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	24.02	23.55	33	PASS
		MCH	23.82	23.22	33	PASS
		HCH	23.83	23.28	33	PASS
WCDMA1700	UMTS/TM1	LCH	24.03	24.01	30	PASS
		MCH	24.00	23.91	30	PASS
		HCH	23.85	23.77	30	PASS
Test Band	Test Mode	Test Channel	Conducted Power [dBm]	ERP [dBm]	Limit [dBm]	Verdict
WCDMA850	UMTS/TM1	LCH	24.37	21.15	38.5	PASS
		MCH	24.23	21.03	38.5	PASS
		HCH	24.28	21.11	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 wxceed 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	3.12	13	PASS
		MCH	3.1	13	PASS
		HCH	2.89	13	PASS
WCDMA1700	UMTS/TM1	LCH	2.98	13	PASS
		MCH	3.16	13	PASS
		HCH	2.91	13	PASS
WCDMA850	UMTS/TM1	LCH	3.02	13	PASS
		MCH	2.91	13	PASS
		HCH	3.12	13	PASS

3Appendix_C: Modulation Characteristics

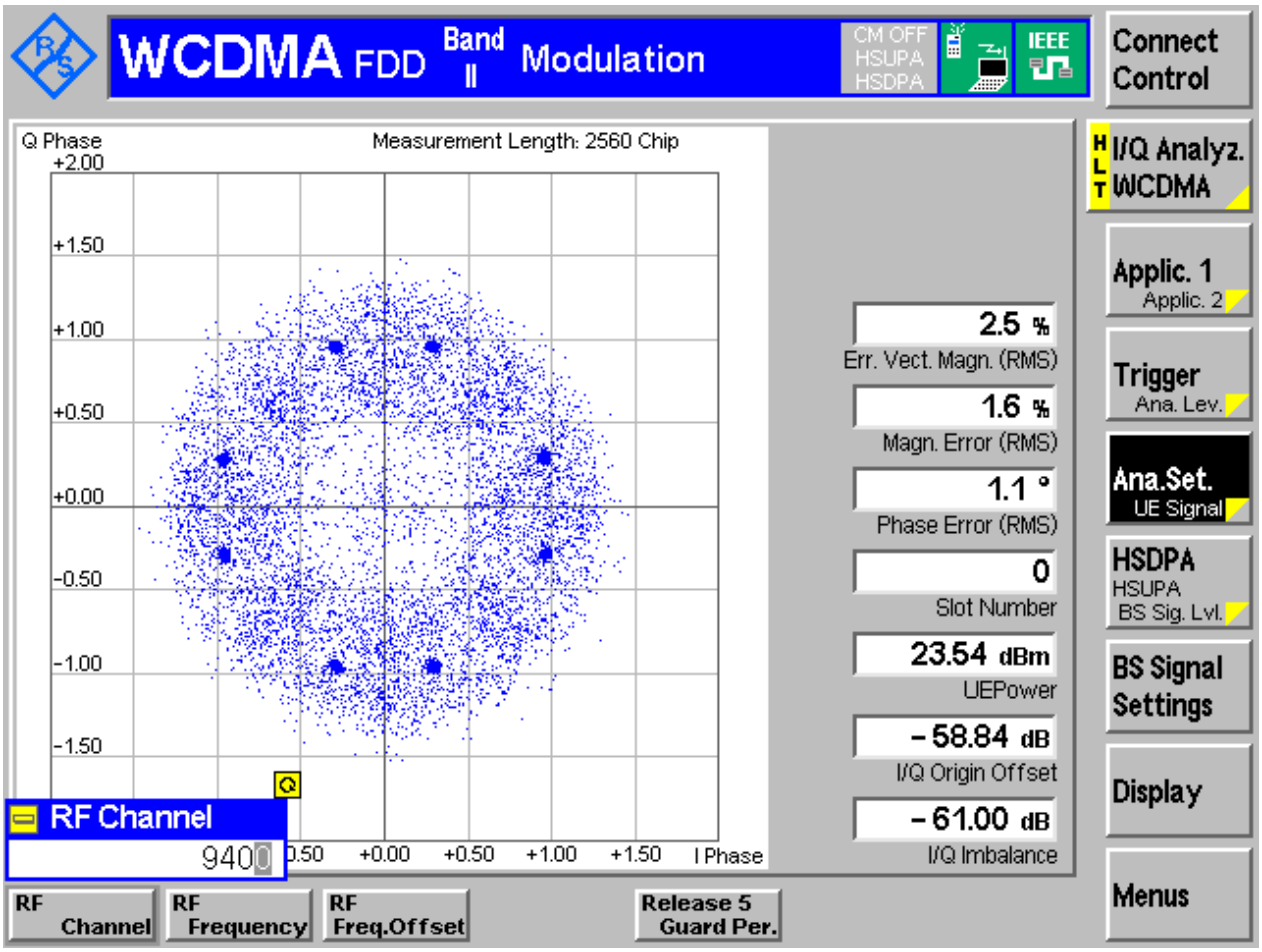
Part I - Test Plots

3.1 For UMTS

3.1.1 Test Band = WCDMA1900

3.1.1.1 Test Mode = UMTS/TM1

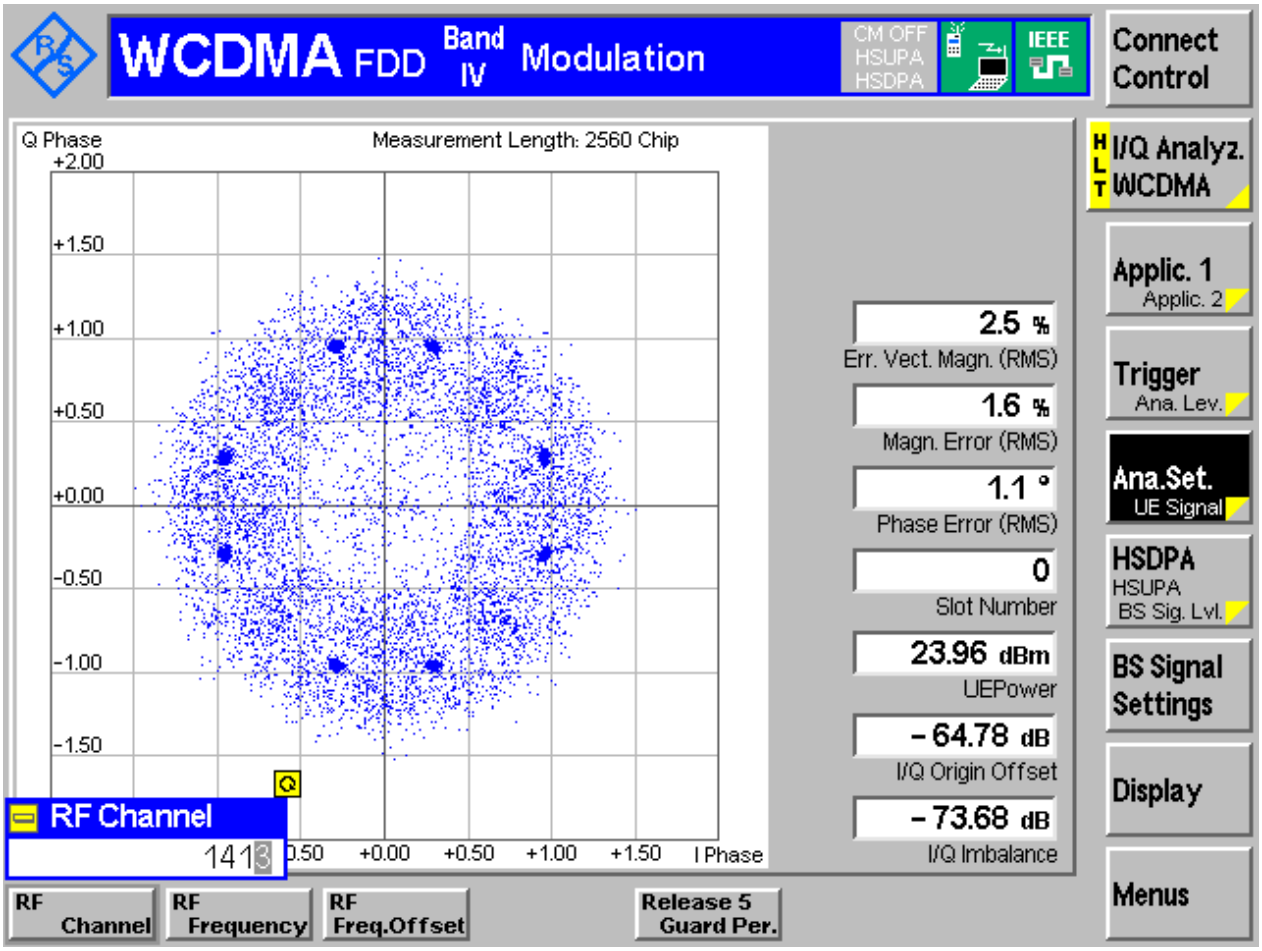
3.1.1.1.1 Test Channel = MCH



3.1.2 Test Band = WCDMA1700

3.1.2.1 Test Mode = UMTS/TM1

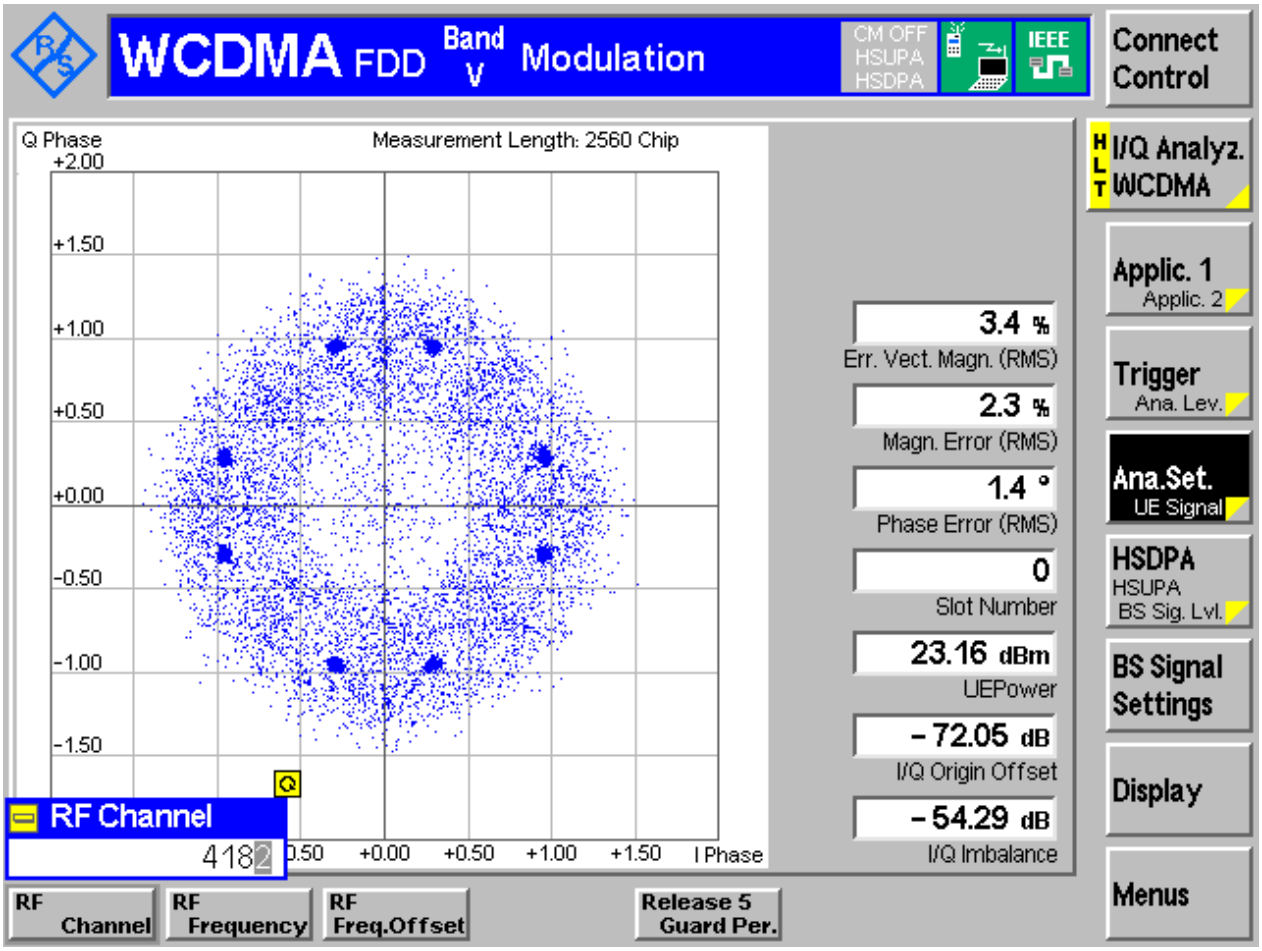
3.1.2.1.1 Test Channel = MCH



3.1.3 Test Band = WCDMA850

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
WCDMA1900	UMTS/TM1	LCH	4.14	4.70	Pass
		MCH	4.14	4.69	Pass
		HCH	4.14	4.70	Pass
WCDMA1700	UMTS/TM1	LCH	4.13	4.69	Pass
		MCH	4.14	4.69	Pass
		HCH	4.15	4.71	Pass
WCDMA850	UMTS/TM1	LCH	4.14	4.69	Pass
		MCH	4.14	4.71	Pass
		HCH	4.14	4.69	Pass

