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]	EIRP [dBm]	Limit [dBm]	Verdict
WCDMA1900	UMTS/TM1	LCH	22.24	22.64	33	PASS
		MCH	22.39	22.79	33	PASS
		HCH	22.19	22.59	33	PASS

Test Band	Test Mode	Test Channel	Conducted Power [dBm]	EIRP [dBm]	Limit [dBm]	Verdict
WCDMA850	UMTS/TM1	LCH	22.49	21.34	38.5	PASS
		MCH	22.44	21.29	38.5	PASS
		HCH	22.49	21.34	38.5	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:

SET Span=1.5*OBW

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

SET VBW>= 3*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	2.83	13	PASS
		MCH	2.89	13	PASS
		HCH	2.82	13	PASS
Test Band	**Test Mode**	**Test Channel**	**Measured[dB]**	**Limit [dB]**	**Verdict**
WCDMA850	UMTS/TM1	LCH	3.03	13	PASS
		MCH	3.46	13	PASS
		HCH	3.13	13	PASS

3Appendix_C: Modulation Characteristics

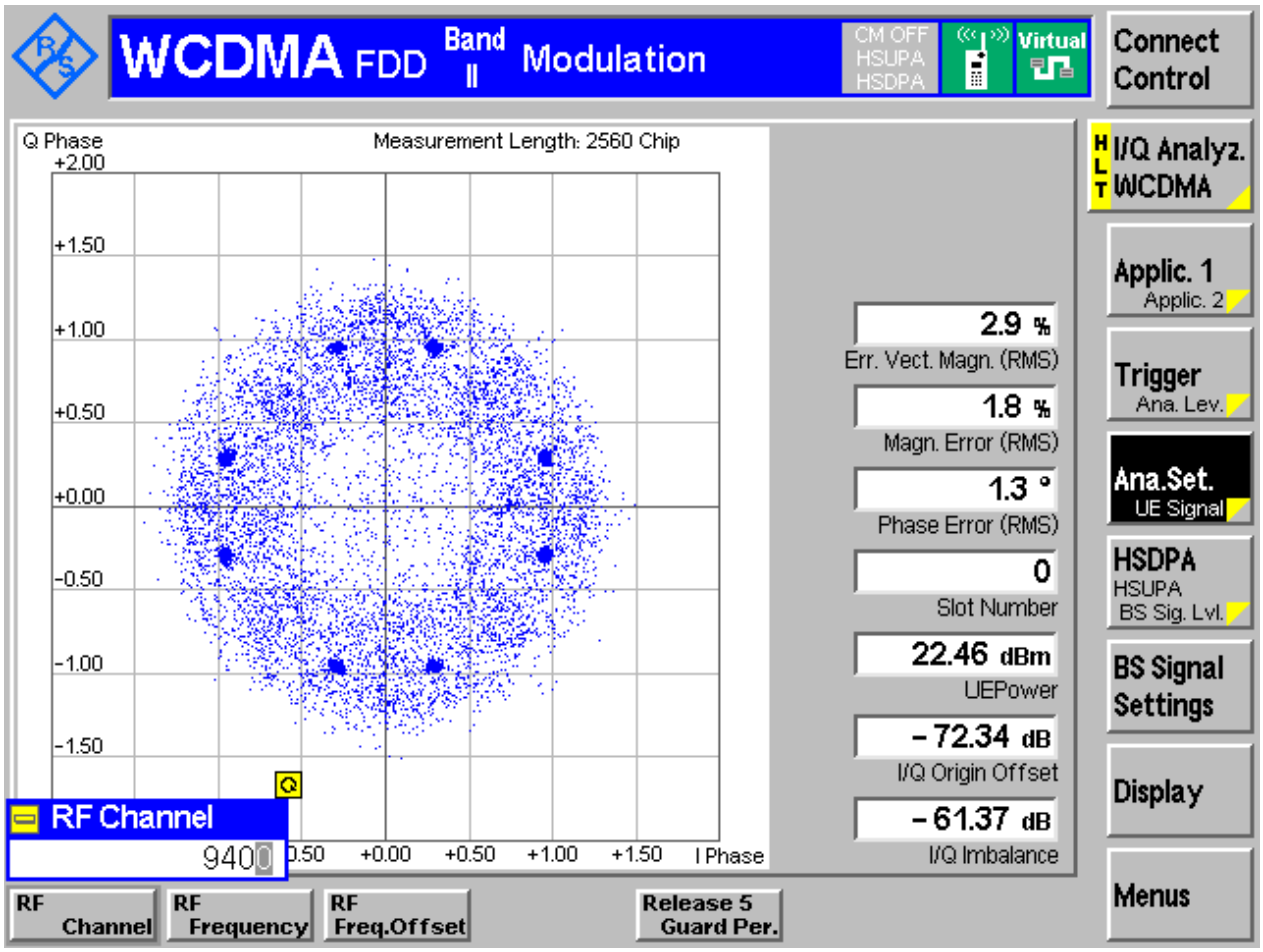
Part I - Test Plots

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

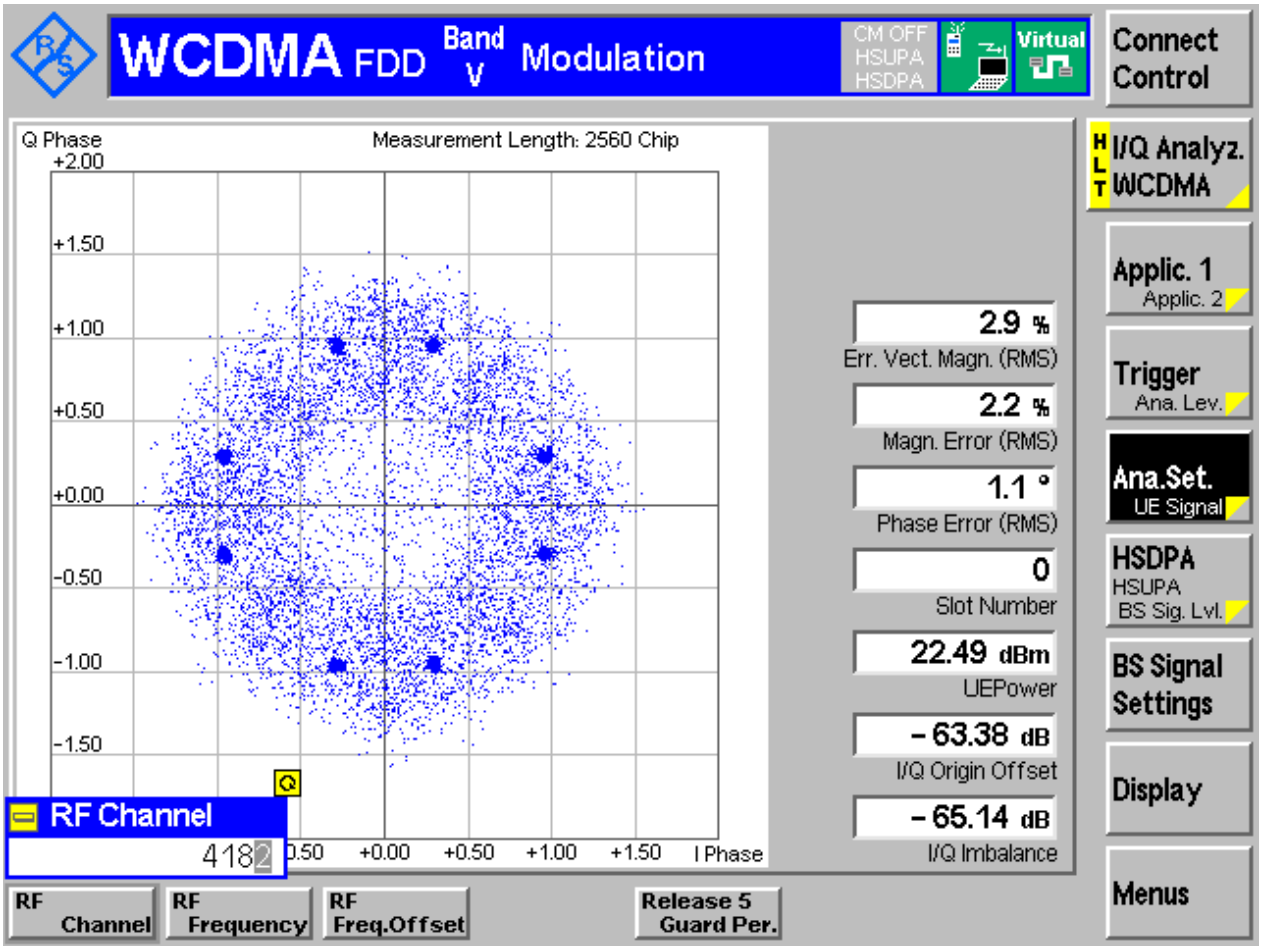


3.2 For UMTS

3.2.1 Test Band = WCDMA850

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
WCDMA1900	UMTS/TM1	LCH	4.16	4.76	Pass
		MCH	4.16	4.75	Pass
		HCH	4.15	4.74	Pass
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	4.72	Pass

