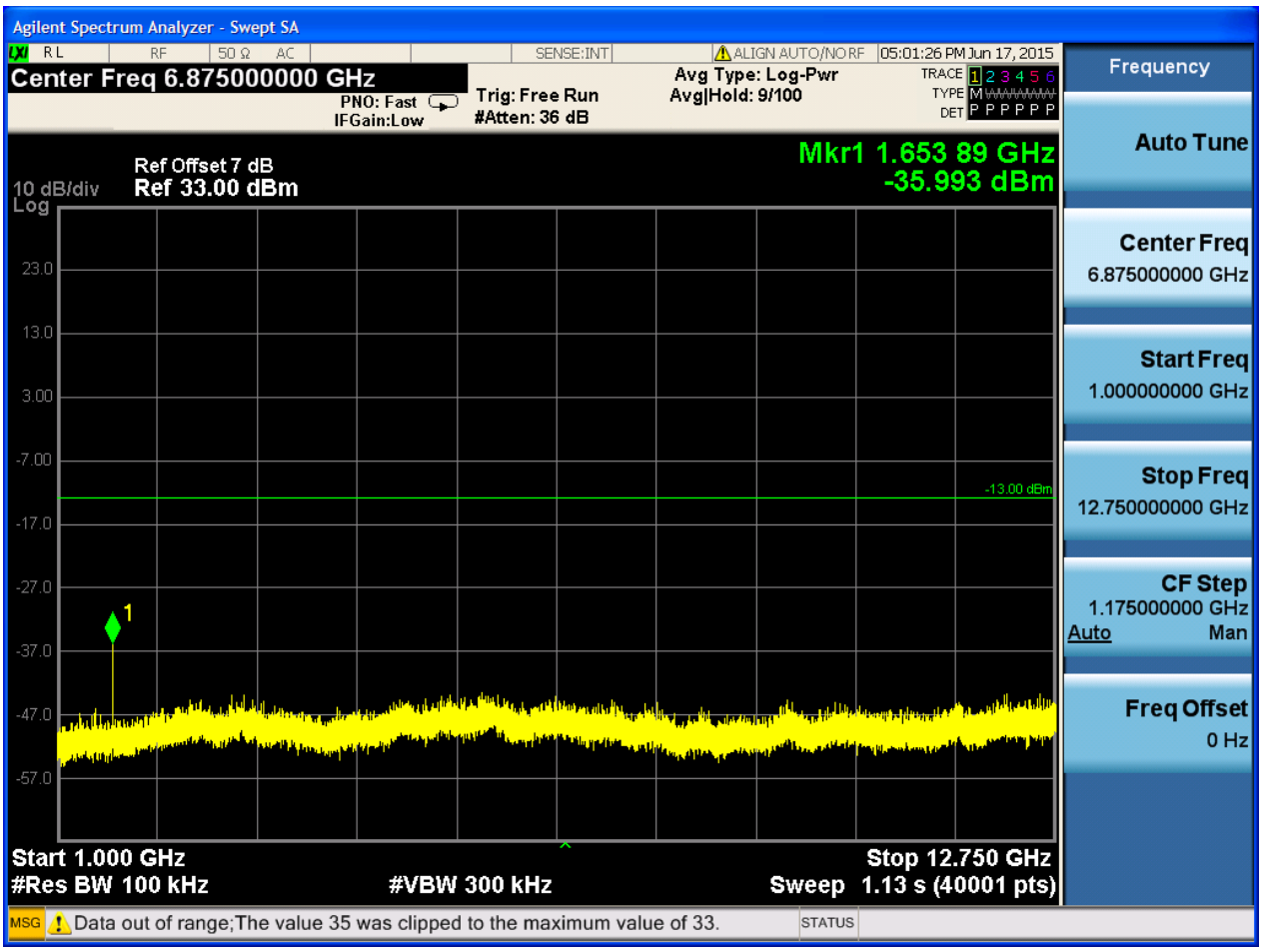
6.1.1.1 Test Mode = UMTS/TM1

6.1.1.1.1 Test Channel = LCH

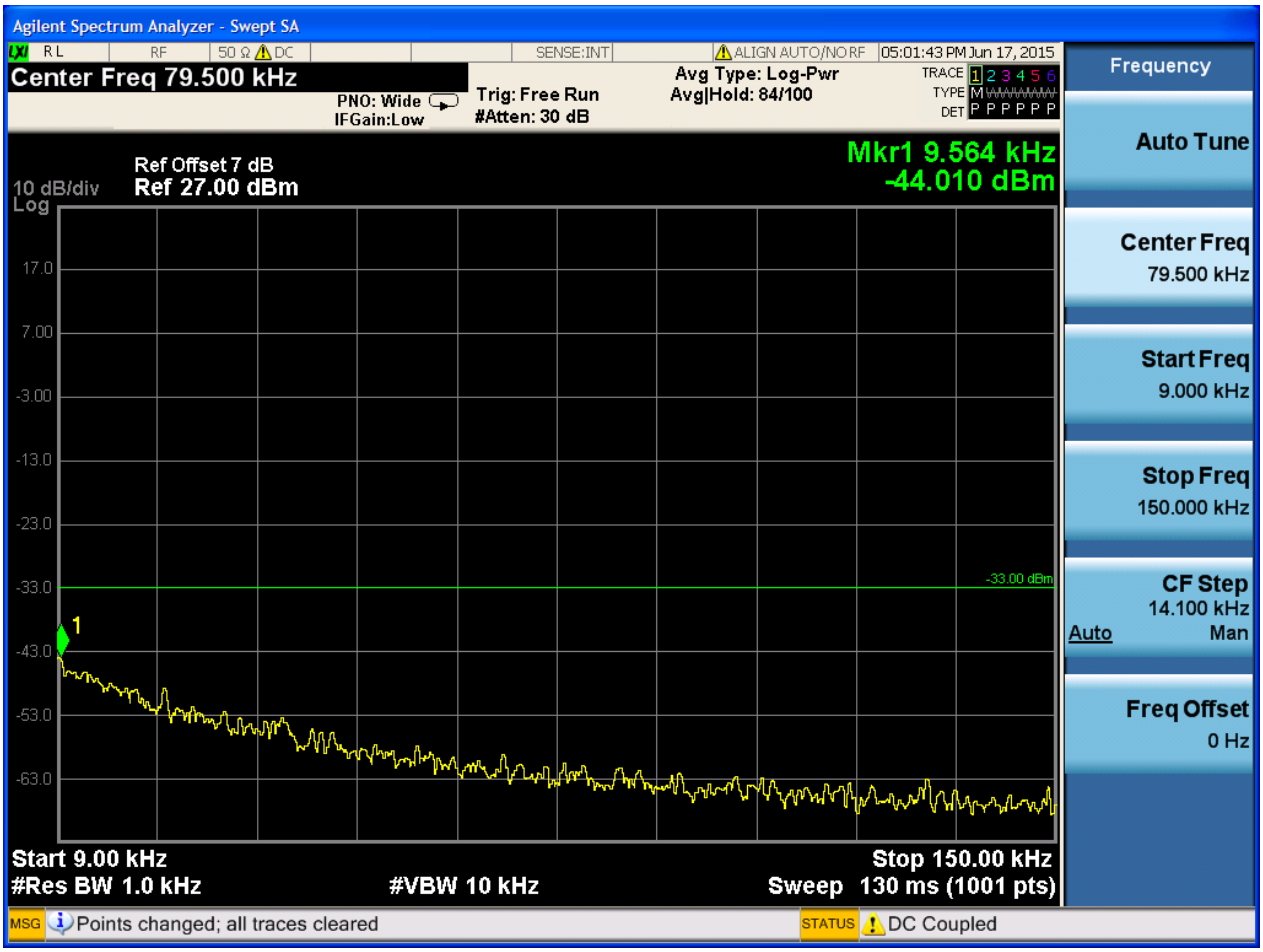


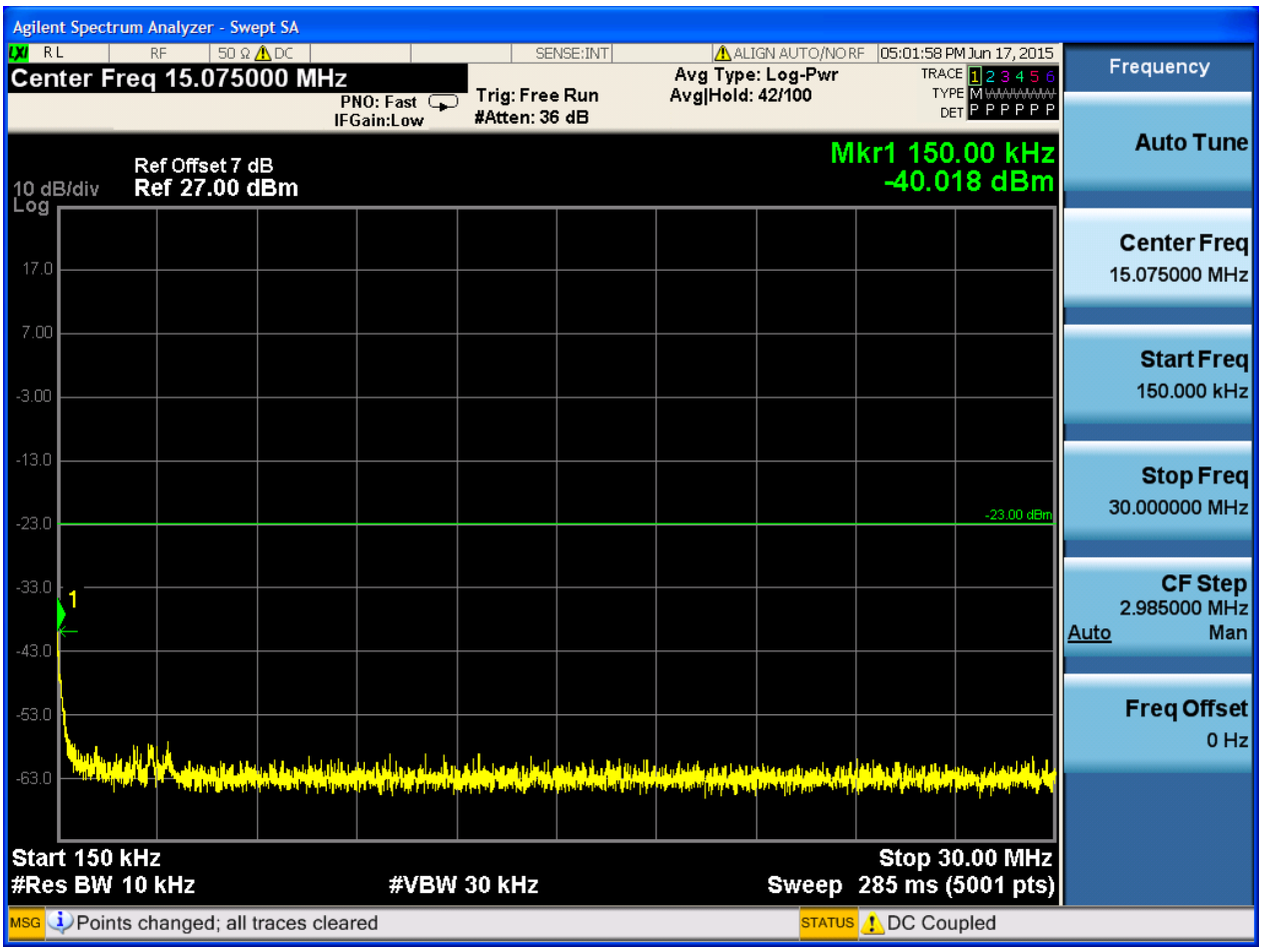


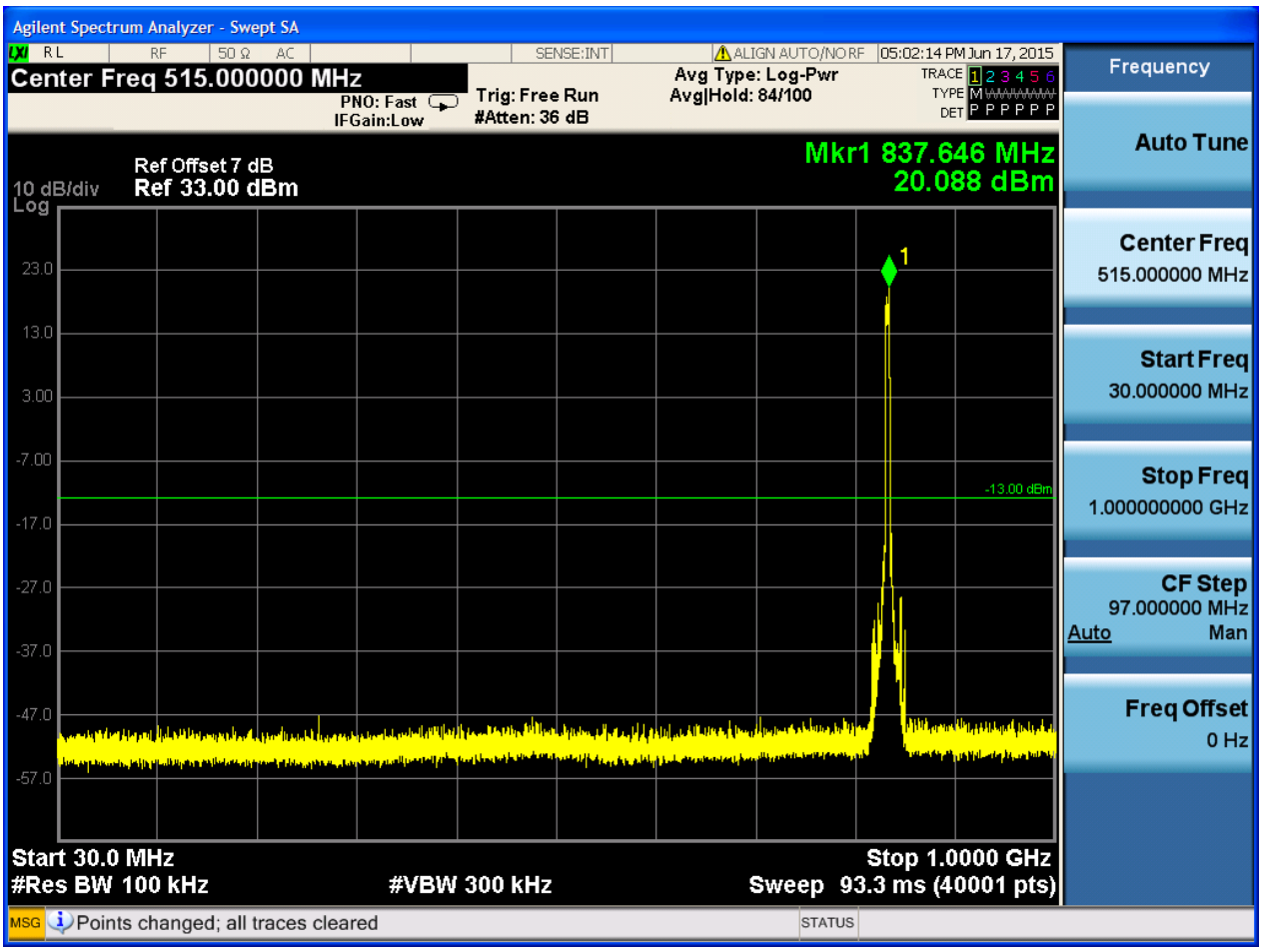


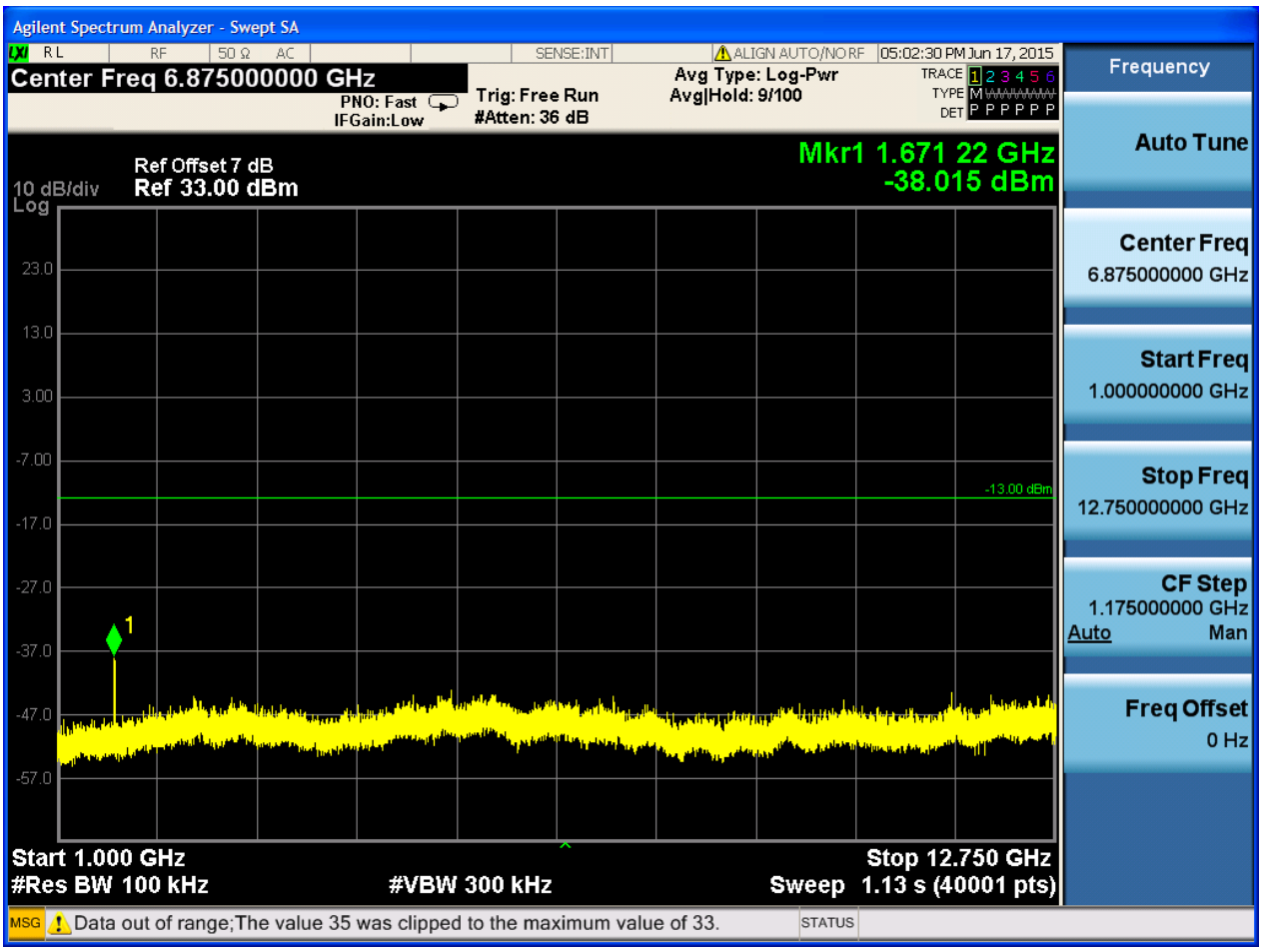


6.1.1.1.2 Test Channel = MCH