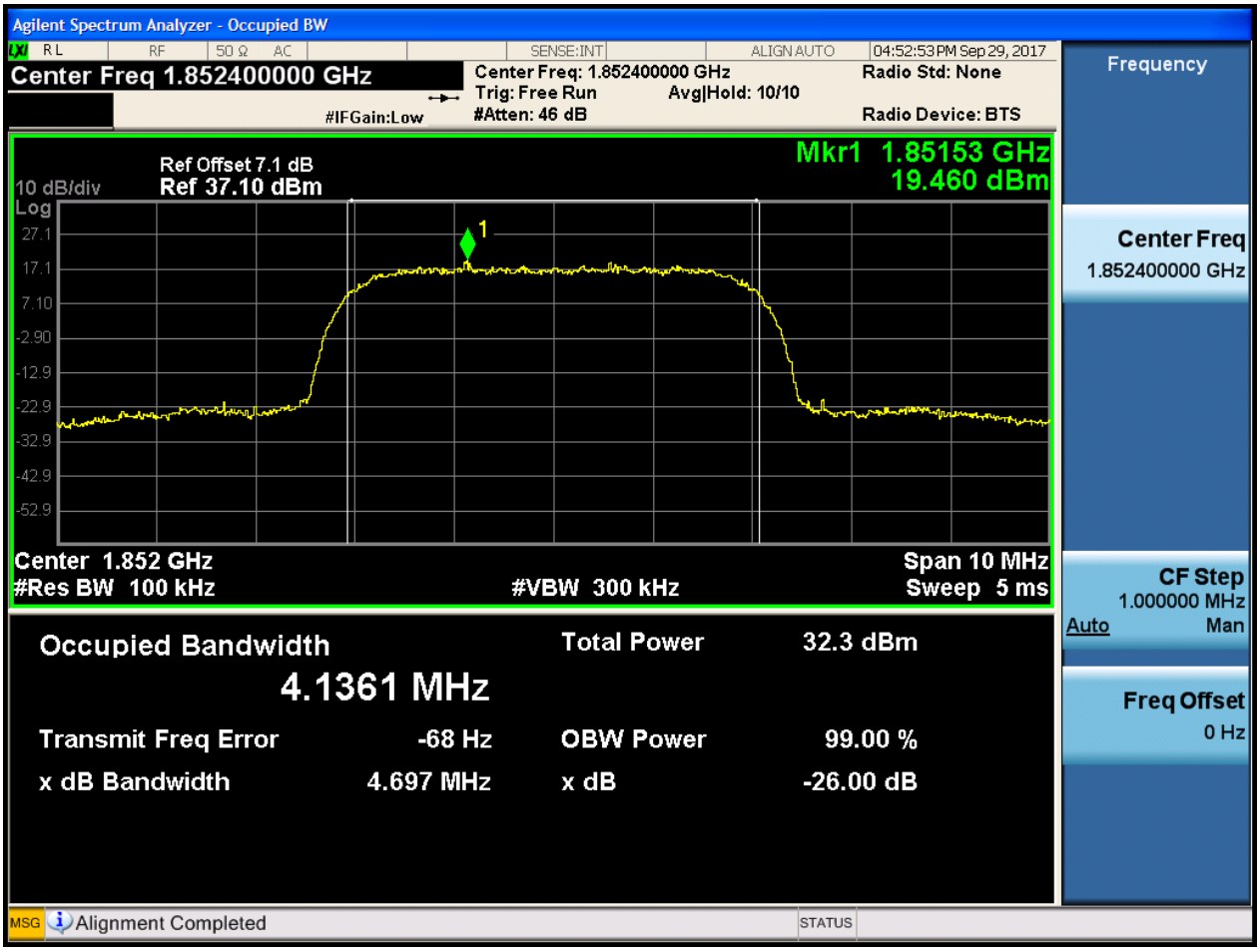
Part II - Test Plots

4.1 For UMTS

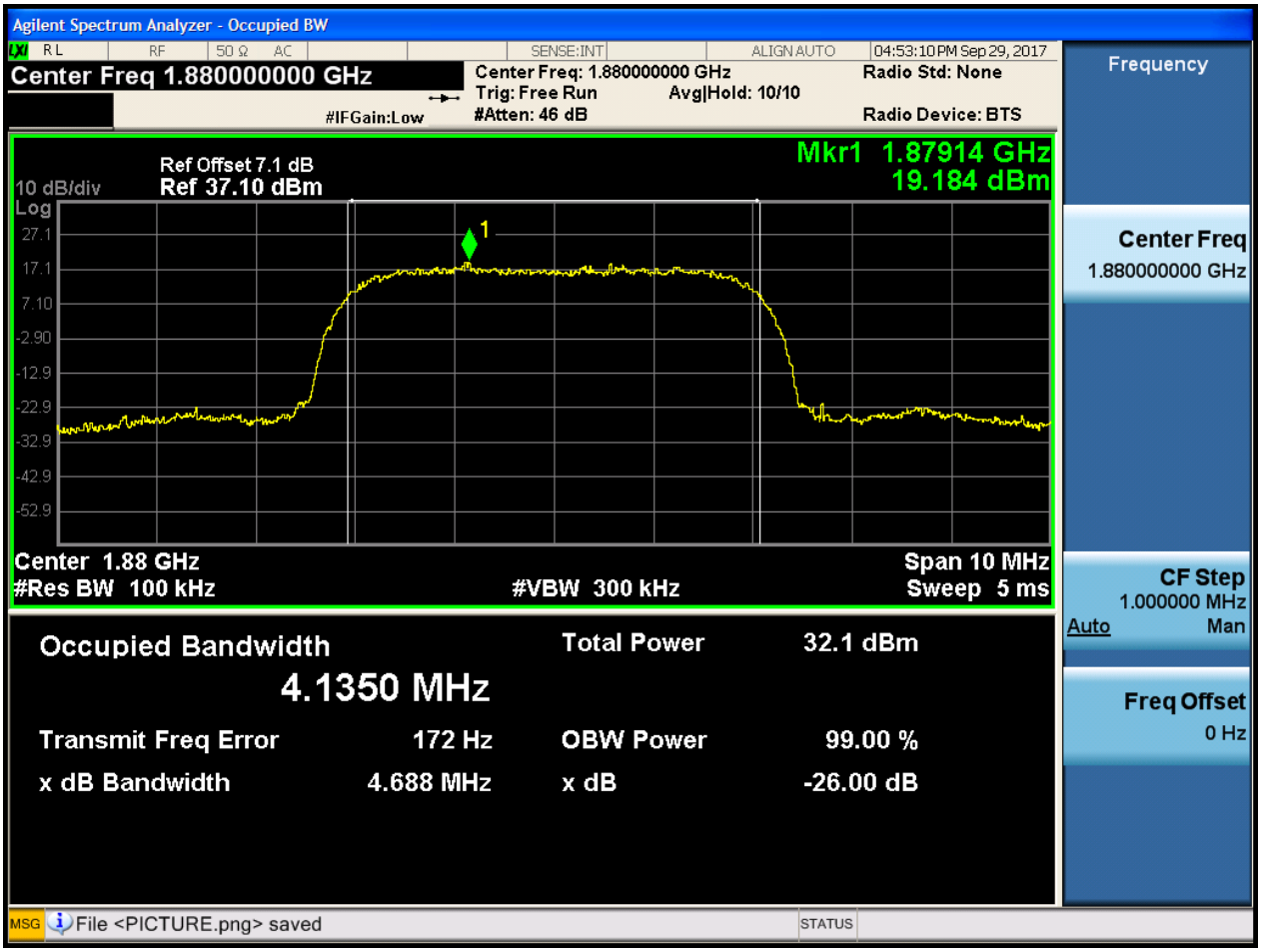
4.1.1 Test Band = WCDMA1900

4.1.1.1 Test Mode = UMTS/TM1

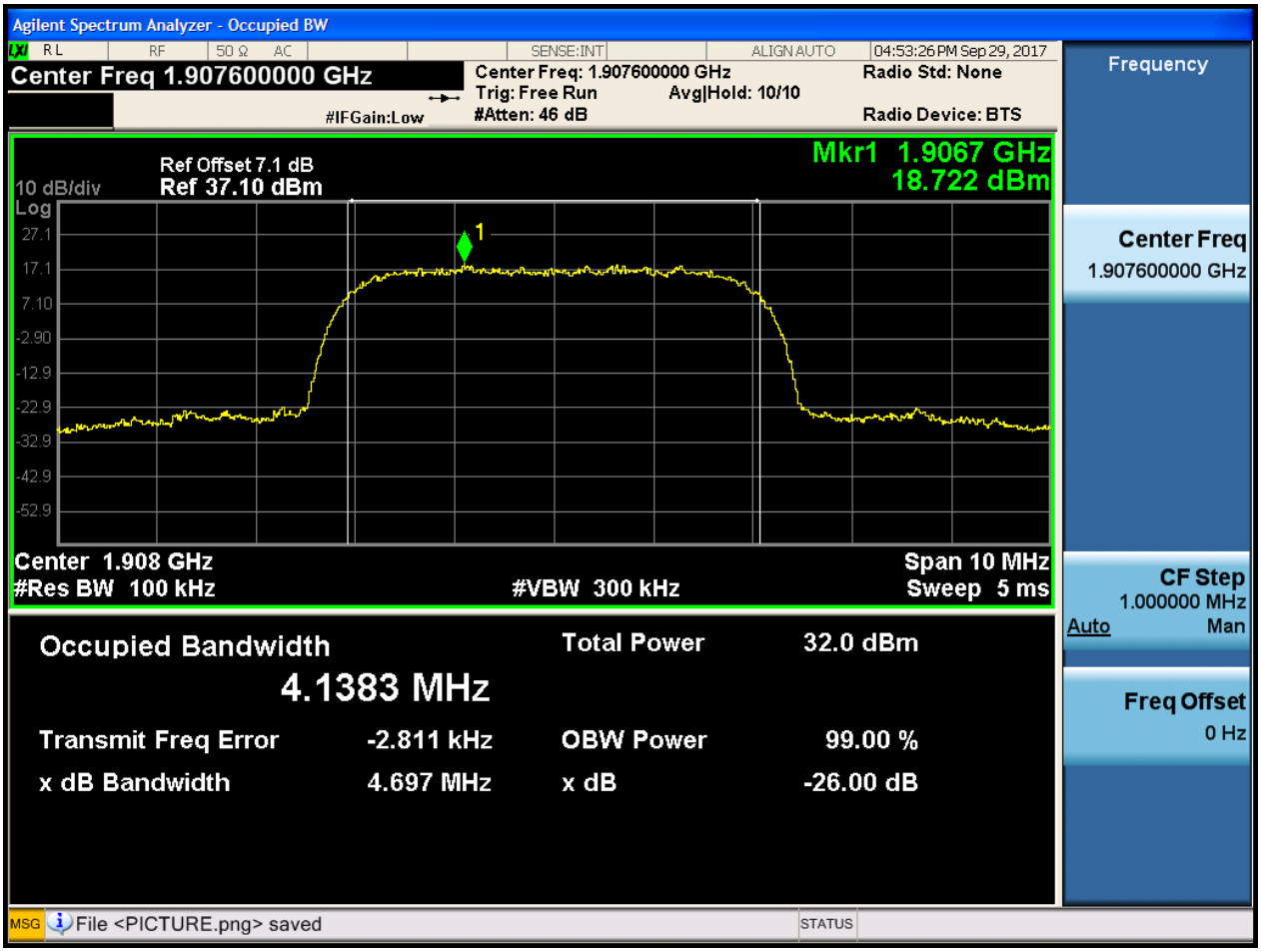
4.1.1.1.1 Test Channel = LCH



4.1.1.1.2 Test Channel = MCH



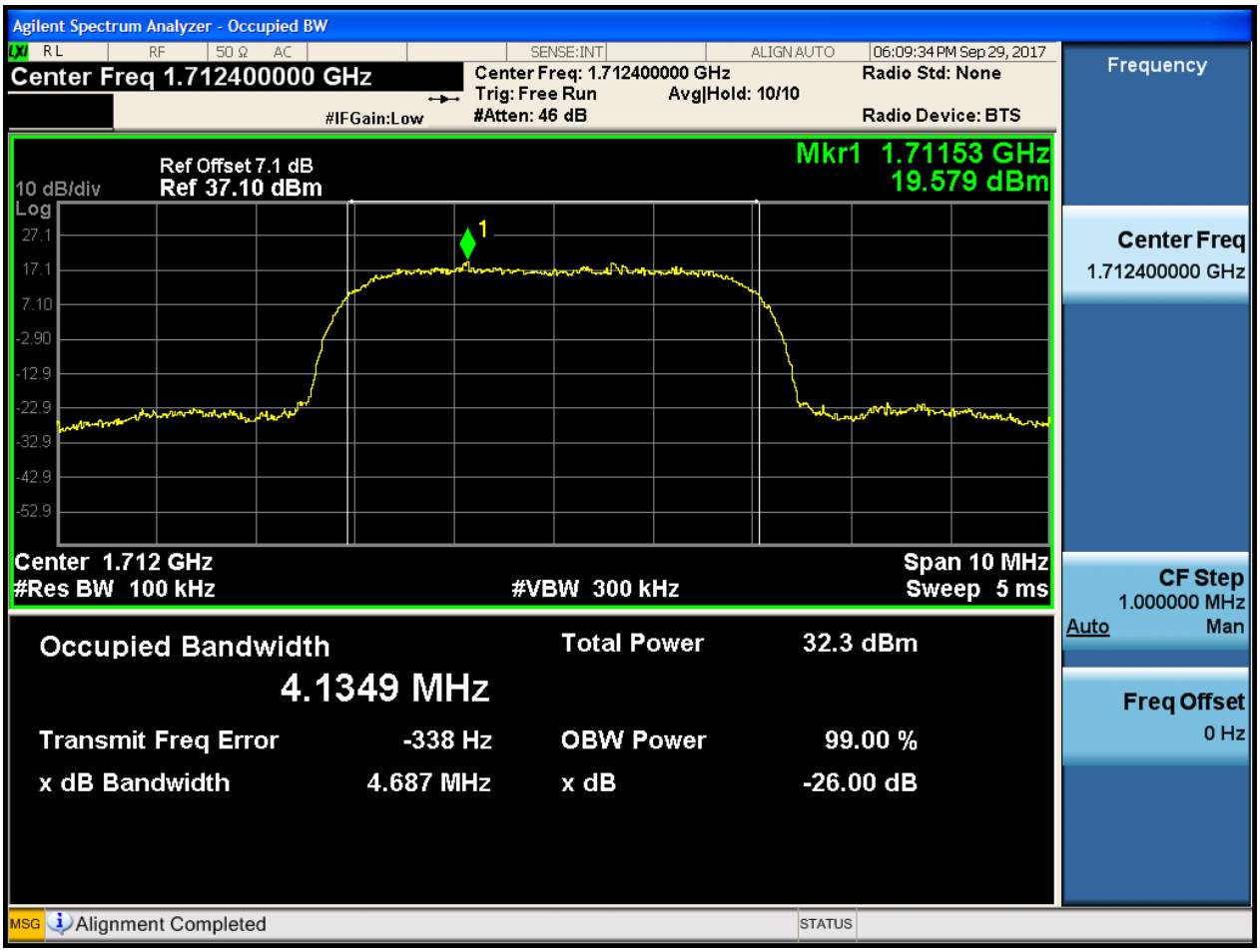
4.1.1.1.3 Test Channel = HCH



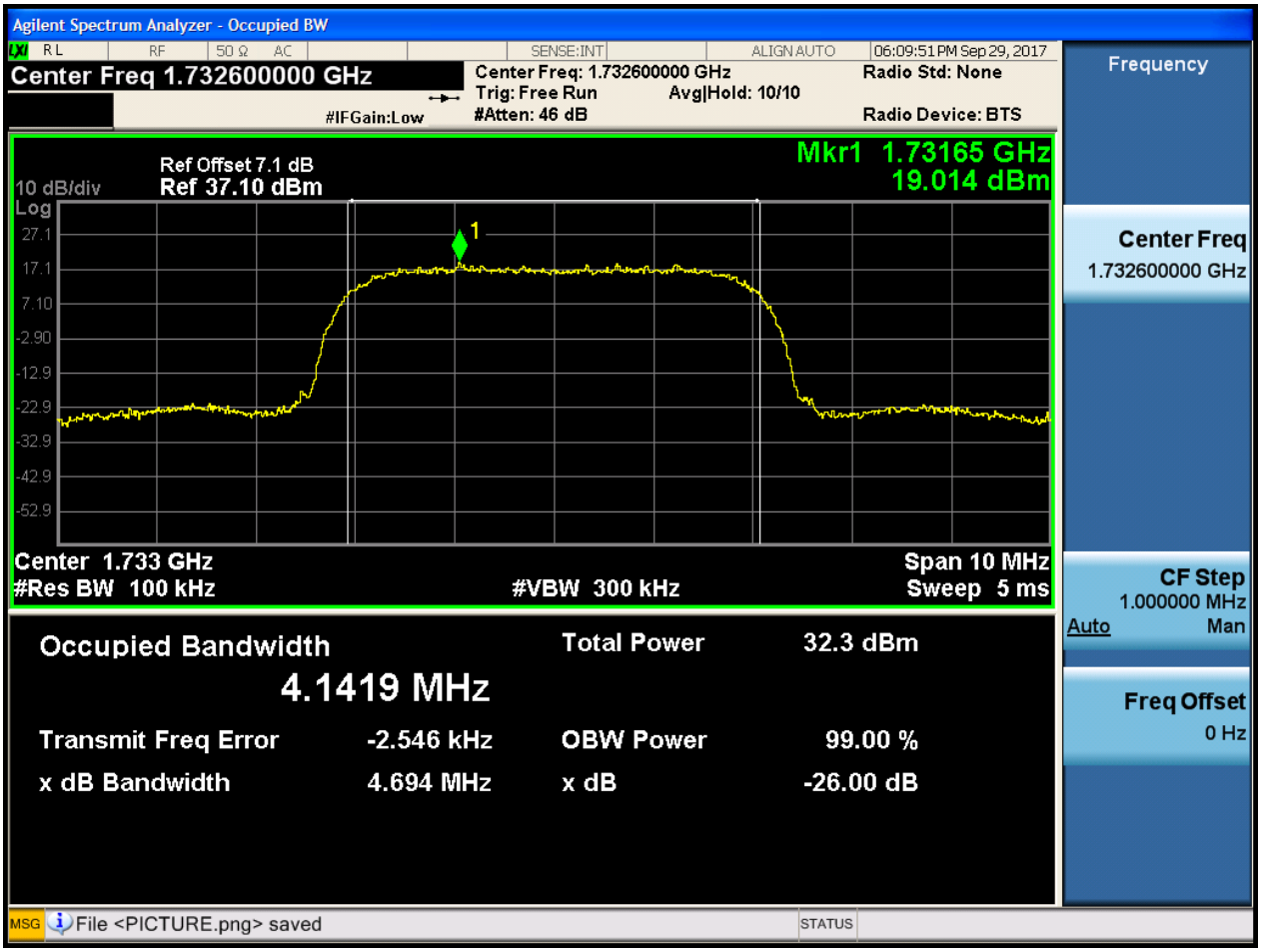
4.1.2 Test Band = WCDMA1700

4.1.2.1 Test Mode = UMTS/TM1

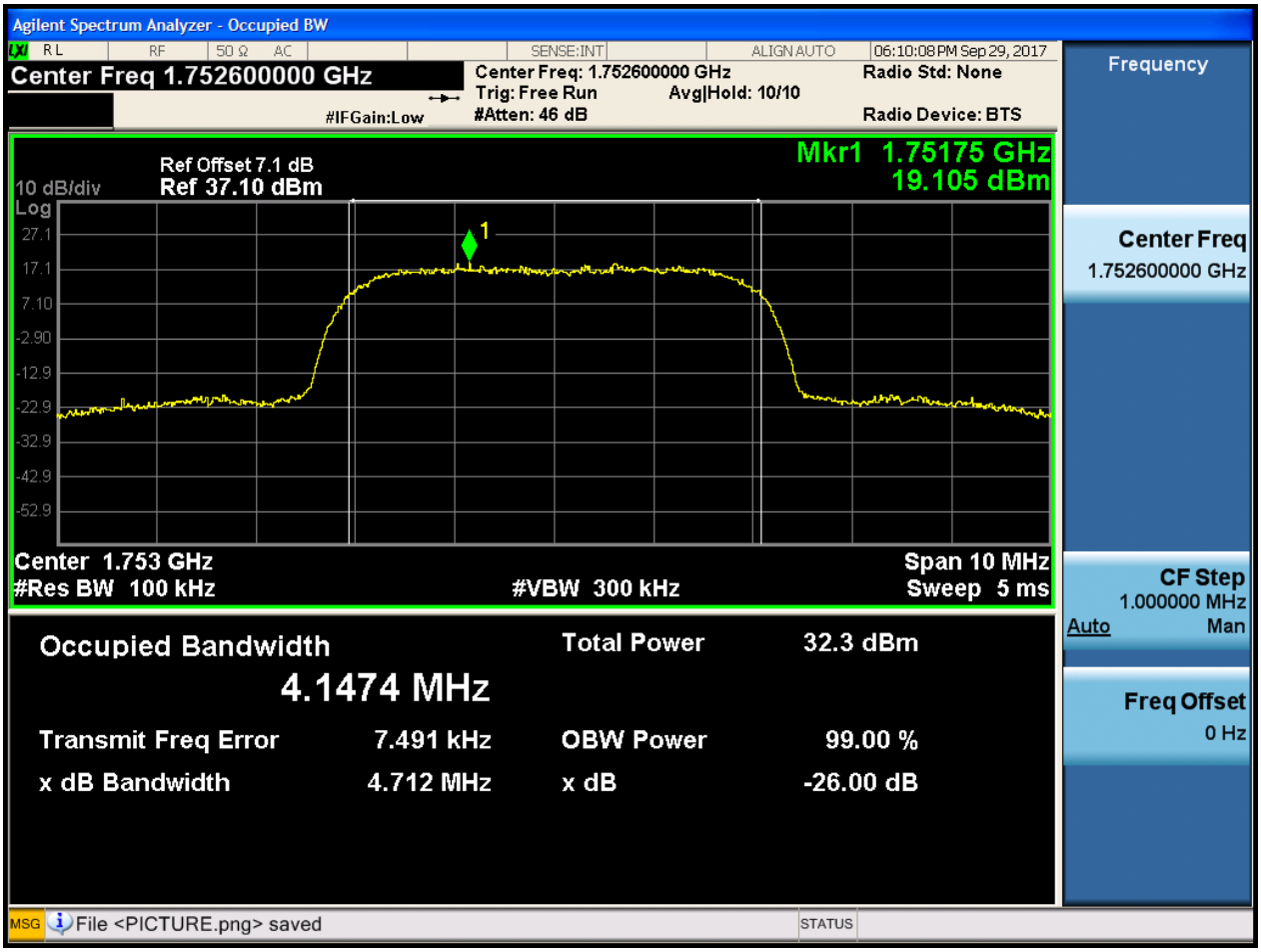
4.1.2.1.1 Test Channel = LCH



4.1.2.1.2 Test Channel = MCH



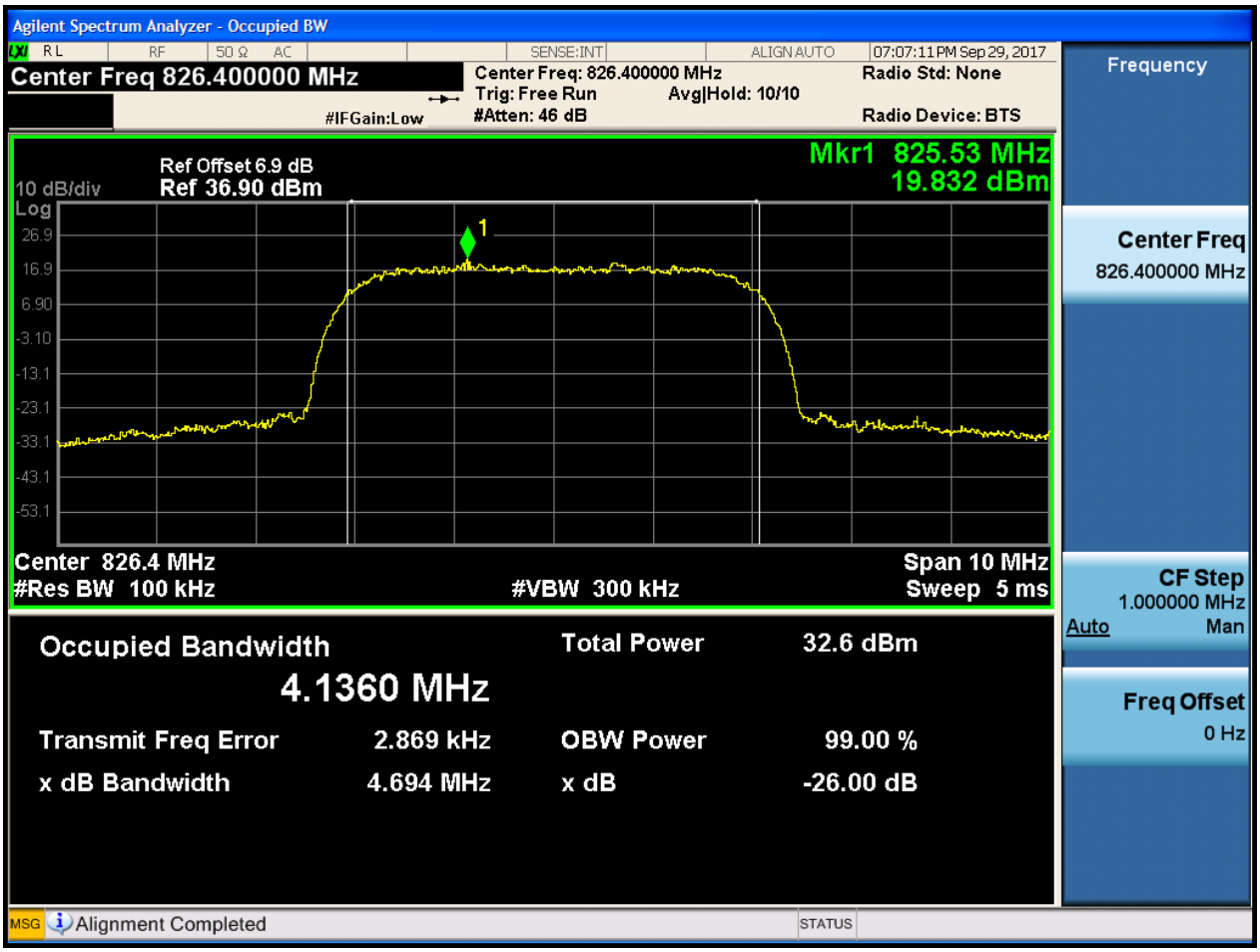
4.1.2.1.3 Test Channel = HCH



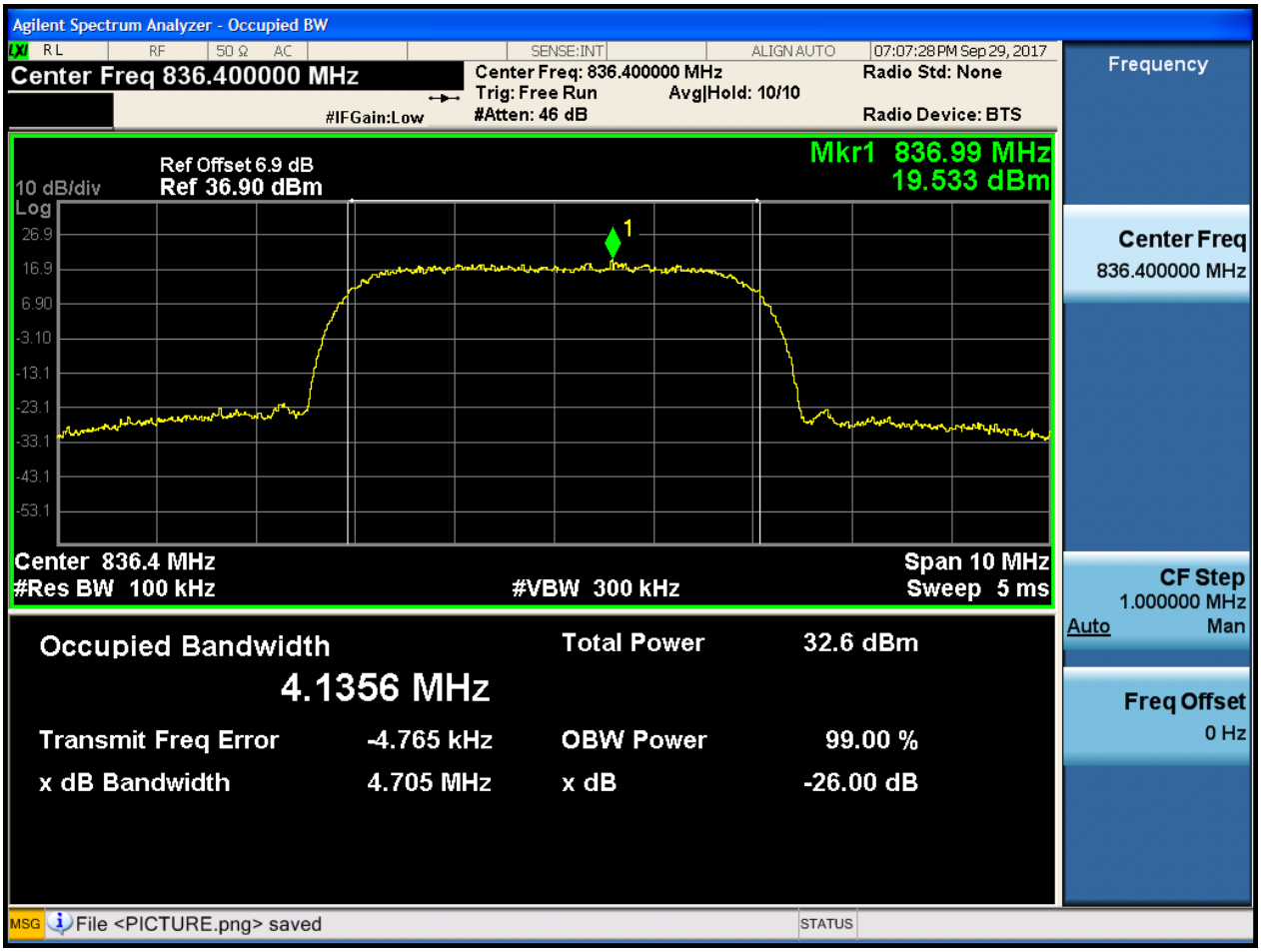
4.1.3 Test Band = WCDMA850