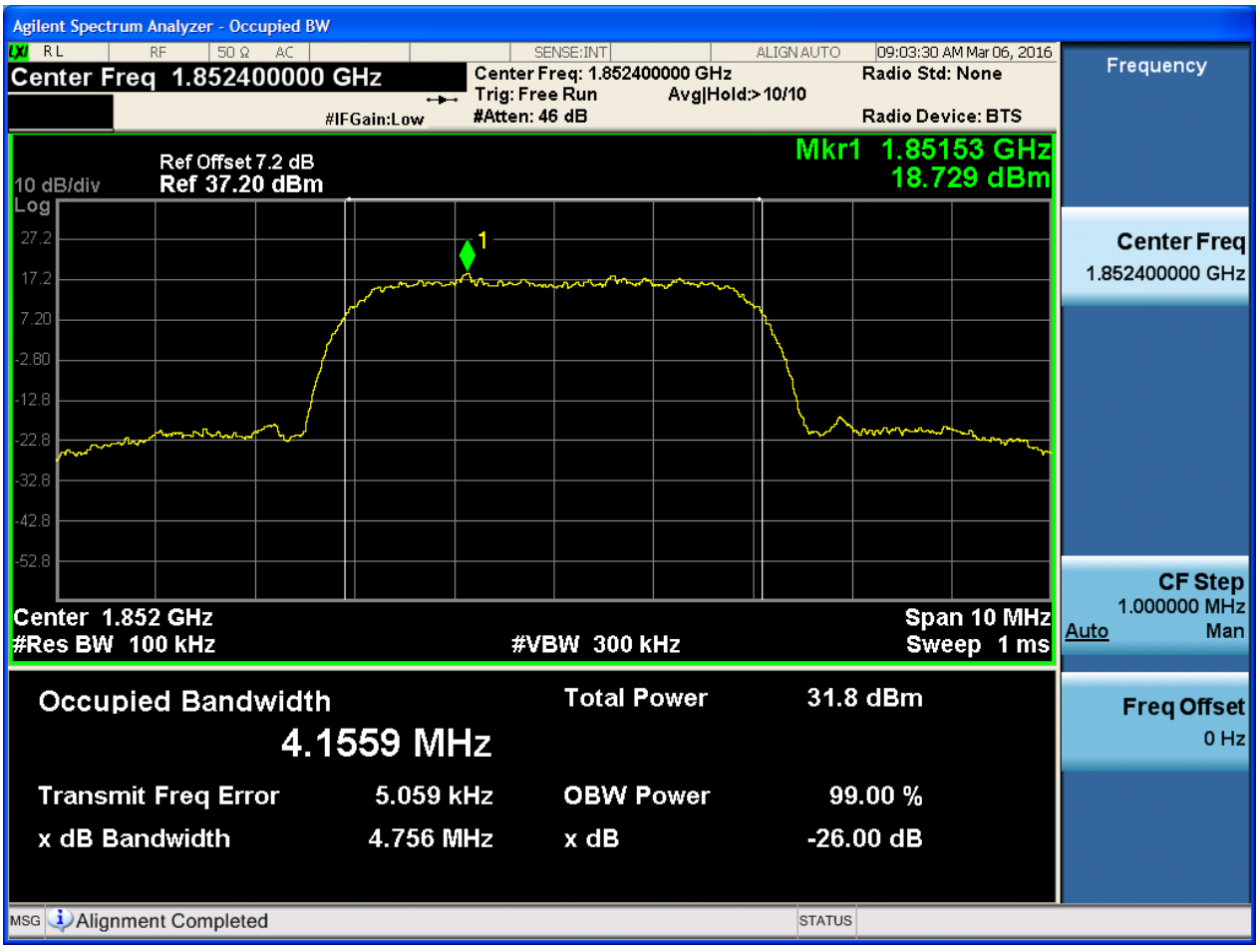
Part II - Test Plots

4.1 For UMTS

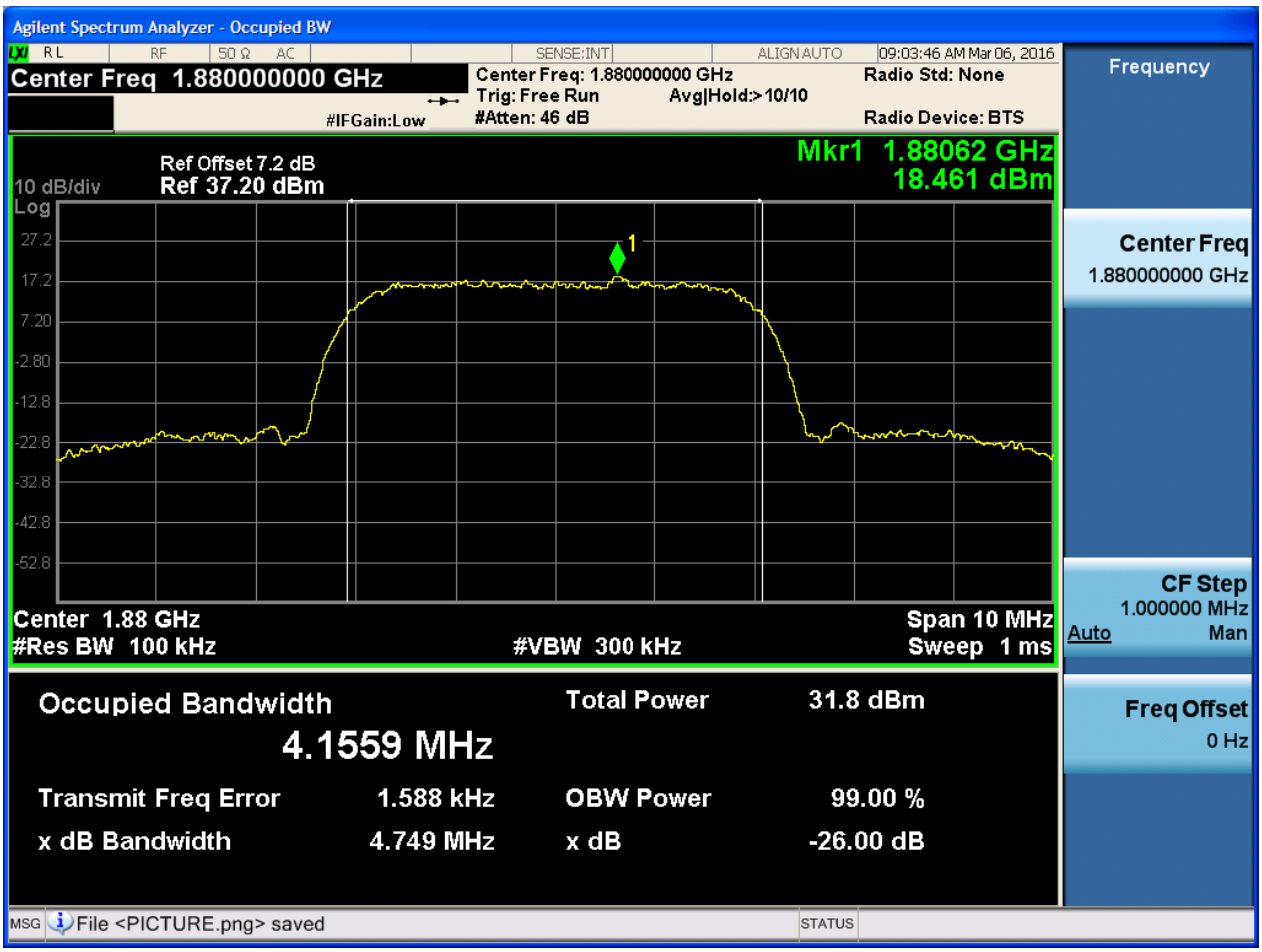
4.1.1 Test Band = WCDMA1900

4.1.1.1 Test Mode = UMTS/TM1

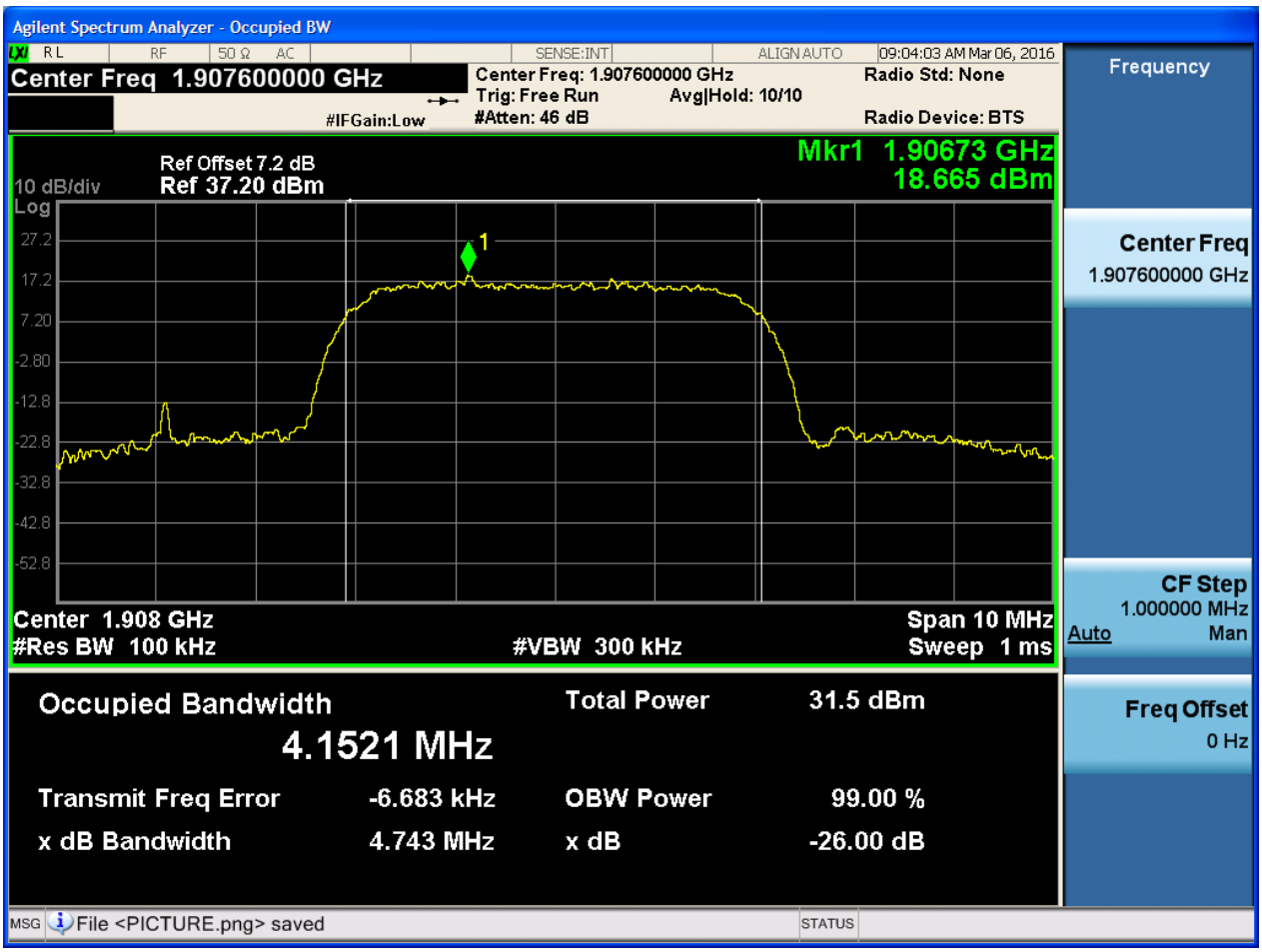
4.1.1.1.1 Test Channel = LCH



4.1.1.1.2 Test Channel = MCH



4.1.1.1.3 Test Channel = HCH

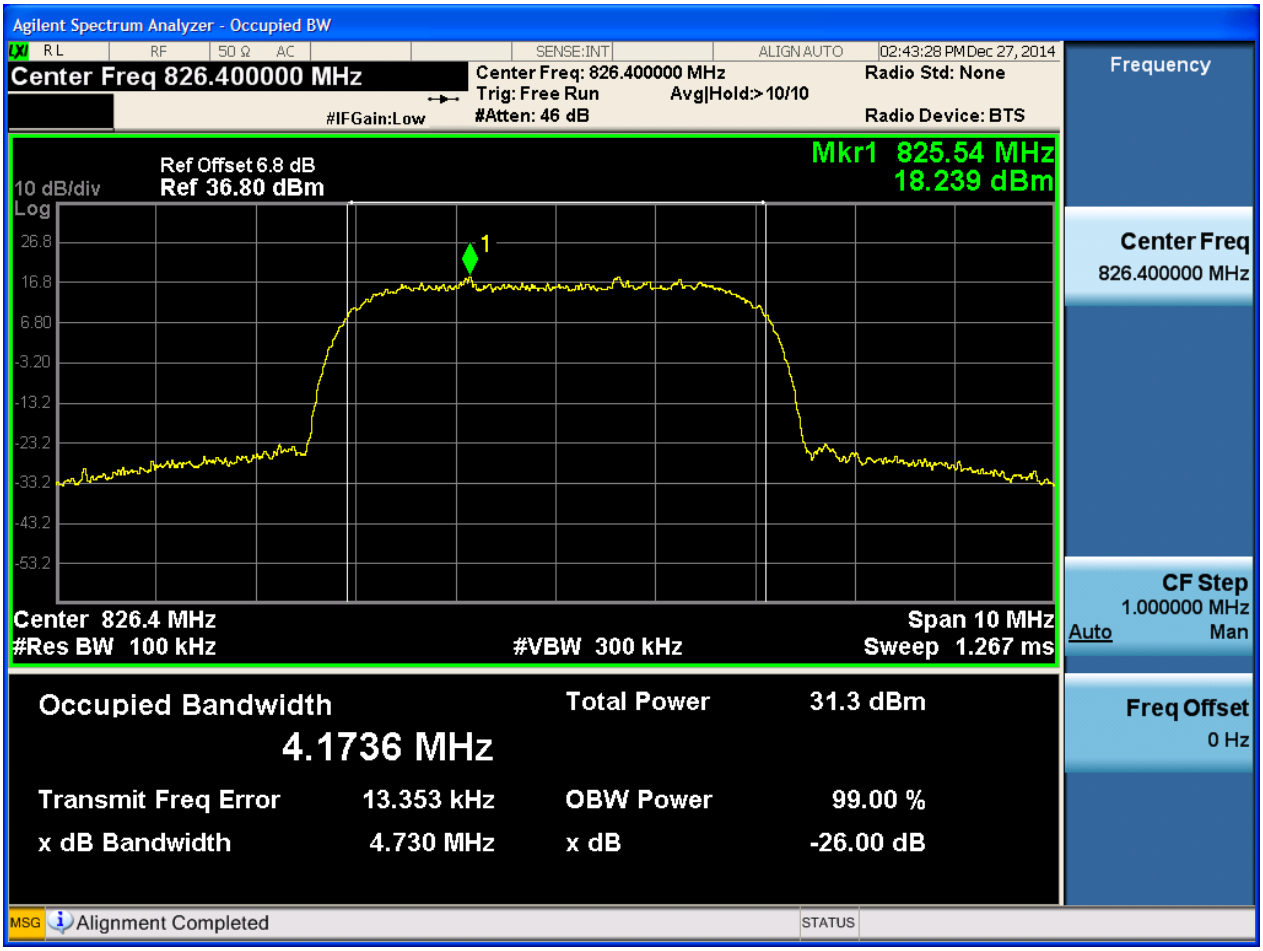


4.2 For UMTS

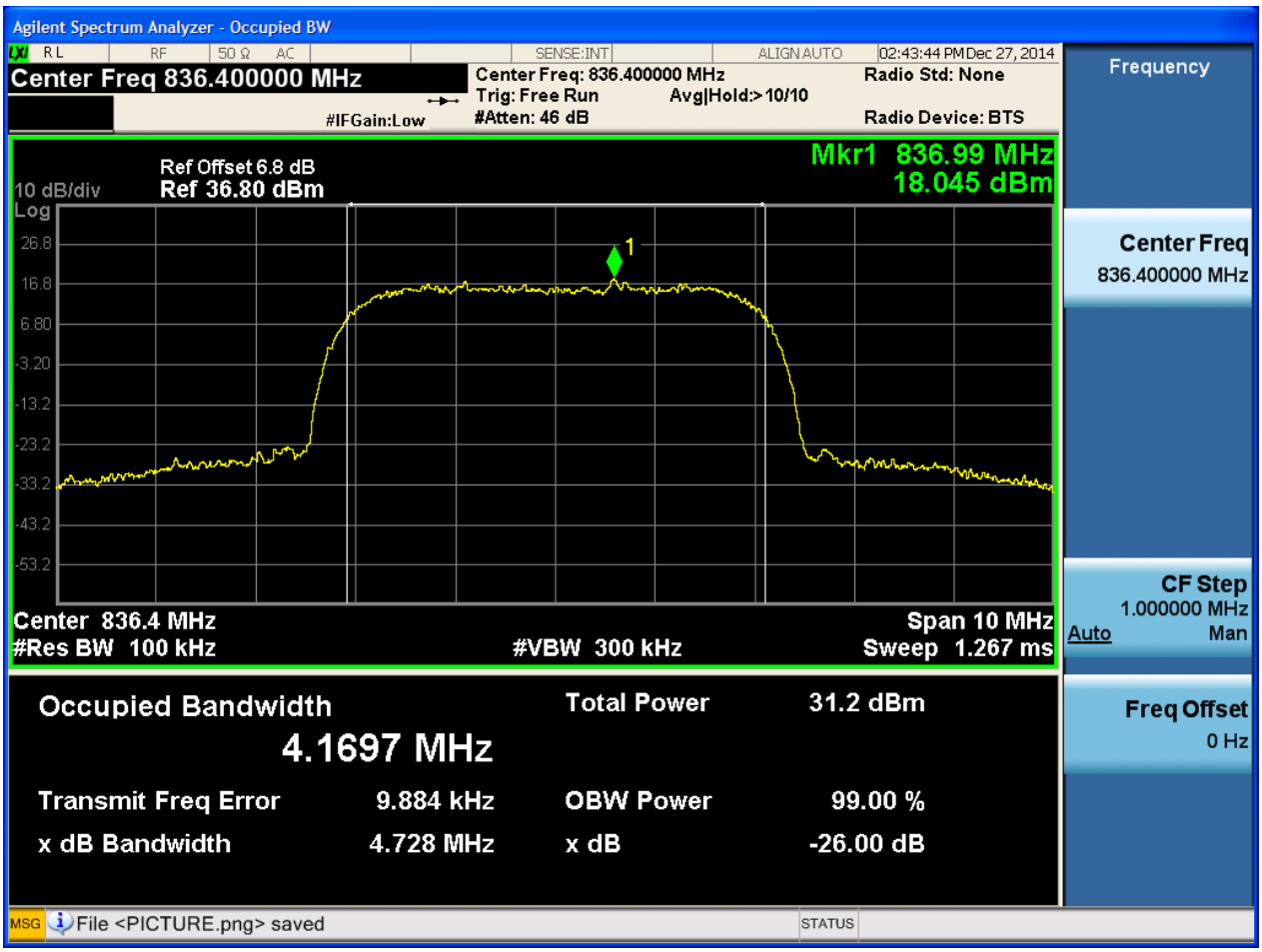
4.2.1 Test Band = WCDMA850

4.2.1.1 Test Mode = UMTS/TM1

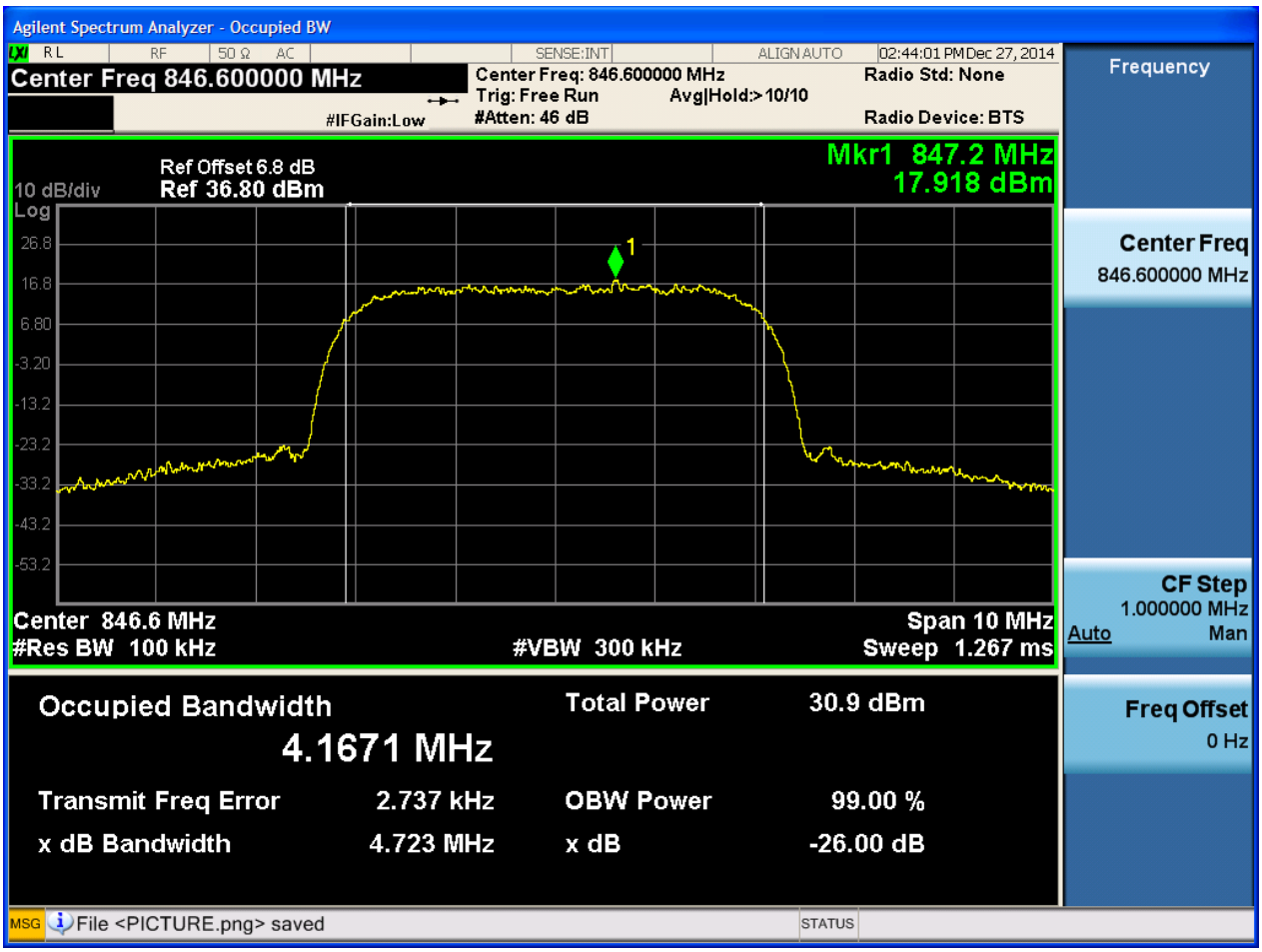
4.2.1.1.1 Test Channel = LCH



4.2.1.1.2 Test Channel = MCH



4.2.1.1.3 Test Channel = HCH



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

5.2 For UMTS

5.2.1 Test Band = WCDMA850

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.