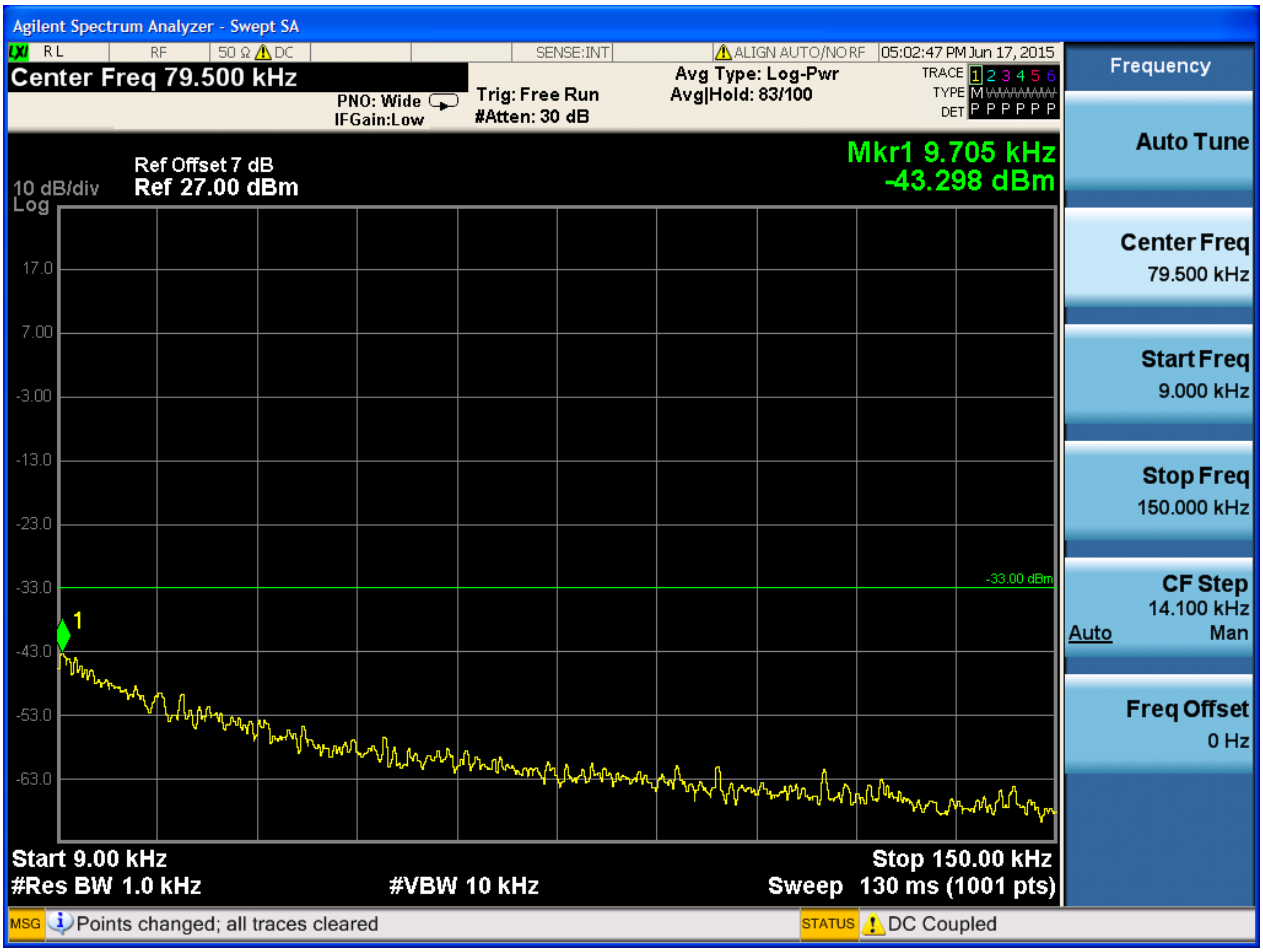


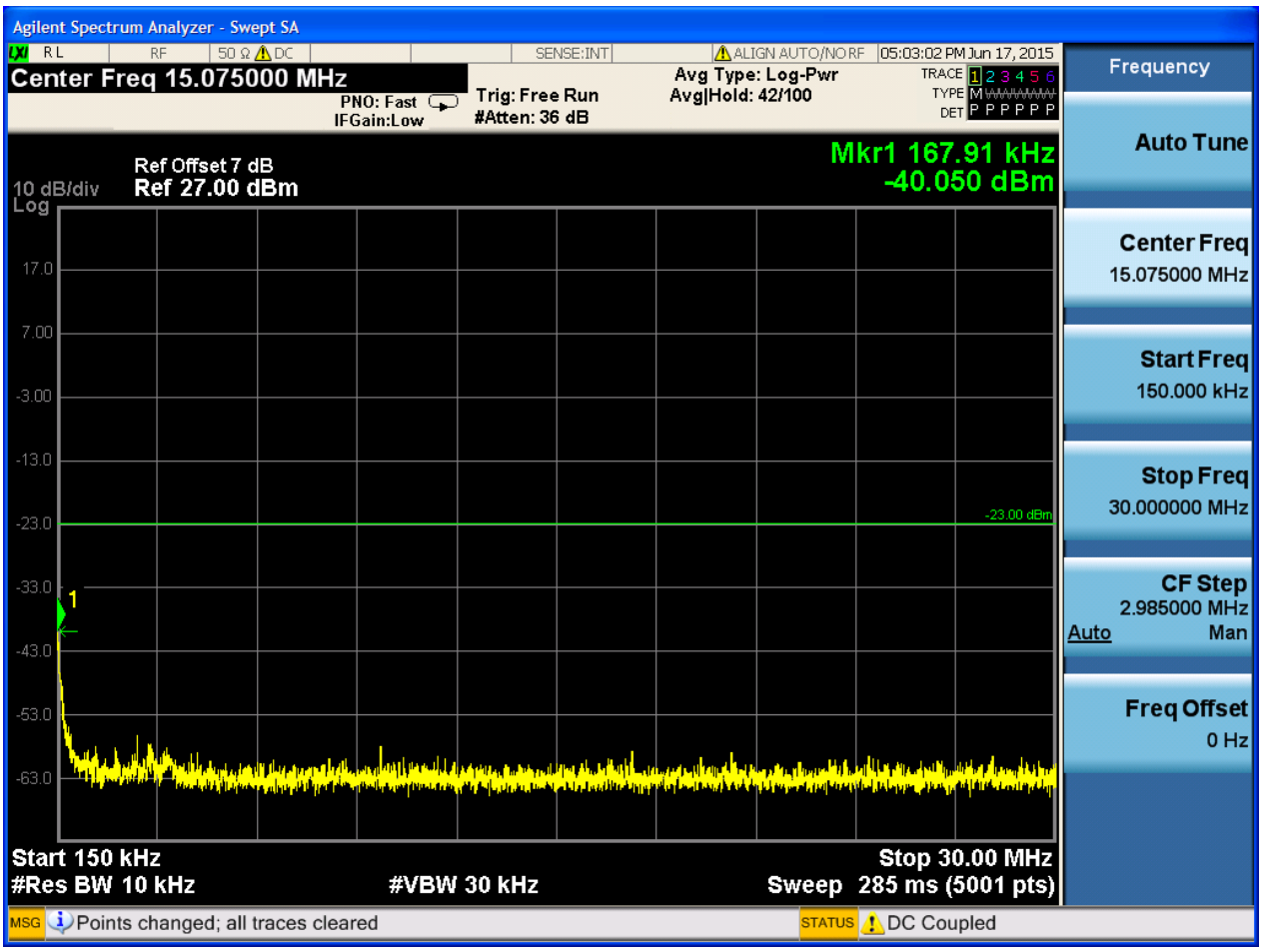


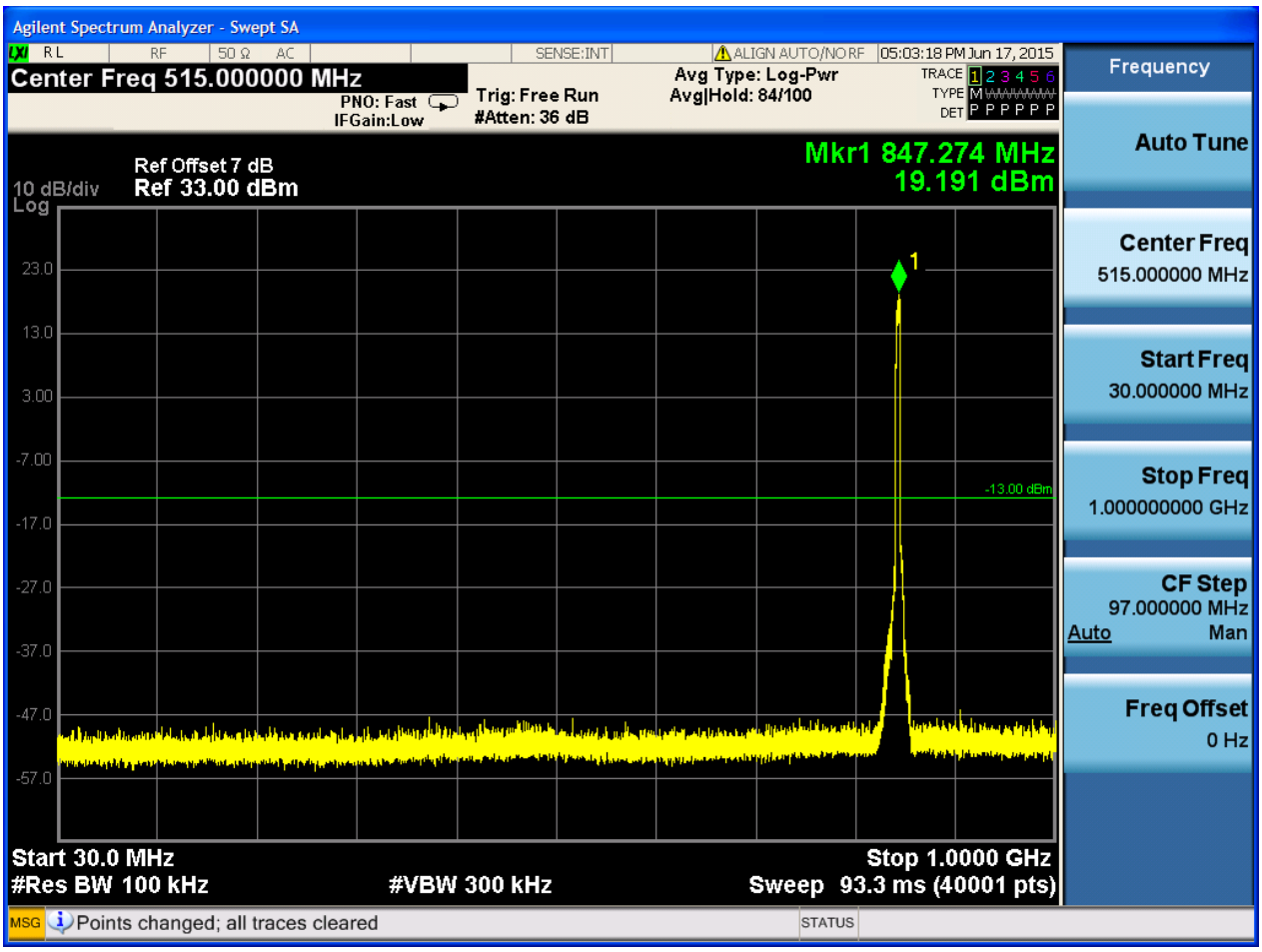


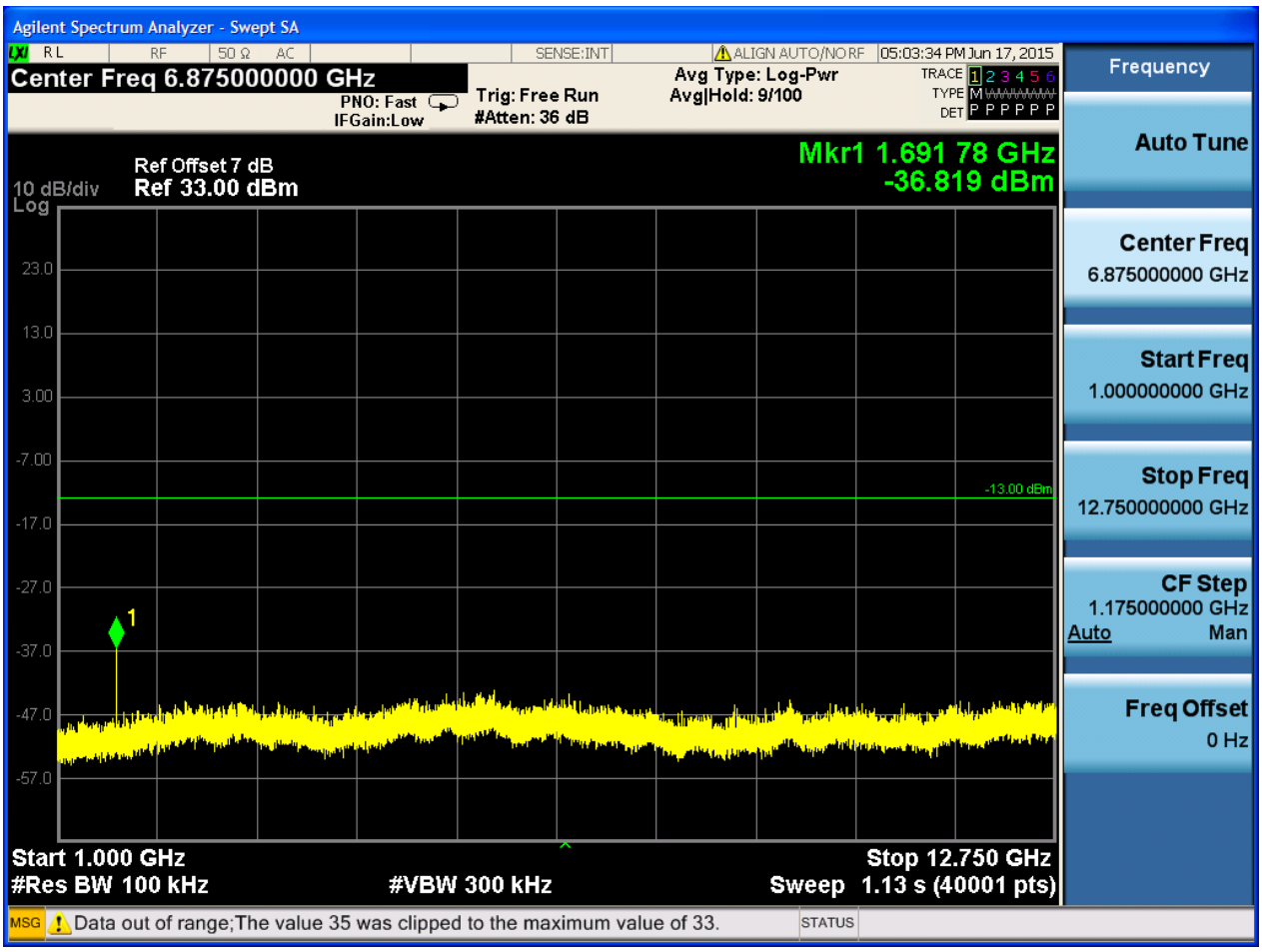


6.1.1.1.3 Test Channel = HCH





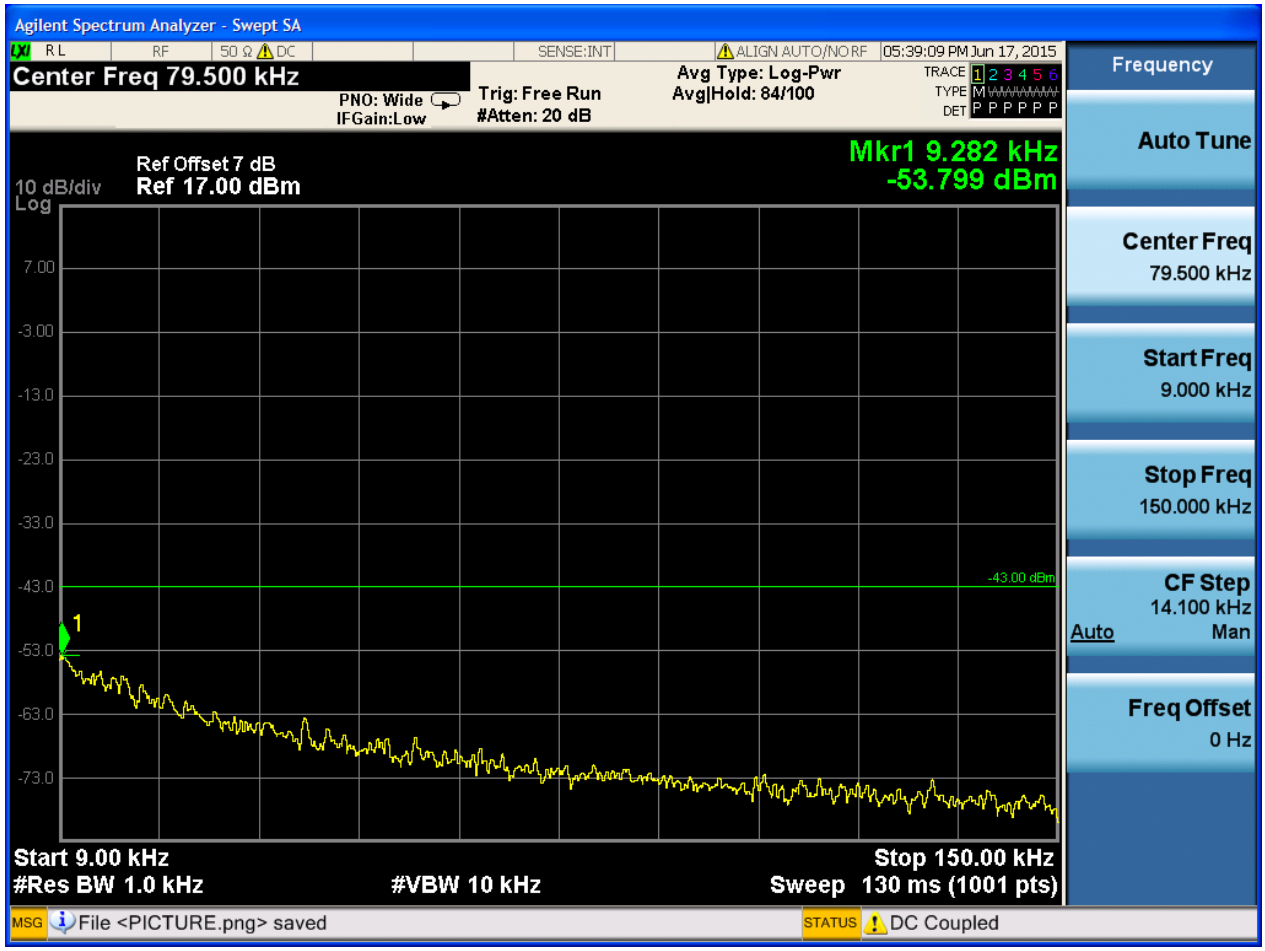


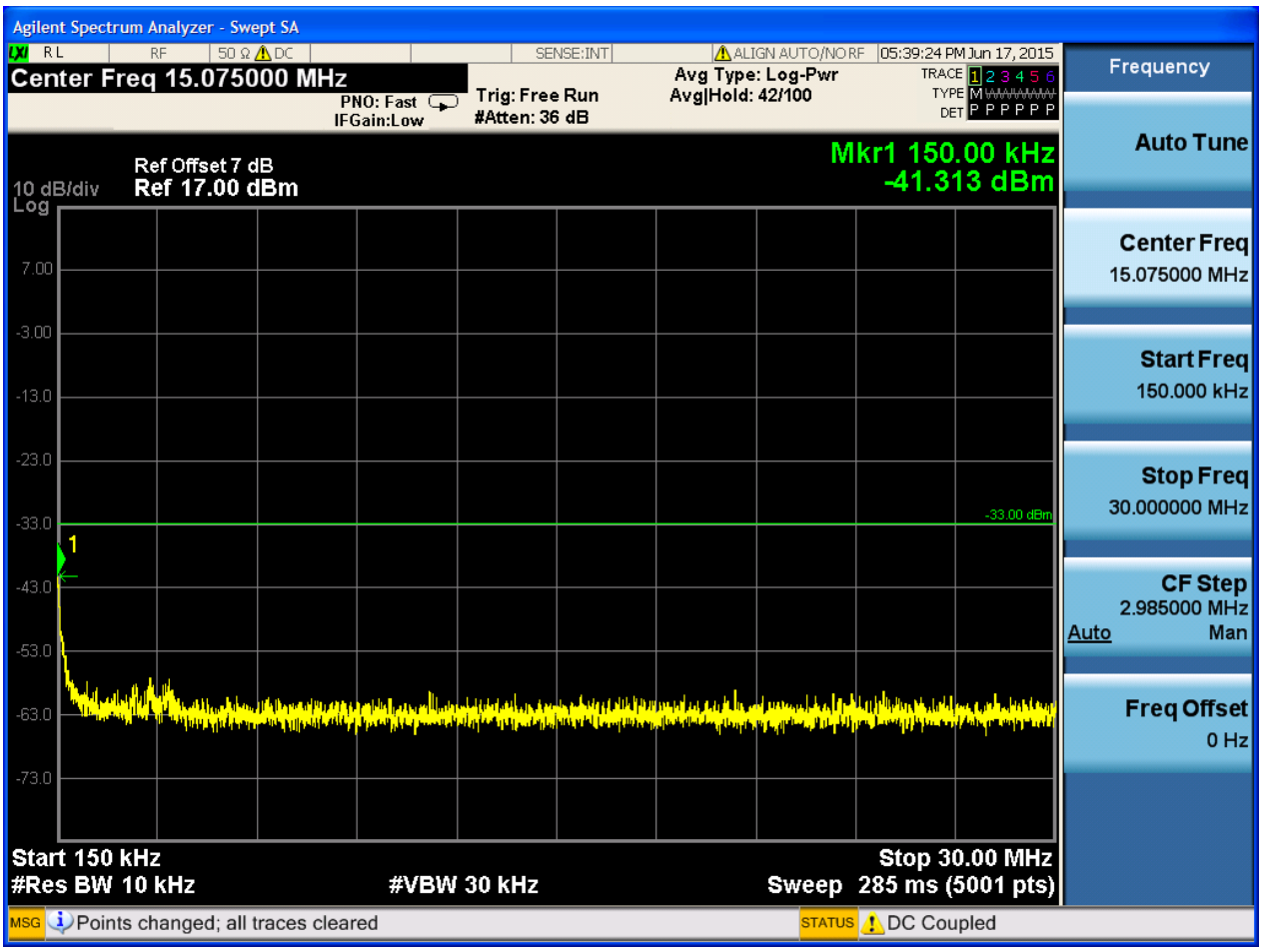