4.1.3.1 Test Mode = UMTS/TM1

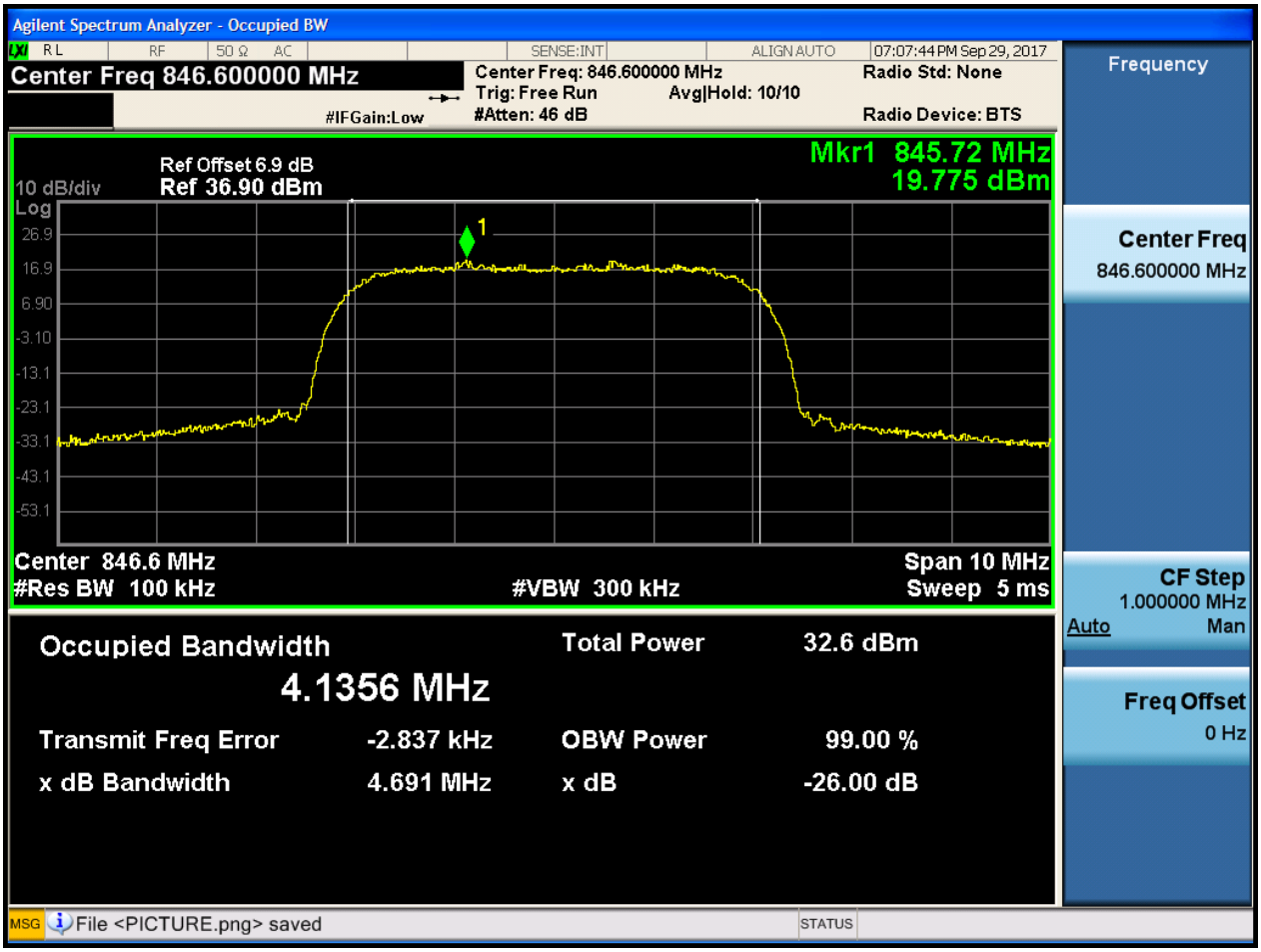
4.1.3.1.1 Test Channel = LCH



4.1.3.1.2 Test Channel = MCH



4.1.3.1.3 Test Channel = HCH



5Appendix_E: Band Edges Compliance

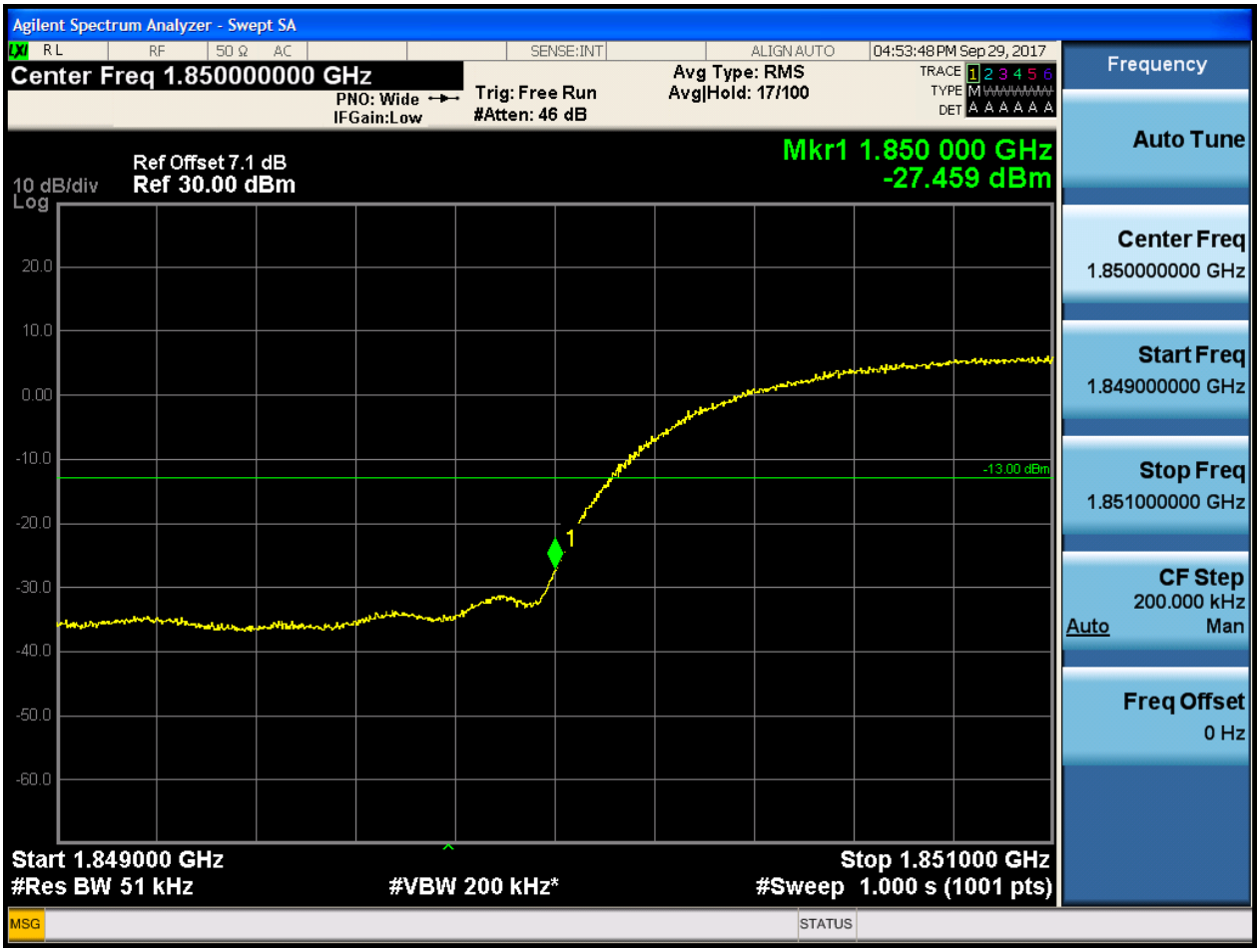
Part I - Test Plots

5.1 For UMTS

5.1.1 Test Band = WCDMA1900

5.1.1.1 Test Mode = UMTS/TM1

5.1.1.1.1 Test Channel = LCH

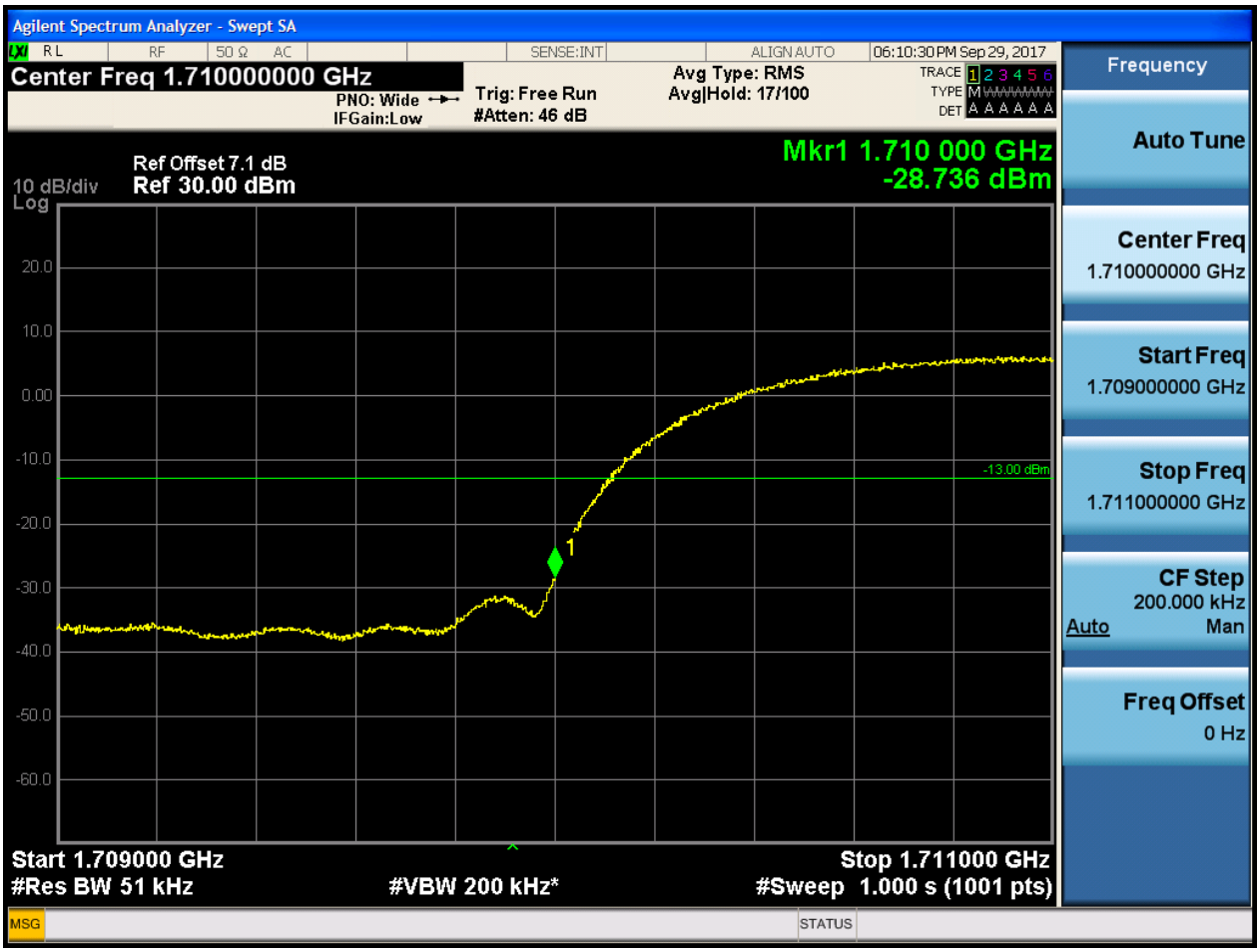


5.1.1.1.2 Test Channel = HCH

5.1.2 Test Band = WCDMA1700

5.1.2.1 Test Mode = UMTS/TM1

5.1.2.1.1 Test Channel = LCH

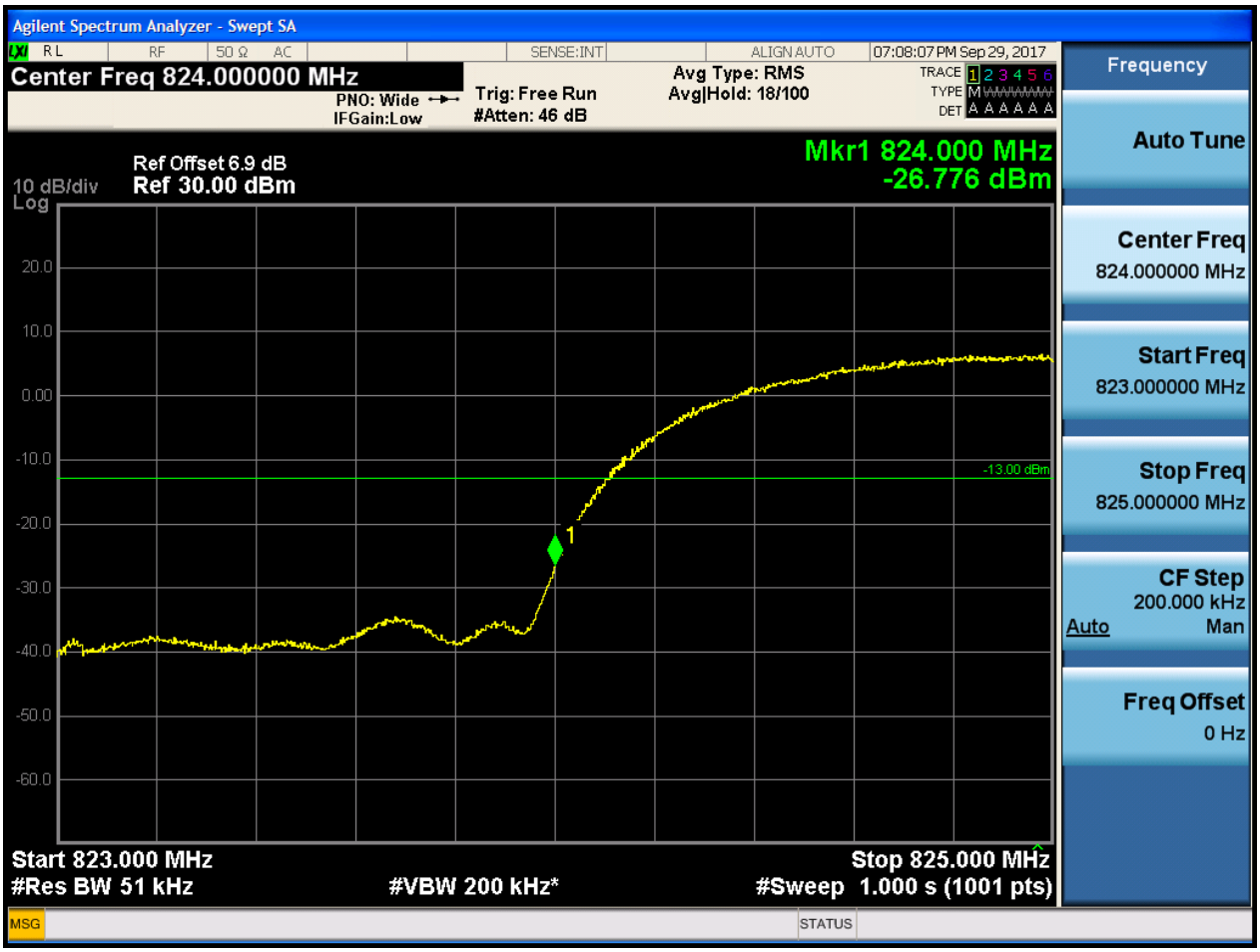


5.1.2.1.2 Test Channel = HCH

5.1.3 Test Band = WCDMA850

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.