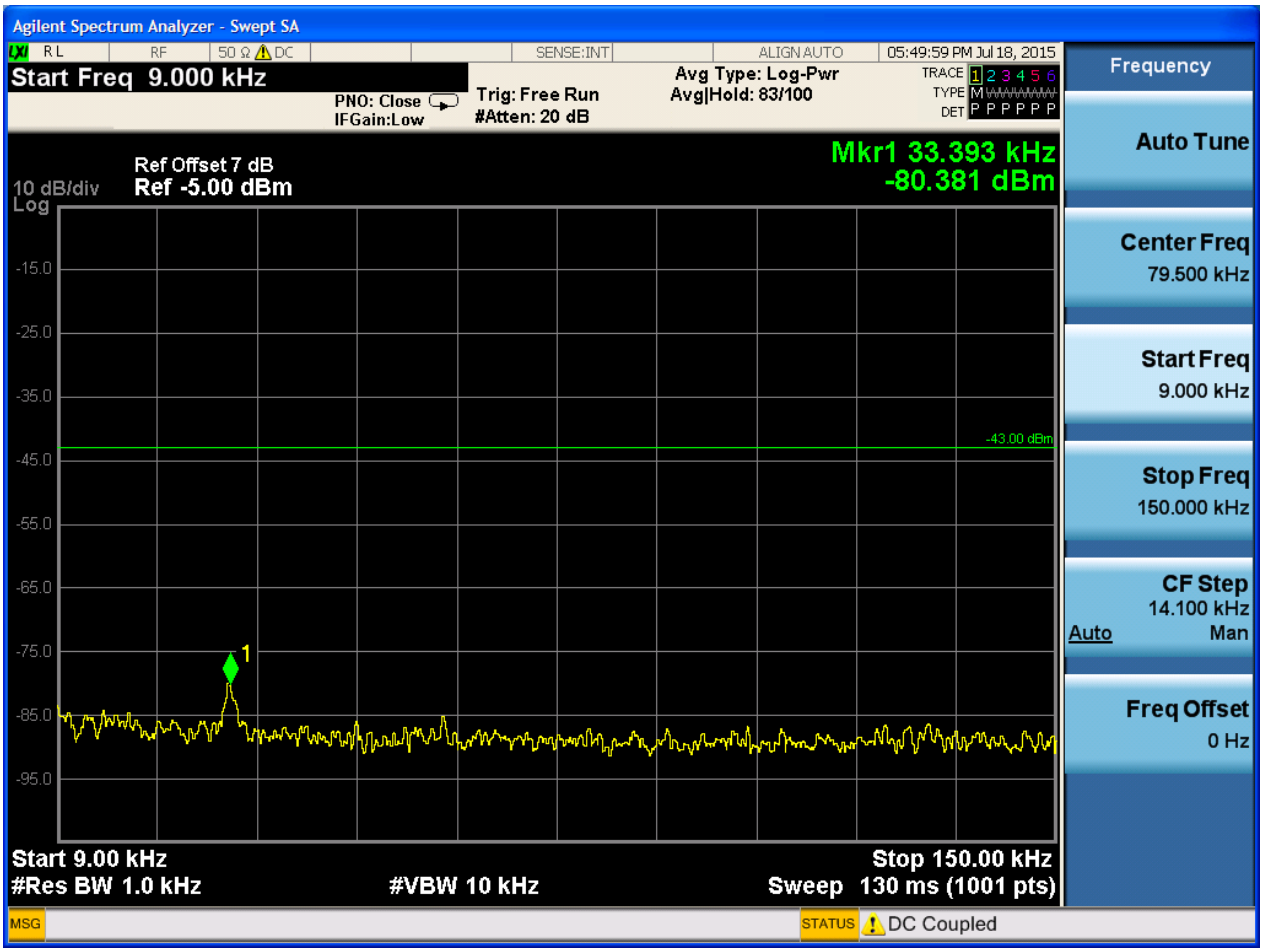
Part I - Test Plots

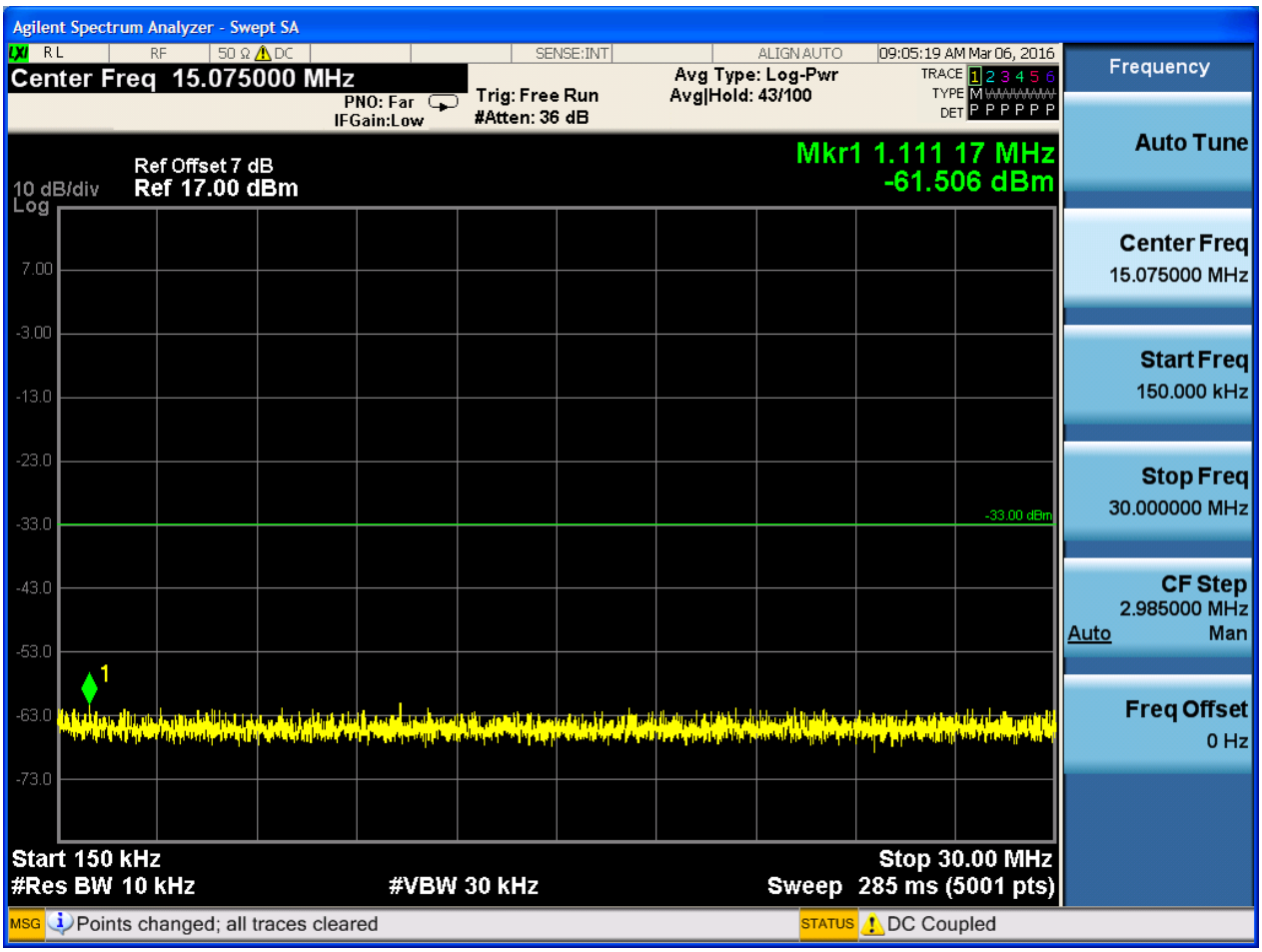
6.1 For UMTS

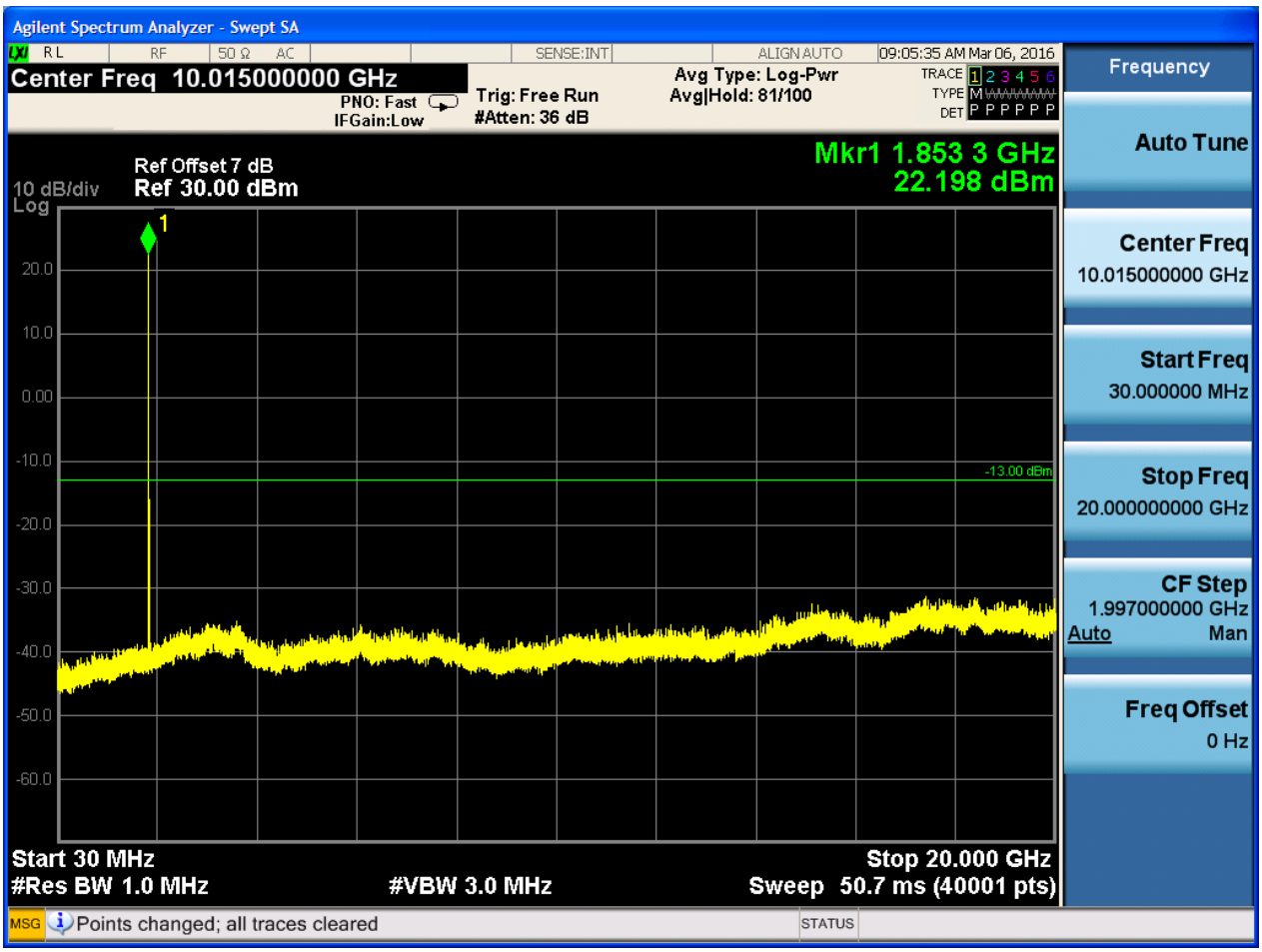
6.1.1 Test Band = WCDMA1900

6.1.1.1 Test Mode = UMTS/TM1

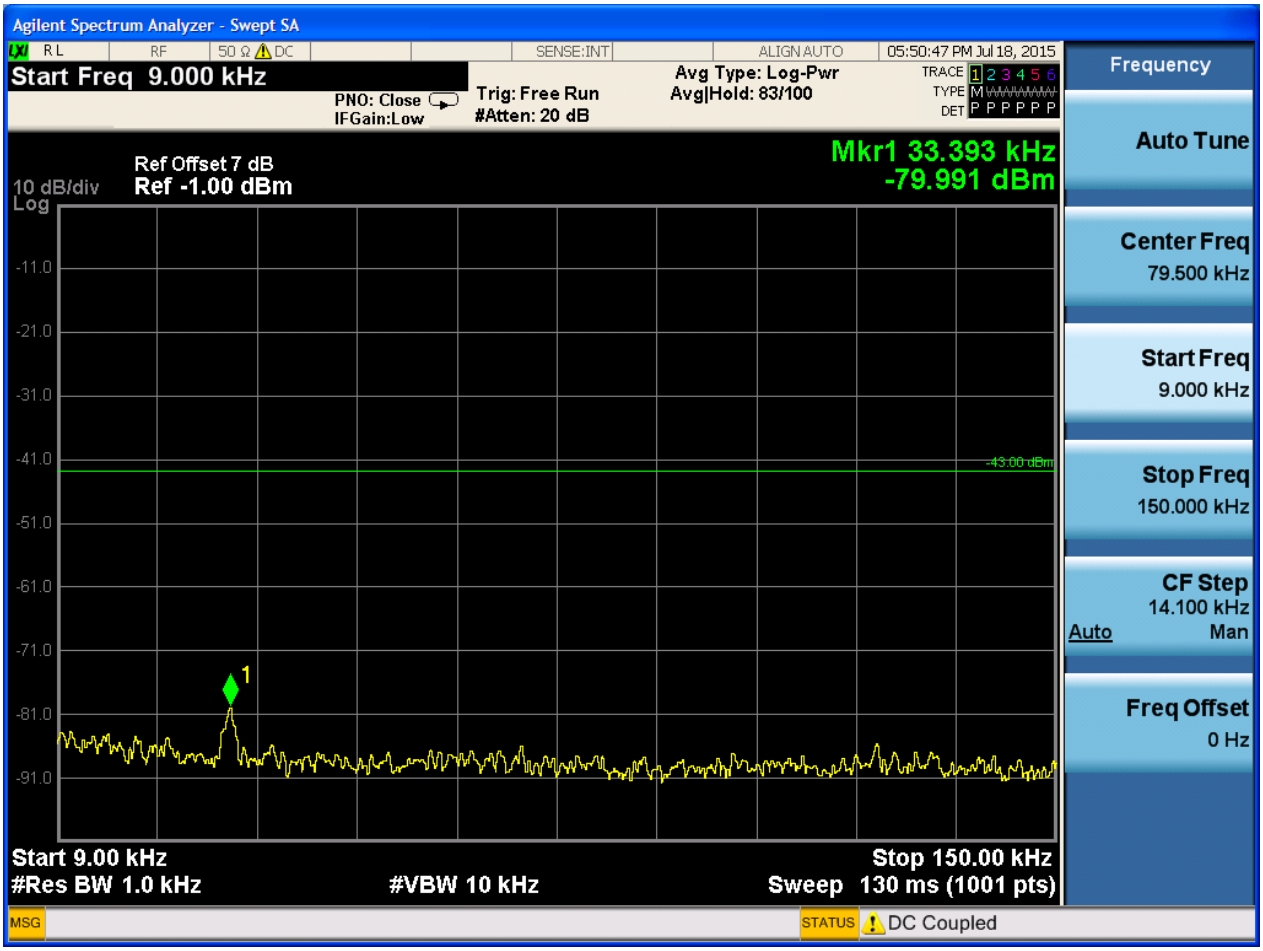
6.1.1.1.1 Test Channel = LCH