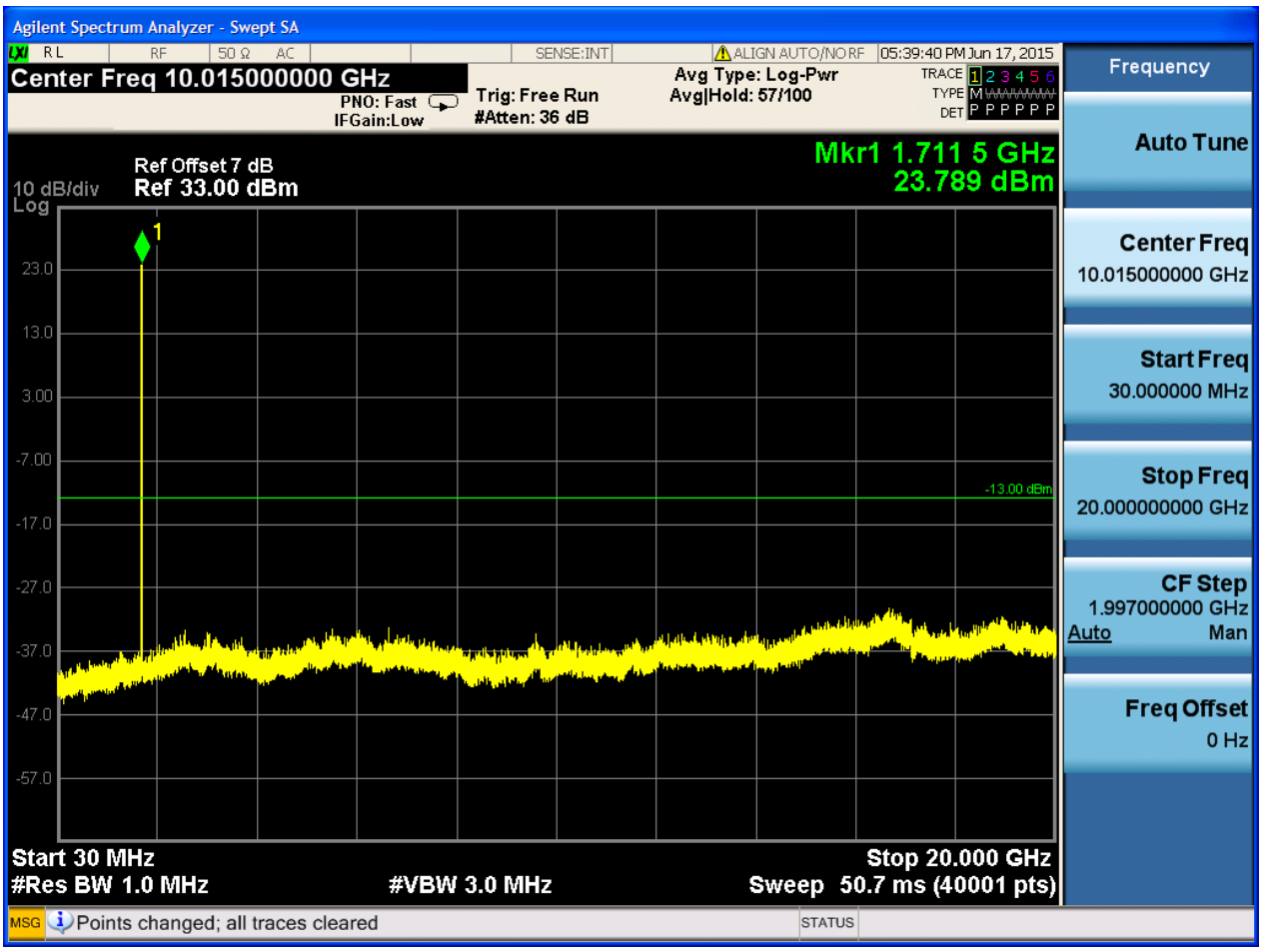
6.1.2 Test Band = WCDMA1700

6.1.2.1 Test Mode = UMTS/TM1

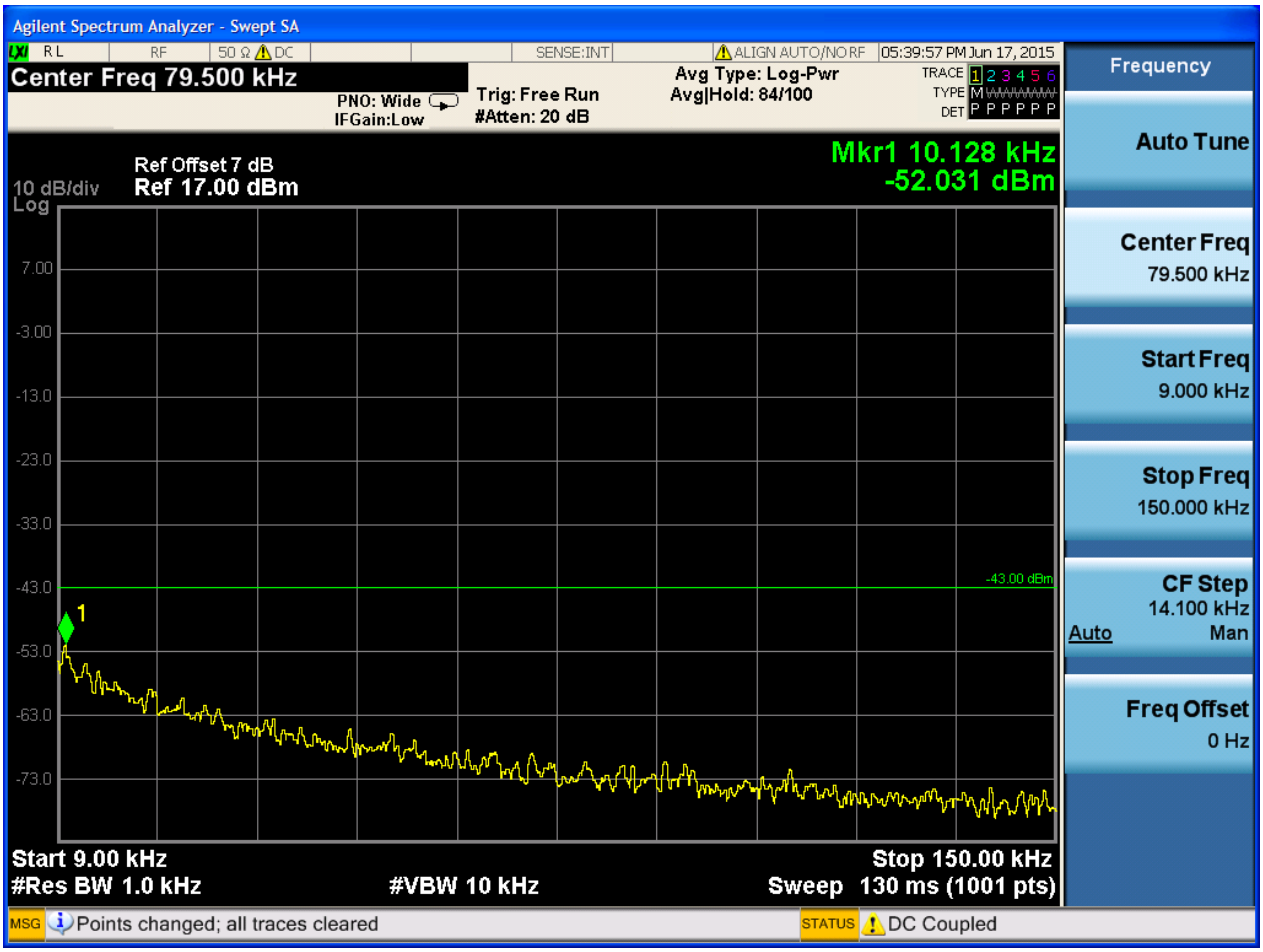
6.1.2.1.1 Test Channel = LCH

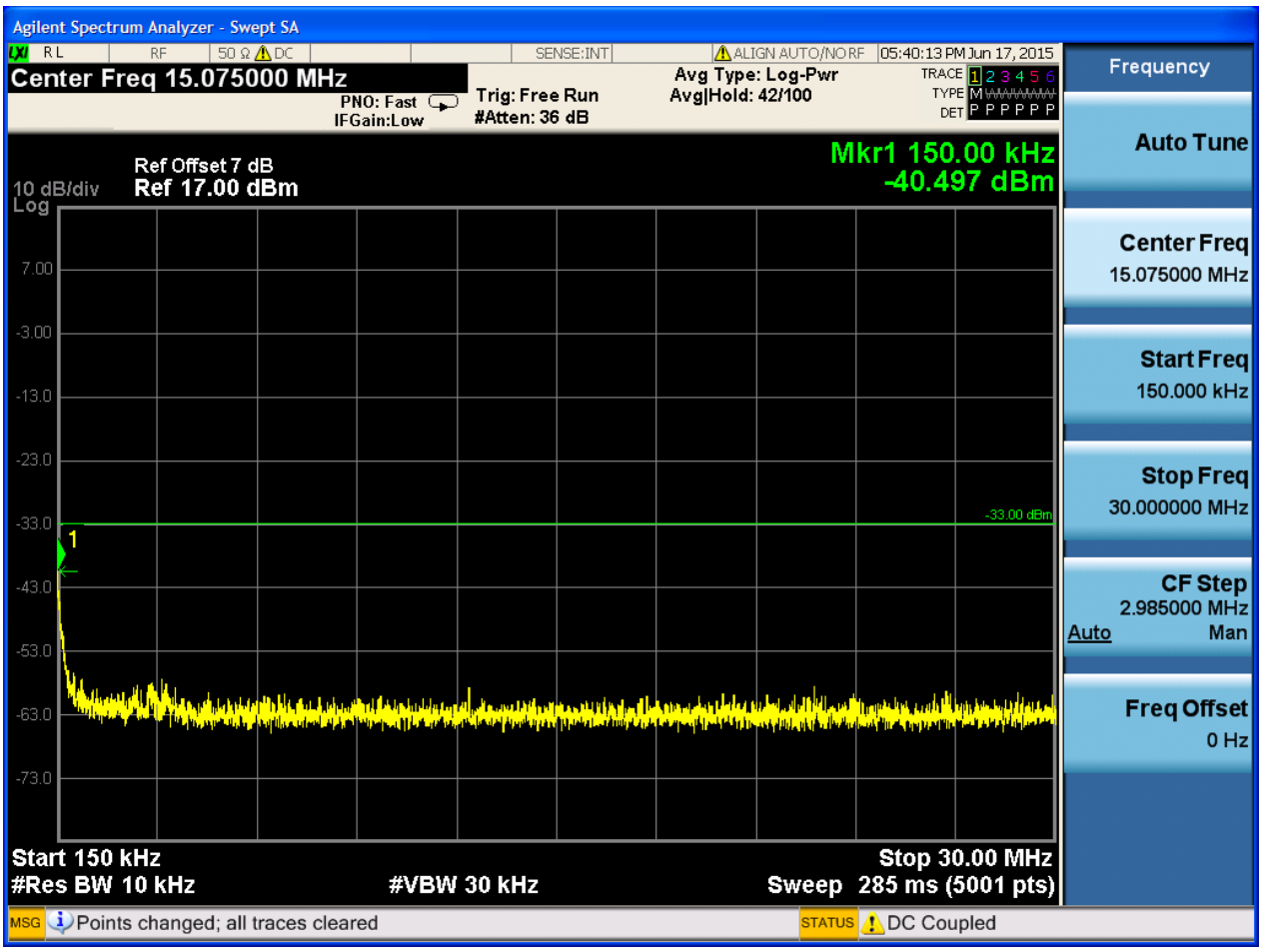


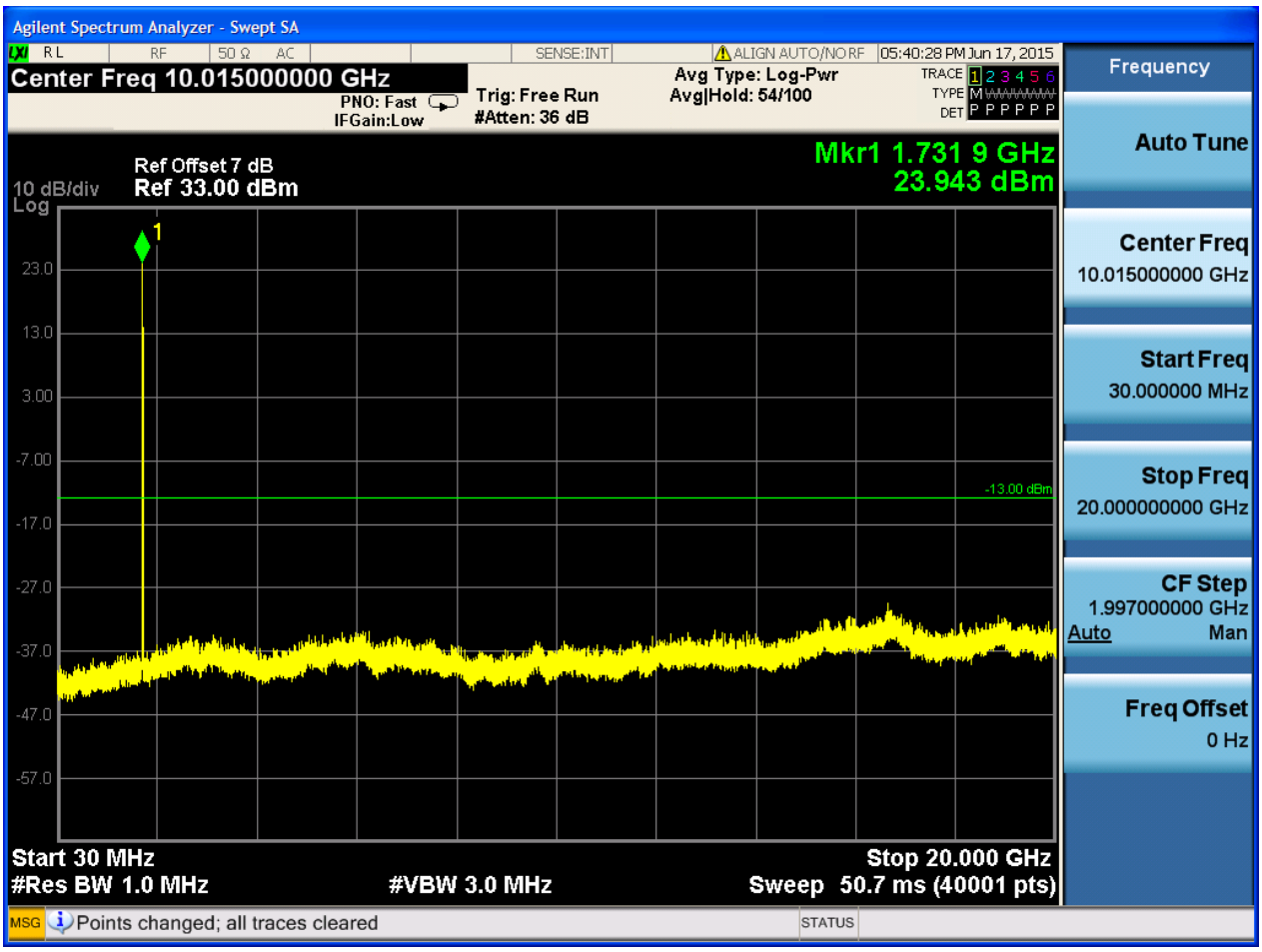