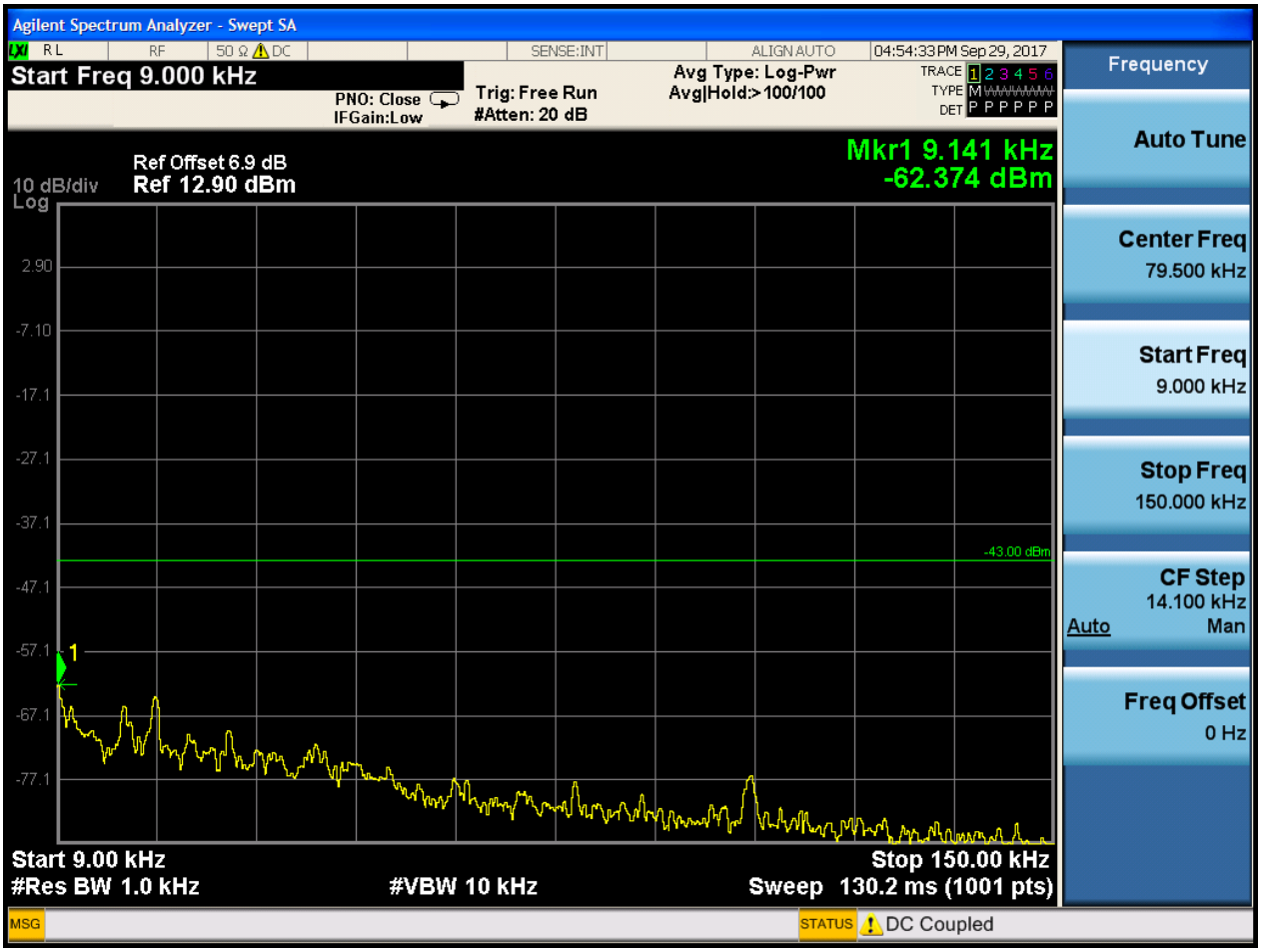
Part I - Test Plots

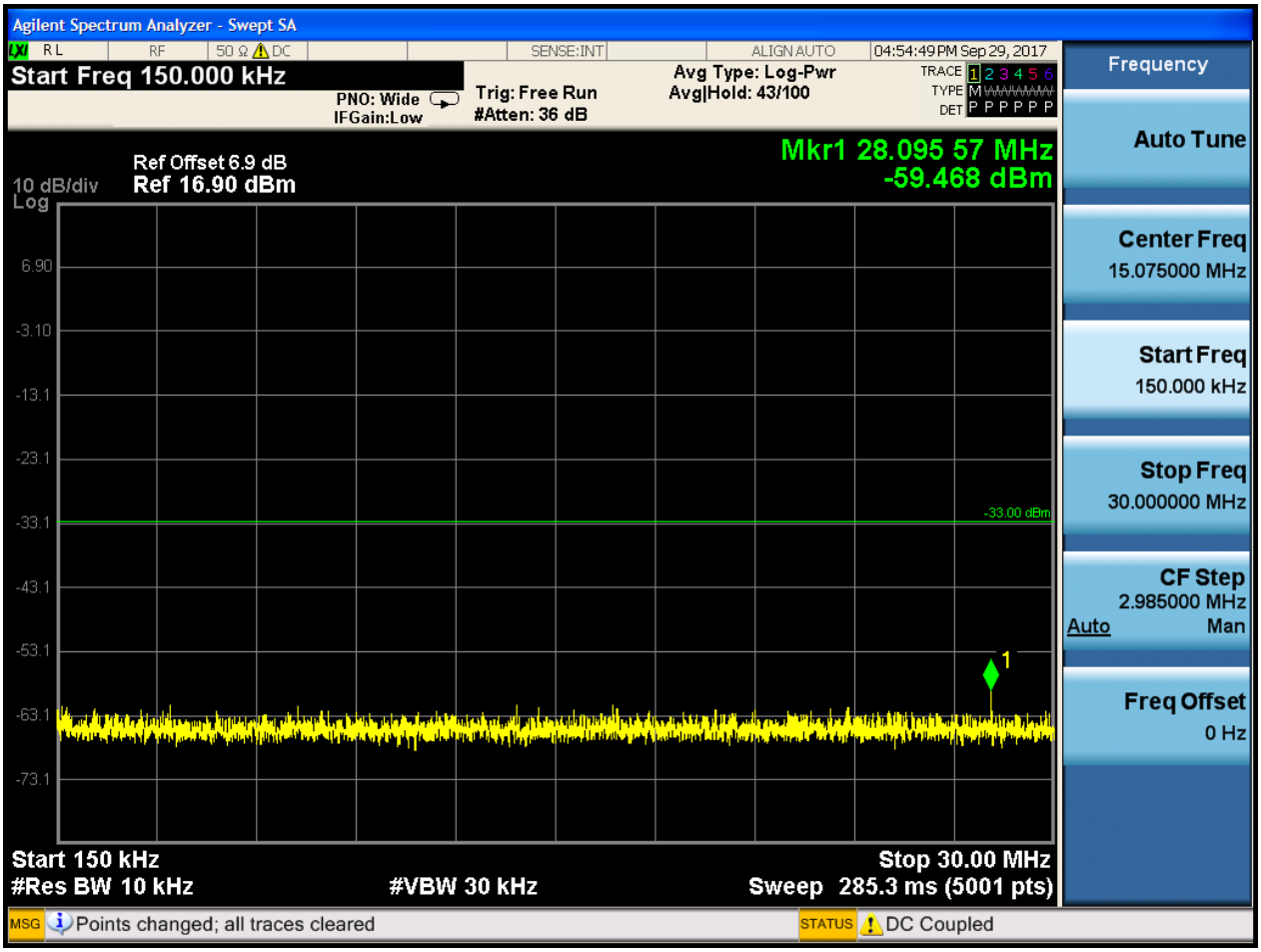
6.1 For UMTS

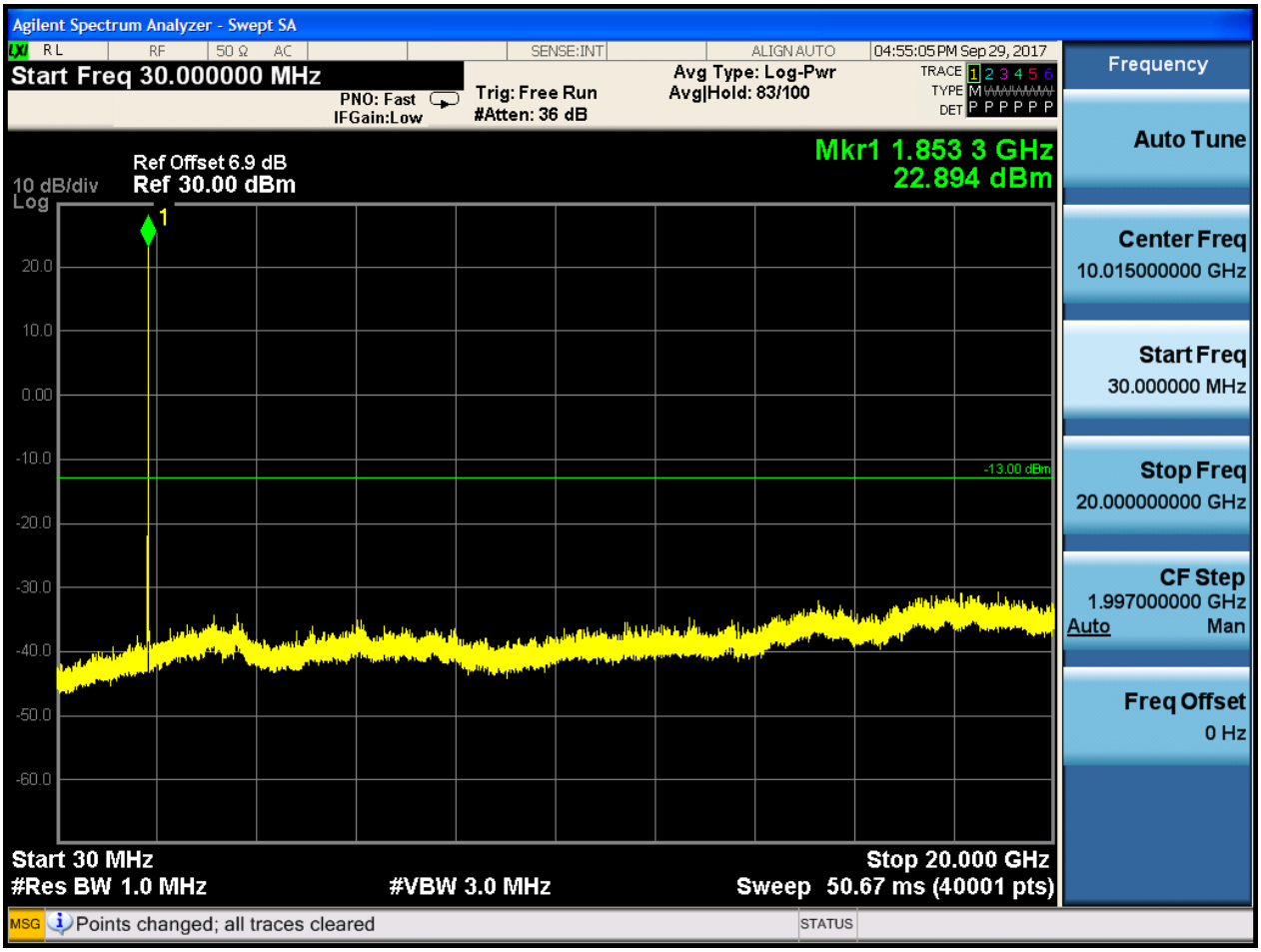
6.1.1 Test Band = WCDMA1900

6.1.1.1 Test Mode = UMTS/TM1

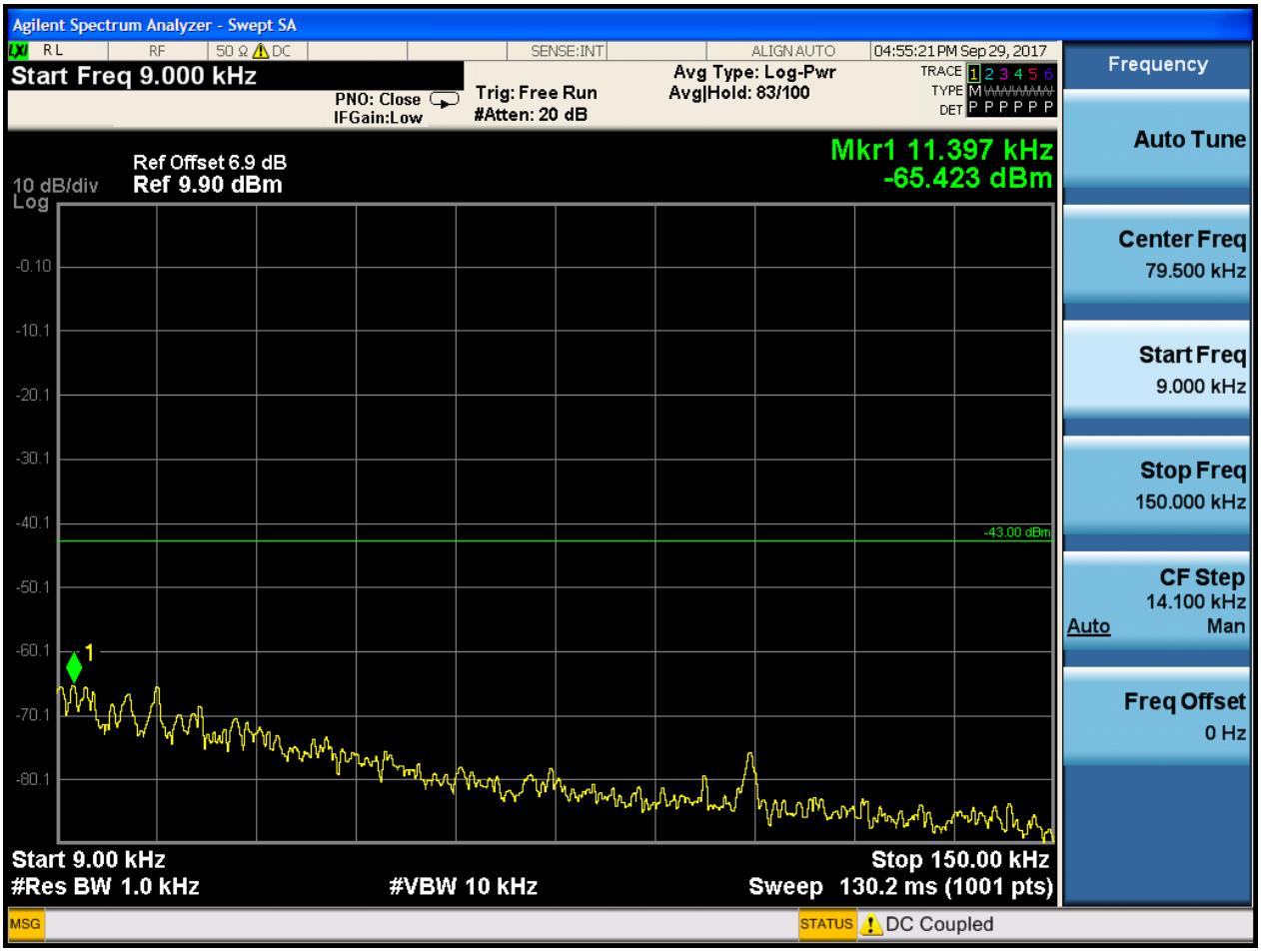
6.1.1.1.1 Test Channel = LCH

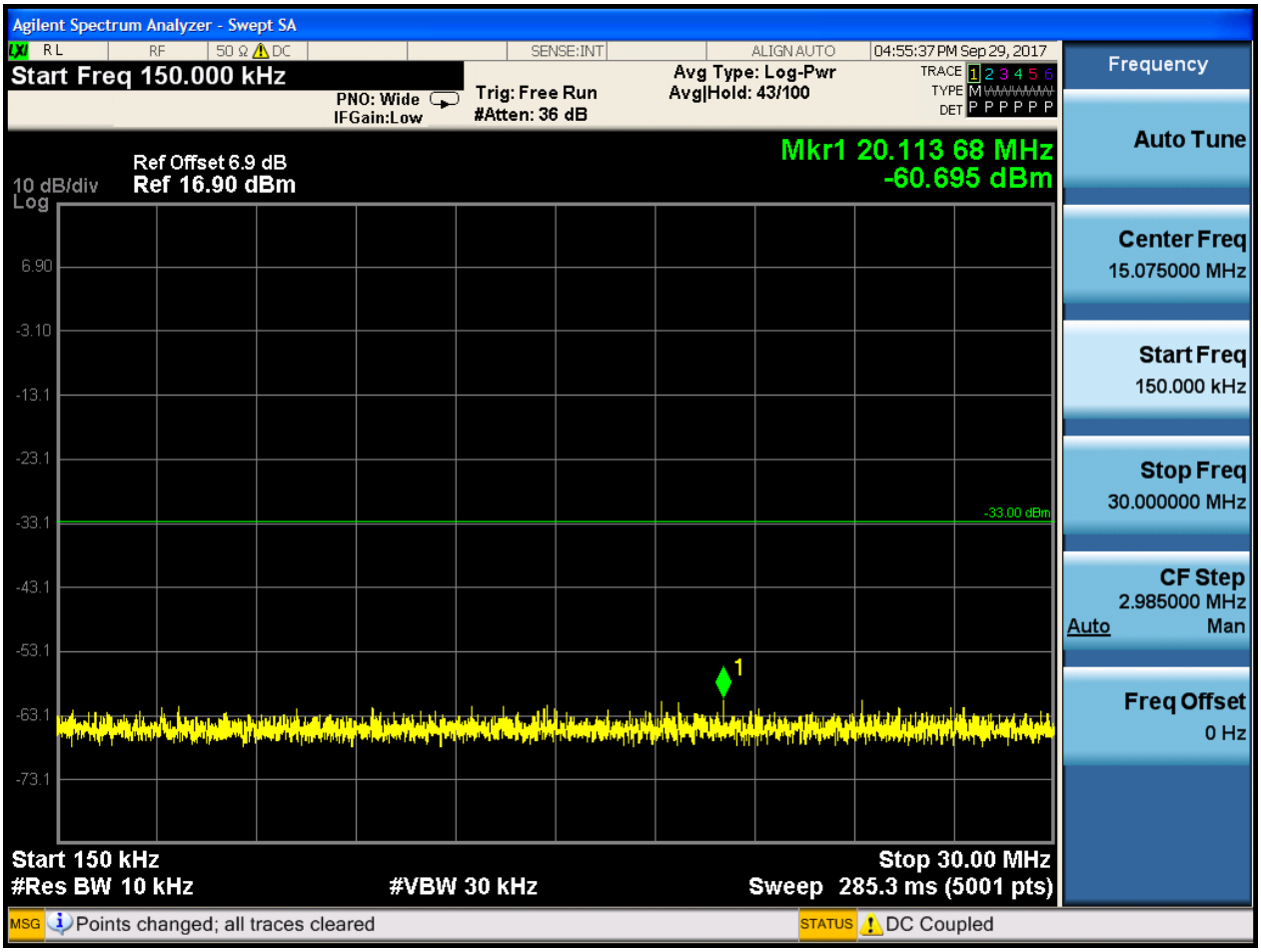


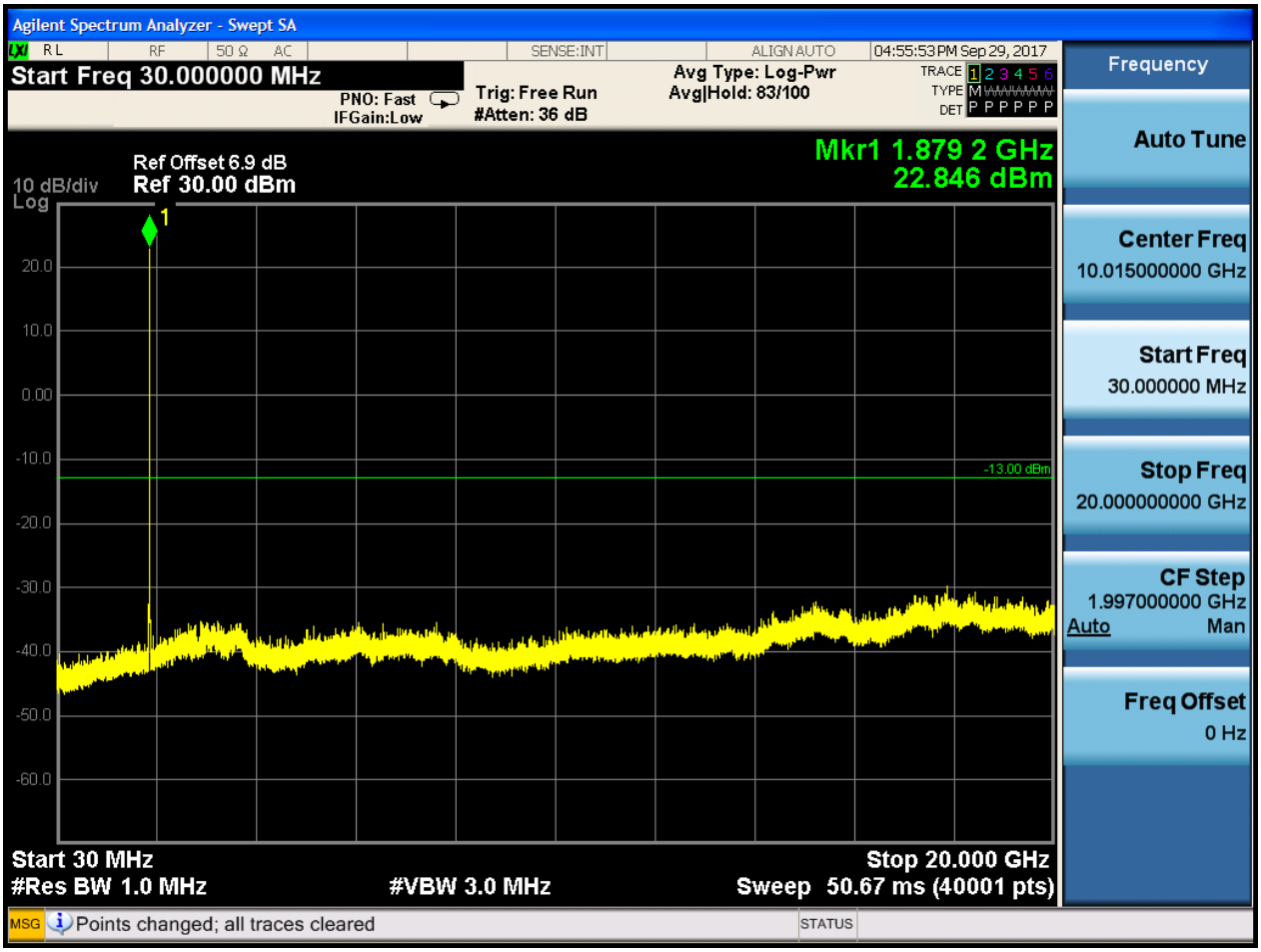




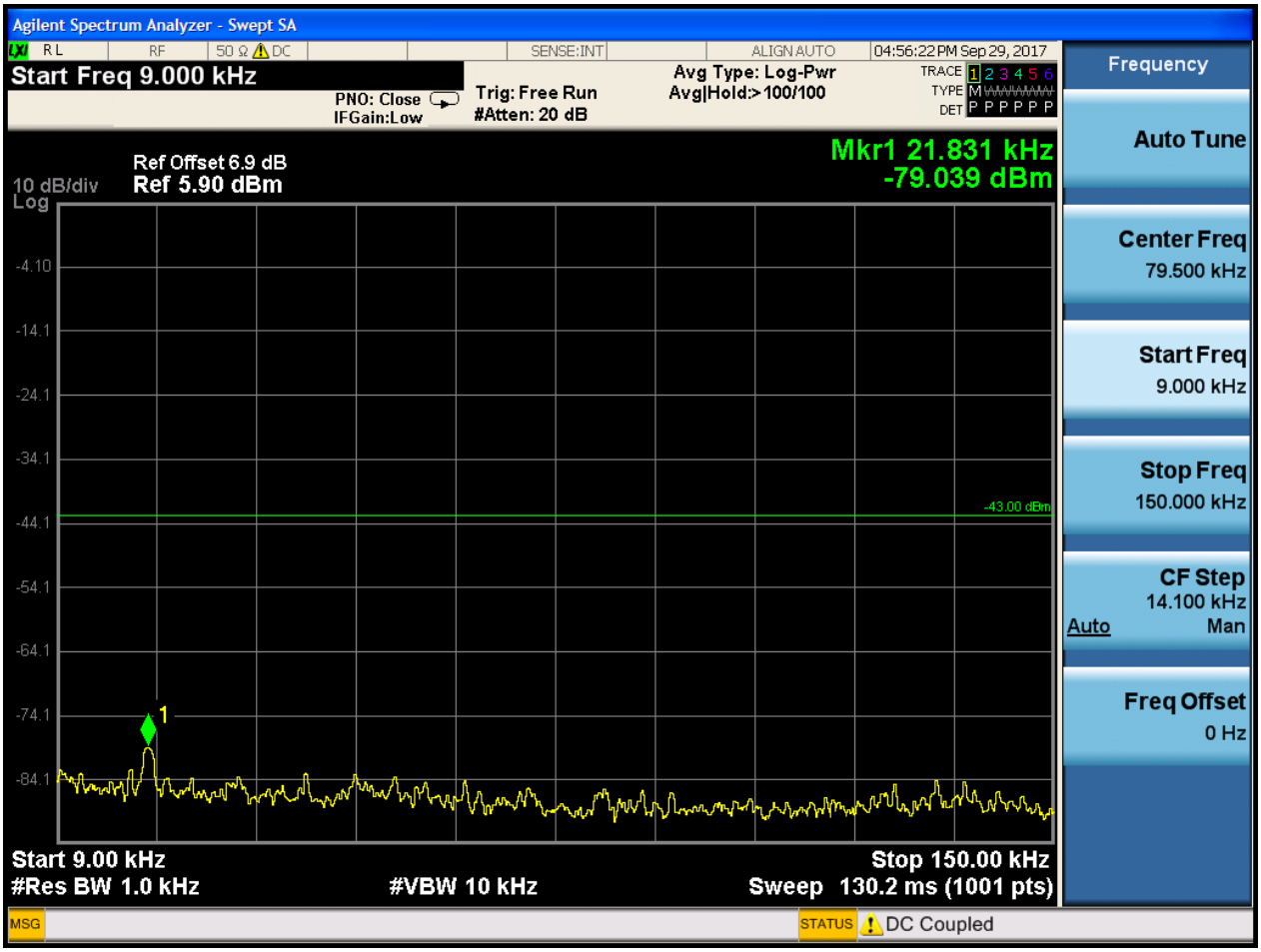
6.1.1.1.2 Test Channel = MCH

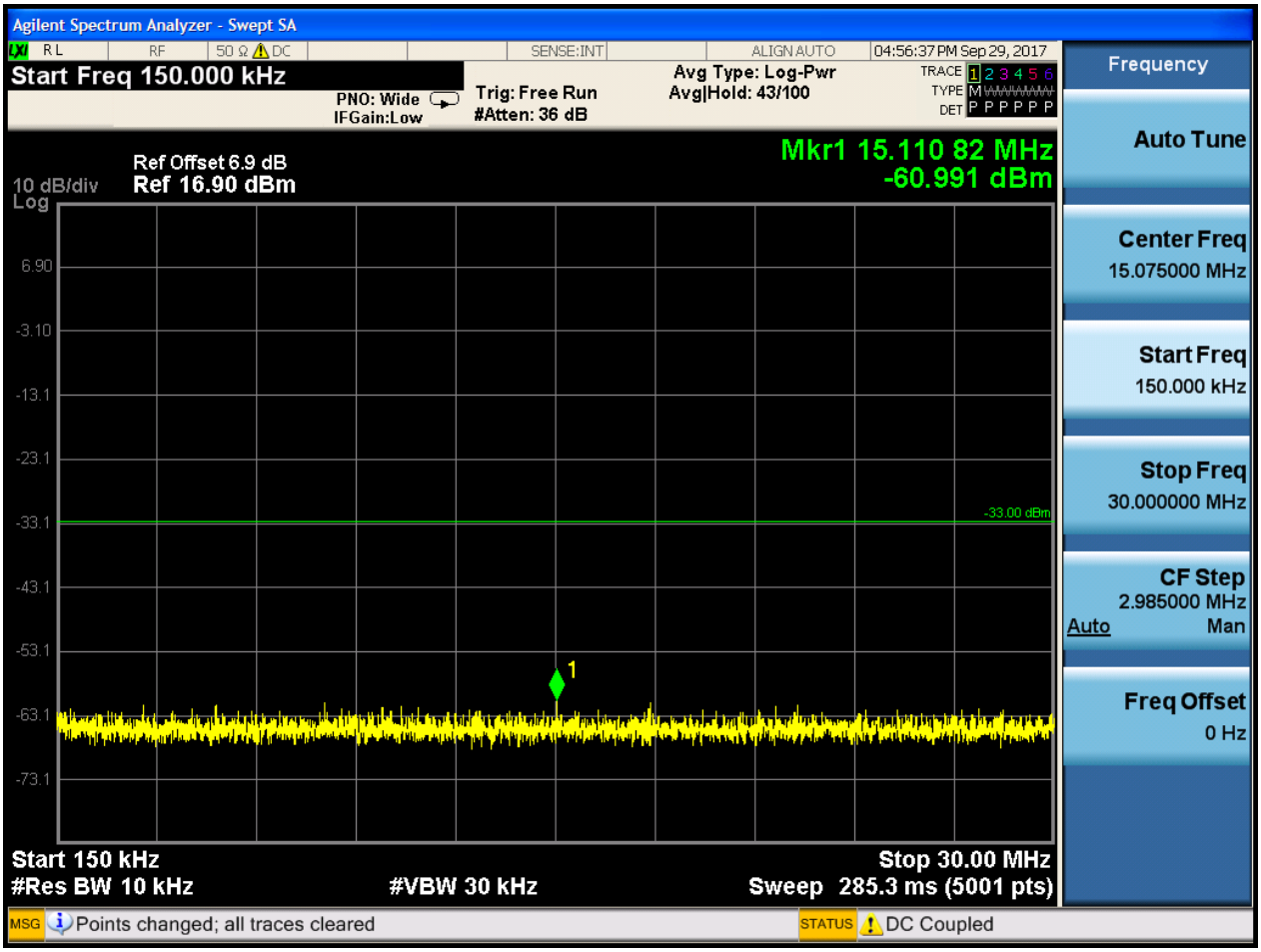


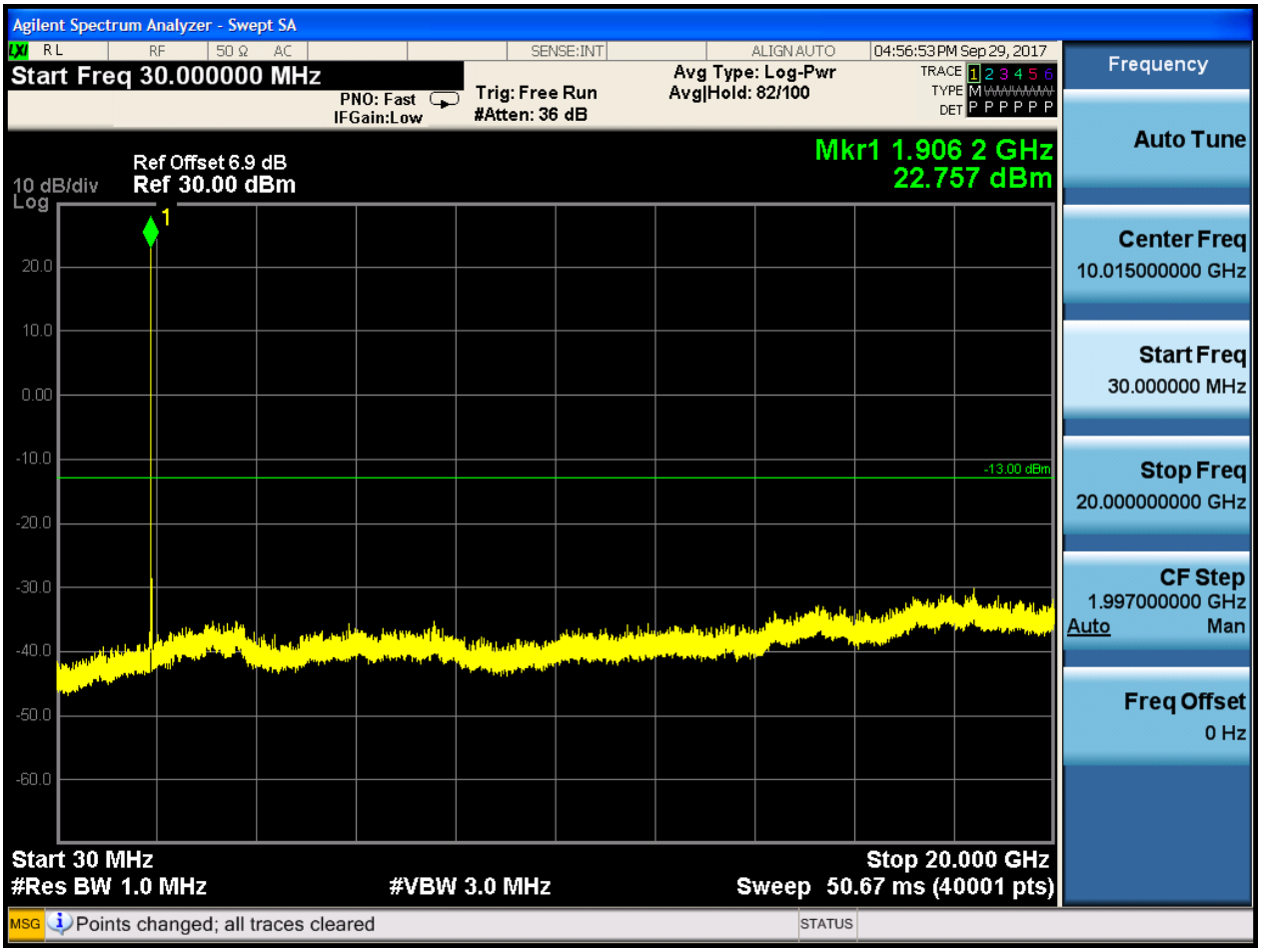