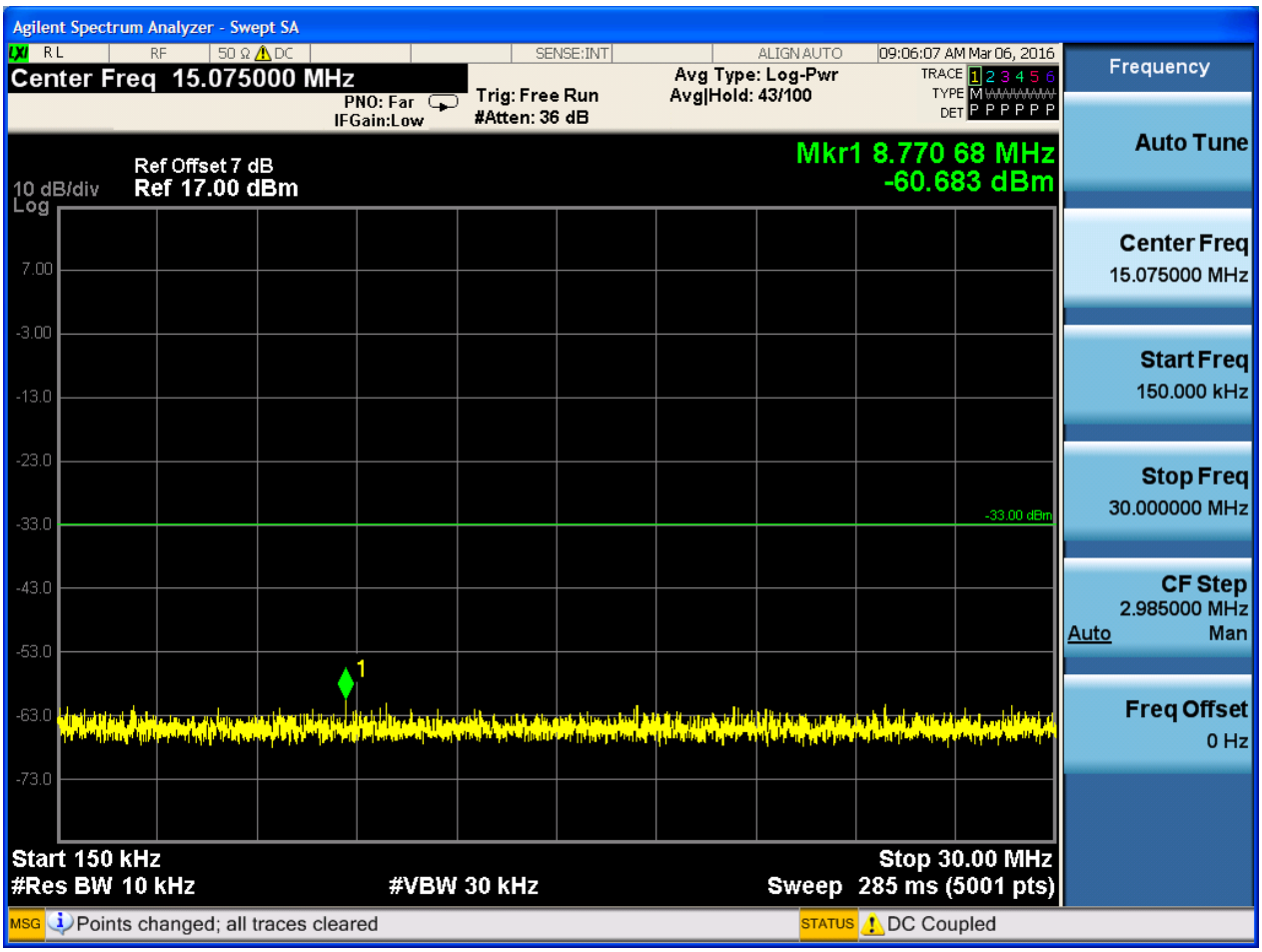


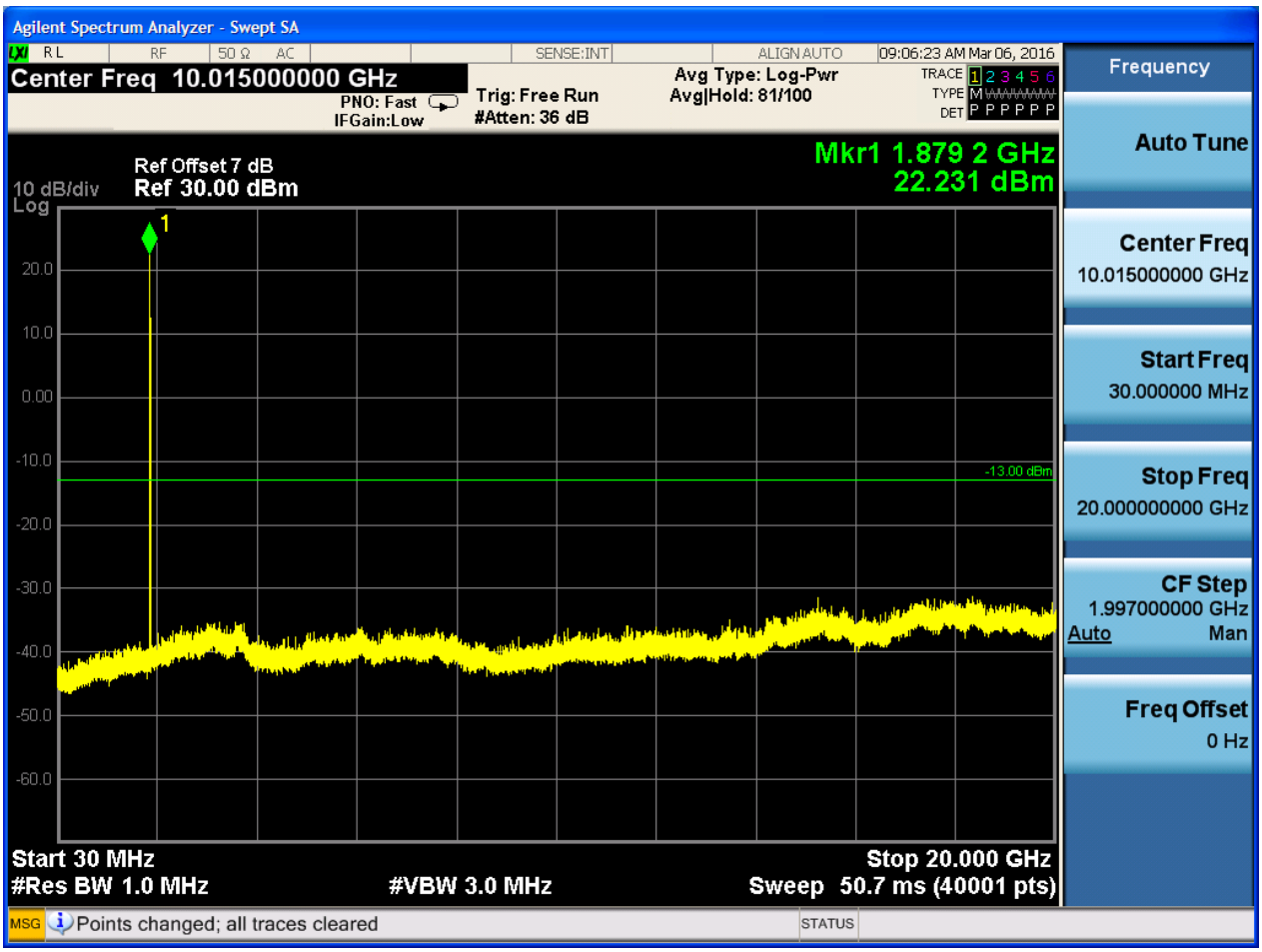




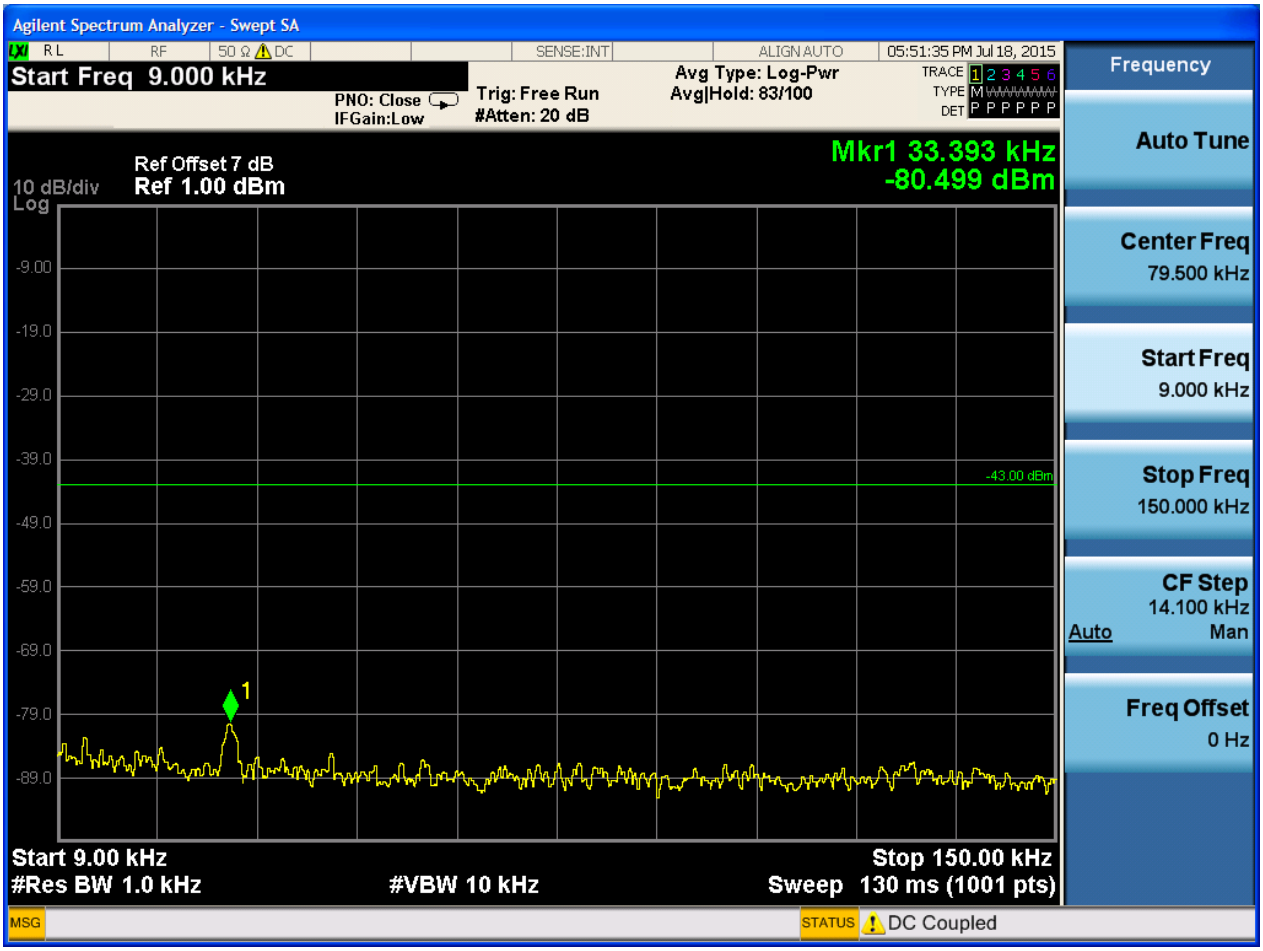
6.1.1.1.2 Test Channel = MCH

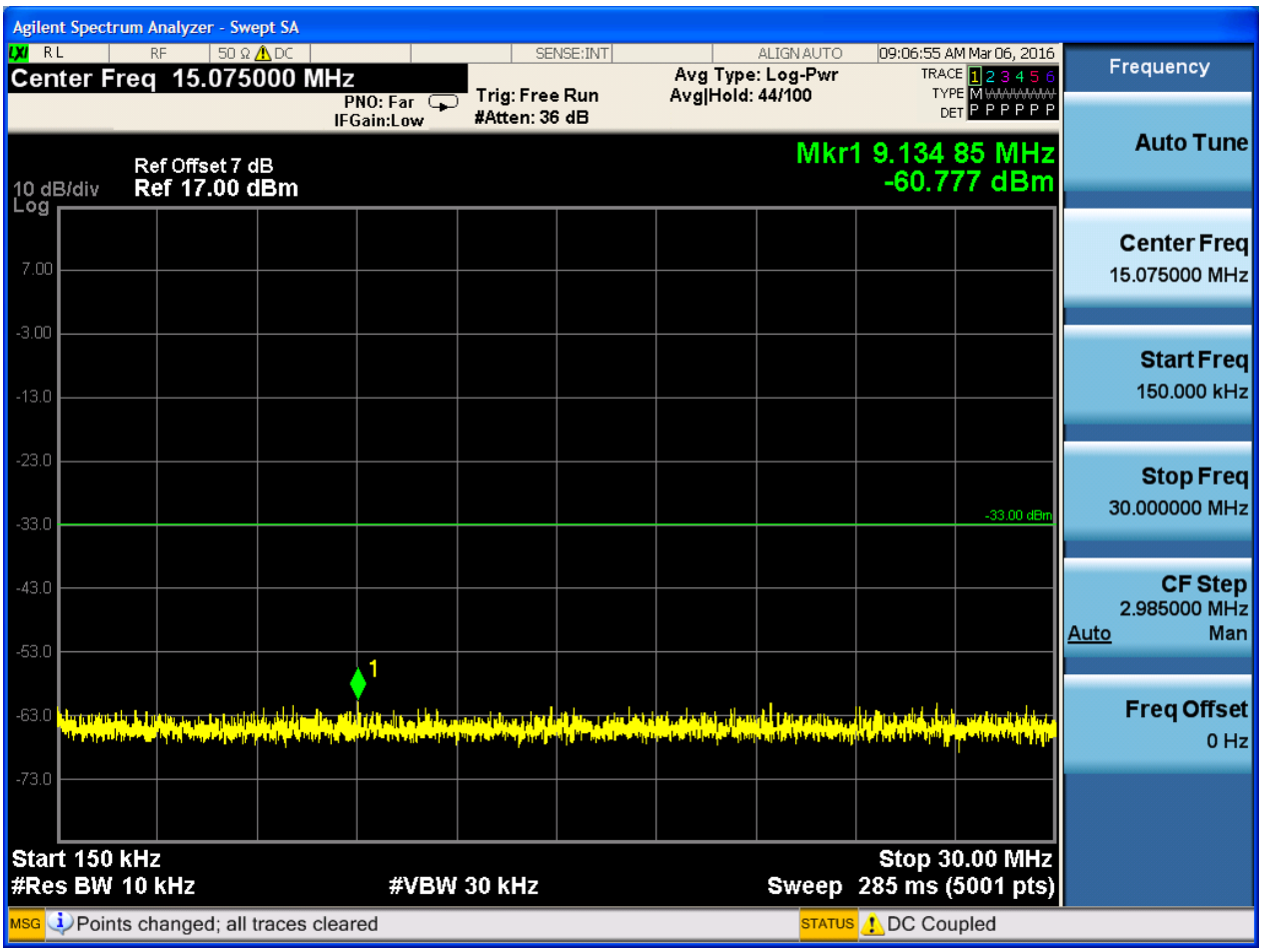


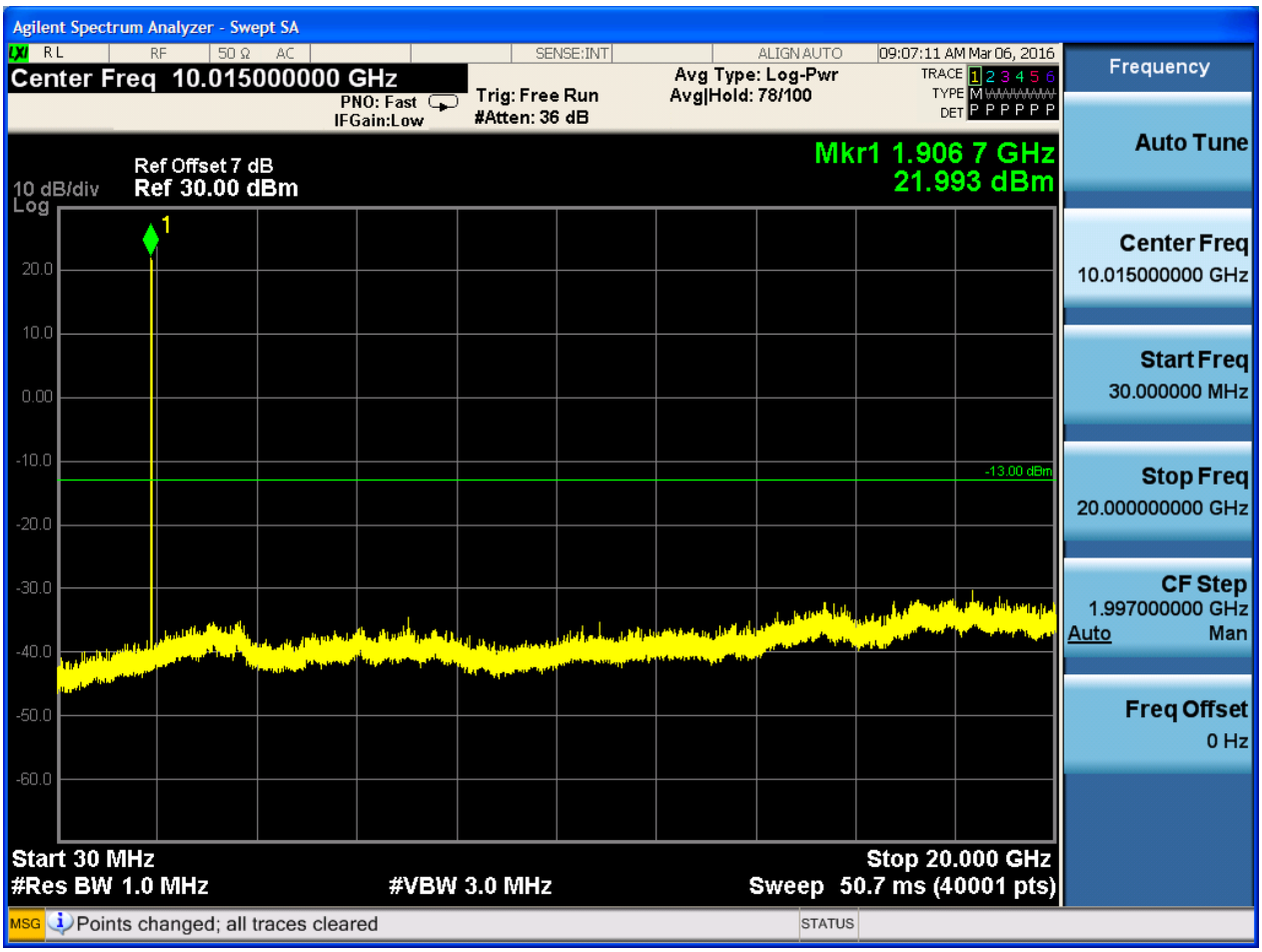




6.1.1.1.3 Test Channel = HCH