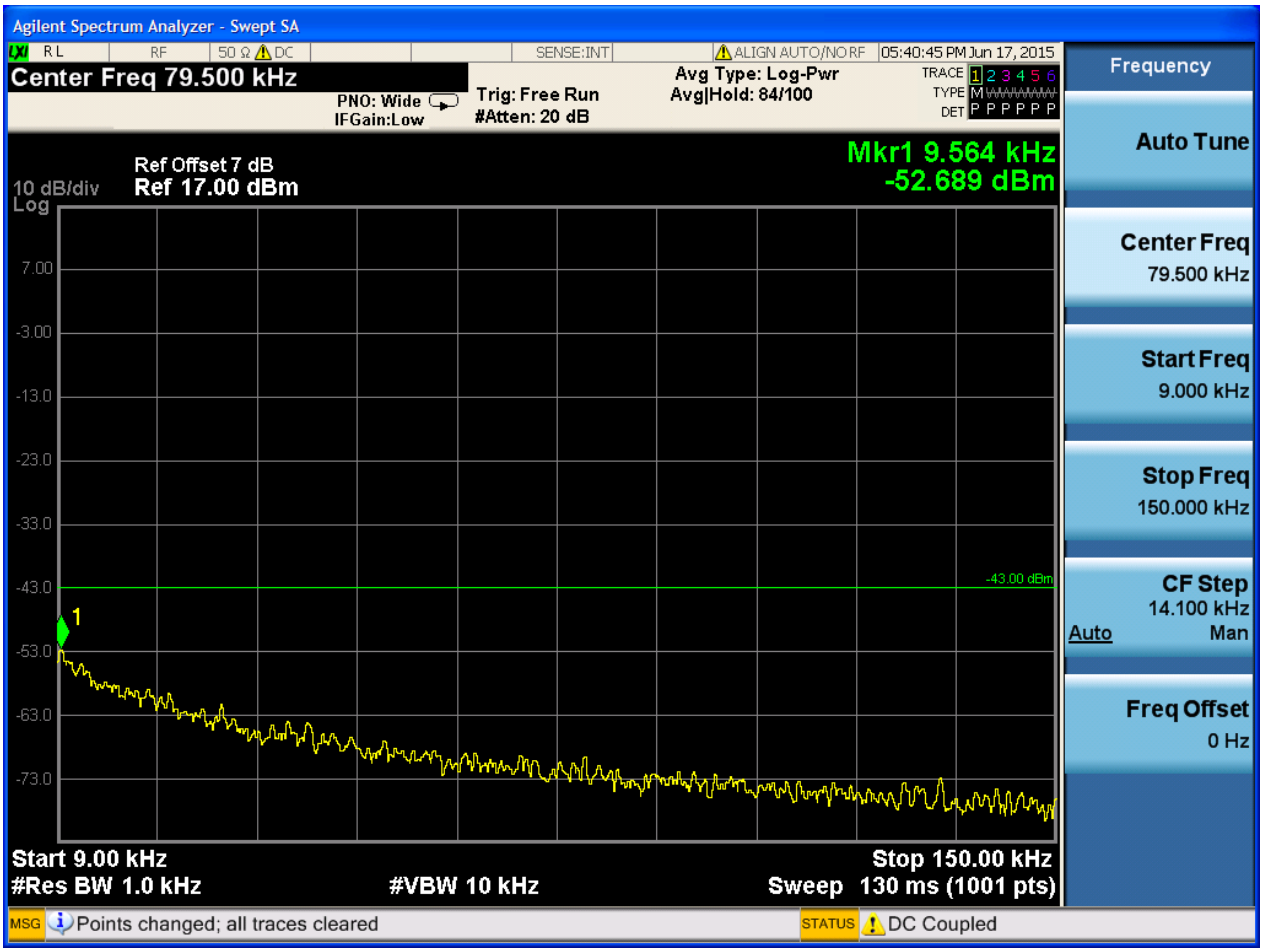
6.1.2.1.2 Test Channel = MCH

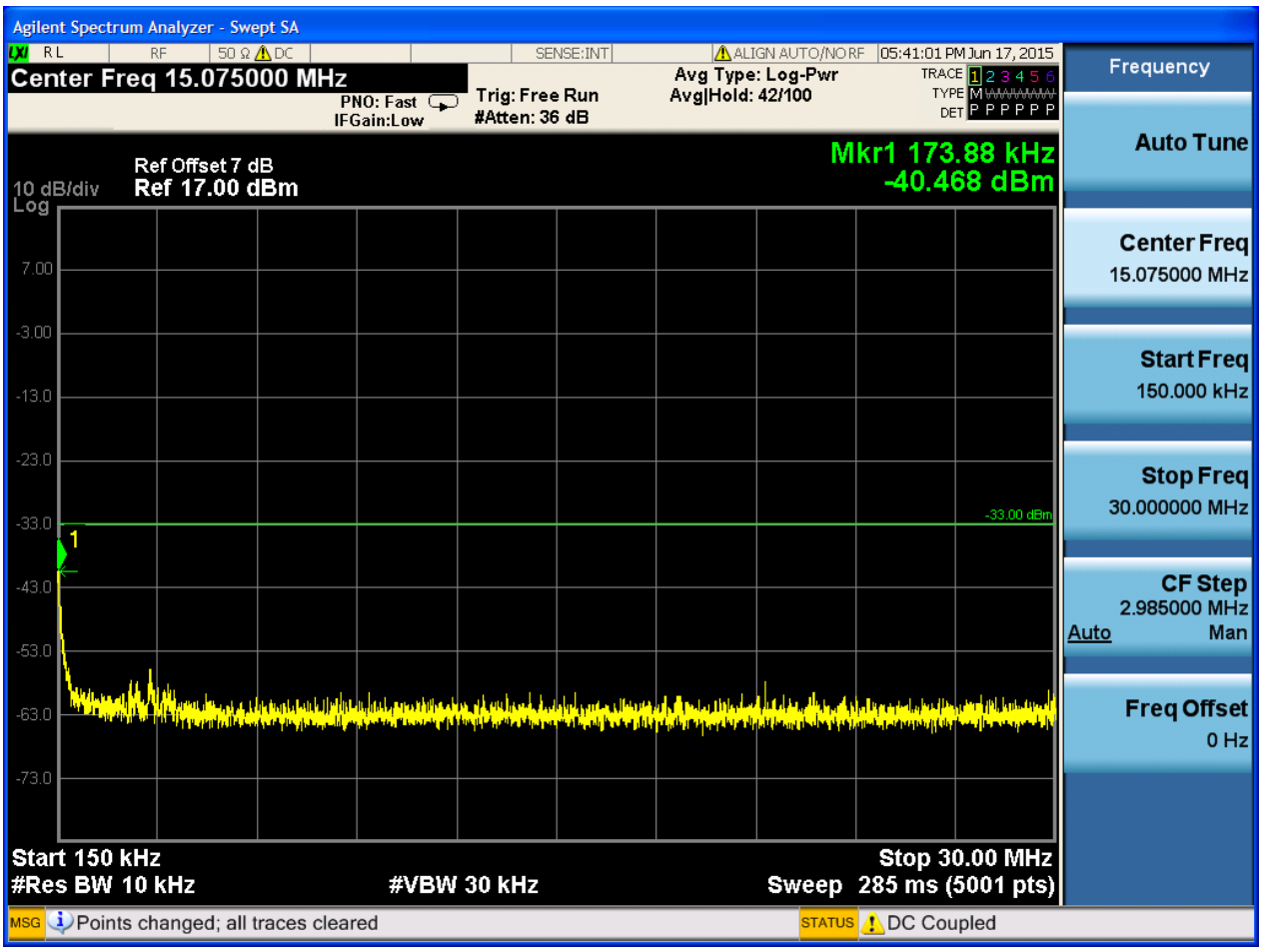


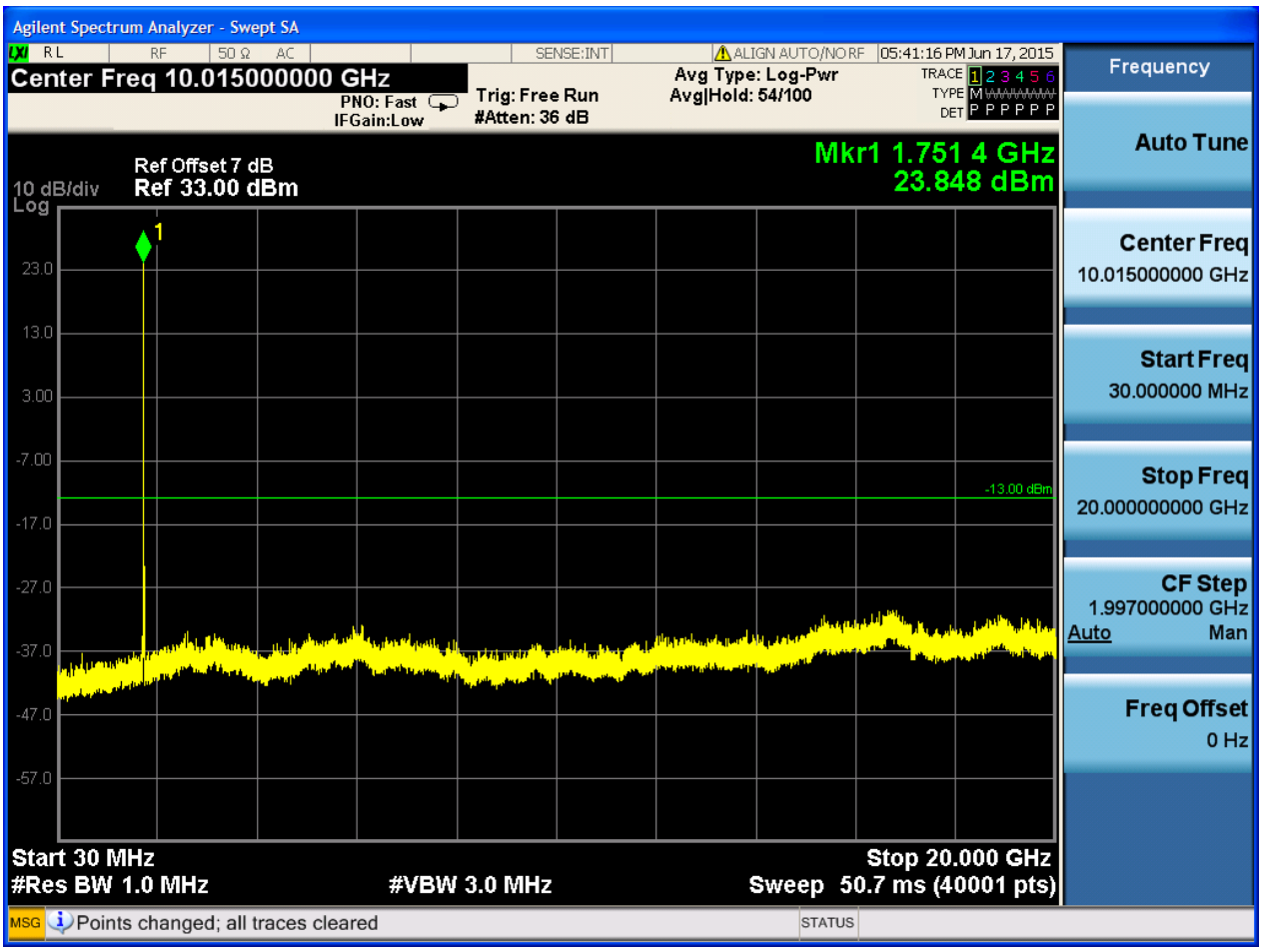




6.1.2.1.3 Test Channel = HCH



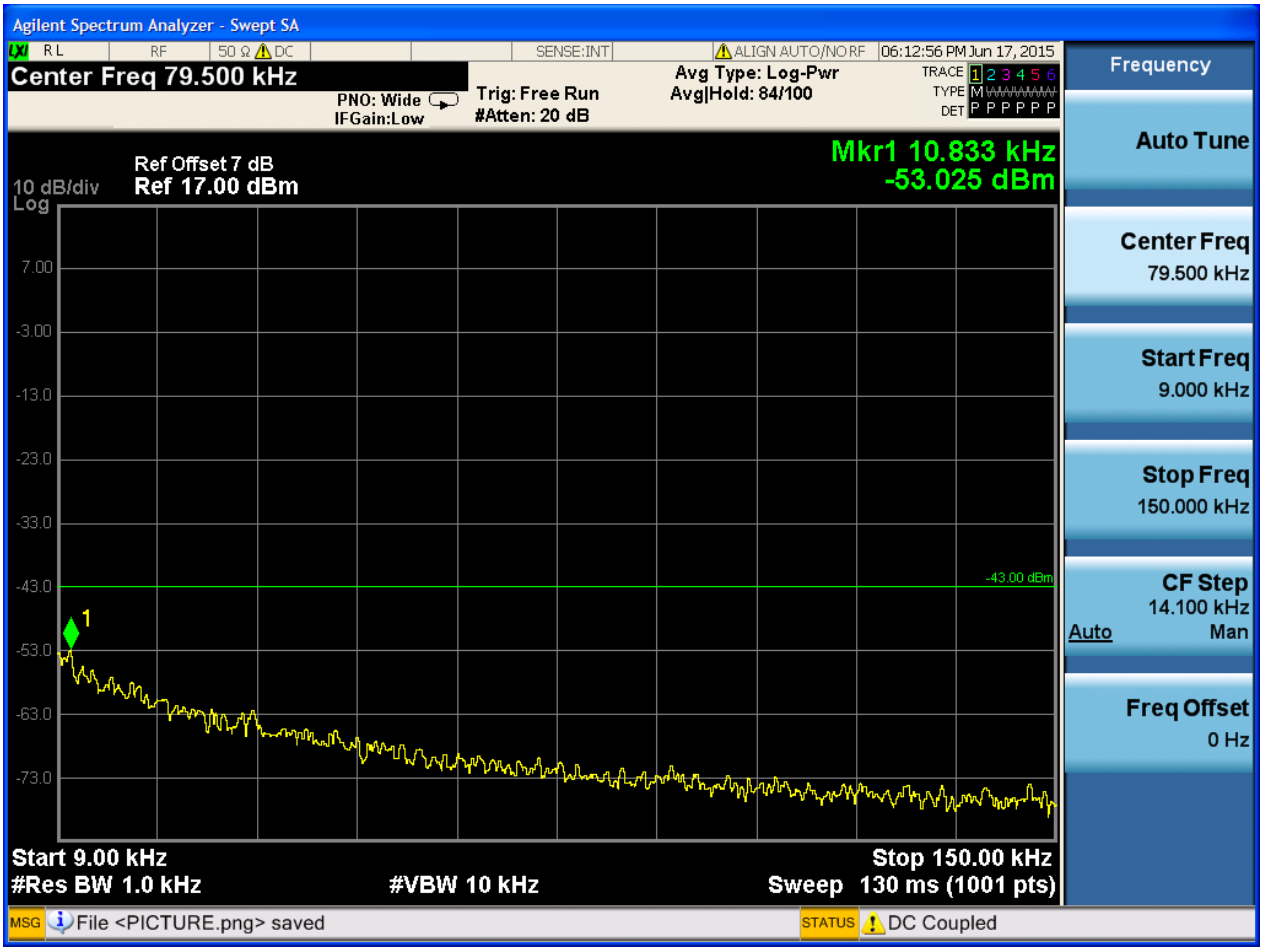


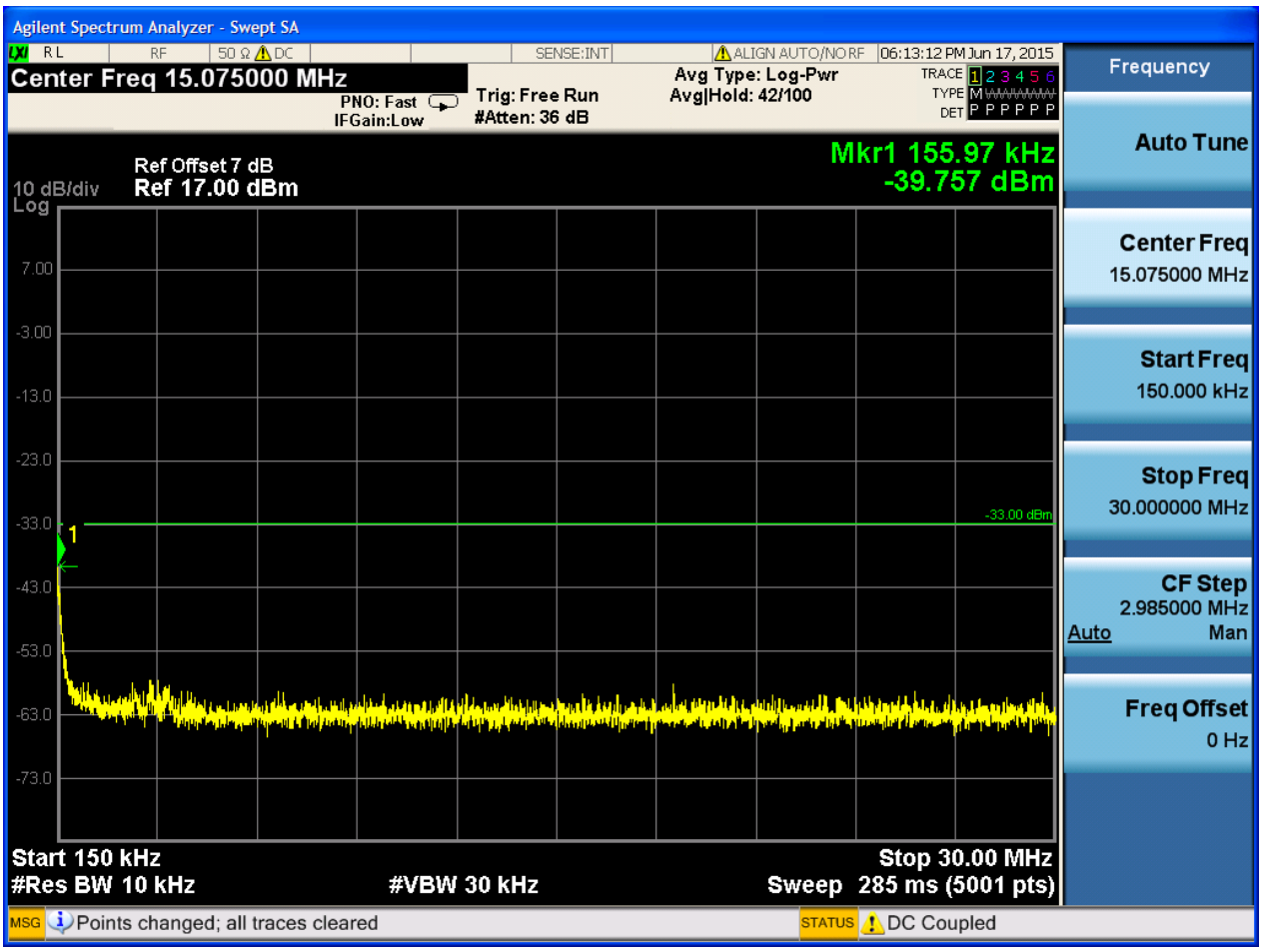


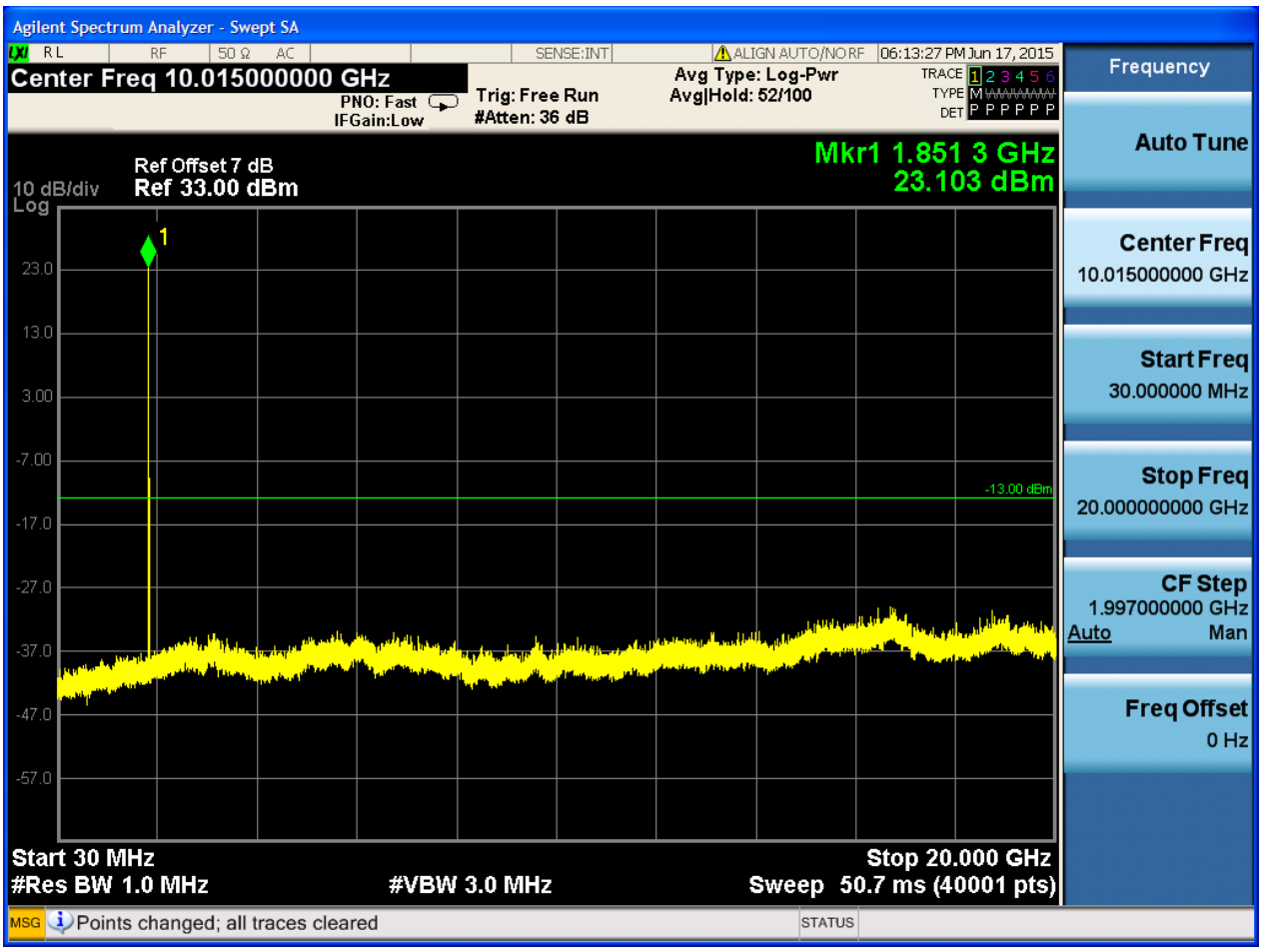