6.1.1.1.3 Test Channel = HCH



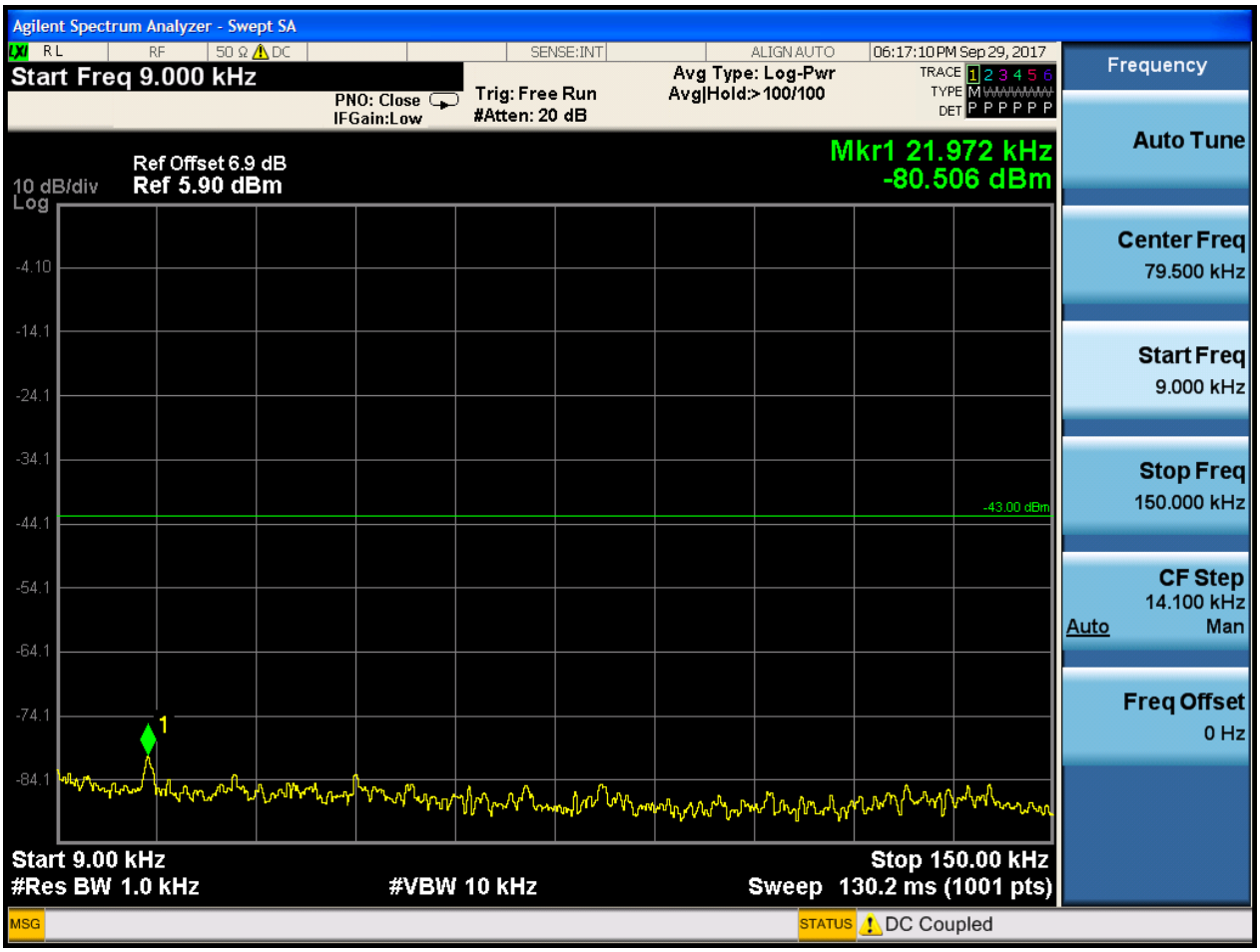


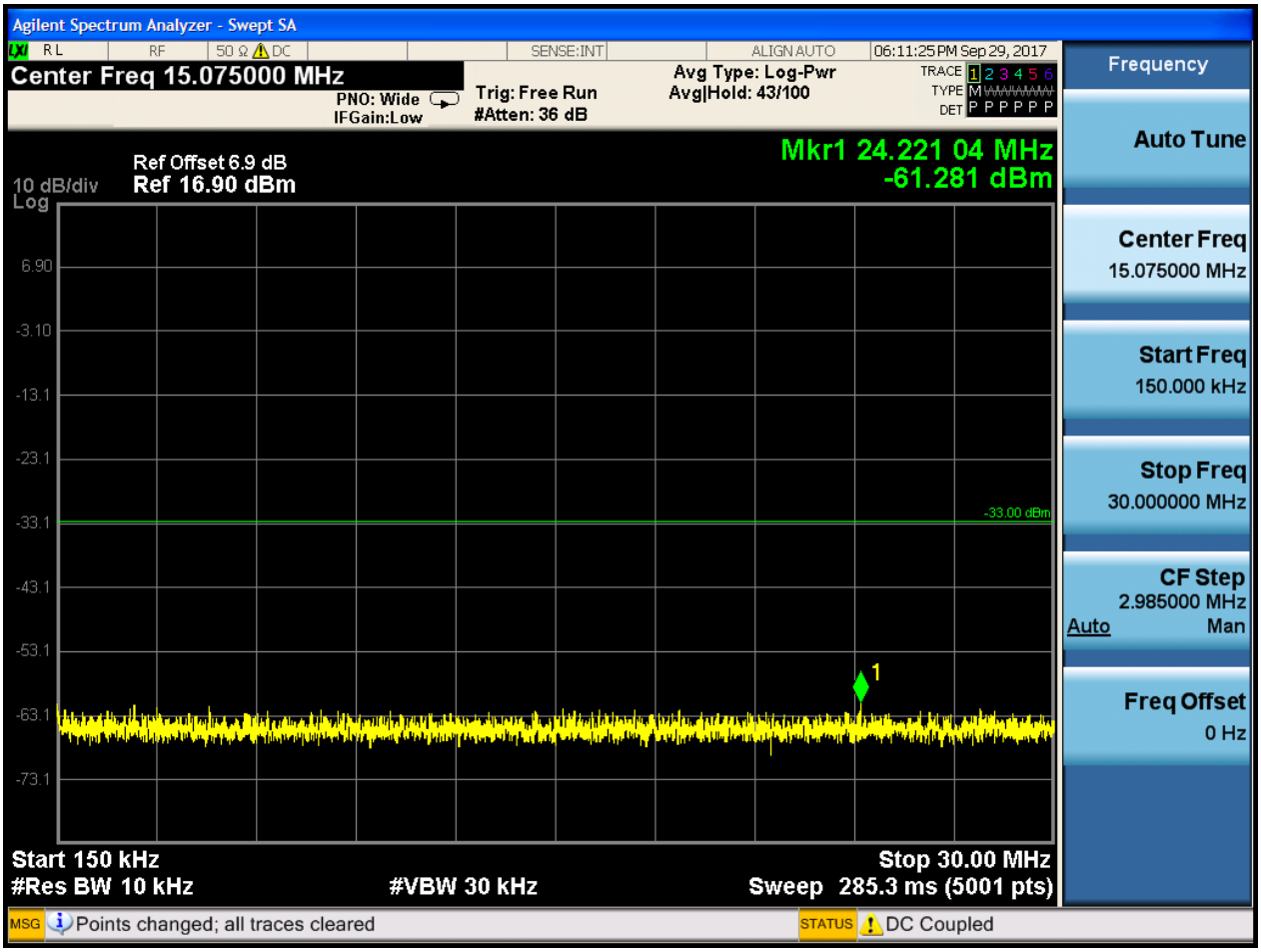


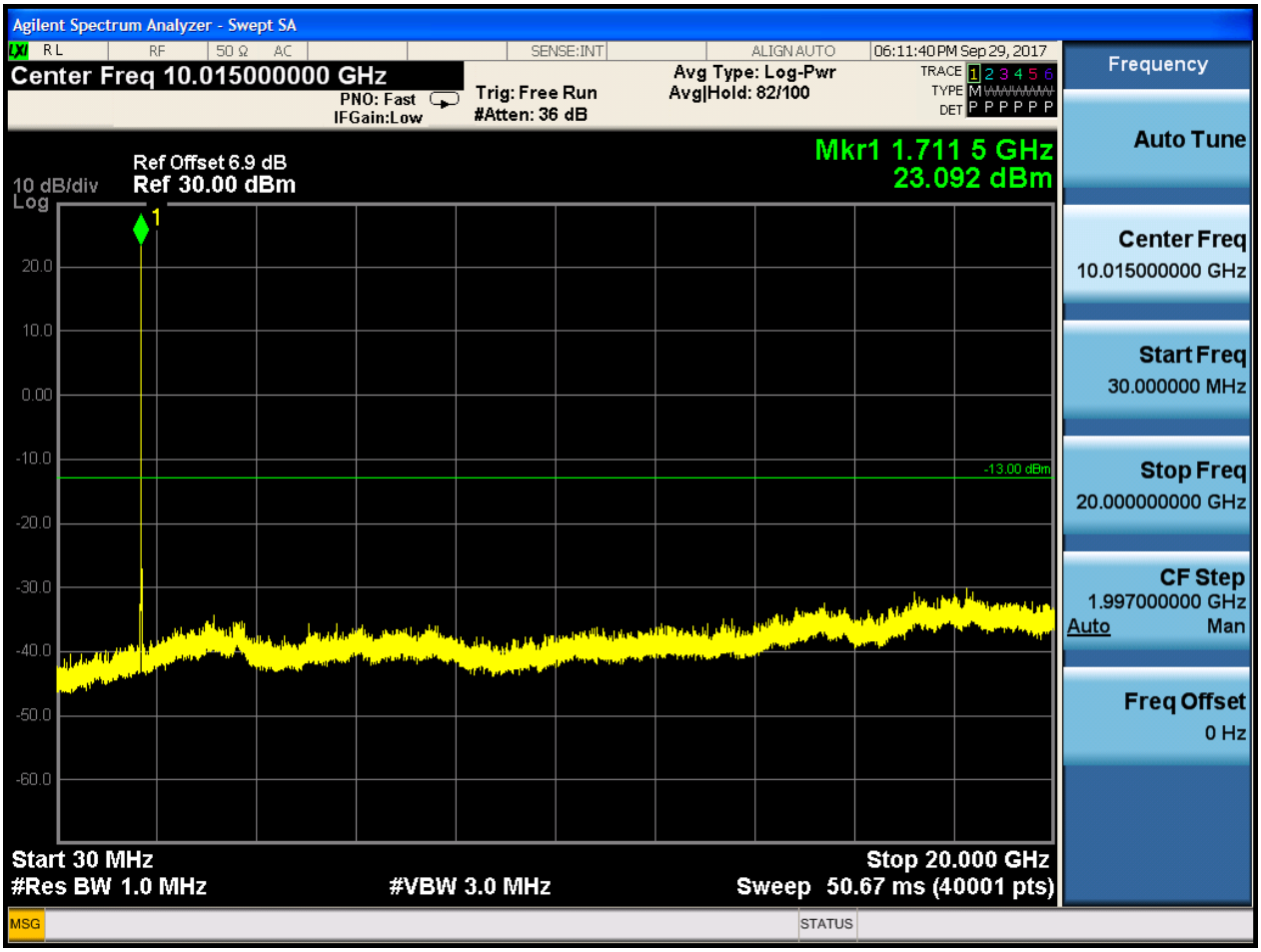
6.1.2 Test Band = WCDMA1700

6.1.2.1 Test Mode = UMTS/TM1

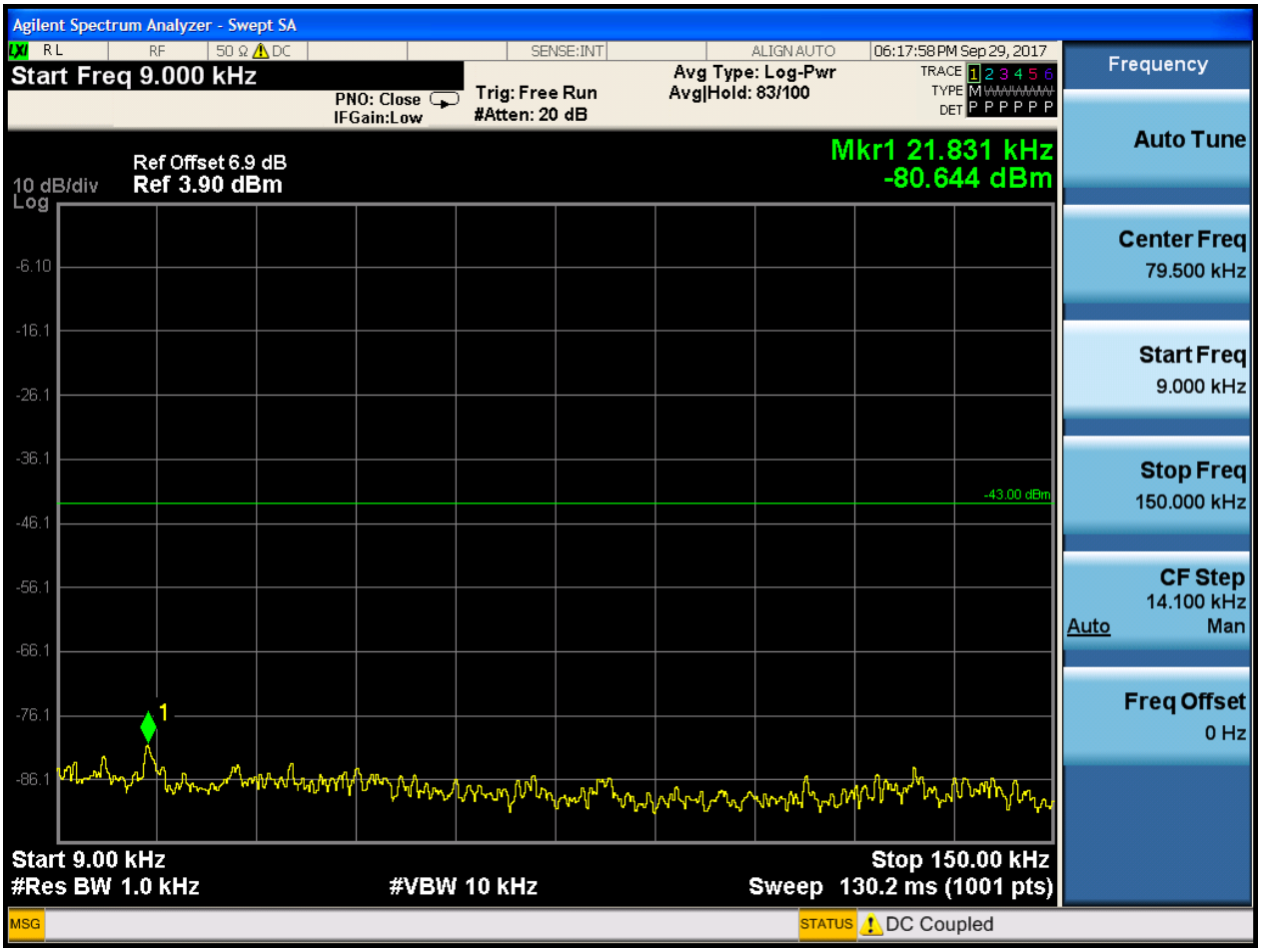
6.1.2.1.1 Test Channel = LCH

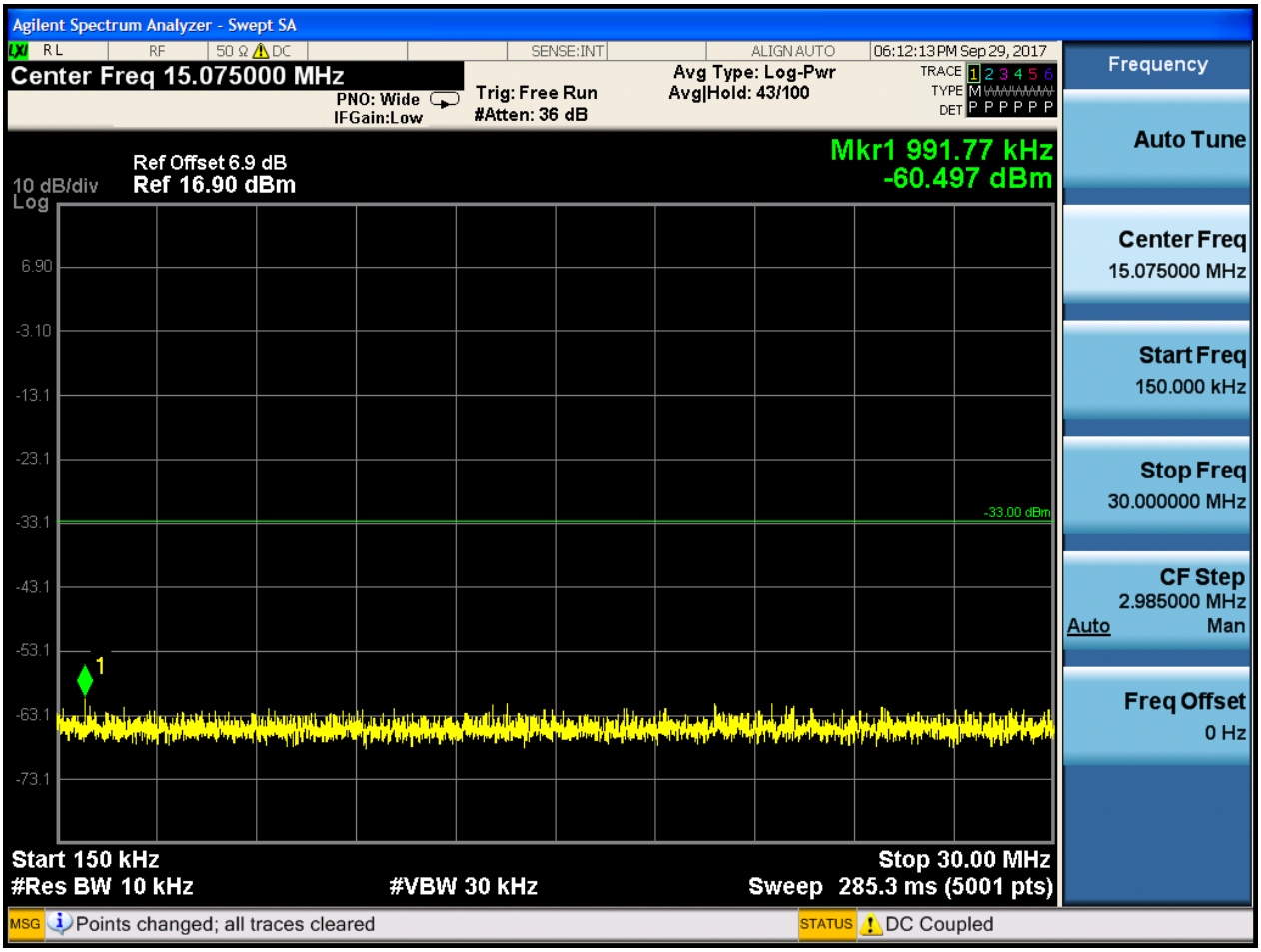


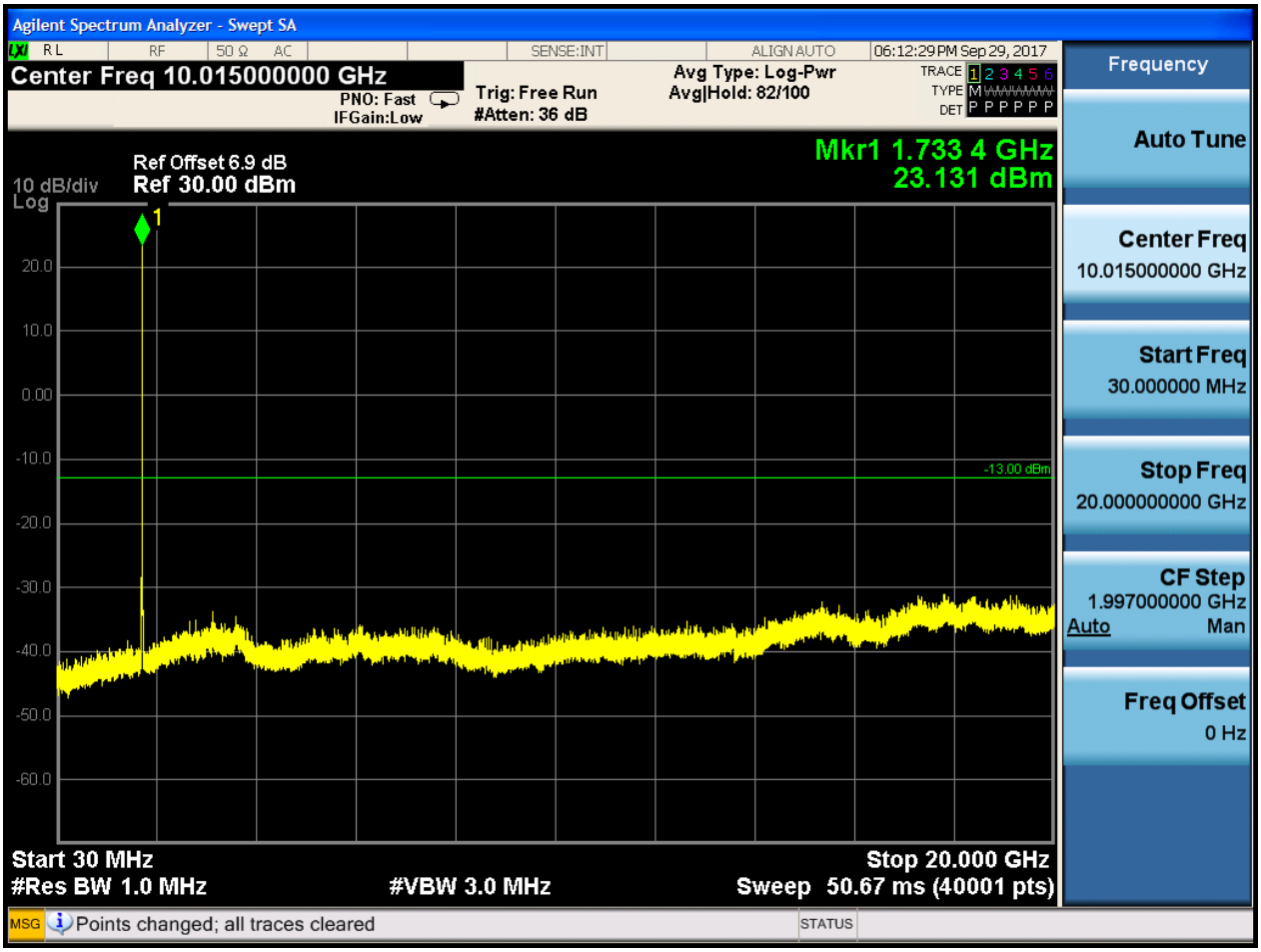




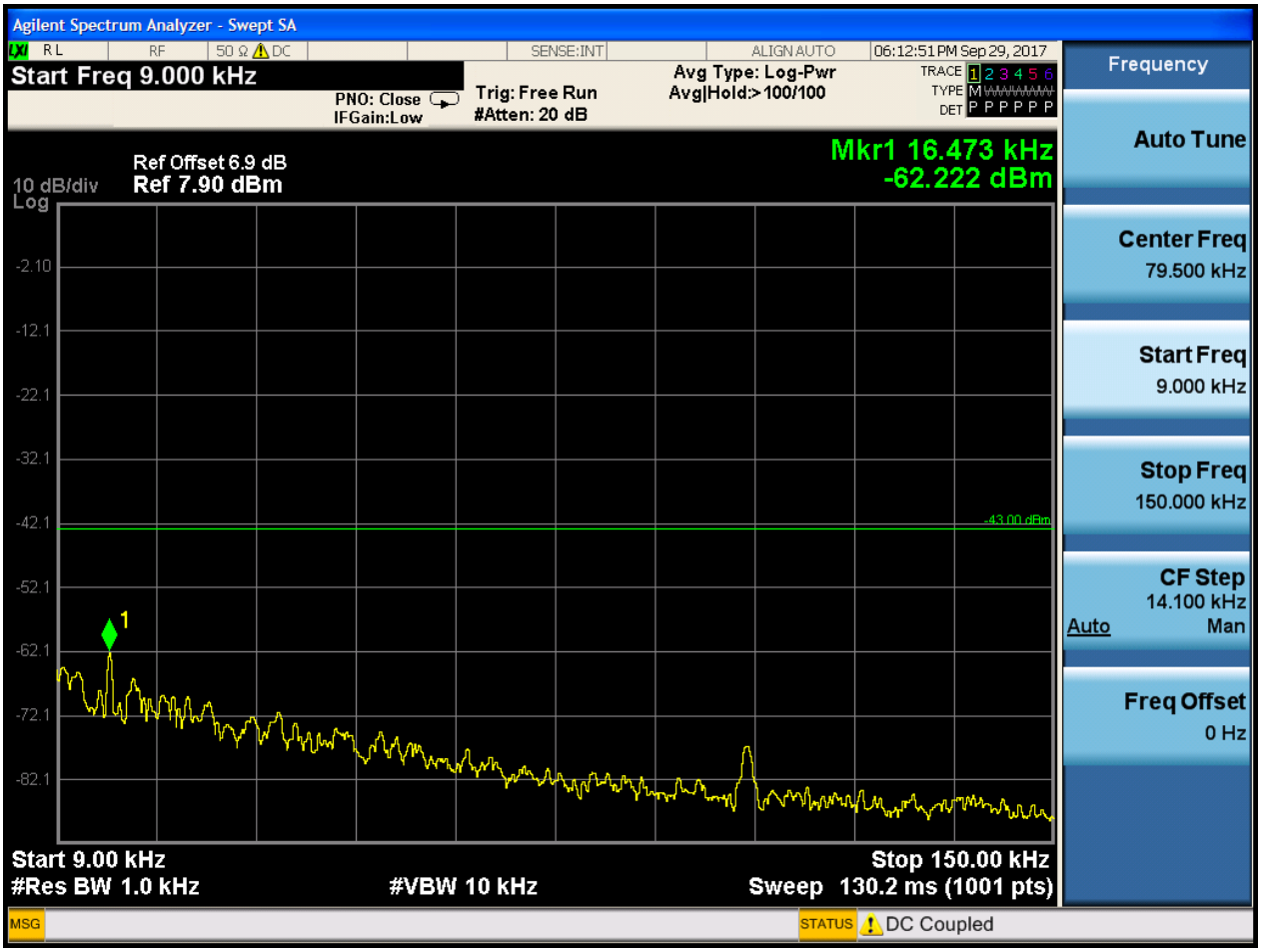
6.1.2.1.2 Test Channel = MCH

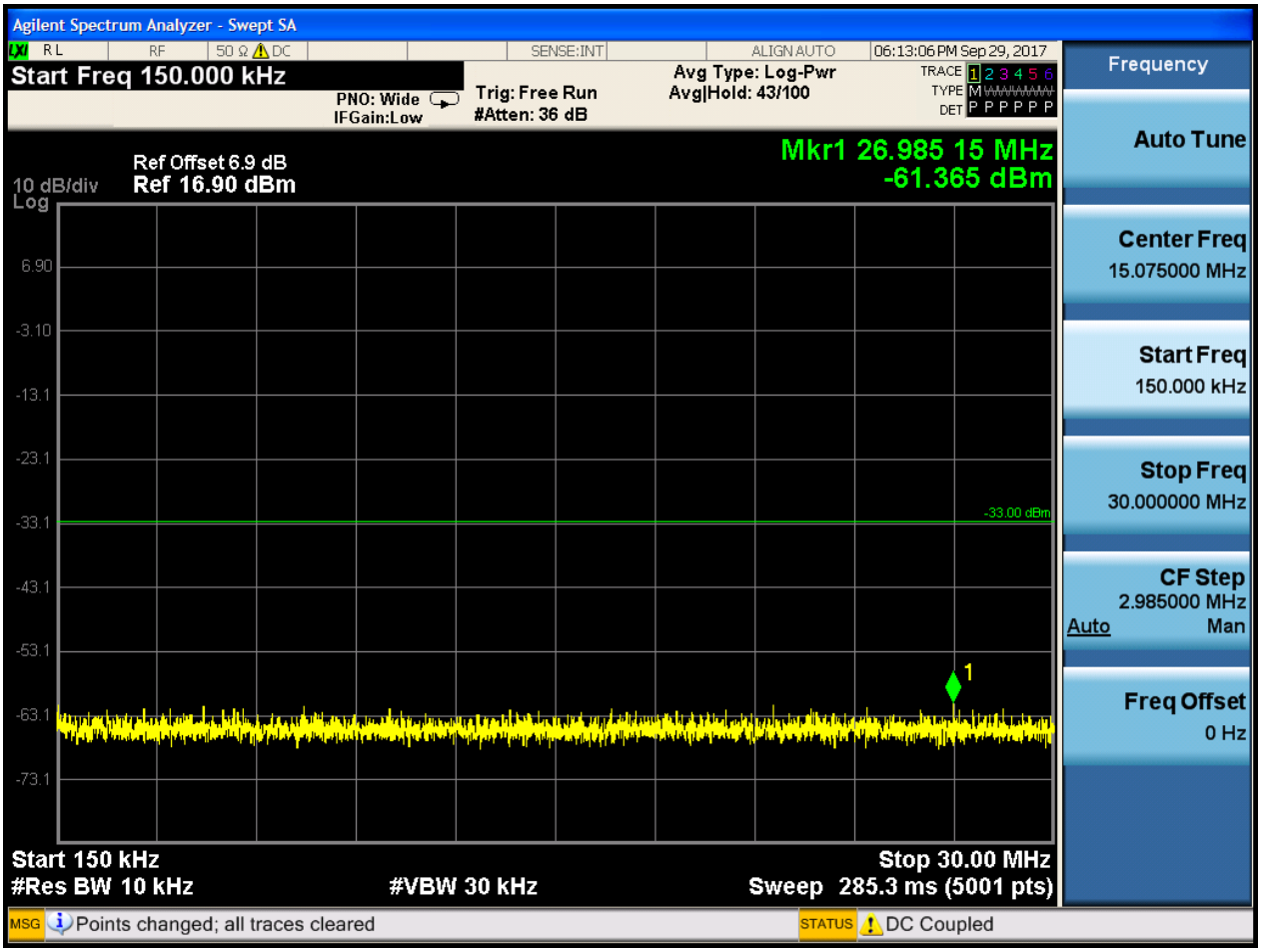


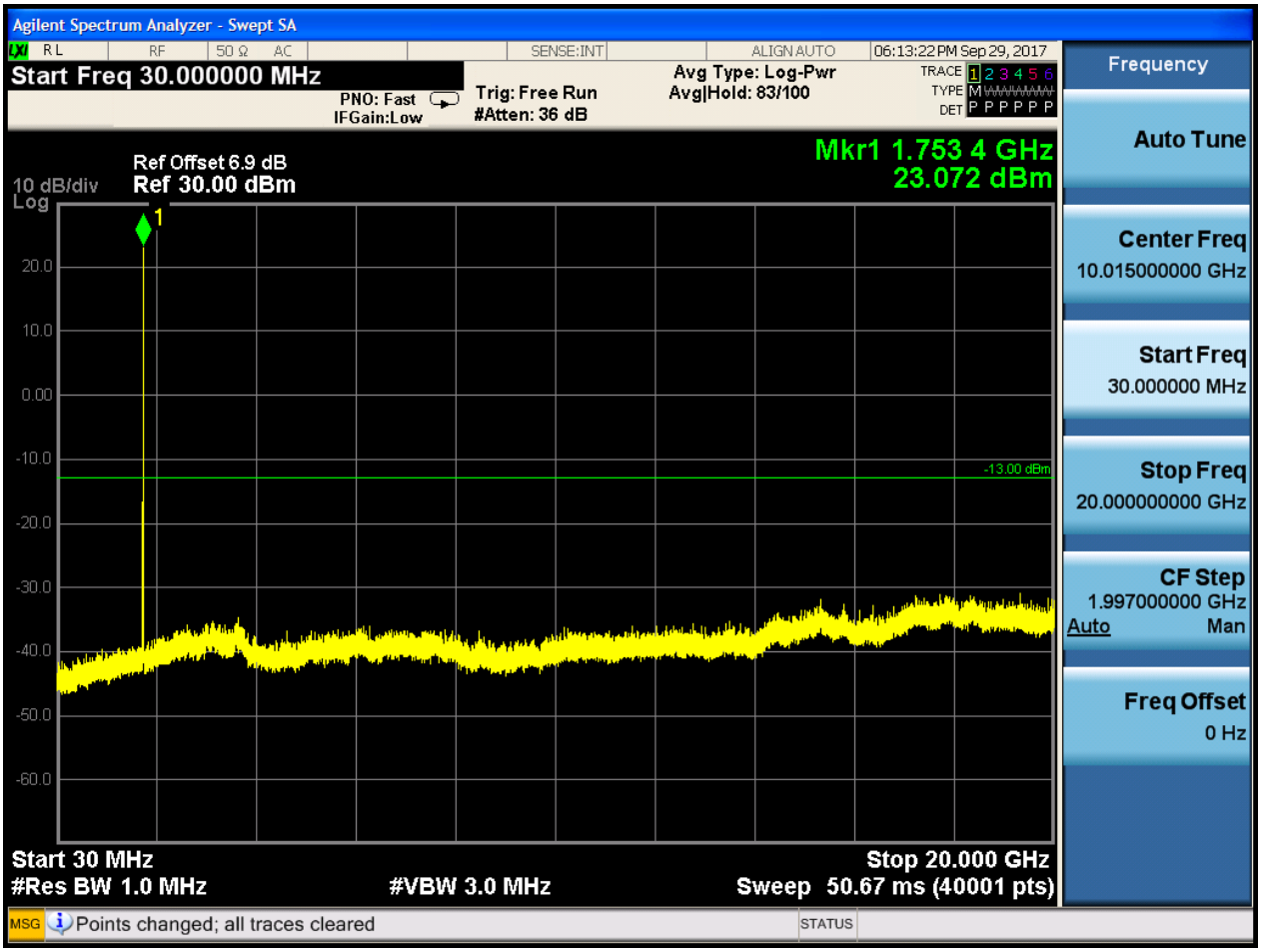