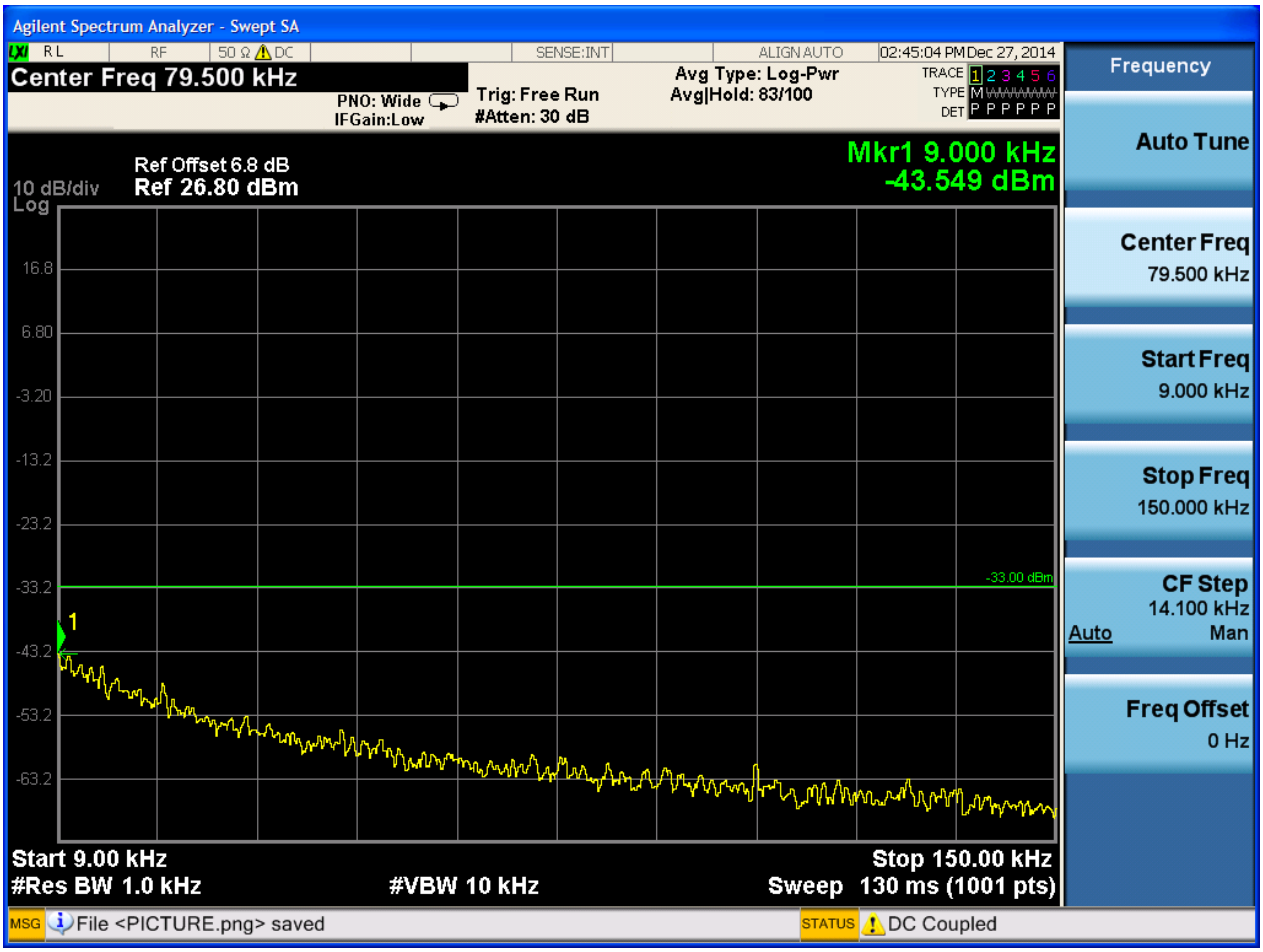


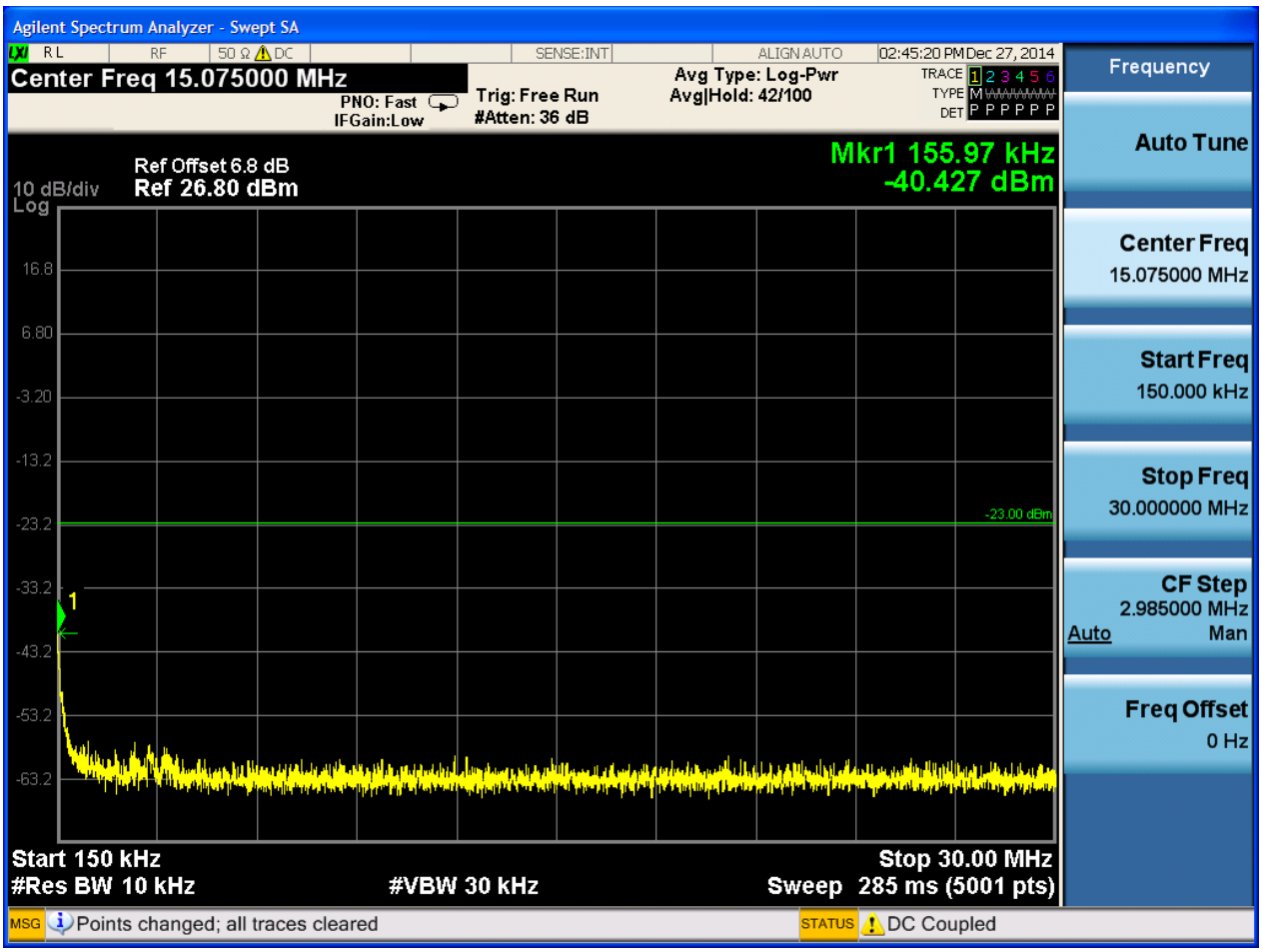
6.2 For UMTS

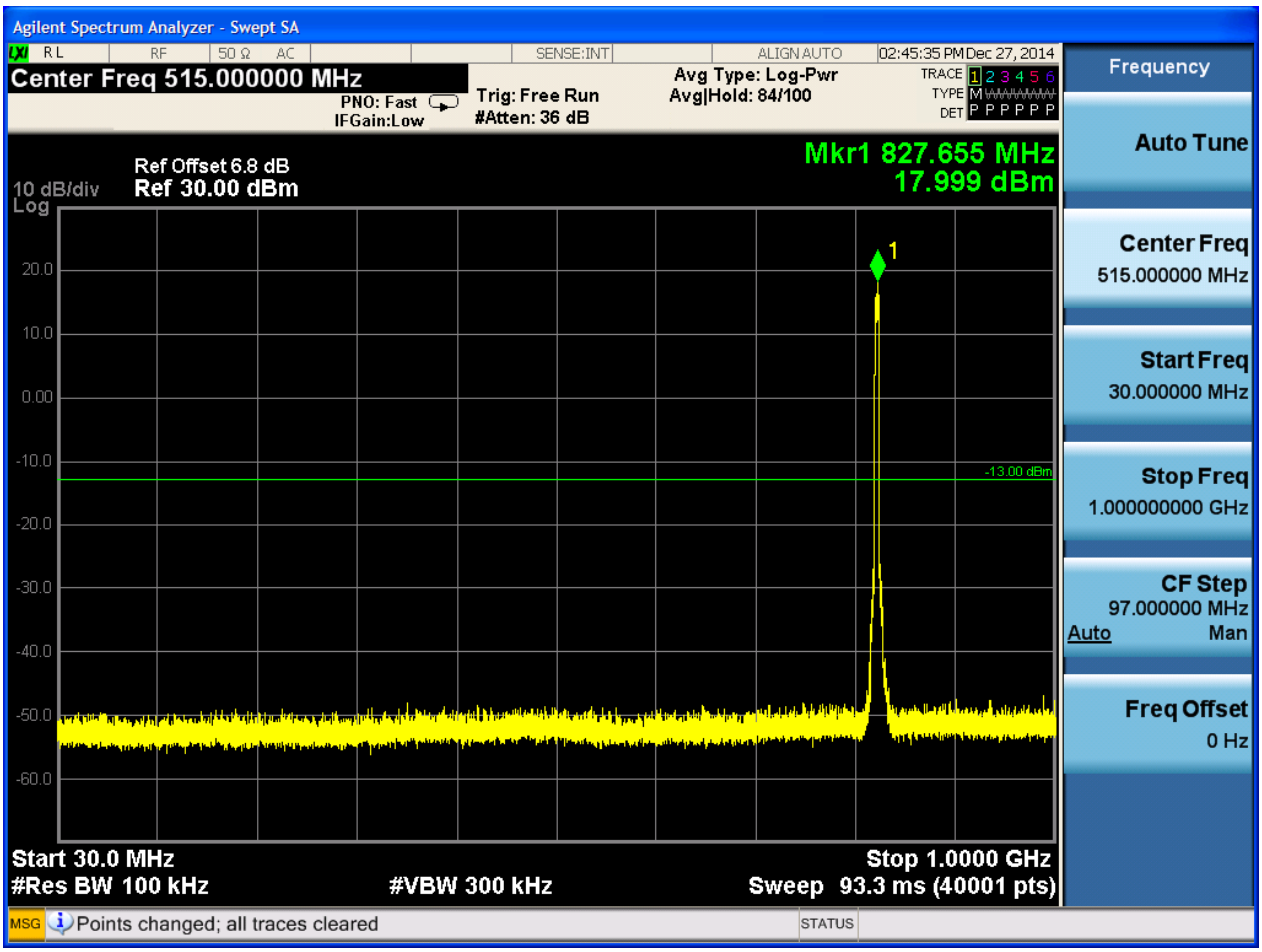
6.2.1 Test Band = WCDMA850

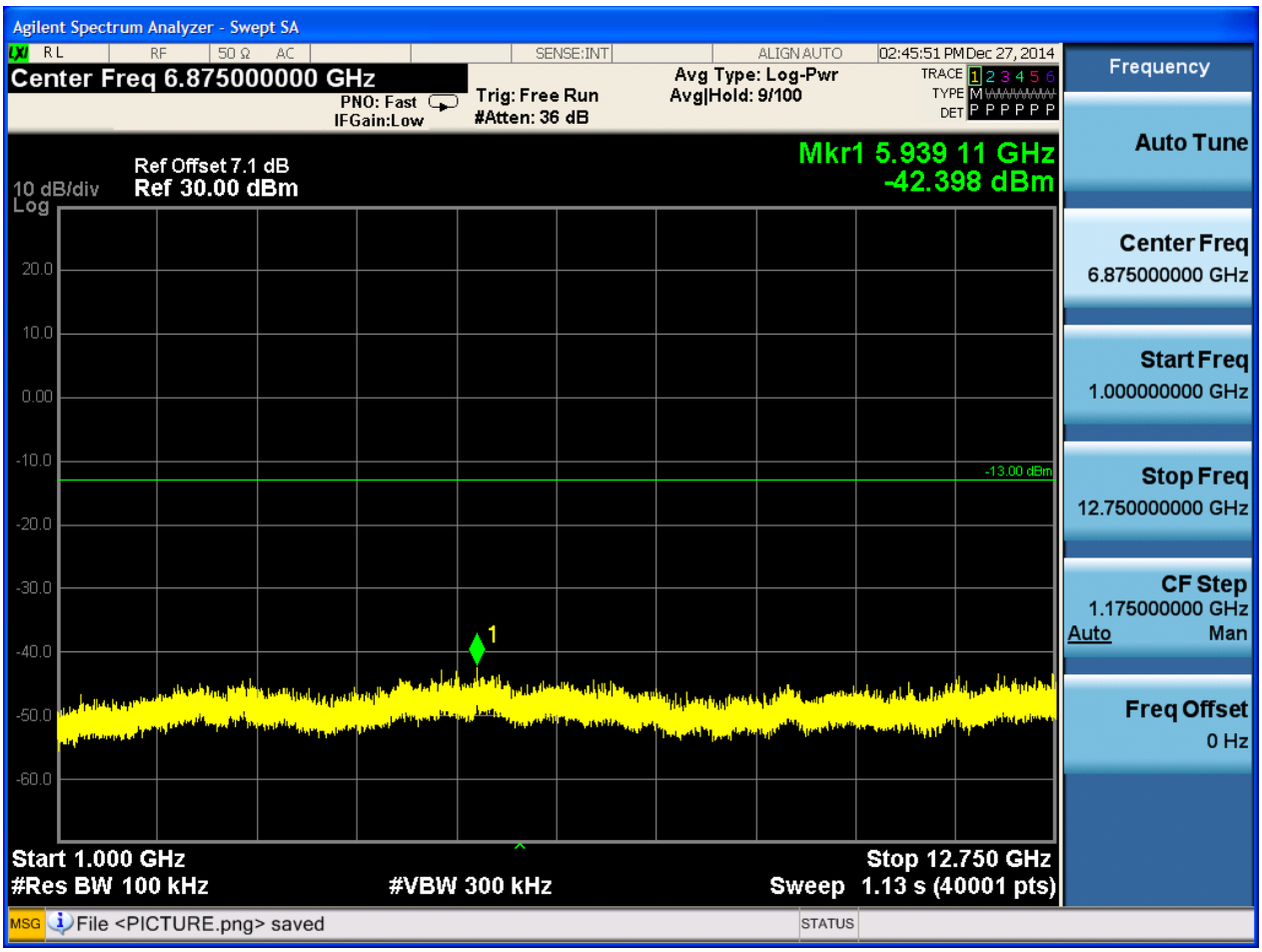
6.2.1.1 Test Mode = UMTS/TM1

6.2.1.1.1 Test Channel = LCH