6.1.3 Test Band = WCDMA1900

6.1.3.1 Test Mode = UMTS/TM1

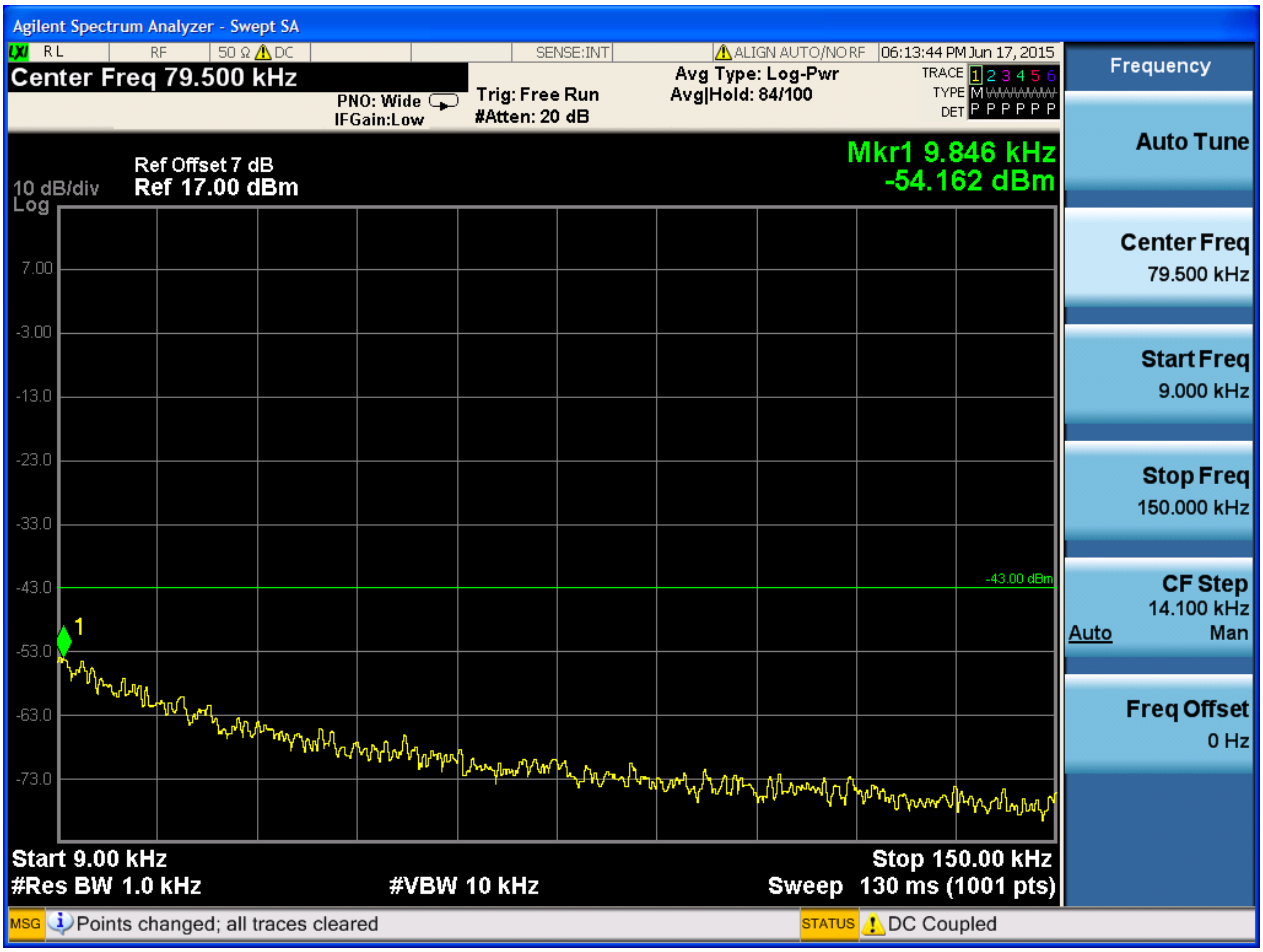
6.1.3.1.1 Test Channel = LCH

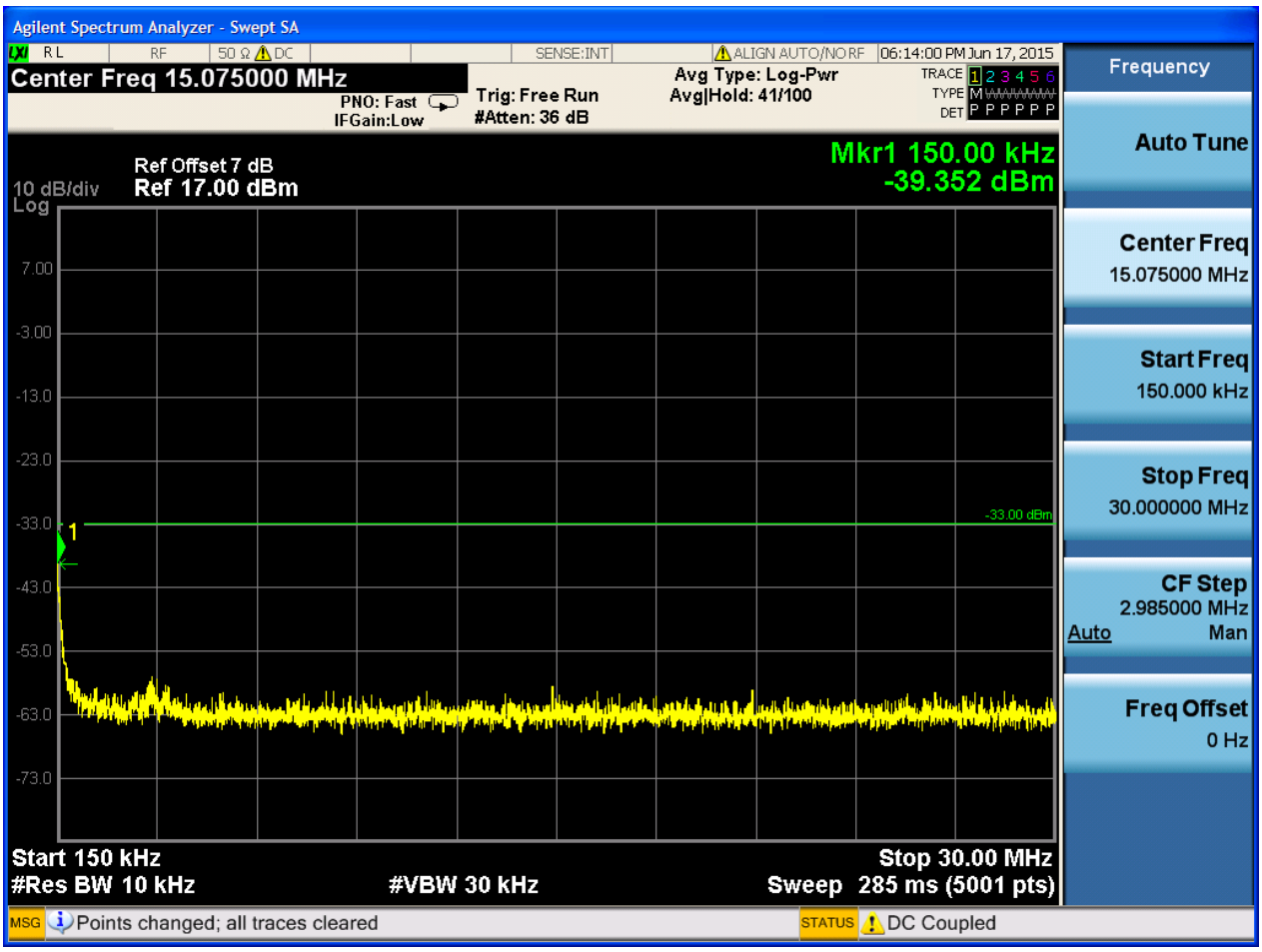


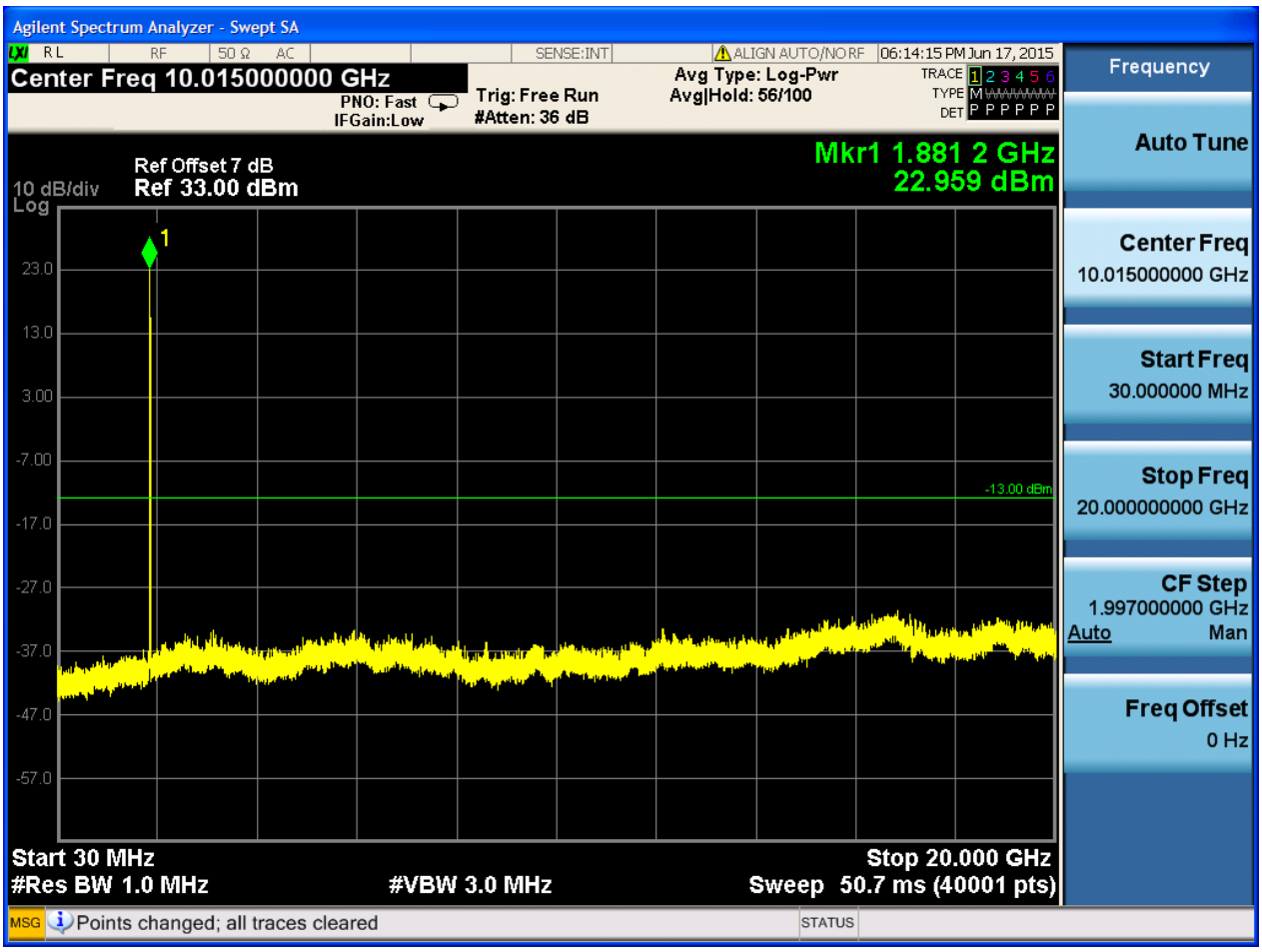




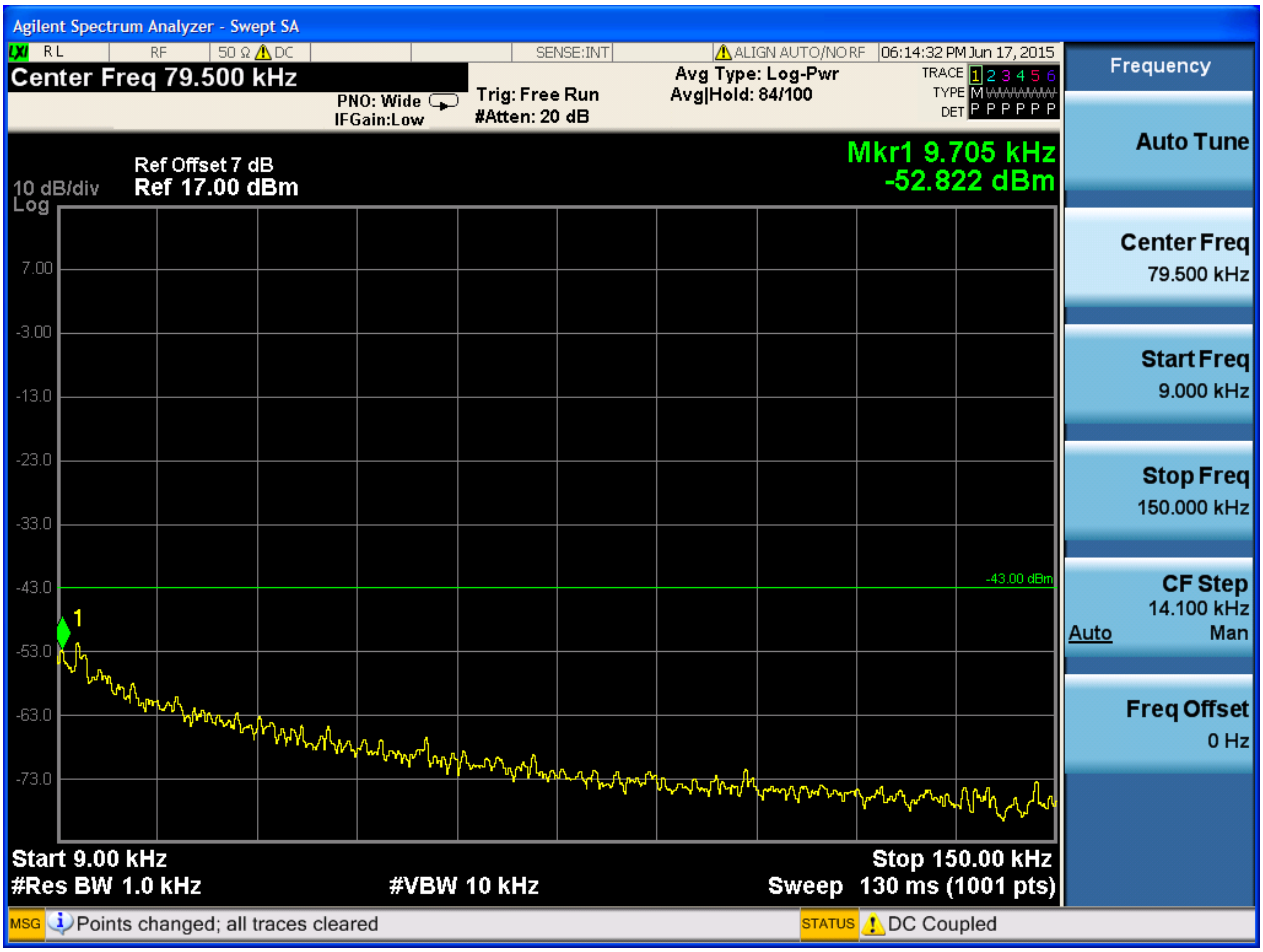