6.1.2.1.3 Test Channel = HCH



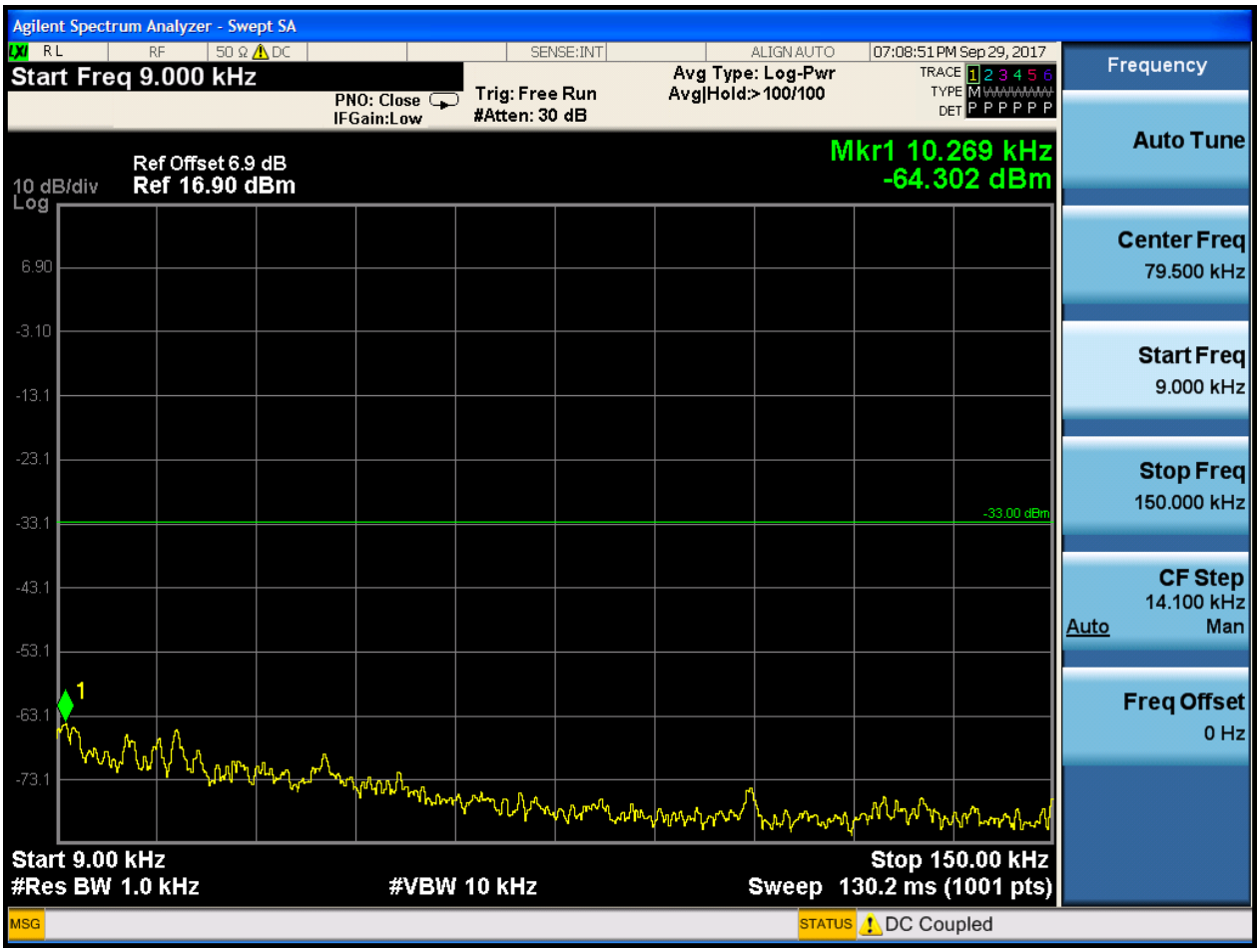


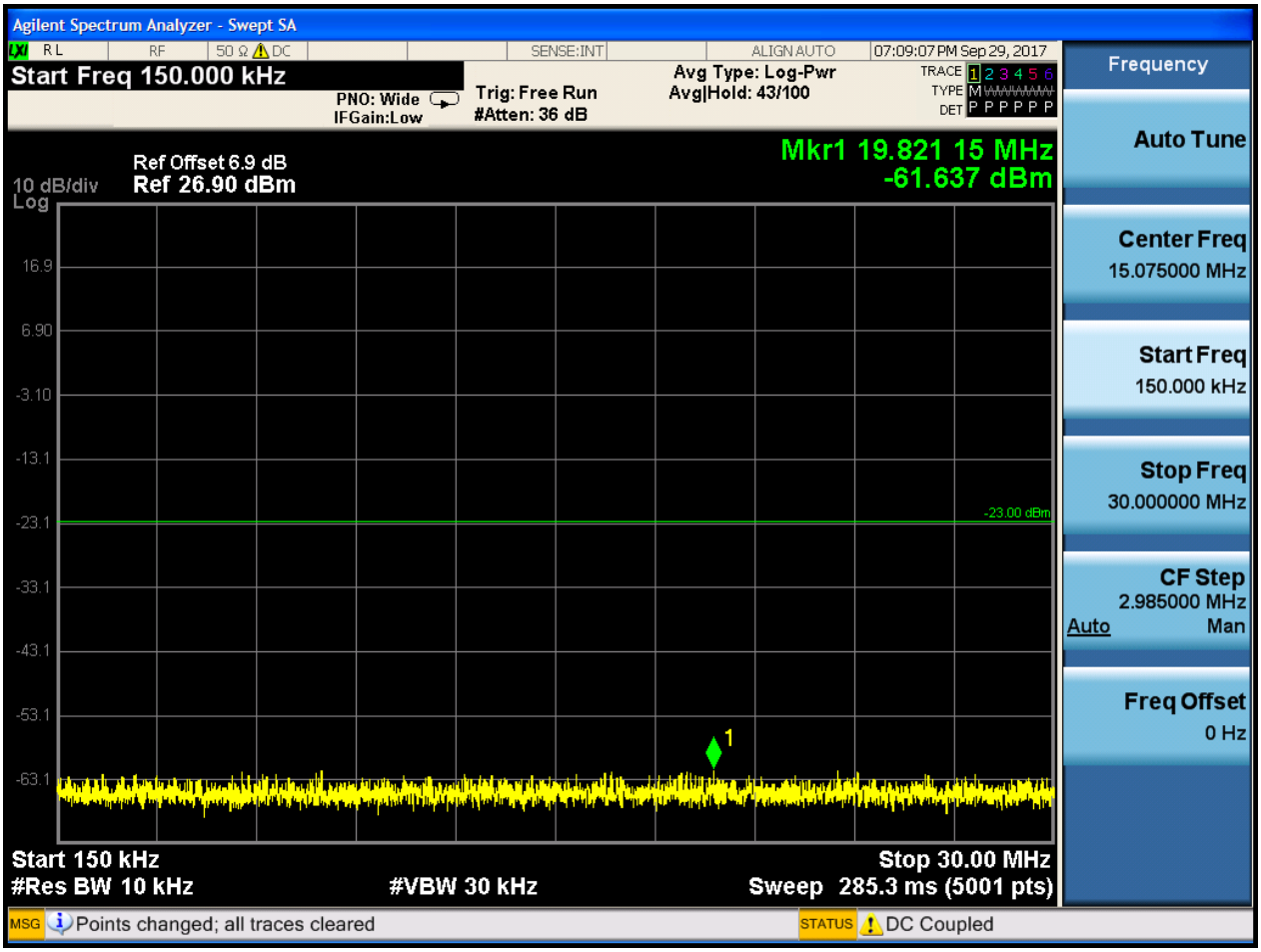


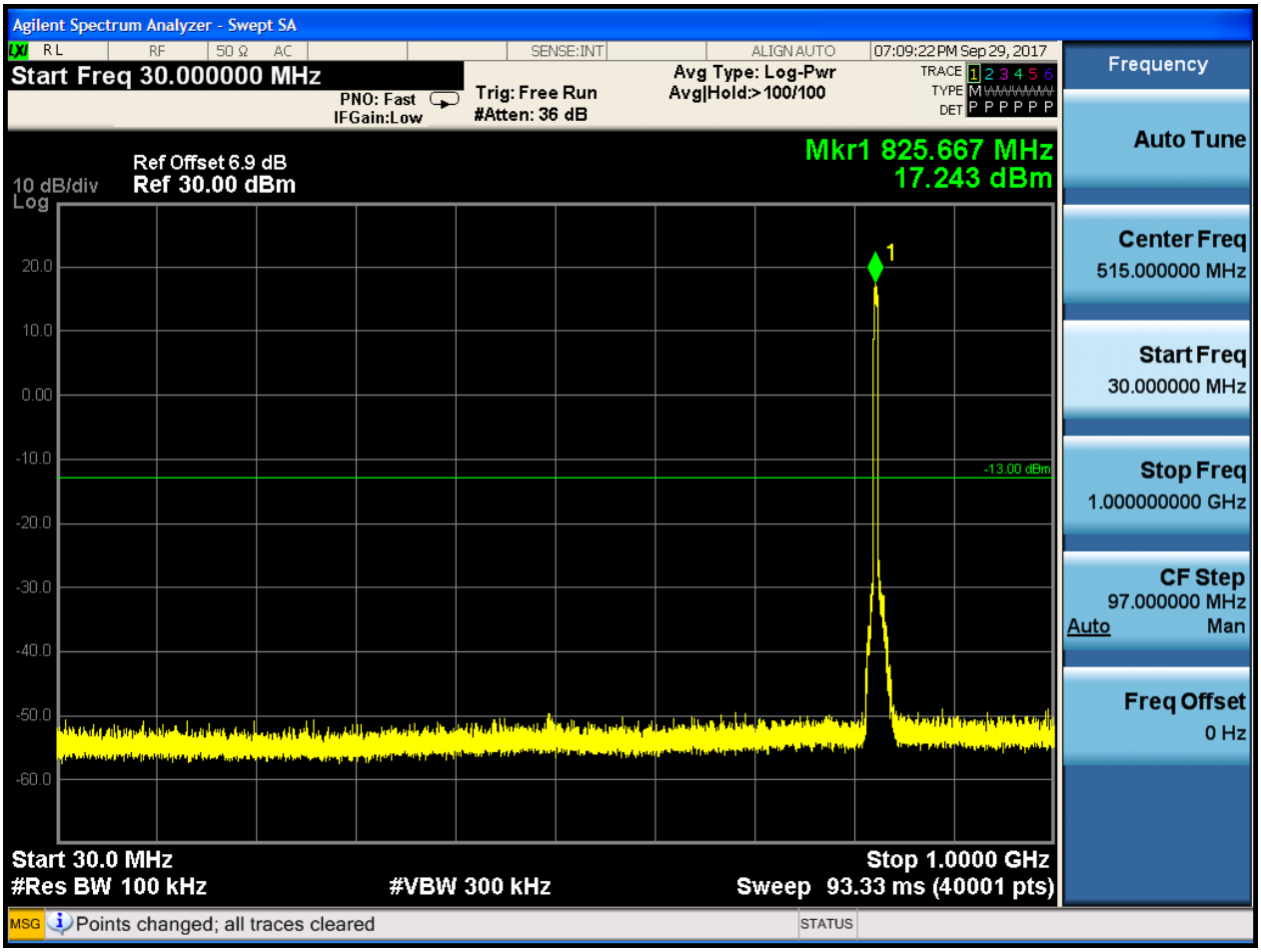
6.1.3 Test Band = WCDMA850

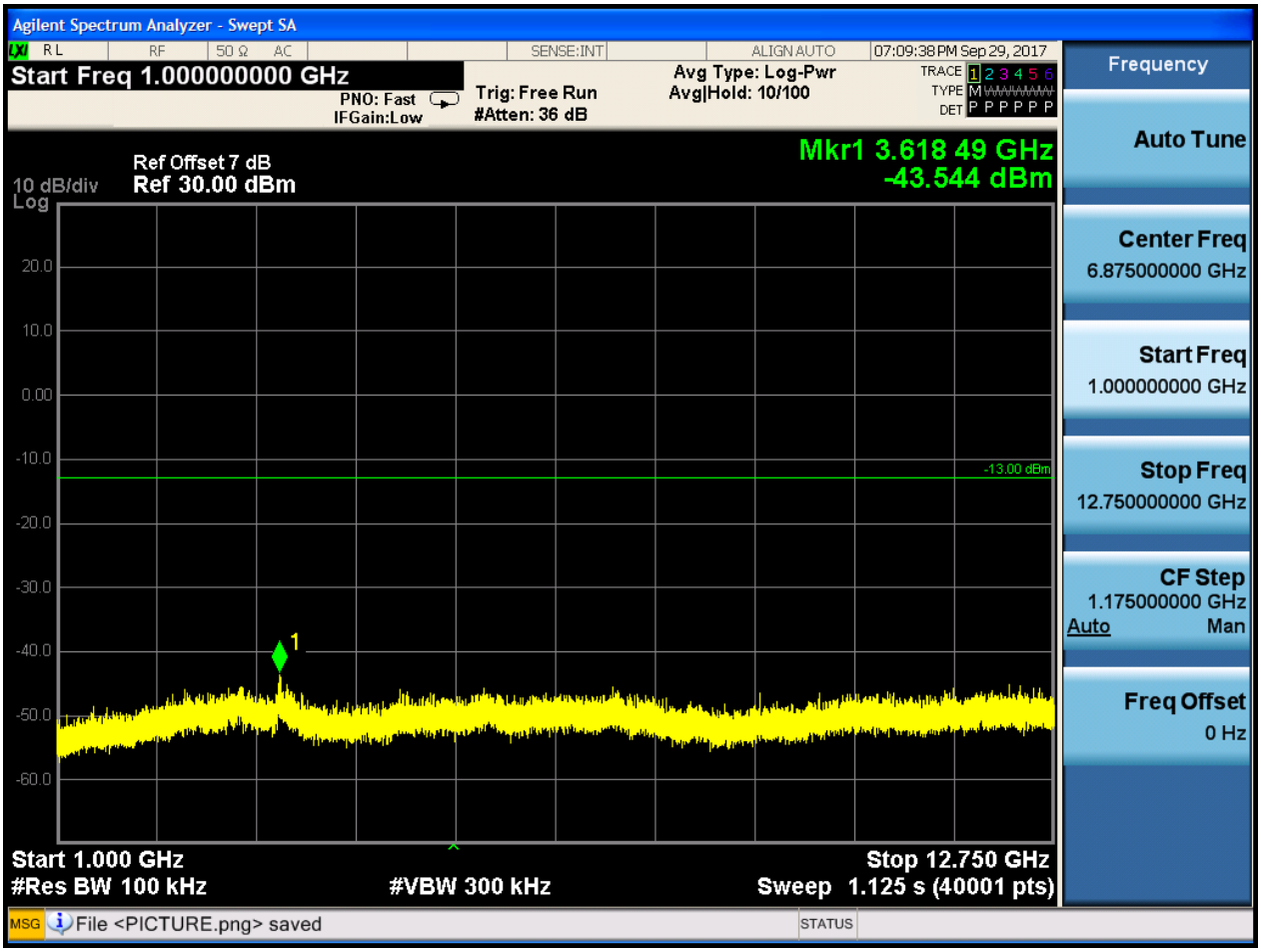
6.1.3.1 Test Mode = UMTS/TM1

6.1.3.1.1 Test Channel = LCH

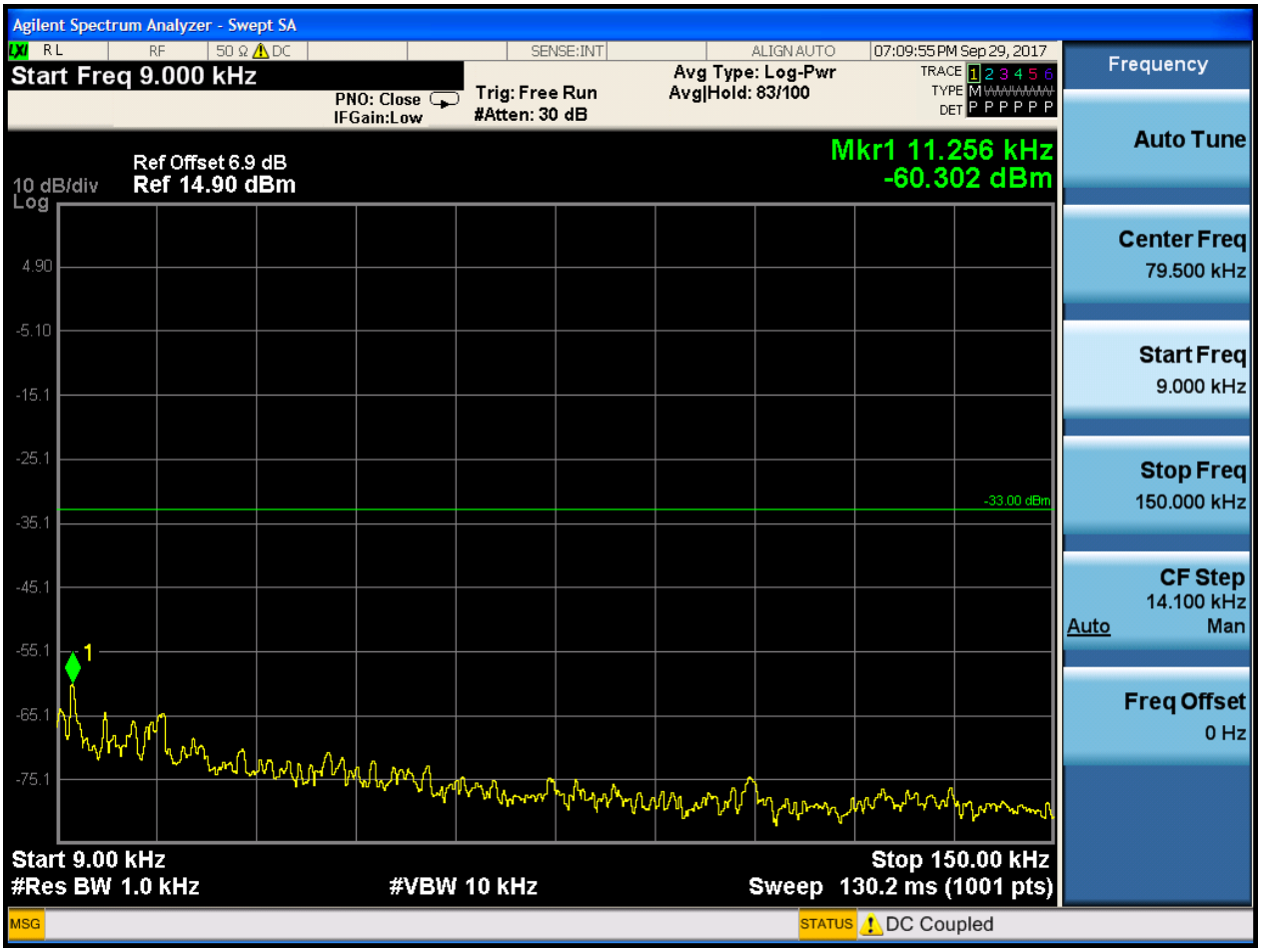


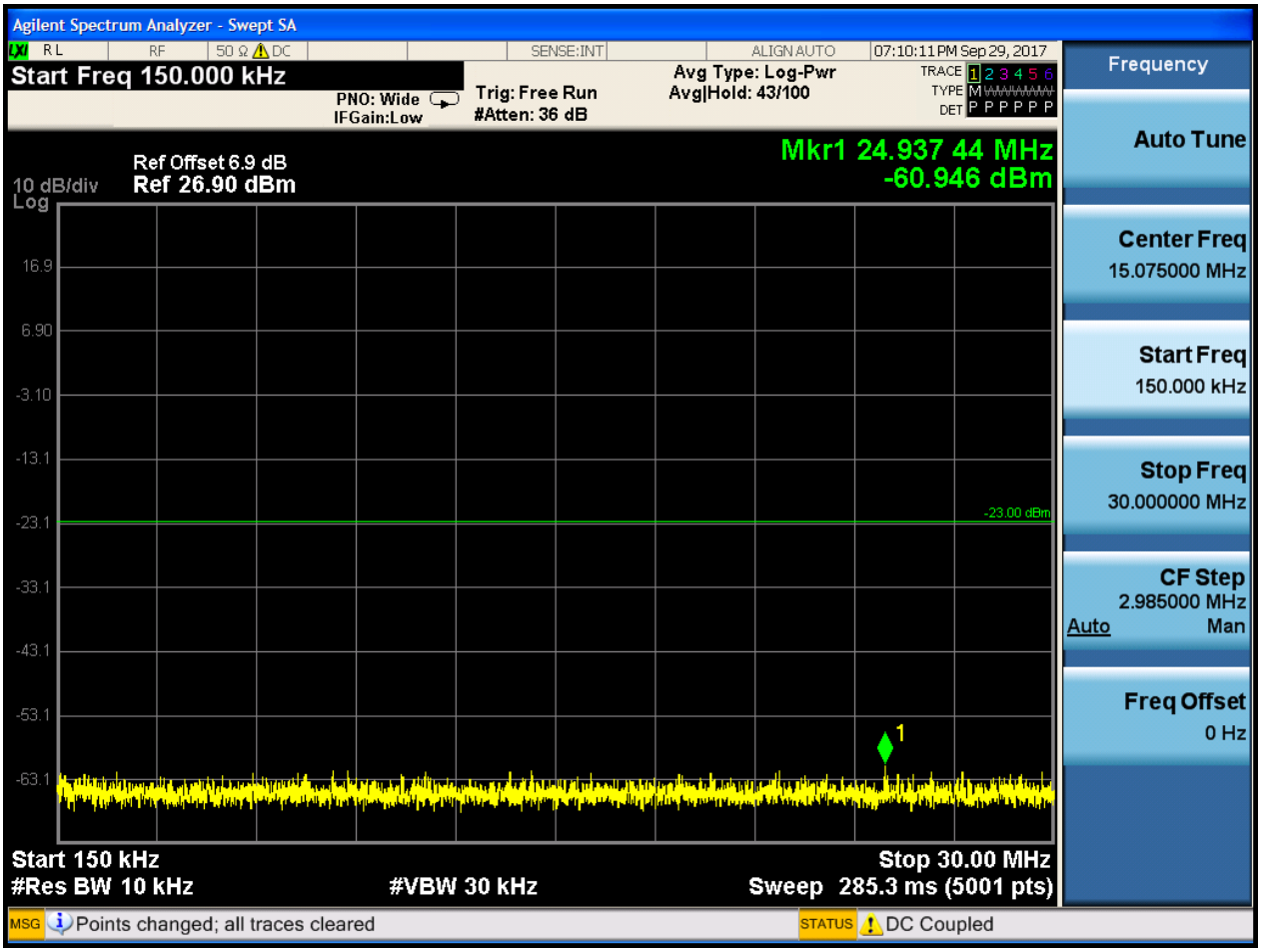


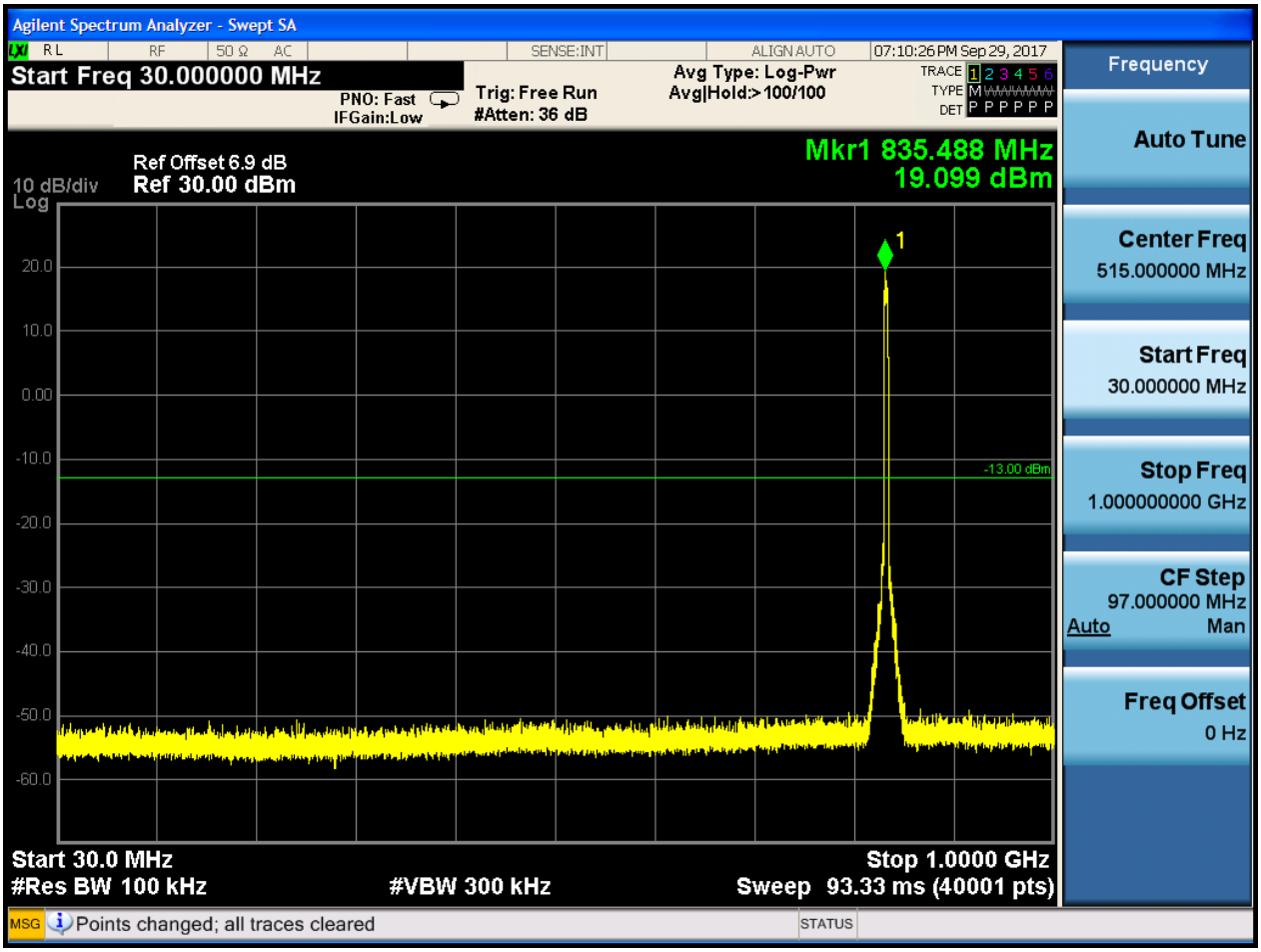


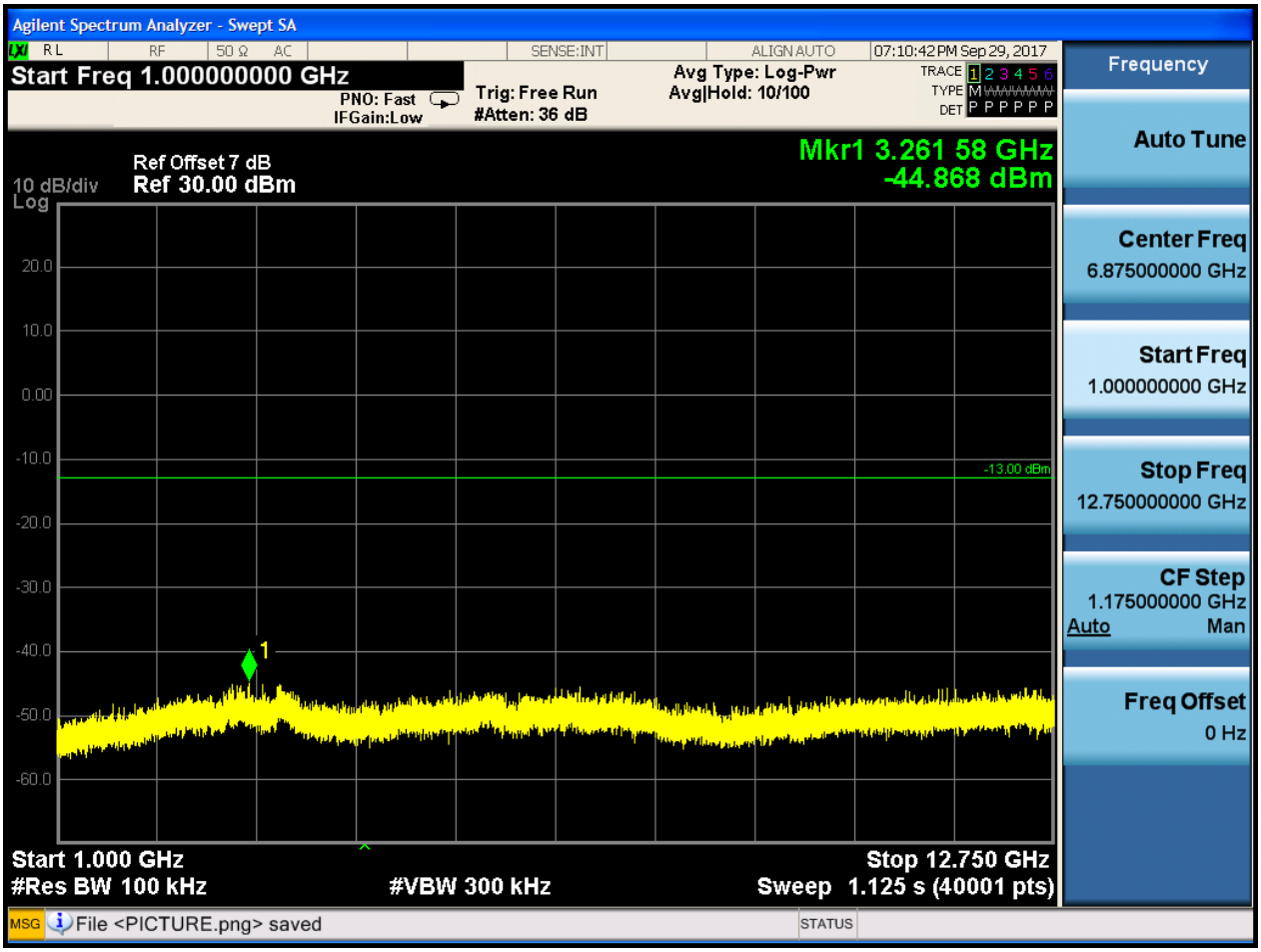


6.1.3.1.2 Test Channel = MCH

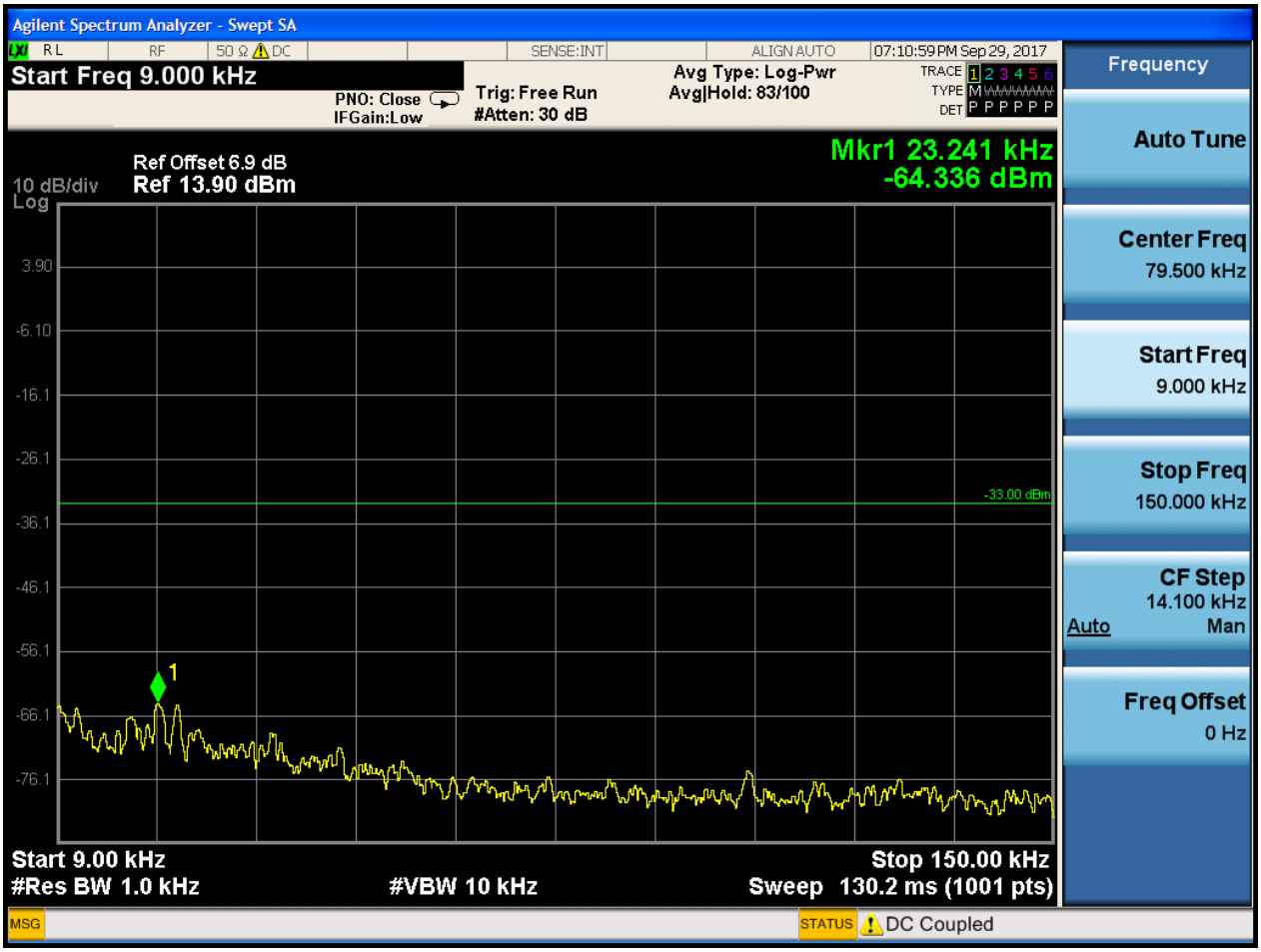