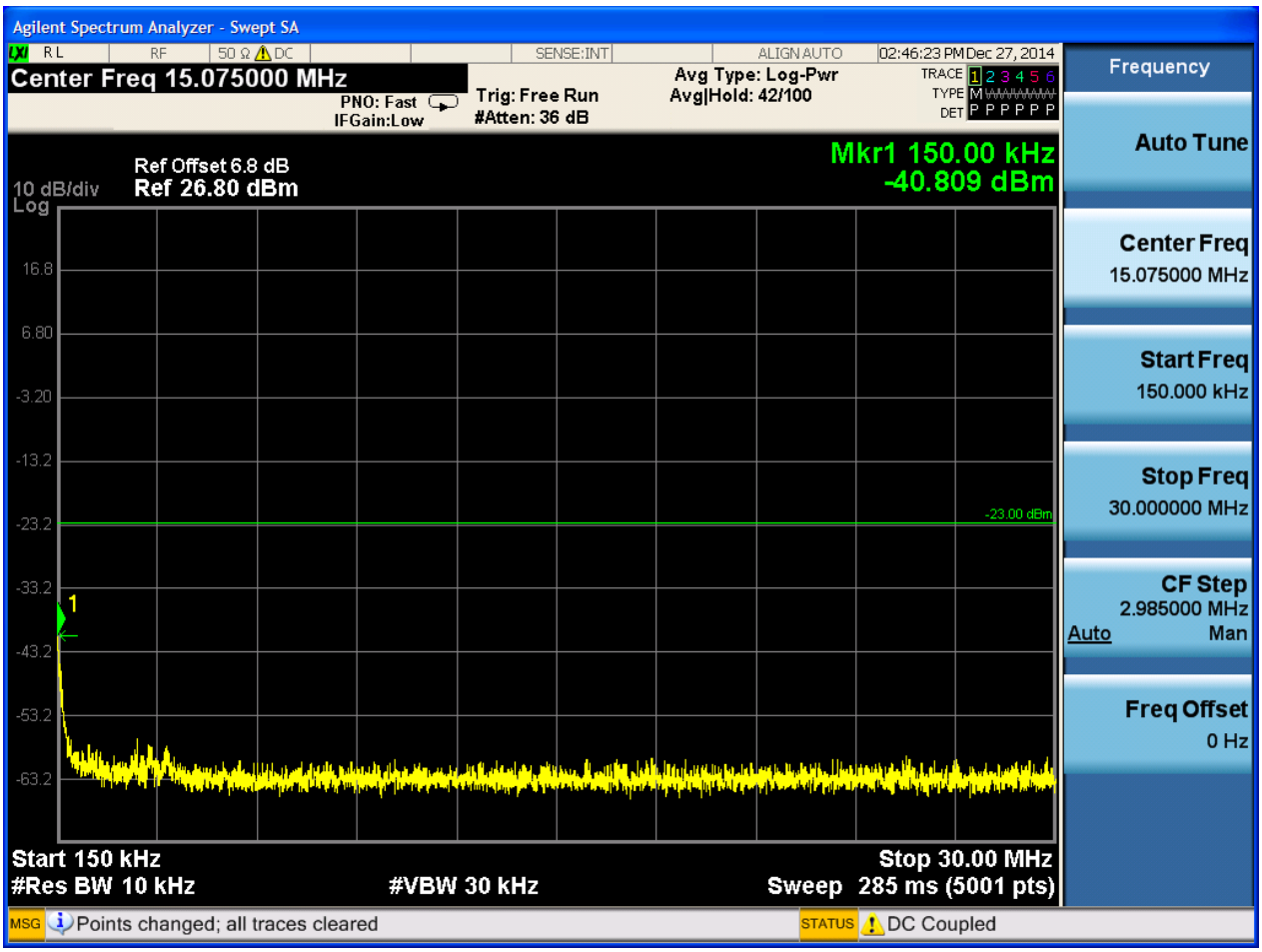


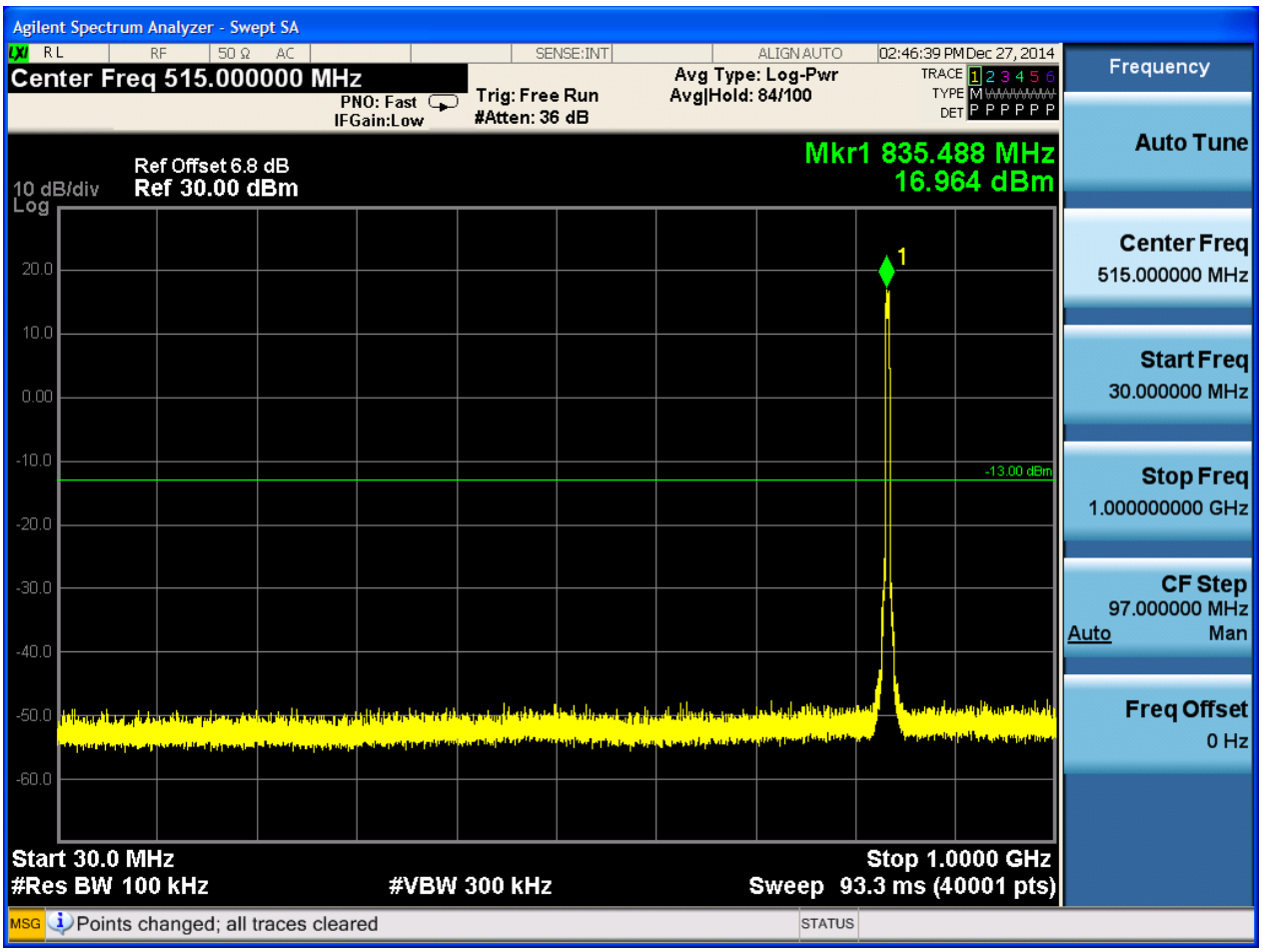


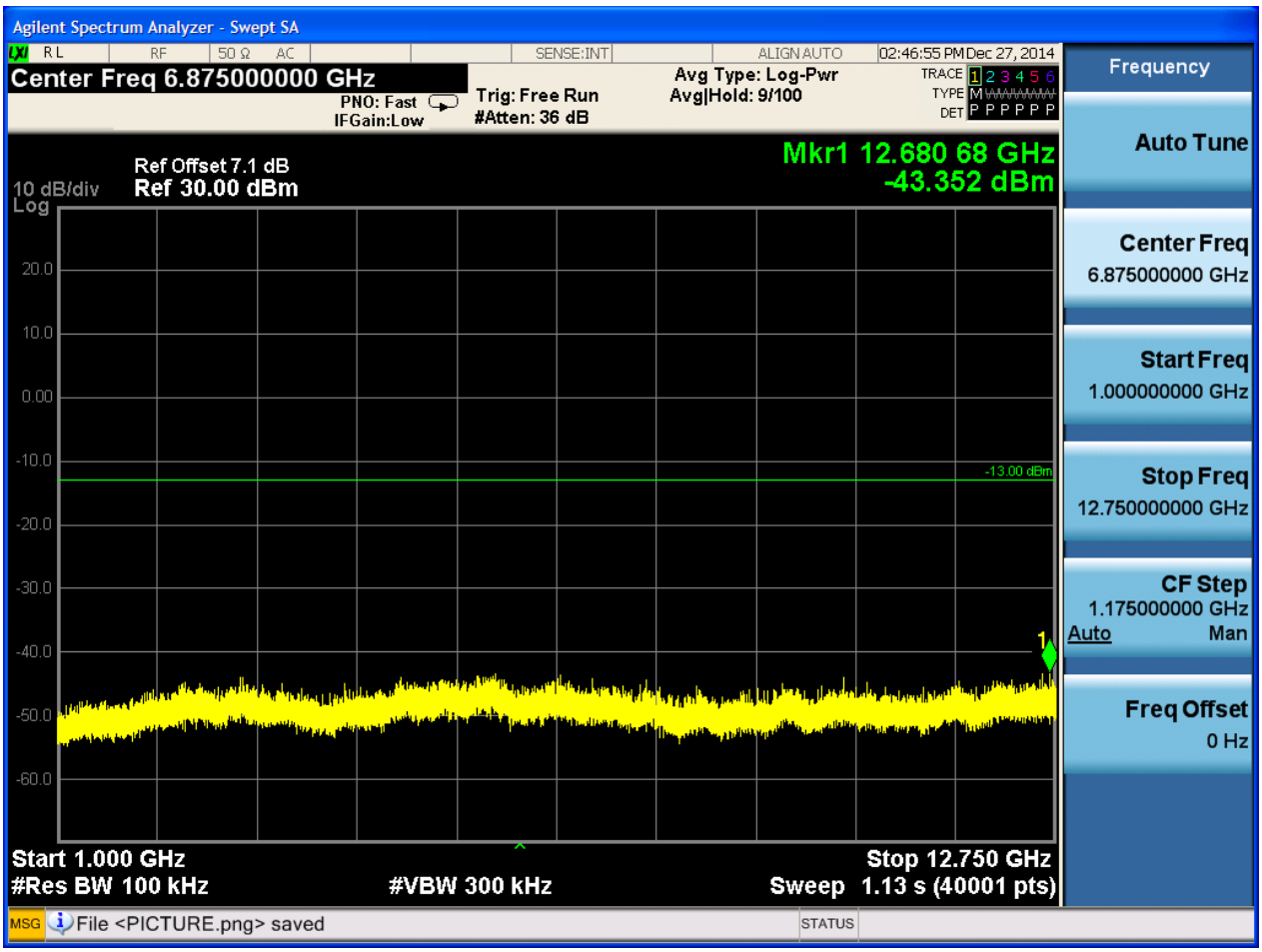




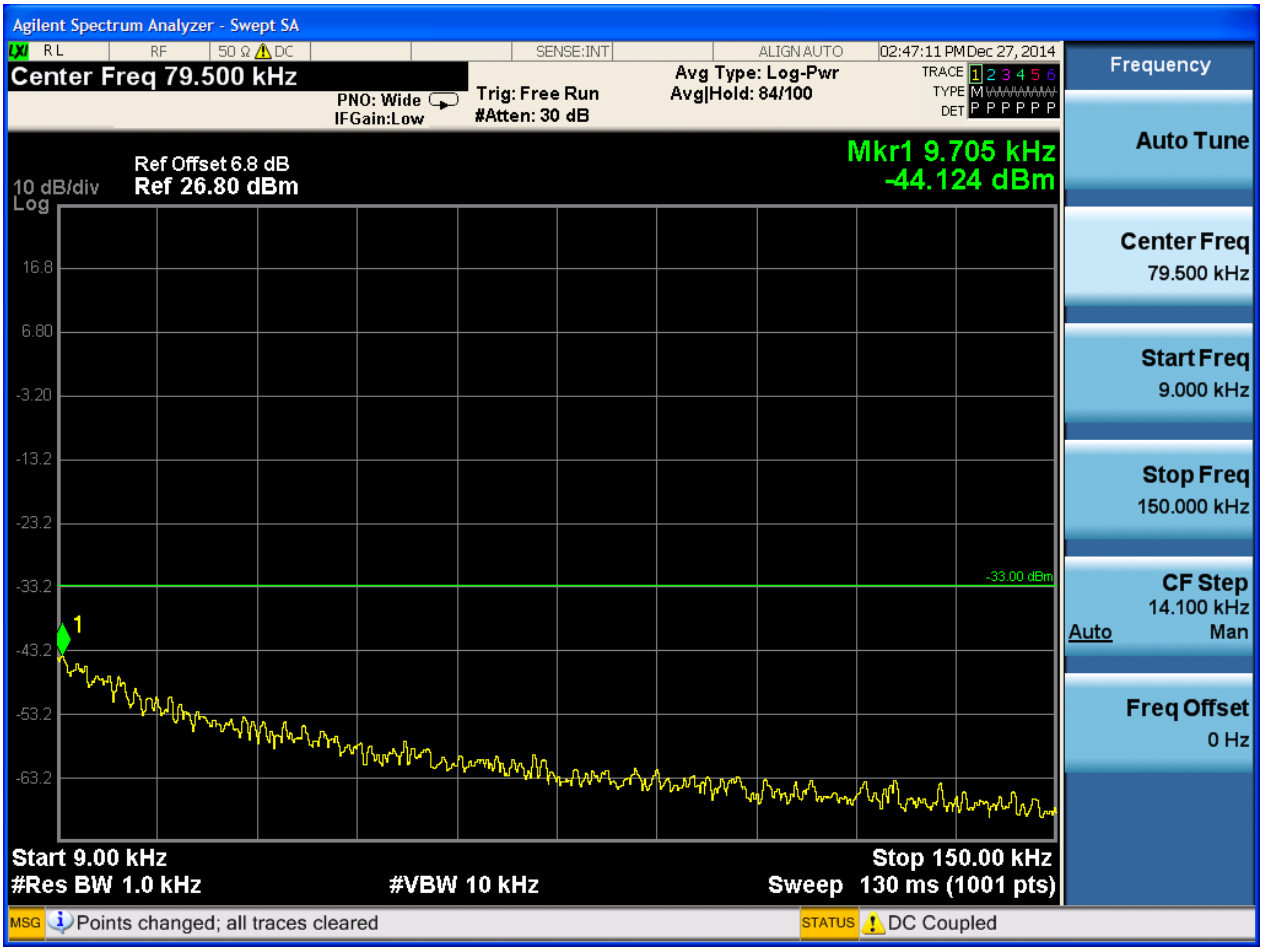
6.2.1.1.2 Test Channel = MCH

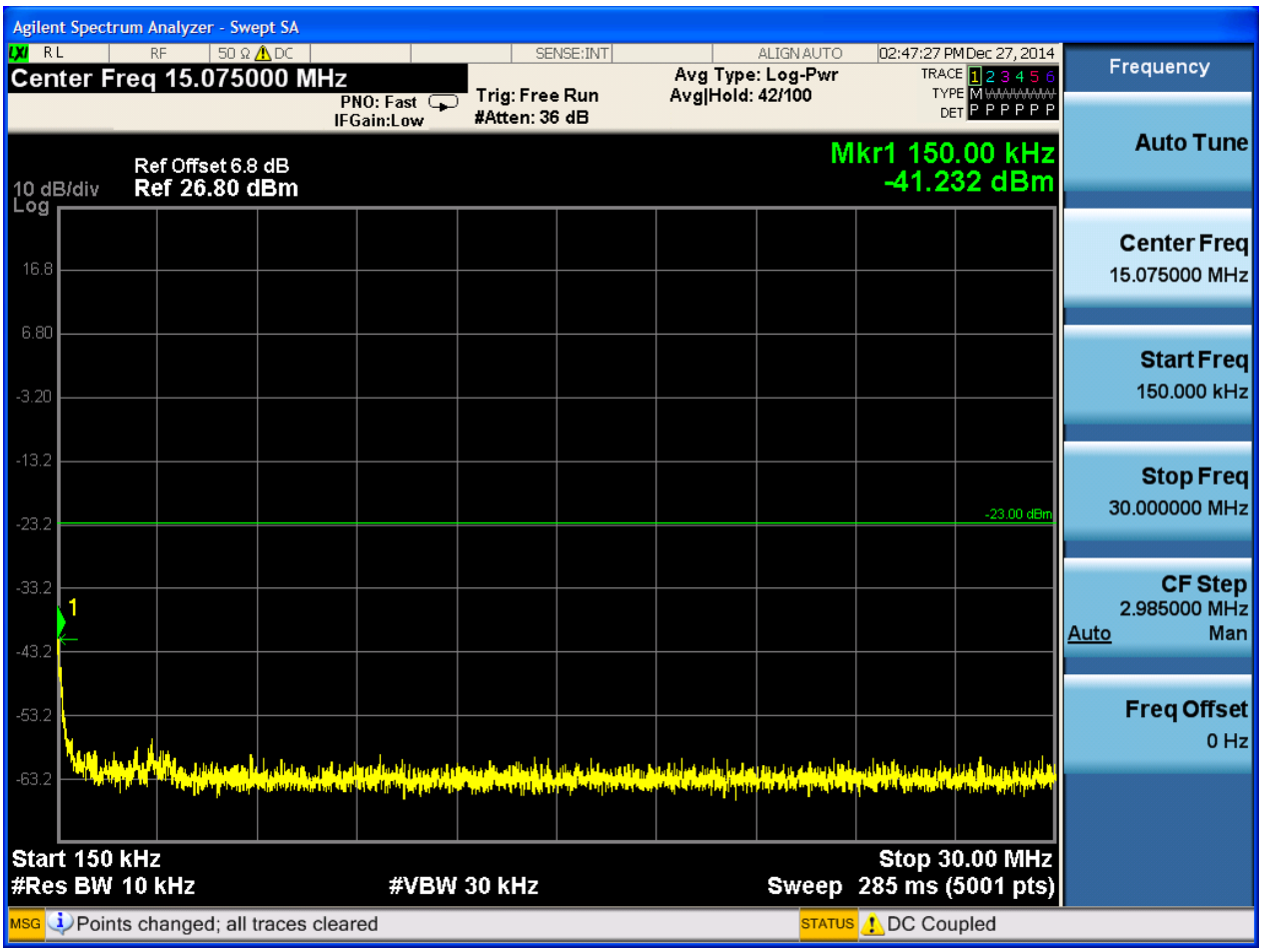


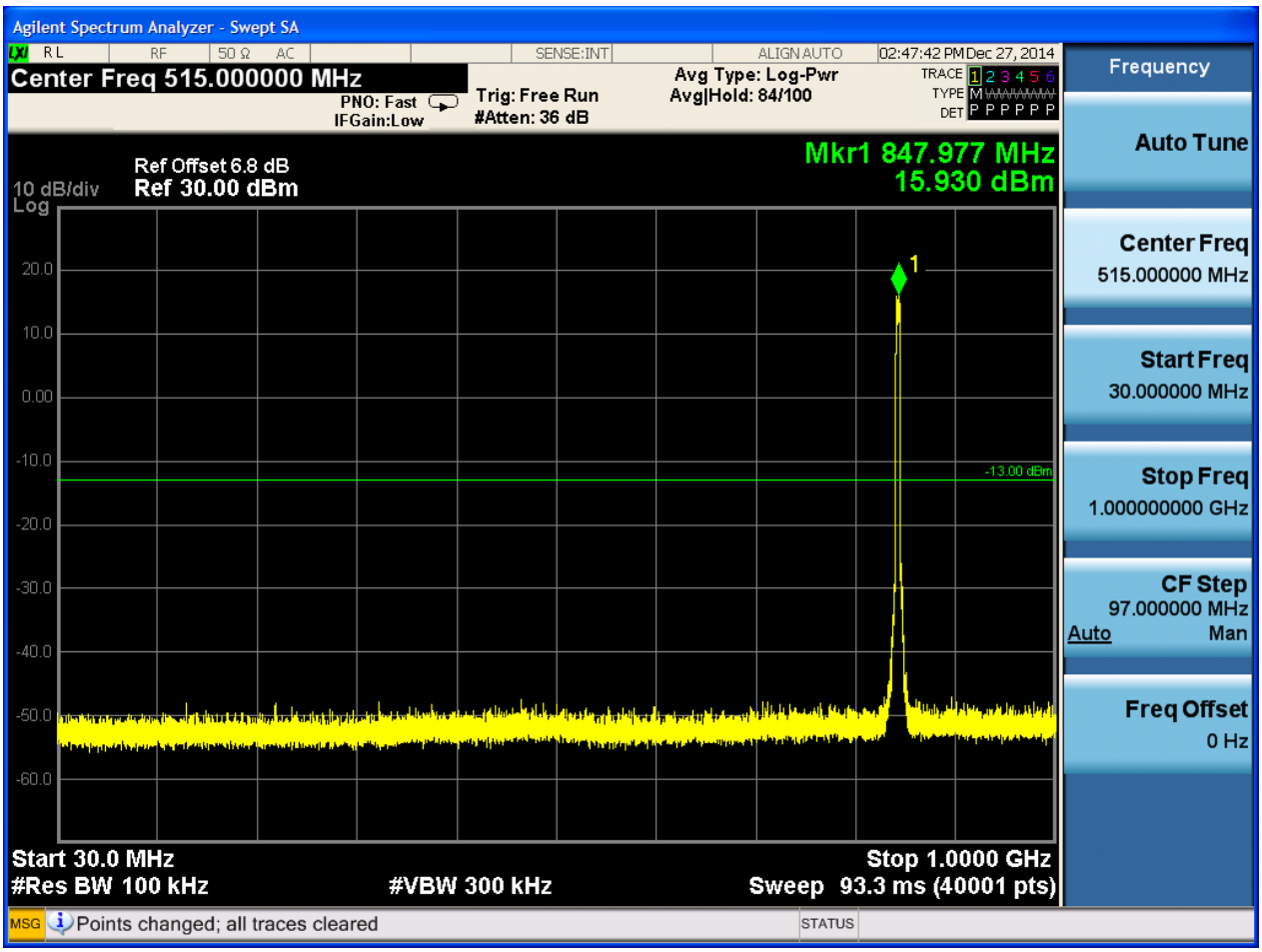