6.1.3.1.2 Test Channel = MCH

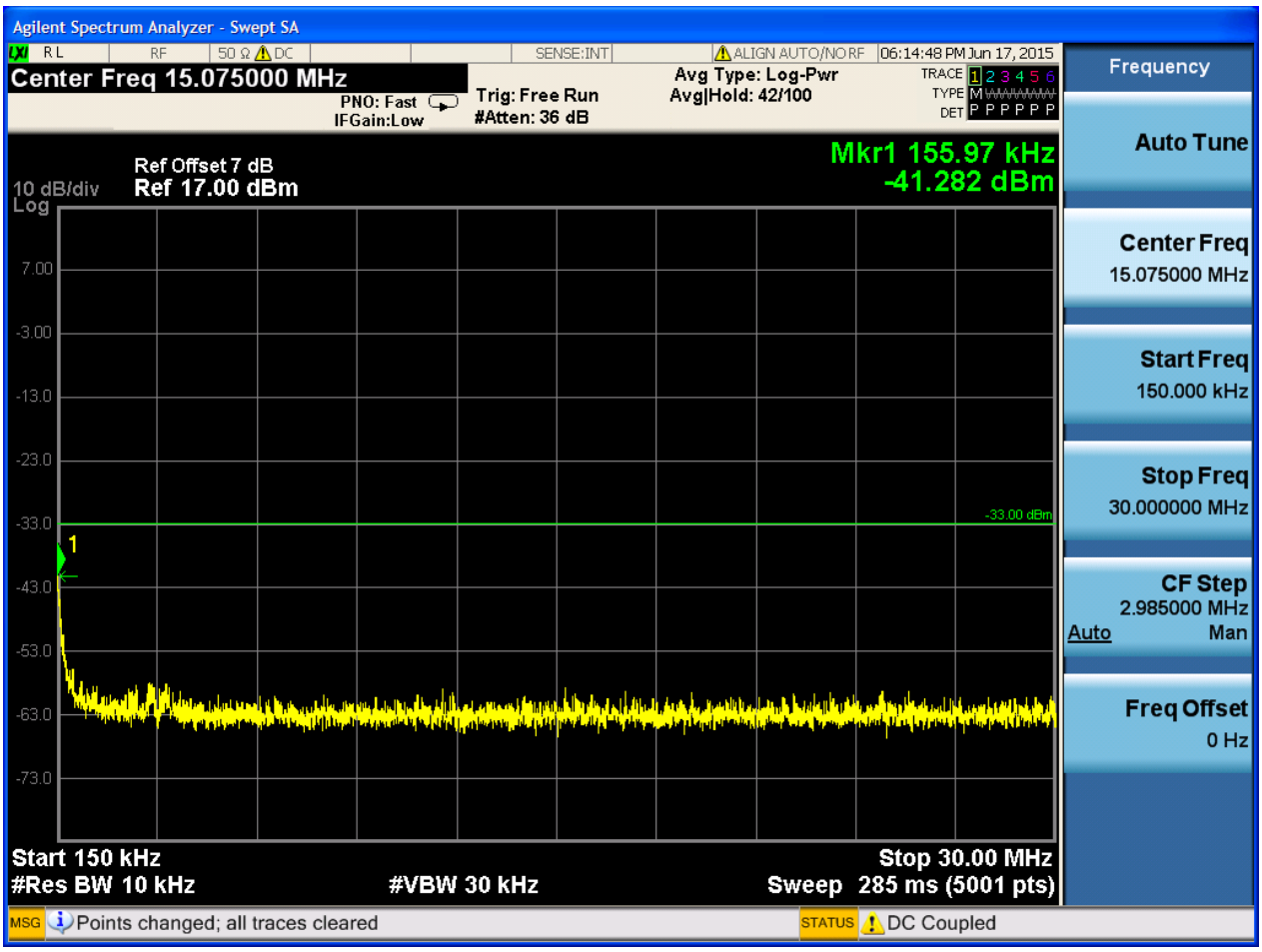


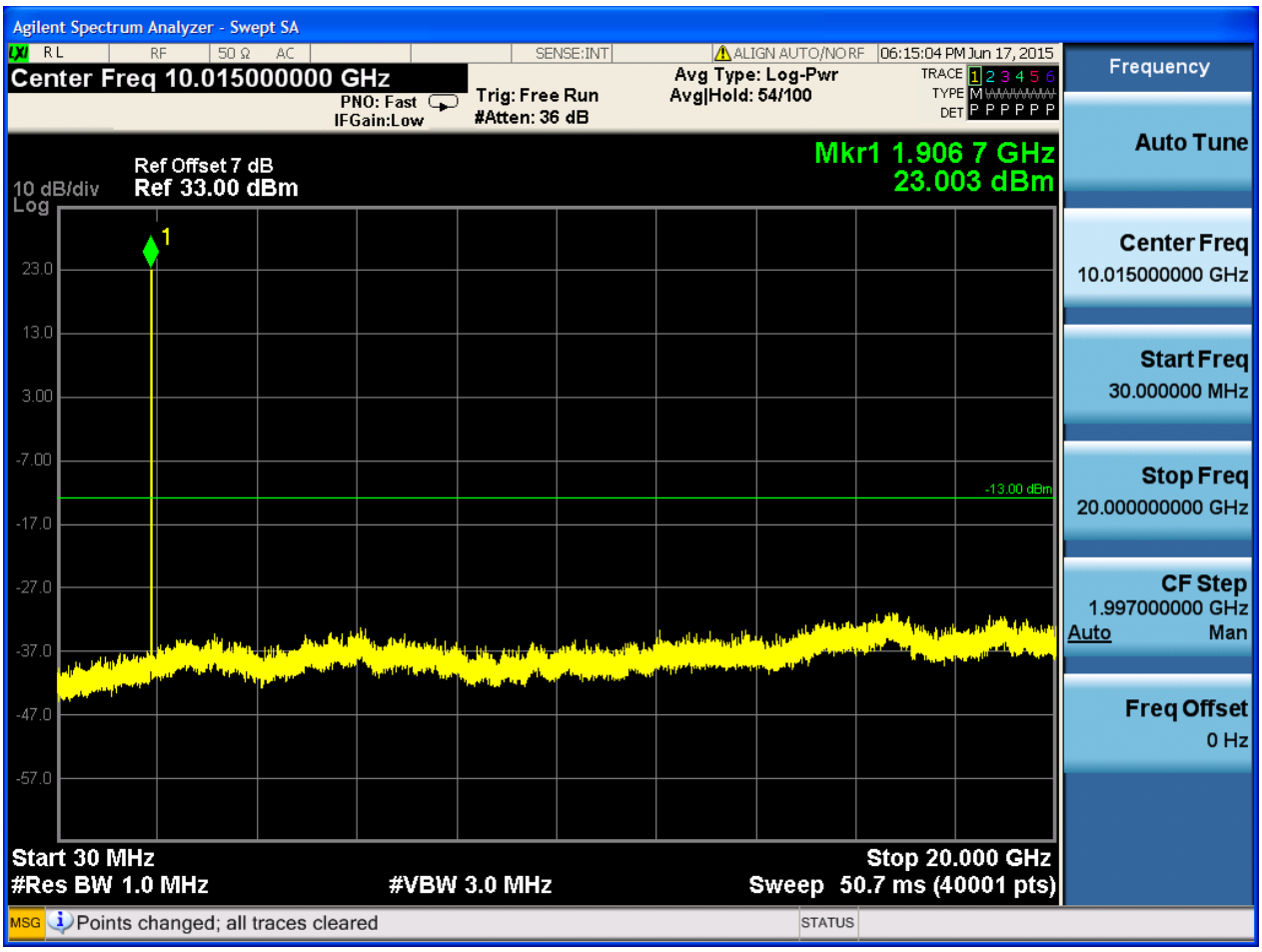




6.1.3.1.3 Test Channel = HCH







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

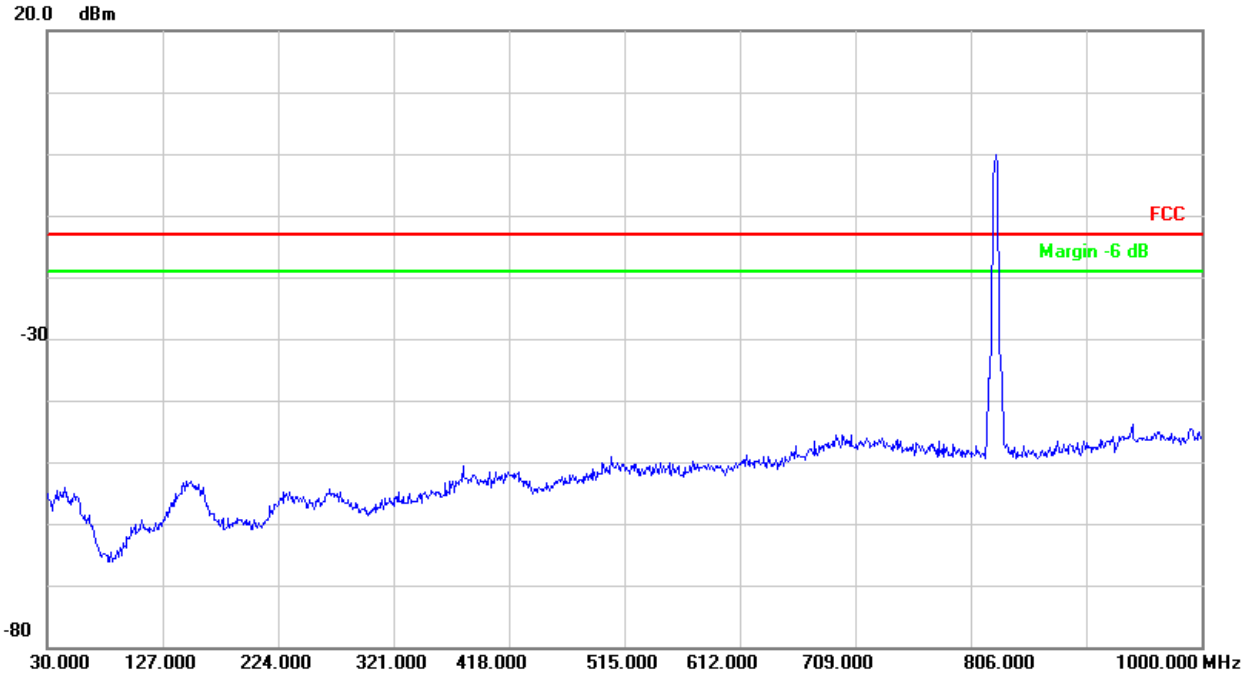
Above 1GHz, RBW = 1 MHz, VBW = 3 MHz. Detector: PK