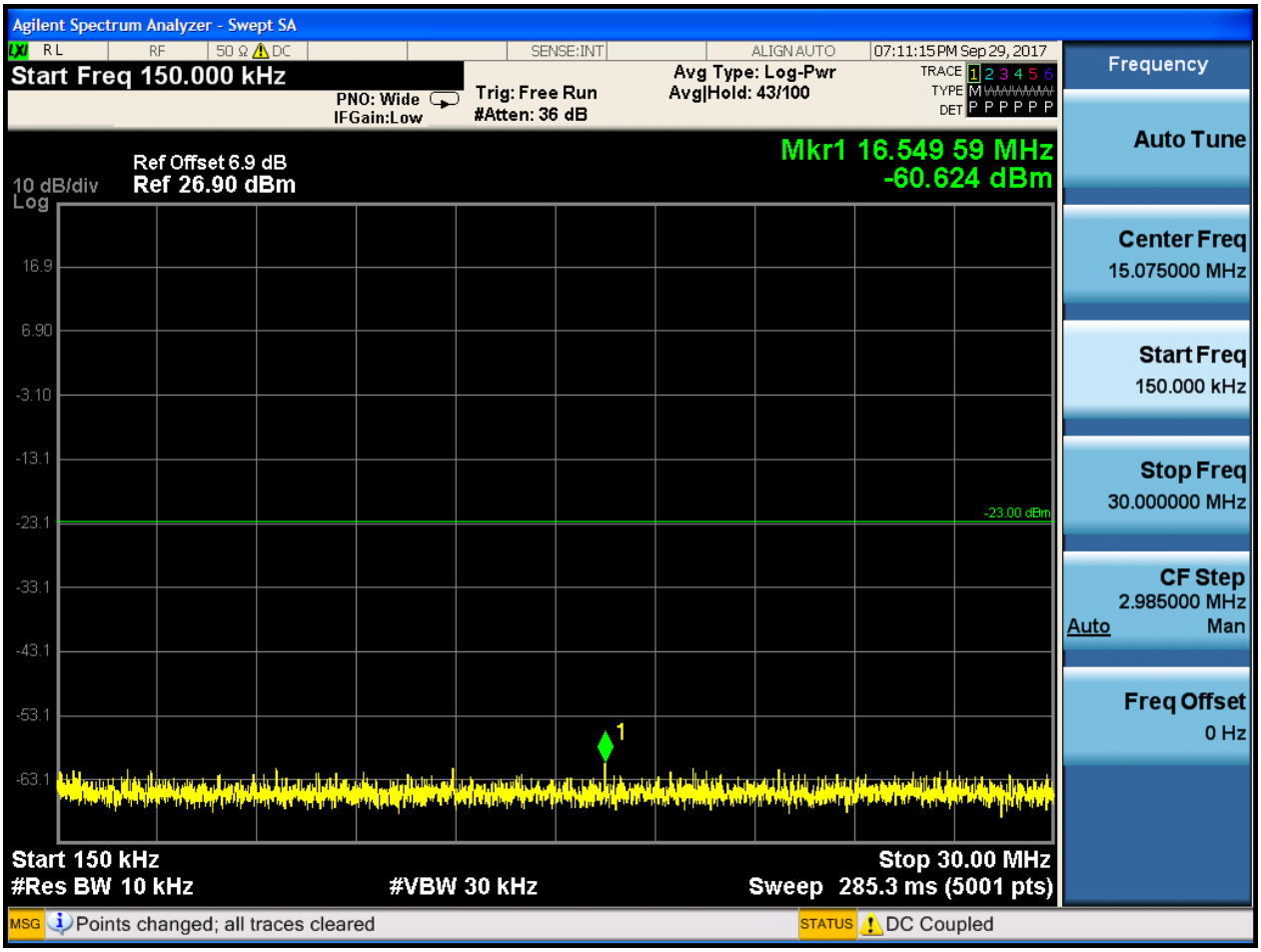


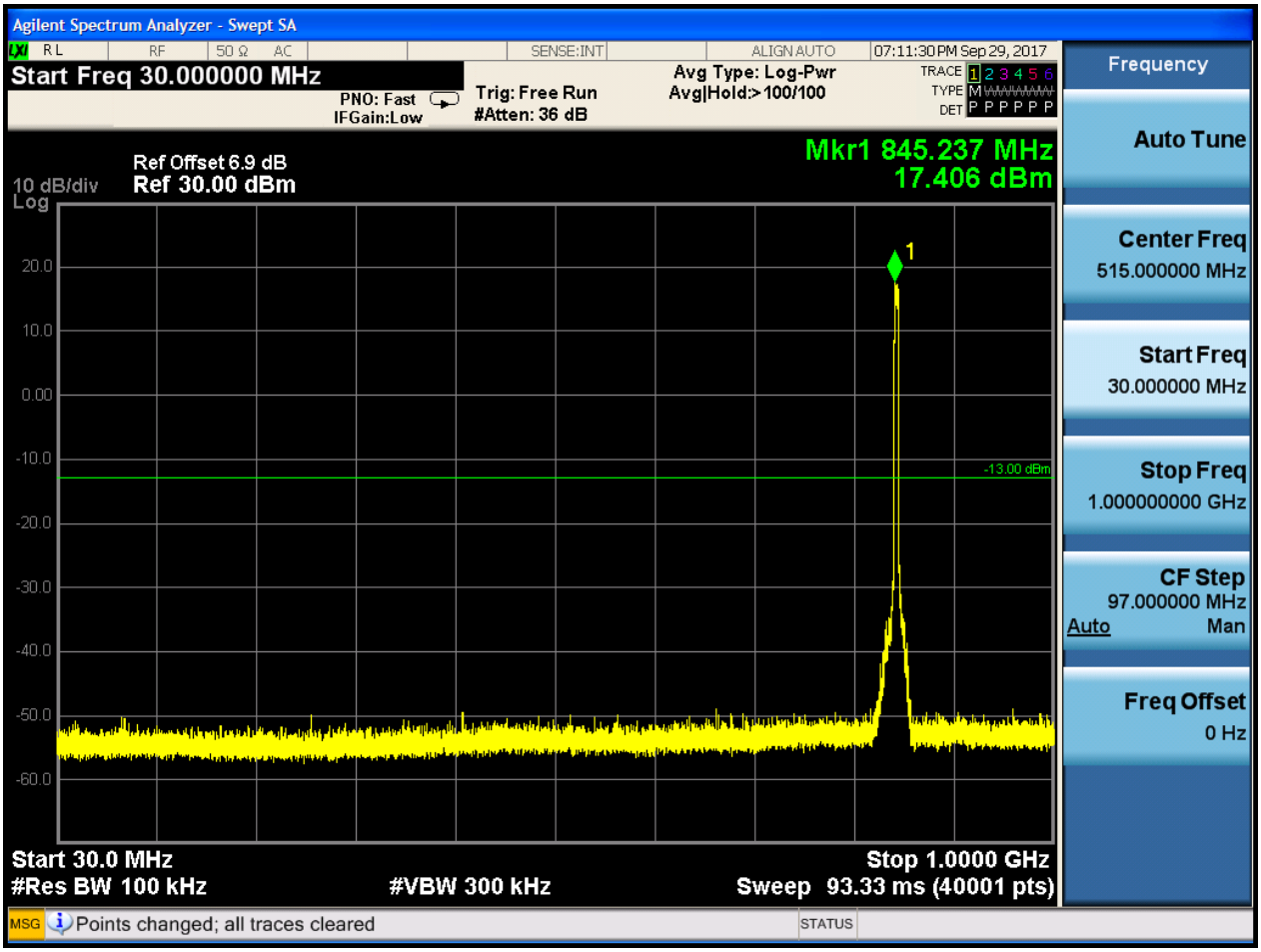


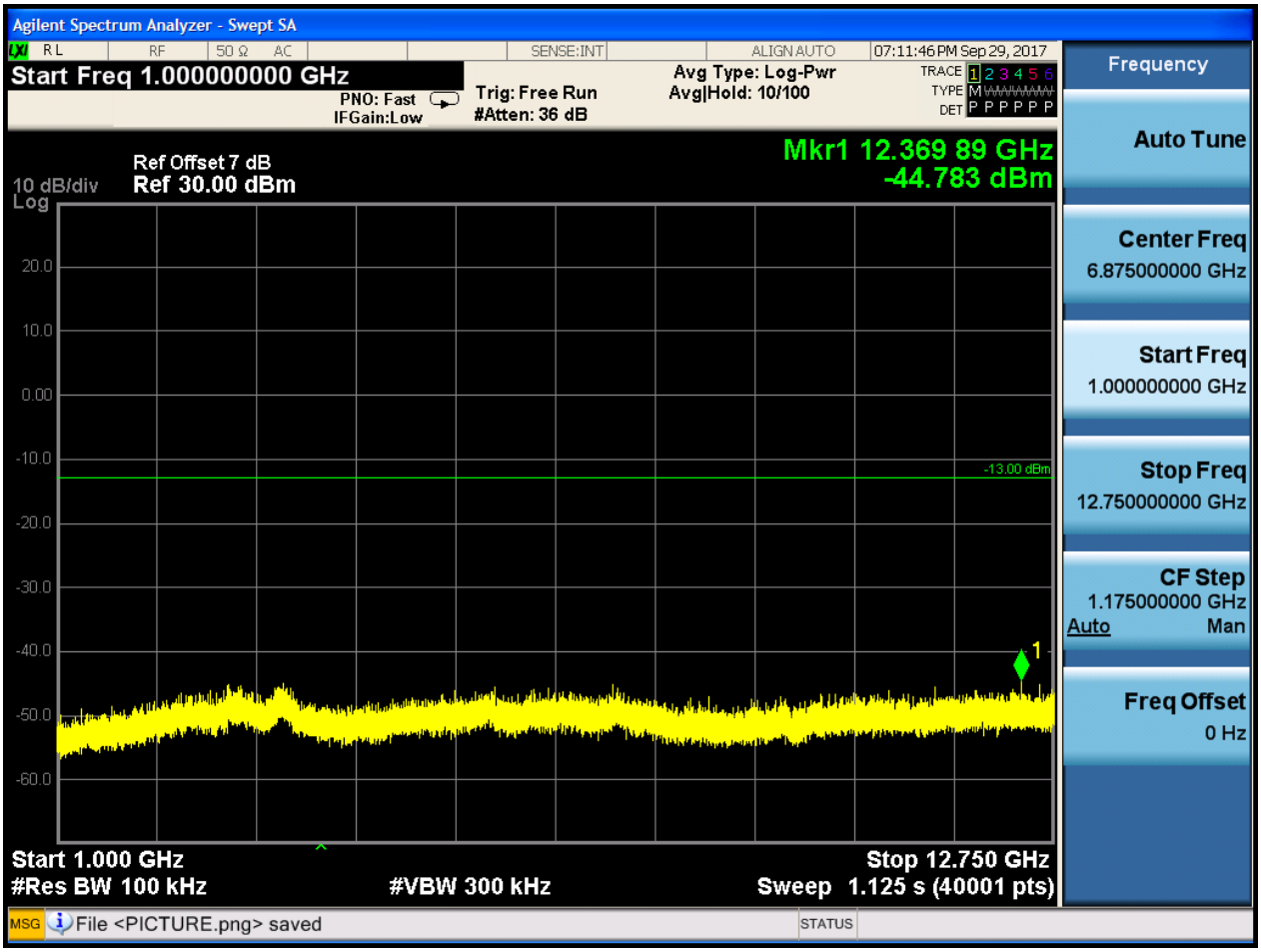


6.1.3.1.3 Test Channel = HCH









7Appendix_G: Field Strength of Spurious Radiation

Note: We tested all modes, but the data presented below is the worst case.

9kHz~150kHz, RBW = 200Hz, VBW = 600 Hz, Detector: PK

150kHz~30MHz, RBW = 9kHz, VBW = 30k Hz, Detector: PK

30MHz~1GHz, RBW = 100 kHz, VBW = 300 kHz. Detector: PK

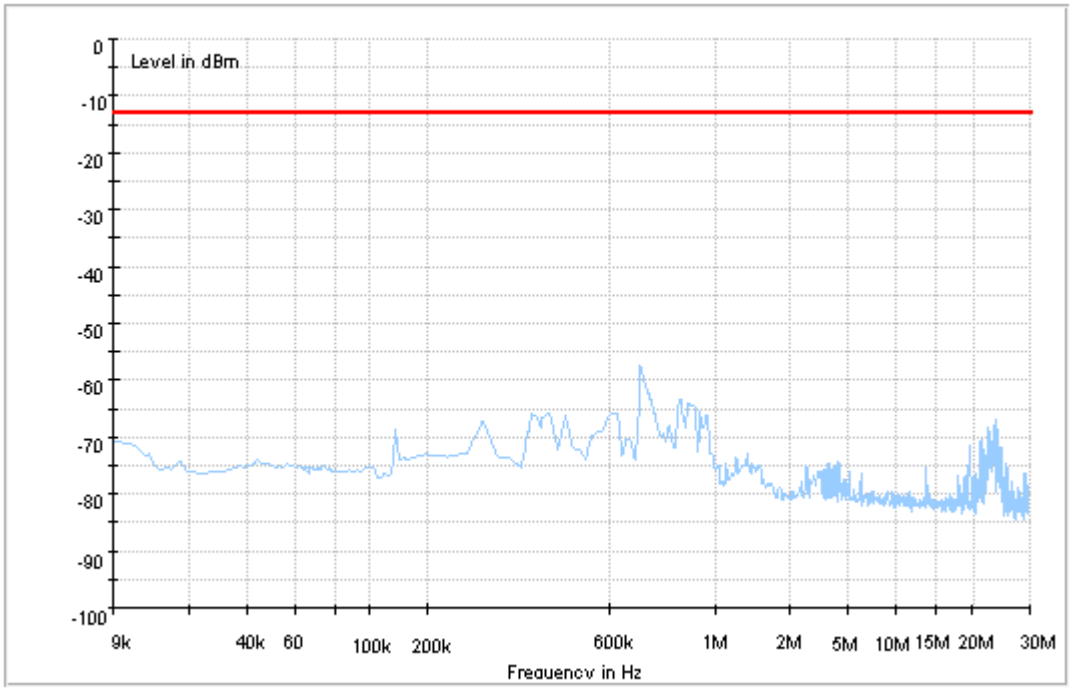
Above 1GHz, RBW = 1 MHz, VBW = 3 MHz. Detector: PK