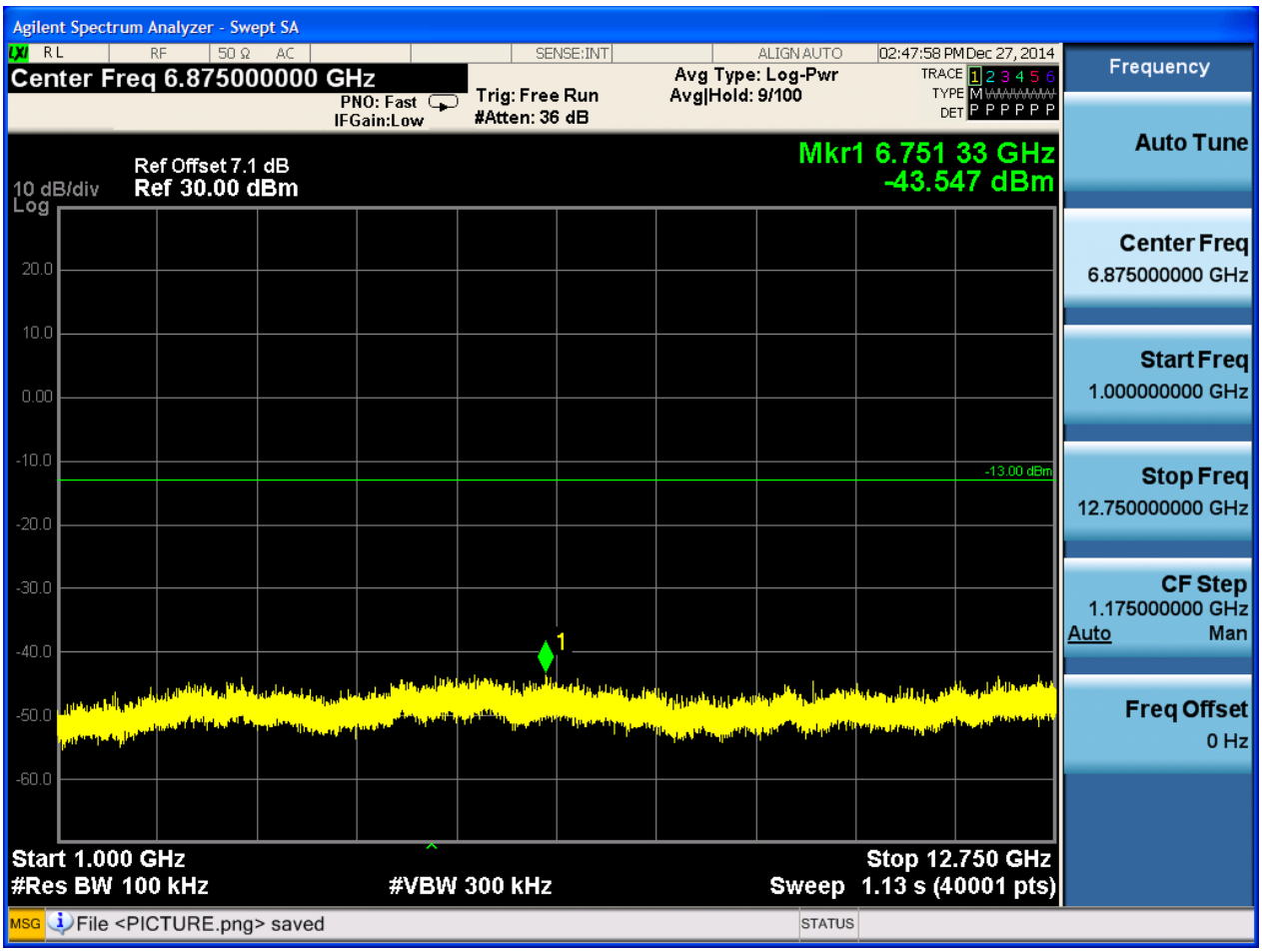


6.2.1.1.3 Test Channel = HCH









7Appendix_G: Field Strength of Spurious Radiation

Note: 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

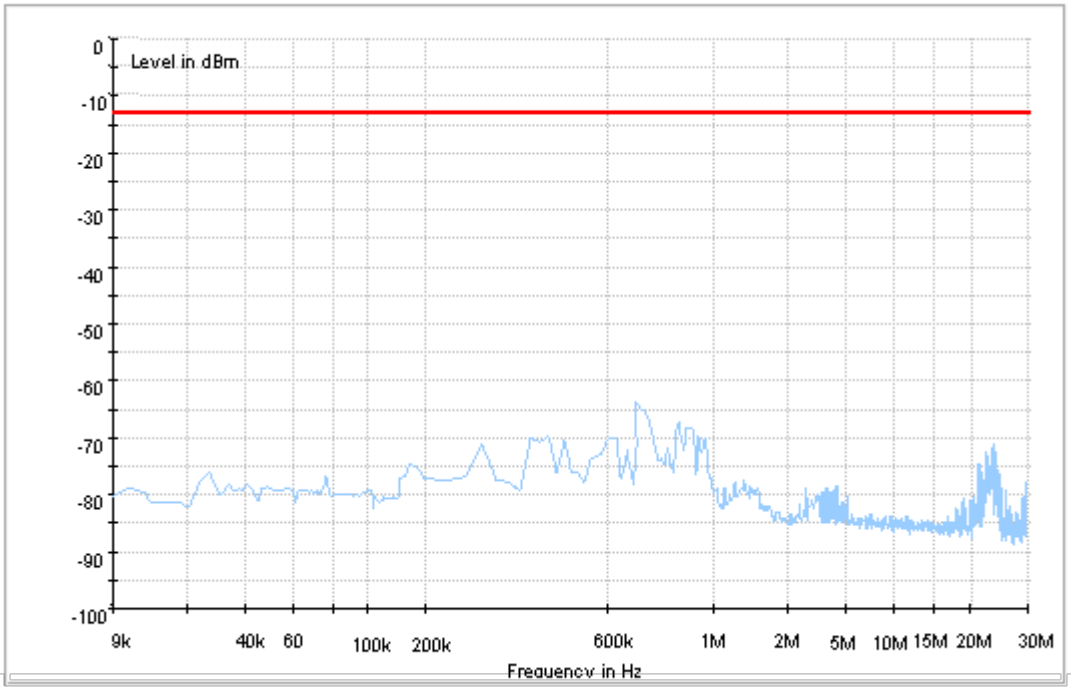
Above 1GHz, RBW = 1 MHz, VBW = 3 MHz. Detector: PK