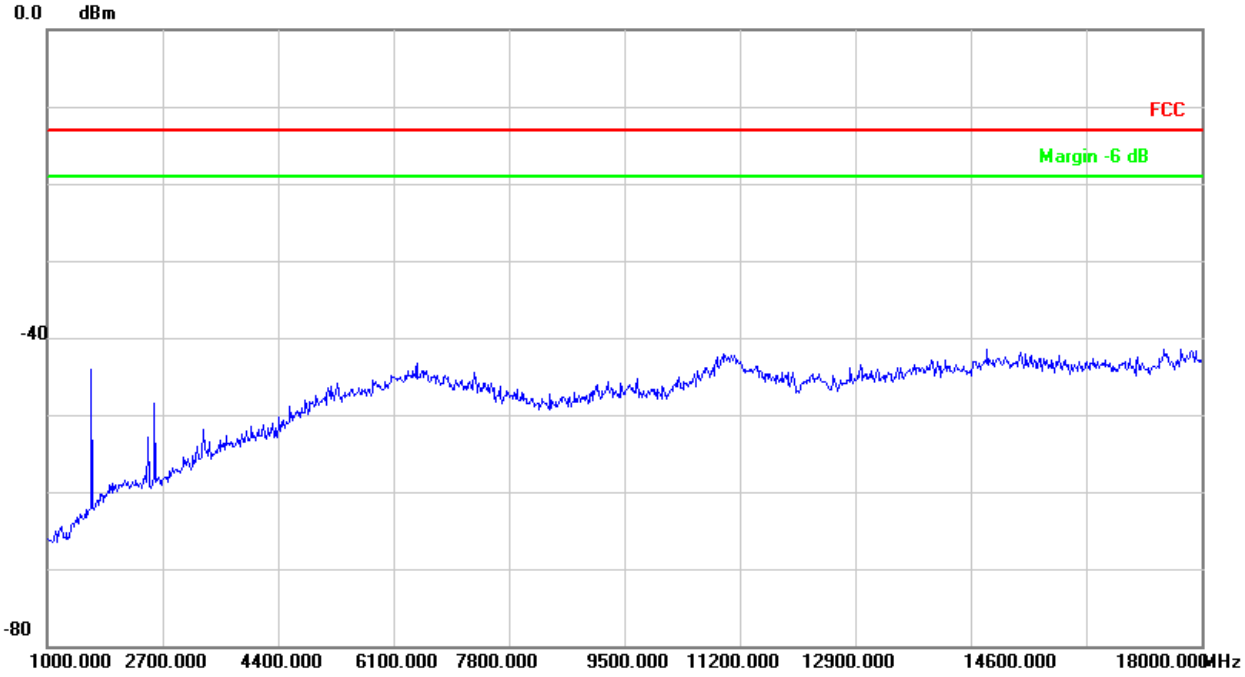
Part I - Test Plots

7.1 For UMTS

7.1.1 Test Band = WCDMA850

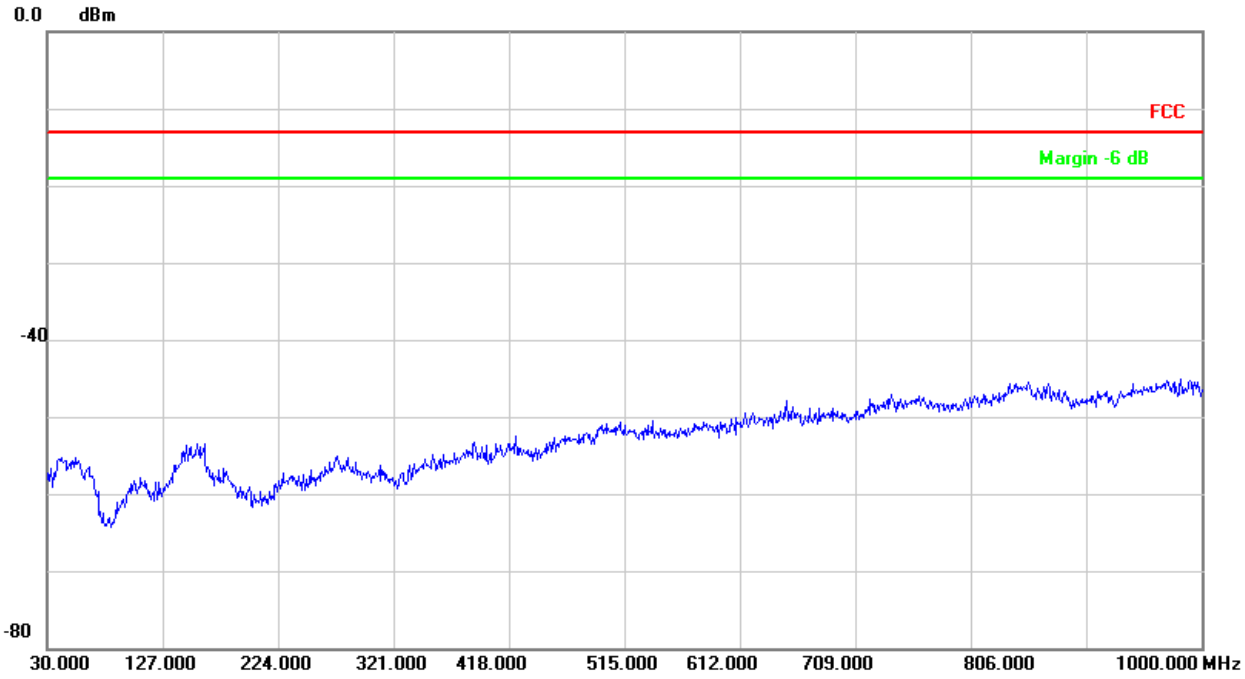
7.1.1.1 Test Mode = UMTS/TM1

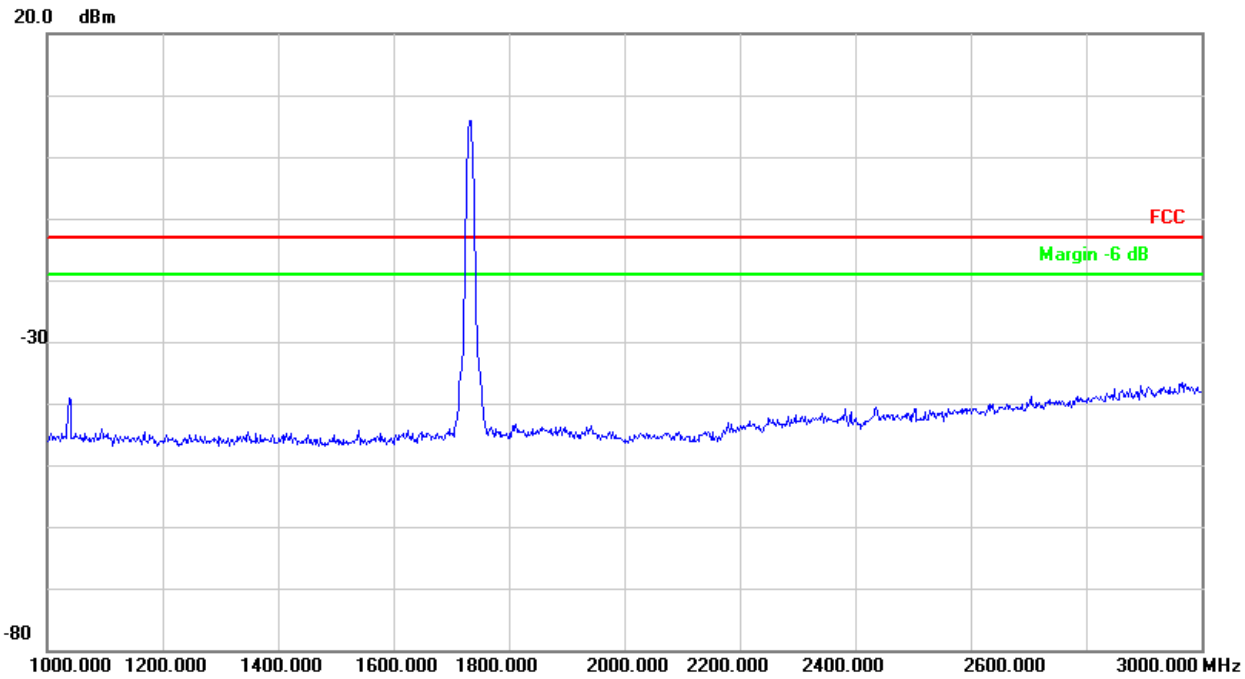


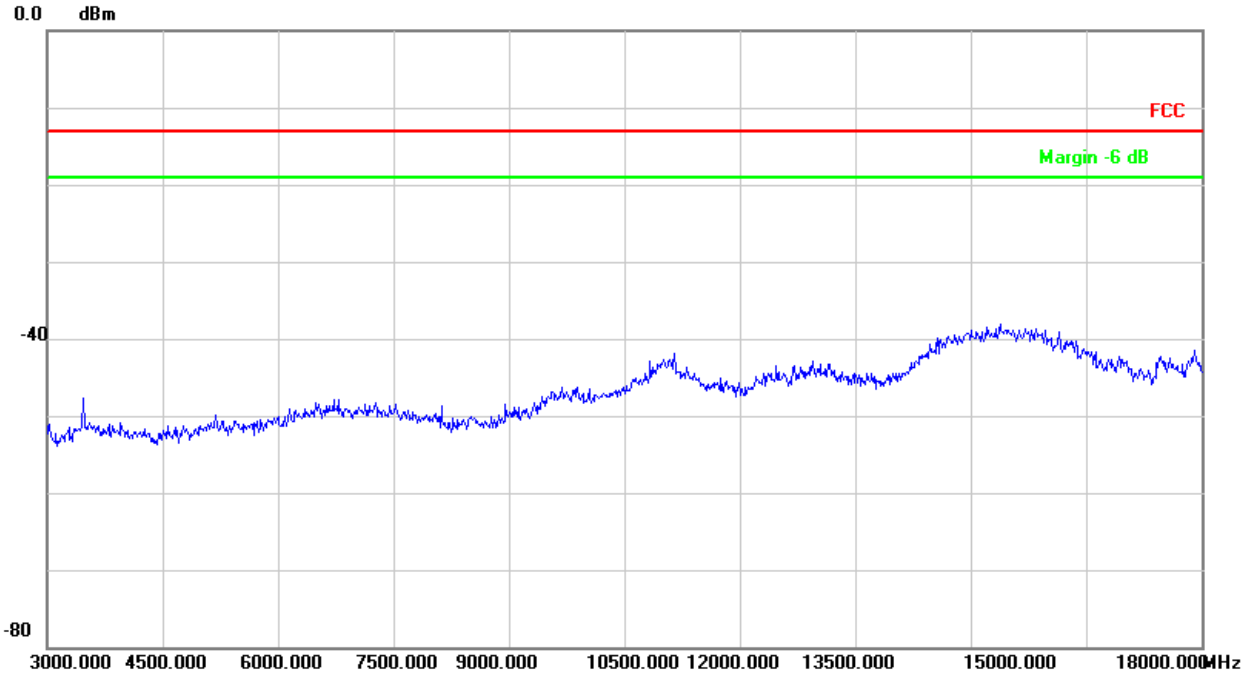


7.1.2 Test Band = WCDMA1700

7.1.2.1 Test Mode = UMTS/TM1

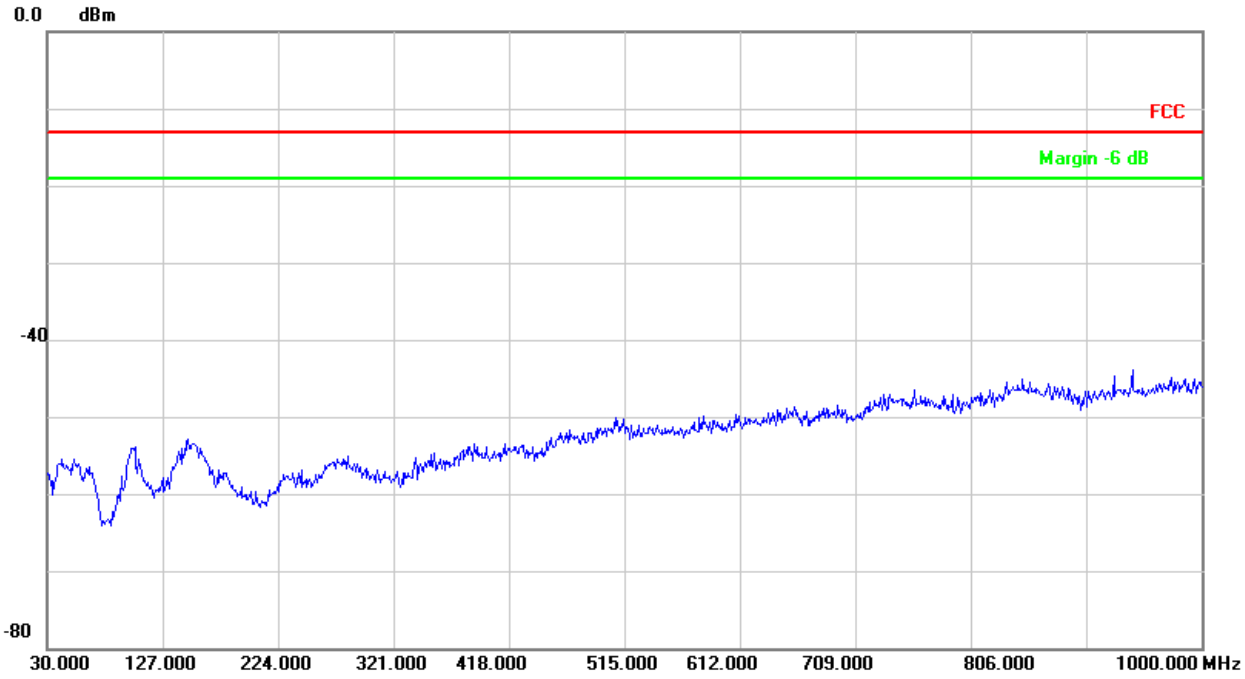


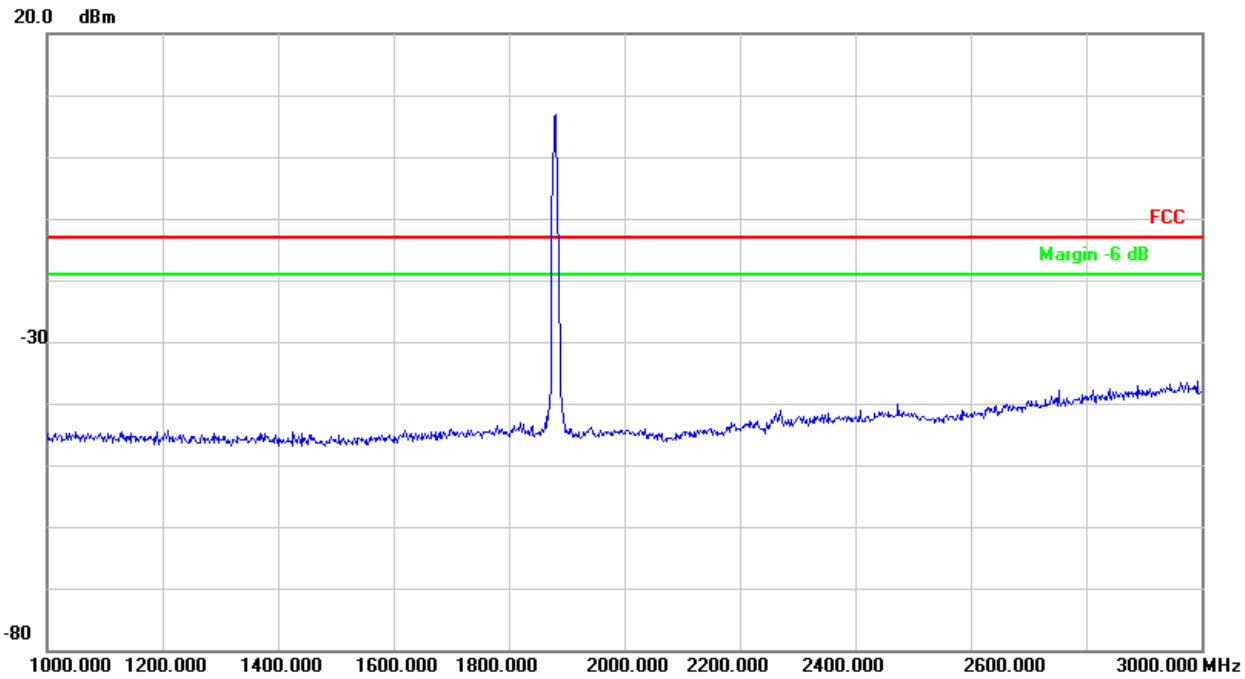


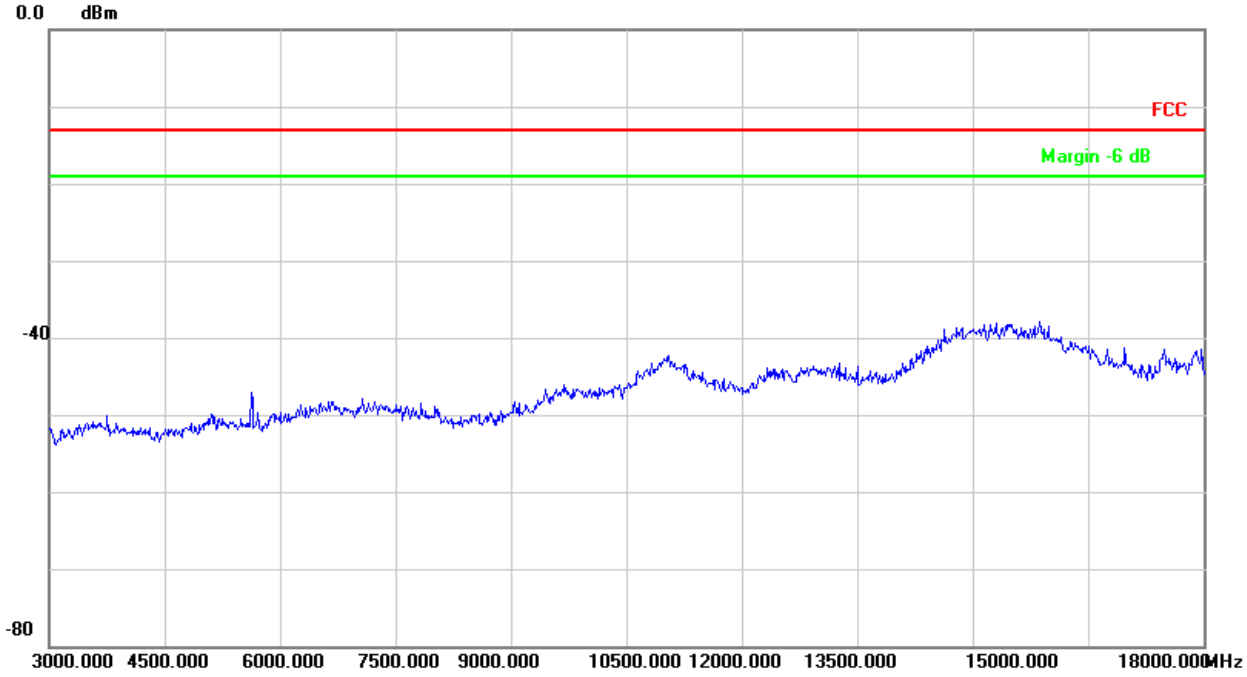


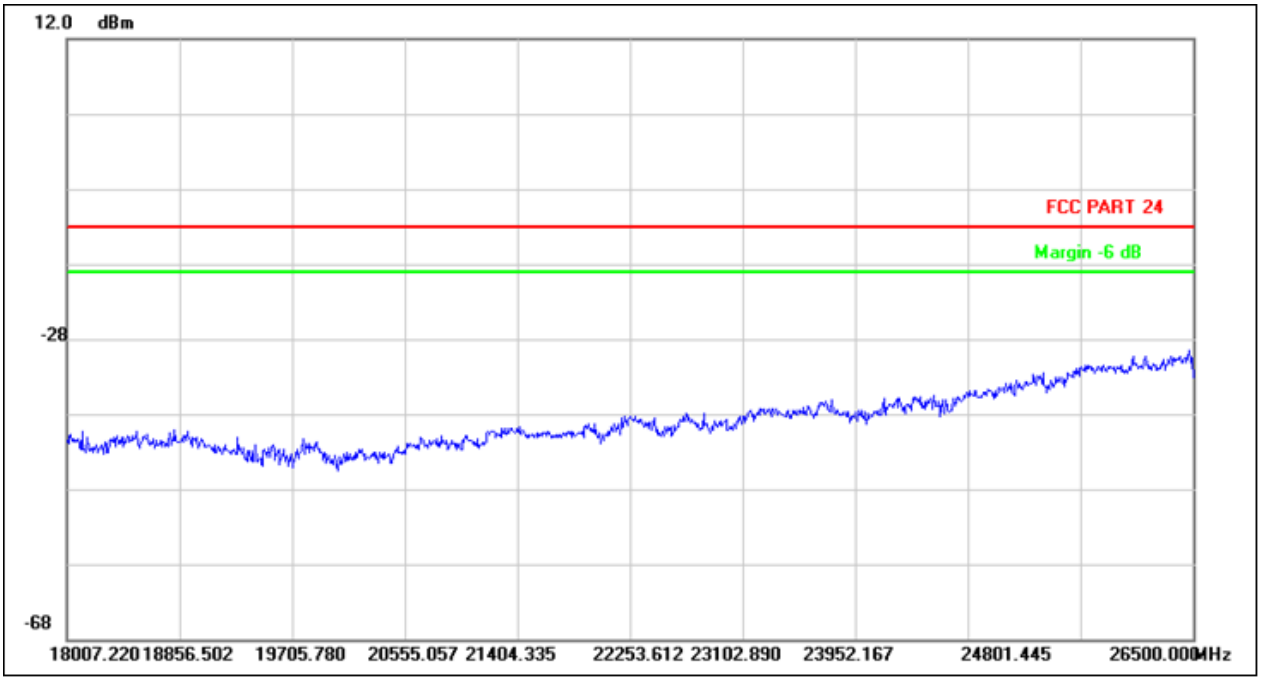
7.1.3 Test Band = WCDMA1900

7.1.3.1 Test Mode = UMTS/TM1









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	2.82	0.00341	PASS
				VN	-0.4	-0.00048	PASS
				VH	1.43	0.00173	PASS
		MCH	TN	VL	-1.74	-0.00208	PASS
				VN	0.27	0.00032	PASS
				VH	-1.72	-0.00206	PASS
		HCH	TN	VL	-2.11	-0.00249	PASS
				VN	-1.95	-0.0023	PASS
				VH	-2.43	-0.00287	PASS
WCDMA1700	UMTS/TM1	LCH	TN	VL	19.53	0.01141	PASS
				VN	16.13	0.00942	PASS
				VH	16.54	0.00966	PASS
		MCH	TN	VL	0.18	0.0001	PASS
				VN	-1.68	-0.00097	PASS
				VH	-0.37	-0.00021	PASS
		HCH	TN	VL	-15.27	-0.00871	PASS
				VN	-15.99	-0.00912	PASS
				VH	-14.39	-0.00821	PASS
WCDMA1900	UMTS/TM1	LCH	TN	VL	4.7	0.00254	PASS
				VN	4.94	0.00267	PASS
				VH	4.32	0.00233	PASS
		MCH	TN	VL	-0.49	-0.00026	PASS
				VN	1.04	0.00055	PASS
				VH	-1.27	-0.00068	PASS
		HCH	TN	VL	-5.49	-0.00288	PASS
				VN	-5.95	-0.00312	PASS
				VH	-3.77	-0.00198	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	3.08	0.00373	PASS
				-20	3.45	0.00417	PASS
				-10	1.6	0.00194	PASS
				0	3.95	0.00478	PASS
				10	1.1	0.00133	PASS
				20	2.79	0.00338	PASS
				30	1.6	0.00194	PASS
				40	0.93	0.00113	PASS
				50	3.62	0.00438	PASS
		MCH	VN	-30	-1.13	-0.00135	PASS
				-20	0.99	0.00118	PASS
				-10	-1.24	-0.00148	PASS
				0	-2.24	-0.00268	PASS
				10	-0.18	-0.00022	PASS
				20	2.29	0.00274	PASS
				30	-0.78	-0.00093	PASS
				40	1.28	0.00153	PASS