Part I - Test Plots

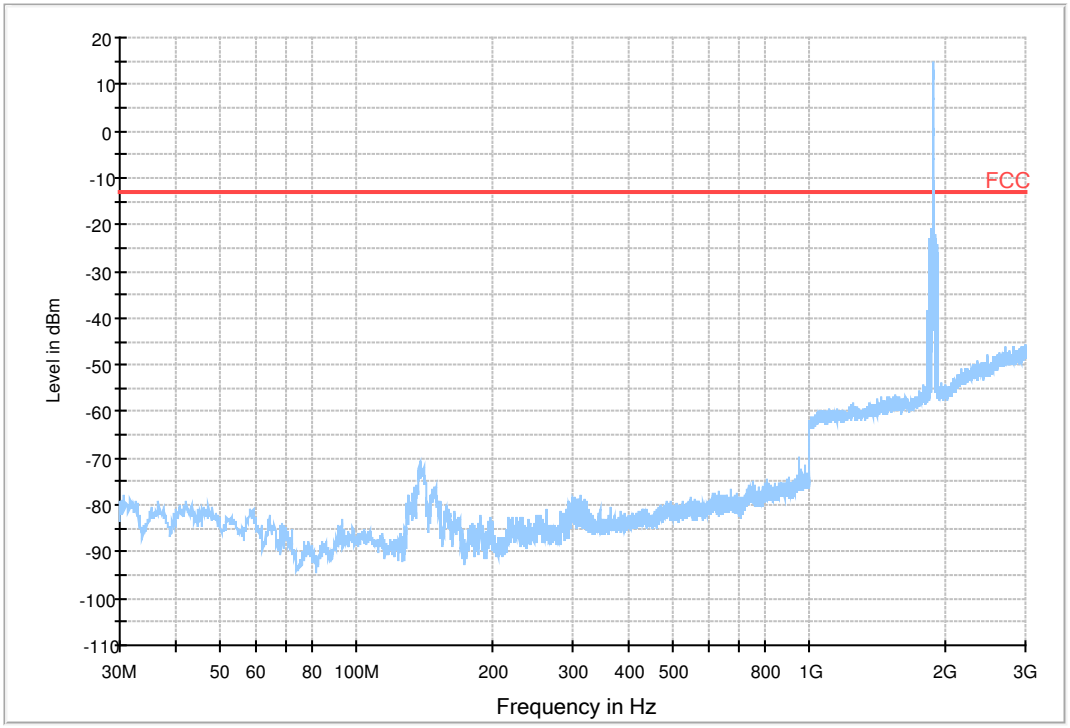
7.1 For UMTS

7.1.1 Test Band = WCDMA1900

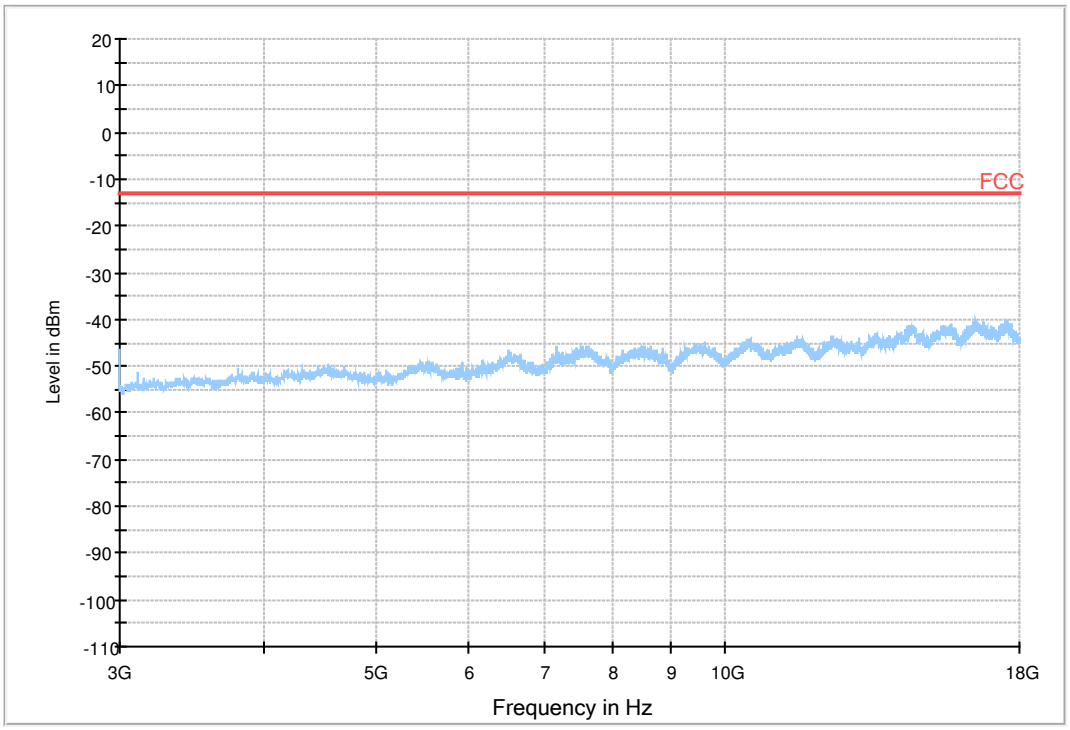
7.1.1.1 Test Mode = UMTS/TM1

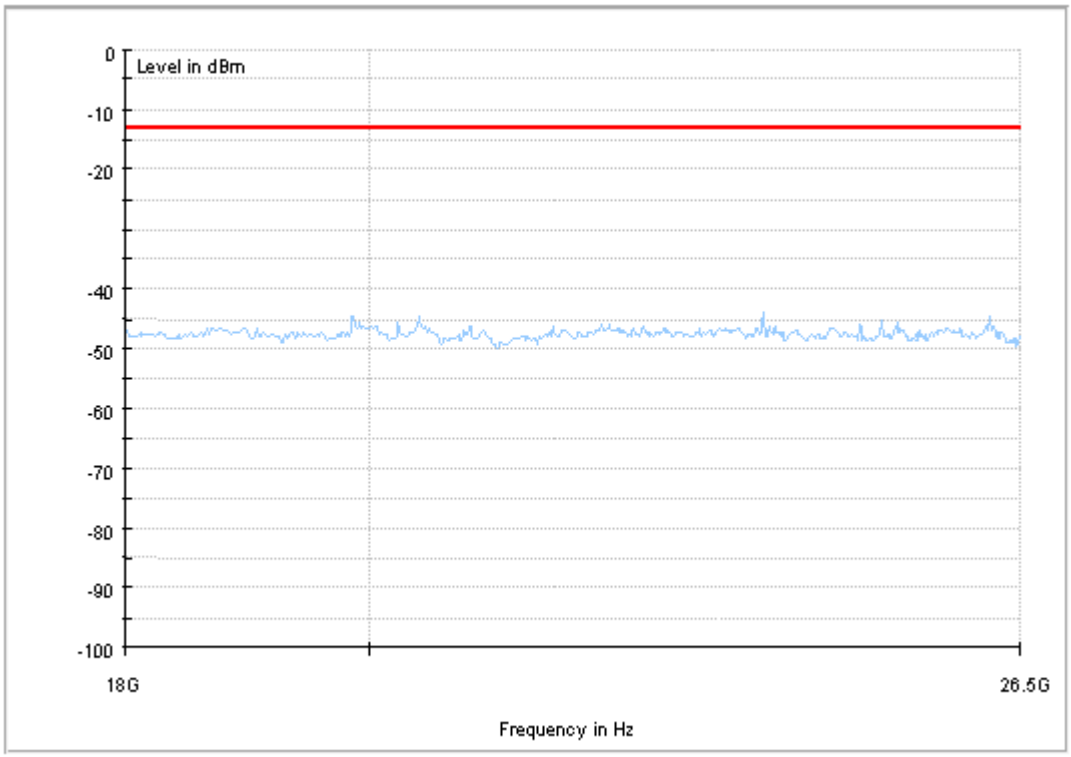


Copy of FCC PART24 WCDMA1900_L



Copy of FCC PART24 WCDMA1900_H

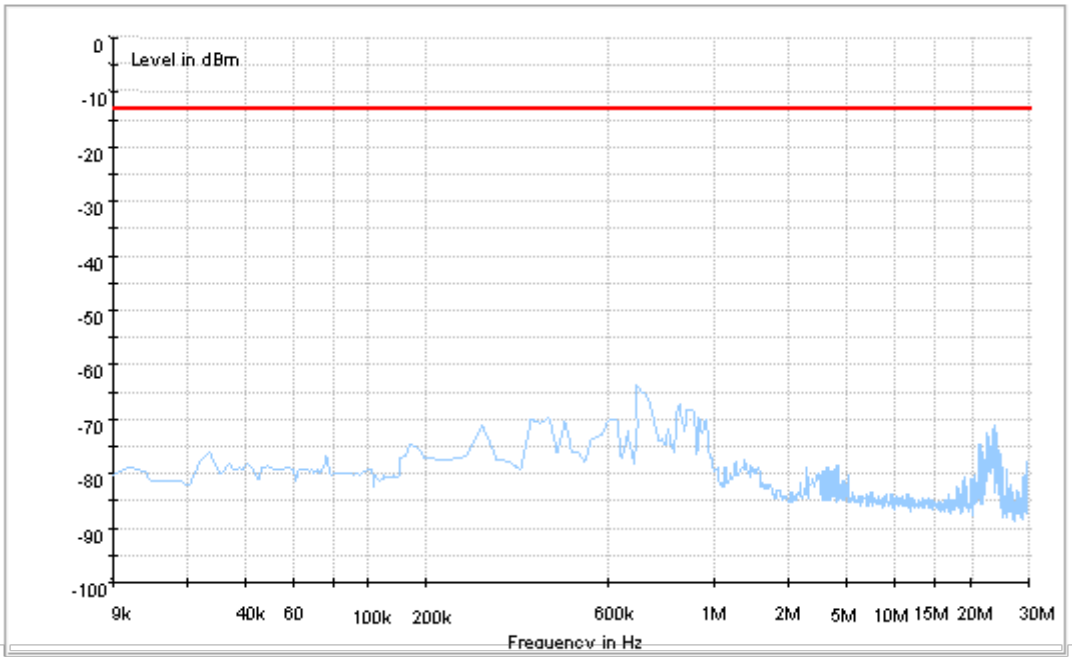




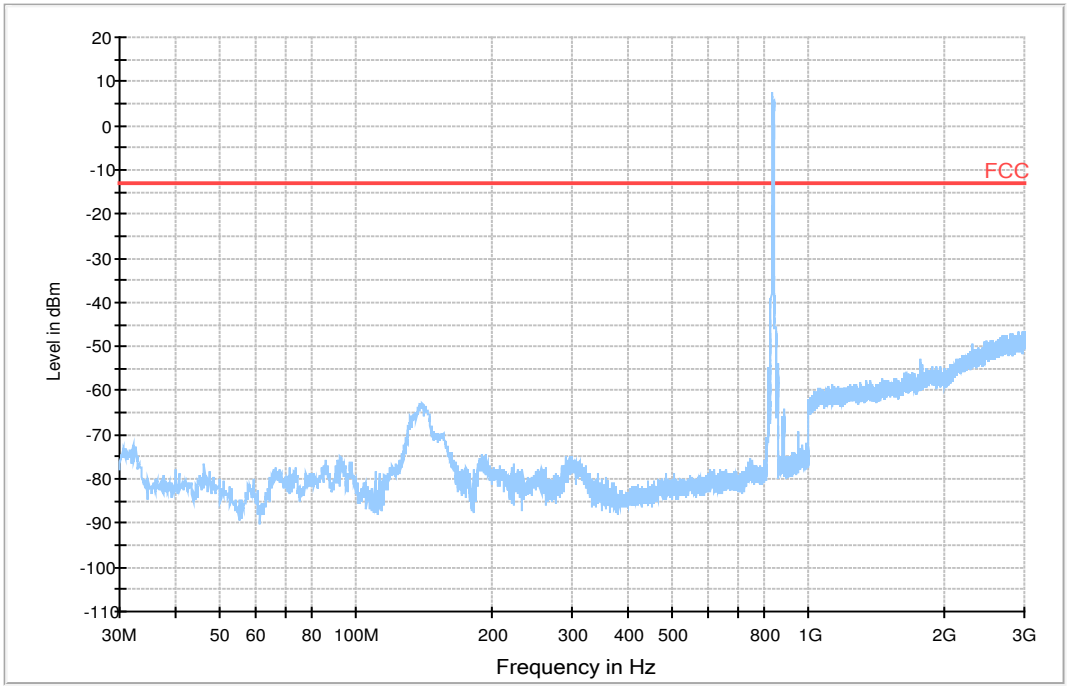
7.2 For UMTS

7.2.1 Test Band = WCDMA850

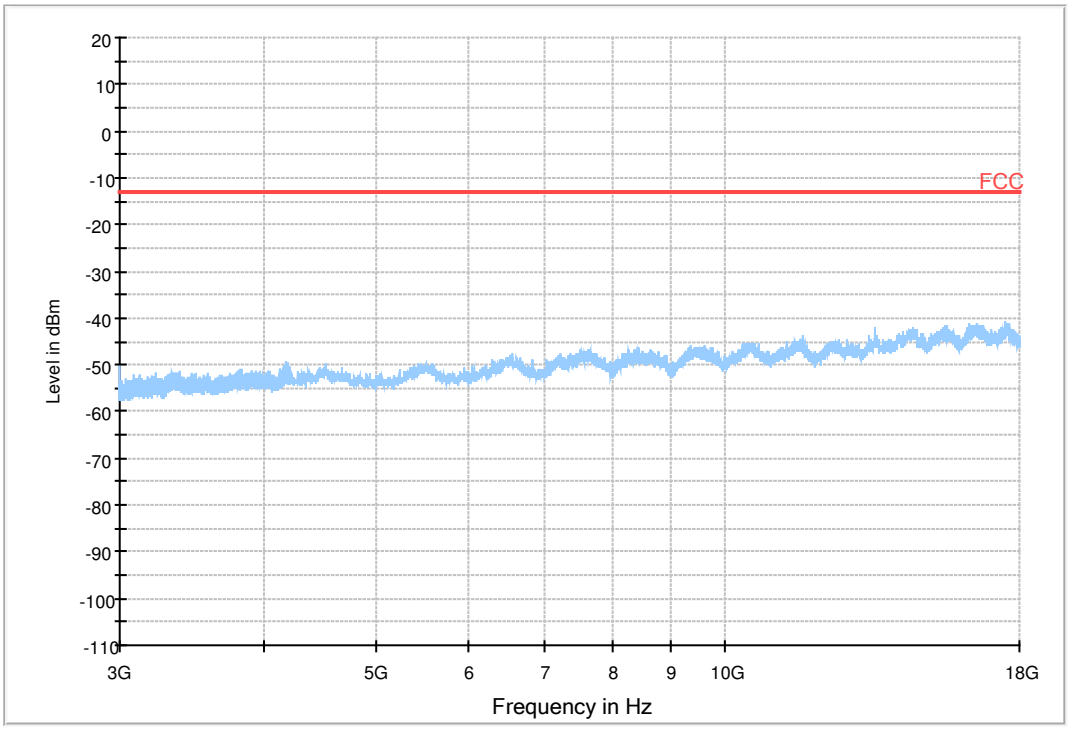
7.2.1.1 Test Mode = UMTS/TM1



Copy of FCC PART22 WCDMA850_L



Copy of FCC PART22 WCDMA850_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	-0.34	-0.00018	PASS
				VN	3.92	0.00212	PASS
				VH	2.94	0.00159	PASS
		MCH	TN	VL	-3.14	-0.00167	PASS
				VN	-4.24	-0.00226	PASS
				VH	-1.59	-0.00085	PASS
		HCH	TN	VL	-8.70	-0.00456	PASS
				VN	-5.60	-0.00294	PASS
				VH	-7.26	-0.00381	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	-1.39	-0.00075	PASS
				-20	0.84	0.00045	PASS
				-10	1.14	0.00062	PASS
				0	1.42	0.00077	PASS
				10	0.73	0.00039	PASS
				20	1.68	0.00091	PASS
				30	2.49	0.00134	PASS
				40	2.78	0.0015	PASS
				50	2.09	0.00113	PASS
		MCH	VN	-30	-4.39	-0.00234	PASS
				-20	-3.66	-0.00195	PASS
				-10	-3.20	-0.0017	PASS
				0	-3.28	-0.00174	PASS
				10	-3.63	-0.00193	PASS
				20	-3.51	-0.00187	PASS
				30	-1.82	-0.00097	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				40	-5.58	-0.00297	PASS
				50	0.08	0.00004	PASS
		HCH	VN	-30	-11.17	-0.00586	PASS
				-20	-8.76	-0.00459	PASS
				-10	-4.73	-0.00248	PASS
				0	-7.25	-0.0038	PASS
				10	-4.97	-0.00261	PASS
				20	-8.67	-0.00454	PASS
				30	-8.53	-0.00447	PASS
				40	-6.88	-0.00361	PASS
				50	-2.09	-0.0011	PASS

8.2 For UMTS

8.2.1Frequency 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	-6.09	-0.00737	PASS
				VN	-5.36	-0.00649	PASS
				VH	-3.62	-0.00438	PASS
		MCH	TN	VL	-3.25	-0.00389	PASS
				VN	-1.85	-0.00221	PASS
				VH	-1.66	-0.00198	PASS
		HCH	TN	VL	-5.08	-0.006	PASS
				VN	-3.95	-0.00467	PASS
				VH	-3.98	-0.0047	PASS

8.2.2Frequency 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	-0.66	-0.0008	PASS
				-20	-2.15	-0.0026	PASS
				-10	-3.56	-0.00431	PASS
				0	-1.72	-0.00208	PASS
				10	-0.05	-0.00006	PASS
				20	-1.63	-0.00197	PASS
				30	-0.43	-0.00052	PASS
				40	1.14	0.00138	PASS
				50	0.73	0.00088	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
		MCH	VN	-30	-2.17	-0.00259	PASS
				-20	-1.54	-0.00184	PASS
				-10	-0.56	-0.00067	PASS
				0	-2.33	-0.00279	PASS
				10	-1.33	-0.00159	PASS
				20	-0.09	-0.00011	PASS
				30	-1.86	-0.00222	PASS
				40	-2.06	-0.00246	PASS
				50	-0.69	-0.00082	PASS
		HCH	VN	-30	-2.94	-0.00347	PASS
				-20	-2.90	-0.00343	PASS
				-10	-3.98	-0.0047	PASS
				0	-2.96	-0.0035	PASS
				10	-3.23	-0.00382	PASS
				20	-2.84	-0.00335	PASS
				30	-4.27	-0.00504	PASS
				40	-1.83	-0.00216	PASS
				50	-0.84	-0.00099	PASS

END