				50	-0.05	-0.00006	PASS
		HCH	VN	-30	-3.43	-0.00405	PASS
				-20	-3.54	-0.00418	PASS
				-10	-1.95	-0.0023	PASS
				0	-2.66	-0.00314	PASS
				10	-3.94	-0.00465	PASS
				20	-2.87	-0.00339	PASS
				30	-0.81	-0.00096	PASS
				40	-0.32	-0.00038	PASS
				50	-0.73	-0.00086	PASS
WCDMA1700	UMTS/TM1	LCH	VN	-30	16.43	0.00959	PASS
				-20	16.56	0.00967	PASS
				-10	17.73	0.01035	PASS
				0	18.71	0.01093	PASS
				10	17.12	0.01	PASS
				20	16.02	0.00936	PASS
				30	19.47	0.01137	PASS
				40	18.36	0.01072	PASS
				50	15.95	0.00931	PASS
		MCH	VN	-30	1.28	0.00074	PASS
				-20	-2.04	-0.00118	PASS
				-10	1.36	0.00078	PASS
				0	1.19	0.00069	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				10	0.89	0.00051	PASS
				20	1.16	0.00067	PASS
				30	1.37	0.00079	PASS
				40	1.62	0.00094	PASS
				50	-0.29	-0.00017	PASS
		HCH	VN	-30	-19	-0.01084	PASS
				-20	-16.91	-0.00965	PASS
				-10	-16.62	-0.00948	PASS
				0	-15.12	-0.00863	PASS
				10	-19.09	-0.01089	PASS
				20	-16.34	-0.00932	PASS
				30	-16.02	-0.00914	PASS
				40	-19.42	-0.01108	PASS
				50	-15.47	-0.00883	PASS
WCDMA1900	UMTS/TM1	LCH	VN	-30	5.36	0.00289	PASS
				-20	2.59	0.0014	PASS
				-10	2.26	0.00122	PASS
				0	5.72	0.00309	PASS
				10	7.66	0.00414	PASS
				20	6.67	0.0036	PASS
				30	4.07	0.0022	PASS
				40	7.87	0.00425	PASS
				50	6.01	0.00324	PASS
		MCH	VN	-30	-3.86	-0.00205	PASS
				-20	-4.53	-0.00241	PASS
				-10	-3.62	-0.00193	PASS
				0	0.72	0.00038	PASS
				10	-0.98	-0.00052	PASS
				20	3.23	0.00172	PASS
				30	1.1	0.00059	PASS
				40	0.6	0.00032	PASS
				50	-1.48	-0.00079	PASS
		HCH	VN	-30	-6.7	-0.00351	PASS
				-20	-7.6	-0.00398	PASS
				-10	-5.78	-0.00303	PASS
				0	-4.03	-0.00211	PASS
				10	-6.74	-0.00353	PASS
				20	-5.05	-0.00265	PASS
				30	-6.62	-0.00347	PASS
				40	-5.26	-0.00276	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				50	-6.74	-0.00353	PASS

END