Part I - Test Plots

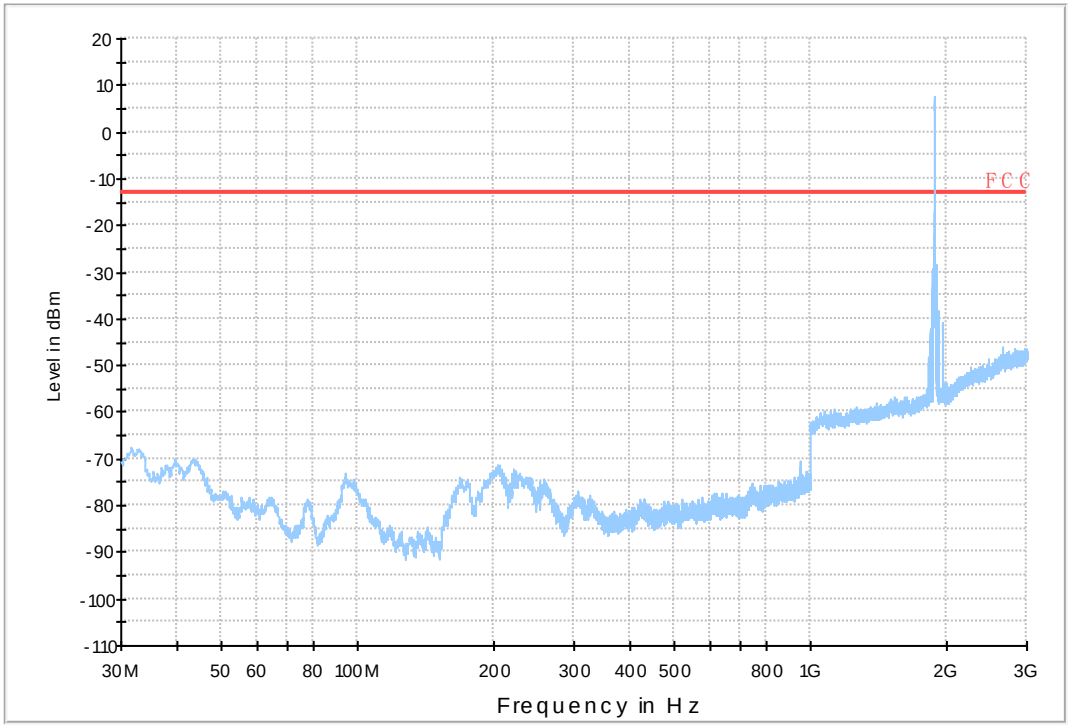
7.1 For UMTS

7.1.1 Test Band = WCDMA1900_ANT1

7.1.1.1 Test Mode = UMTS/TM1



Copy of FCC PART24 WCDMA1900_L



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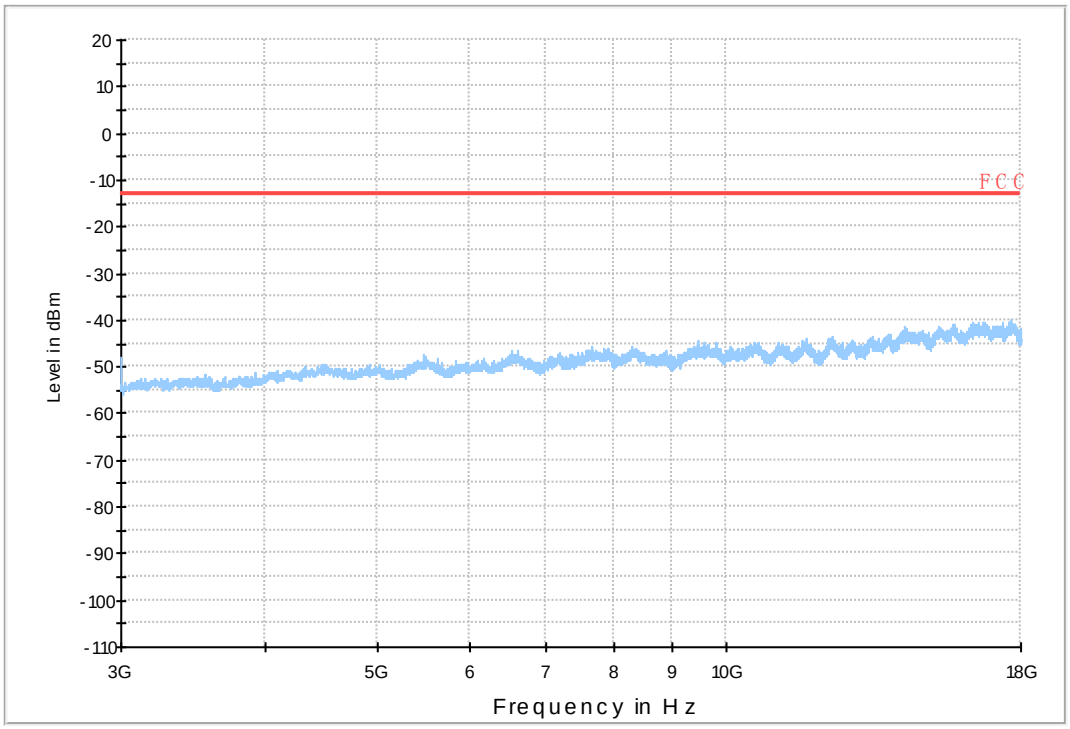
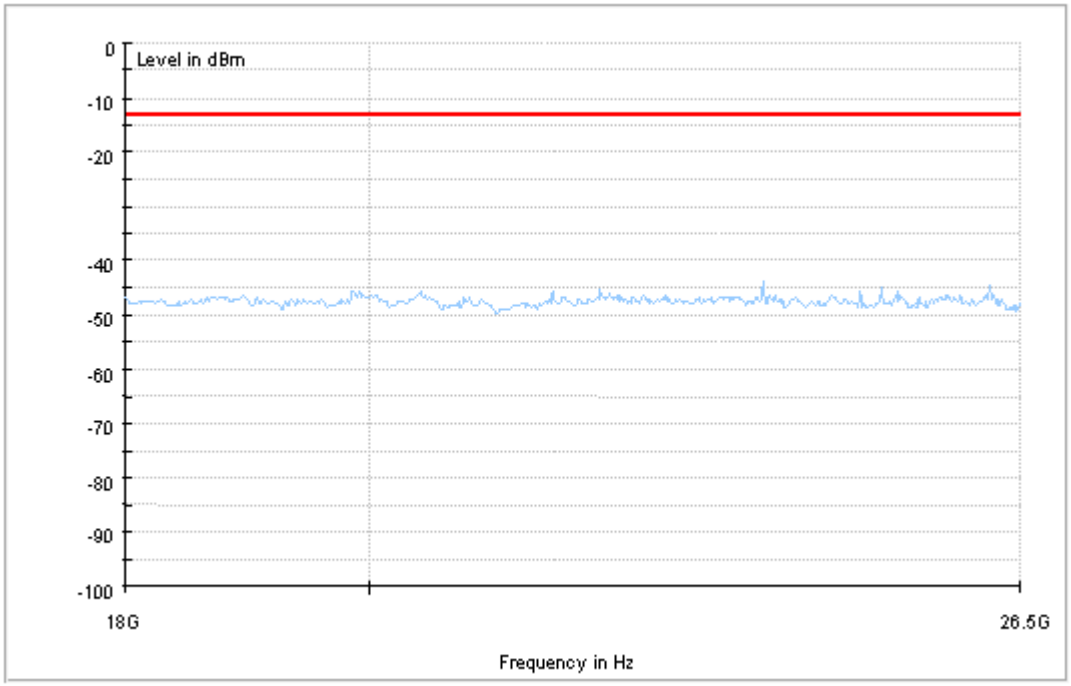
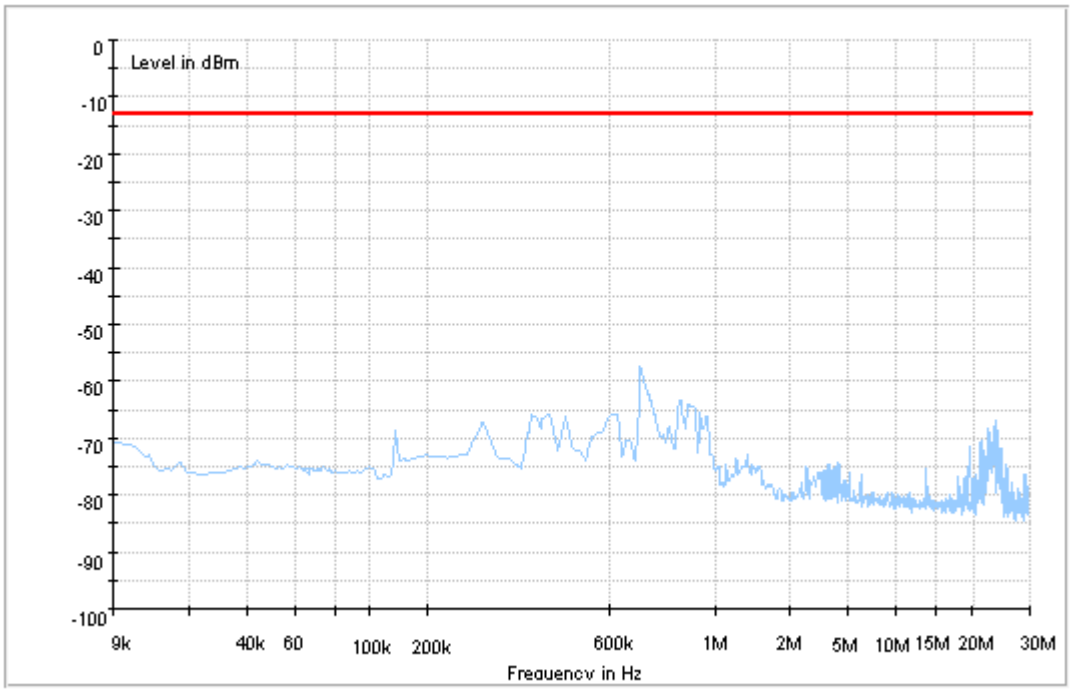




7.1.2 Test Band = WCDMA1900_ANT2

7.1.2.1 Test Mode = UMTS/TM1



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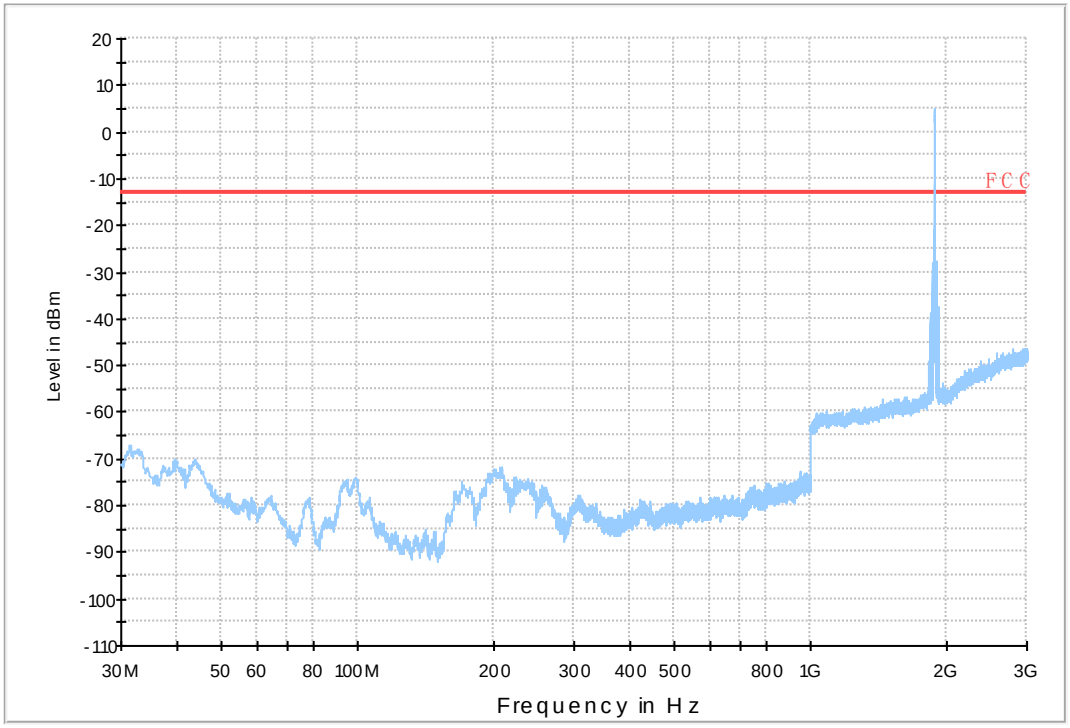

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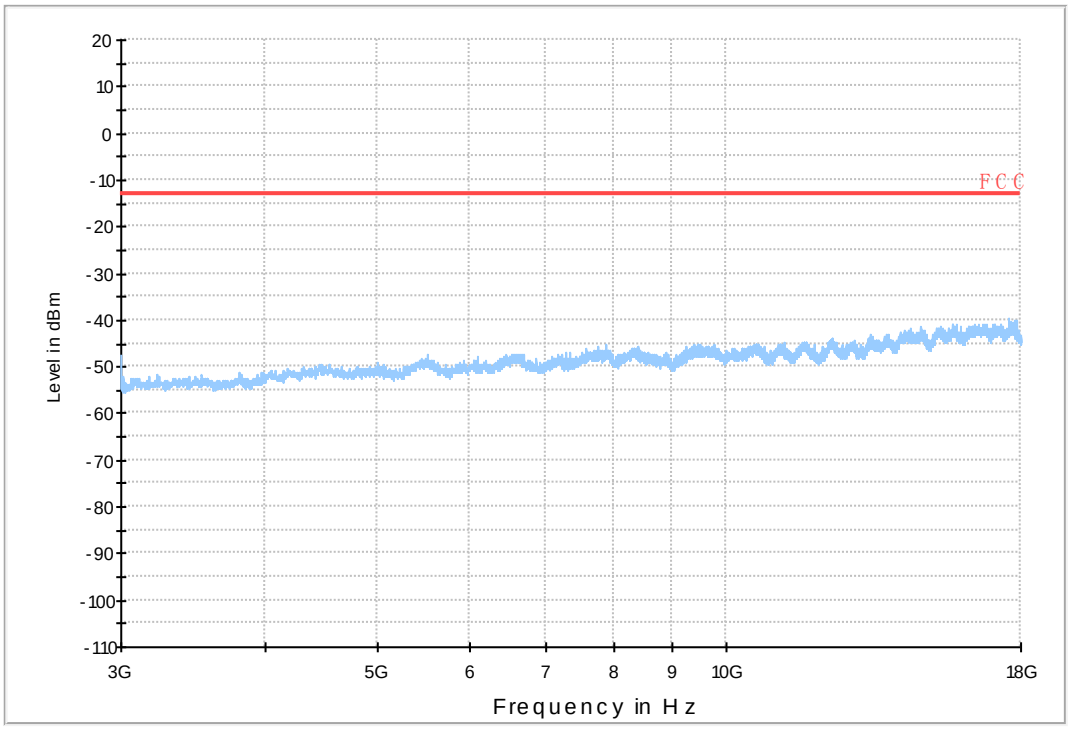
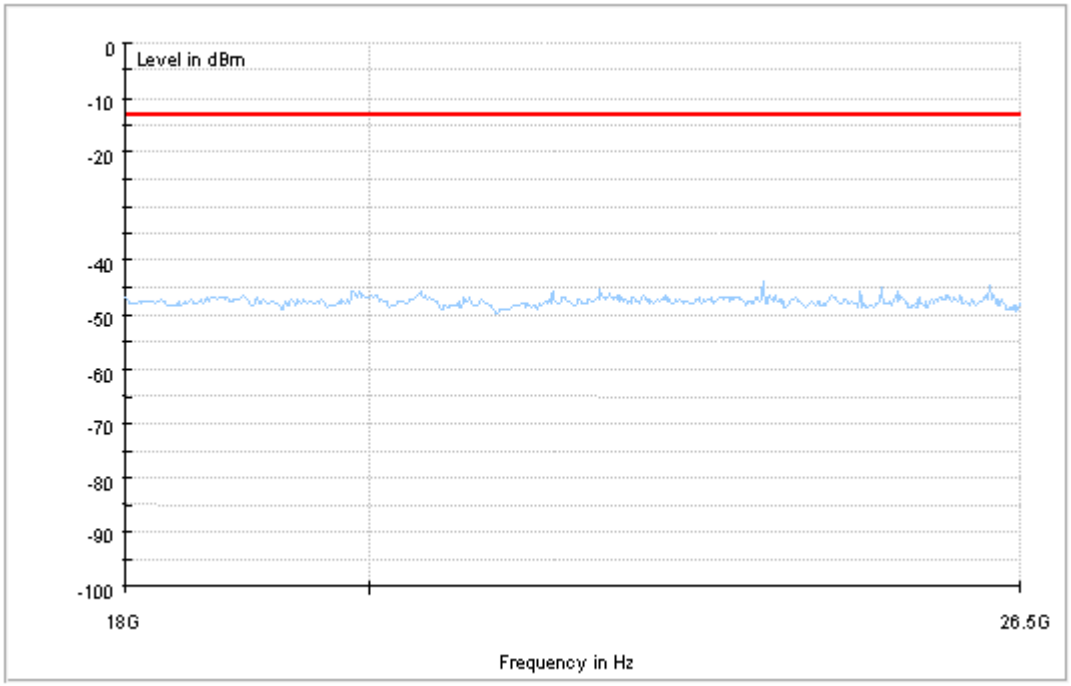
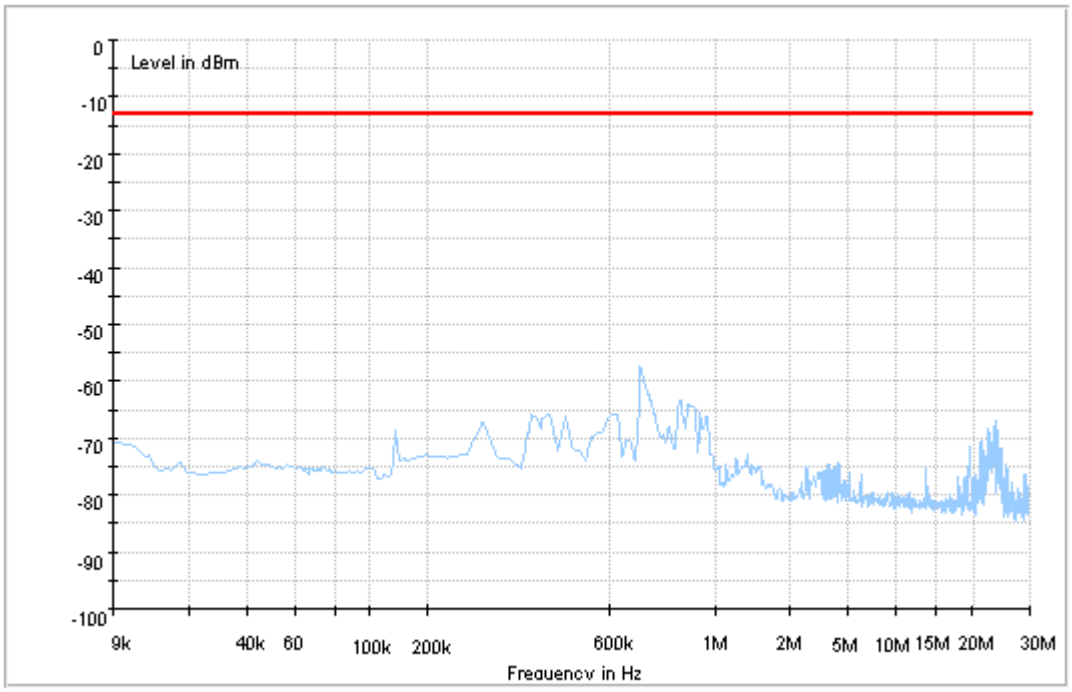




7.1.3 Test Band = WCDMA1700_ANT1

7.1.3.1 Test Mode = UMTS/TM1



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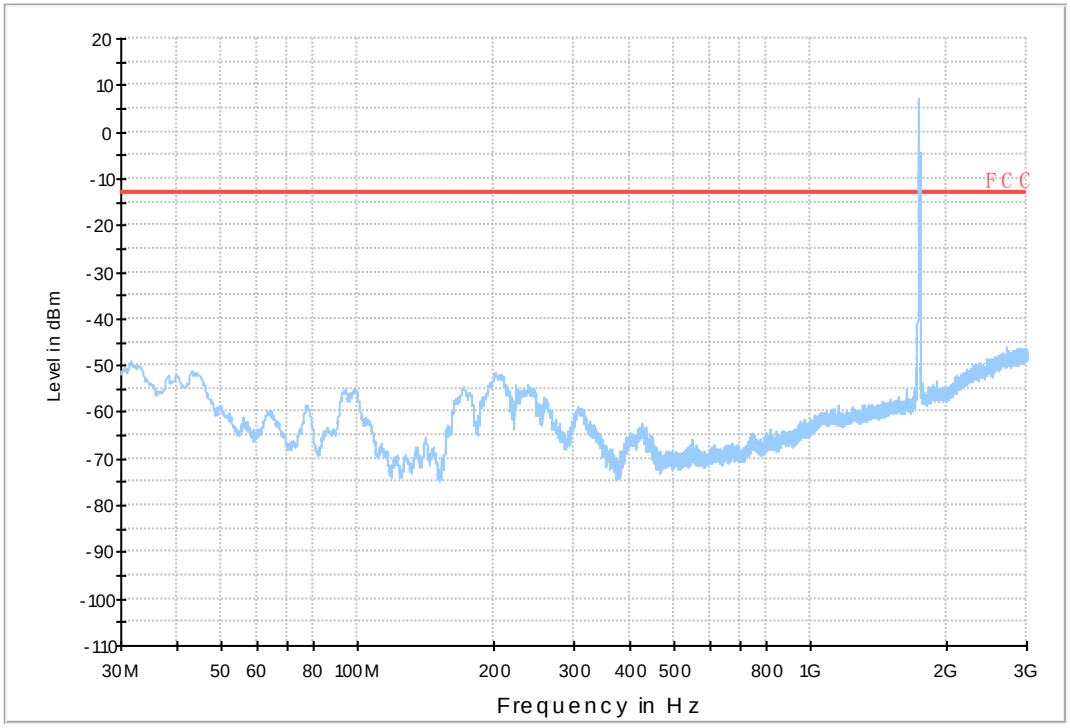

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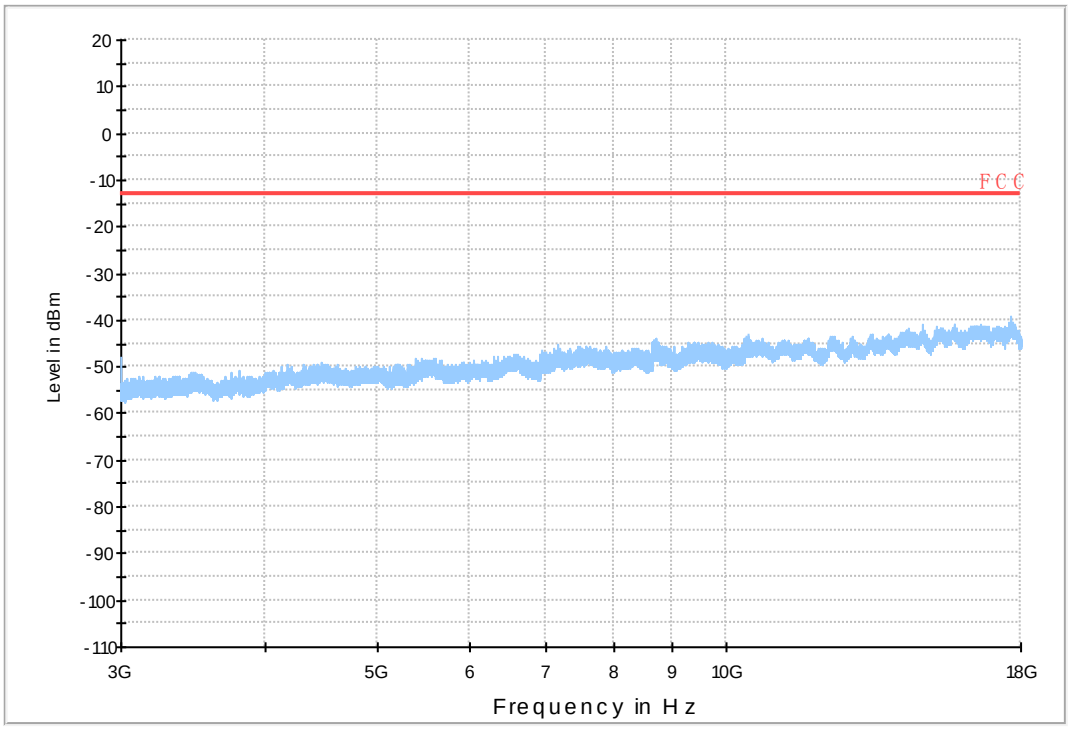
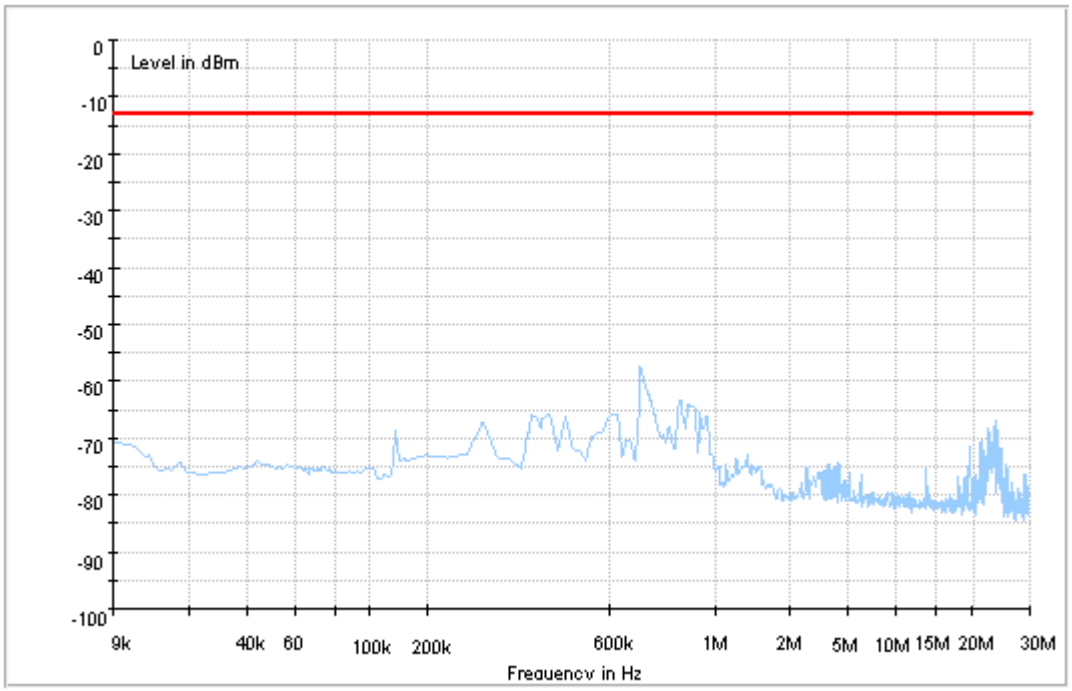


7.1.4 Test Band = WCDMA1700_ANT2

7.1.4.1 Test Mode = UMTS/TM1



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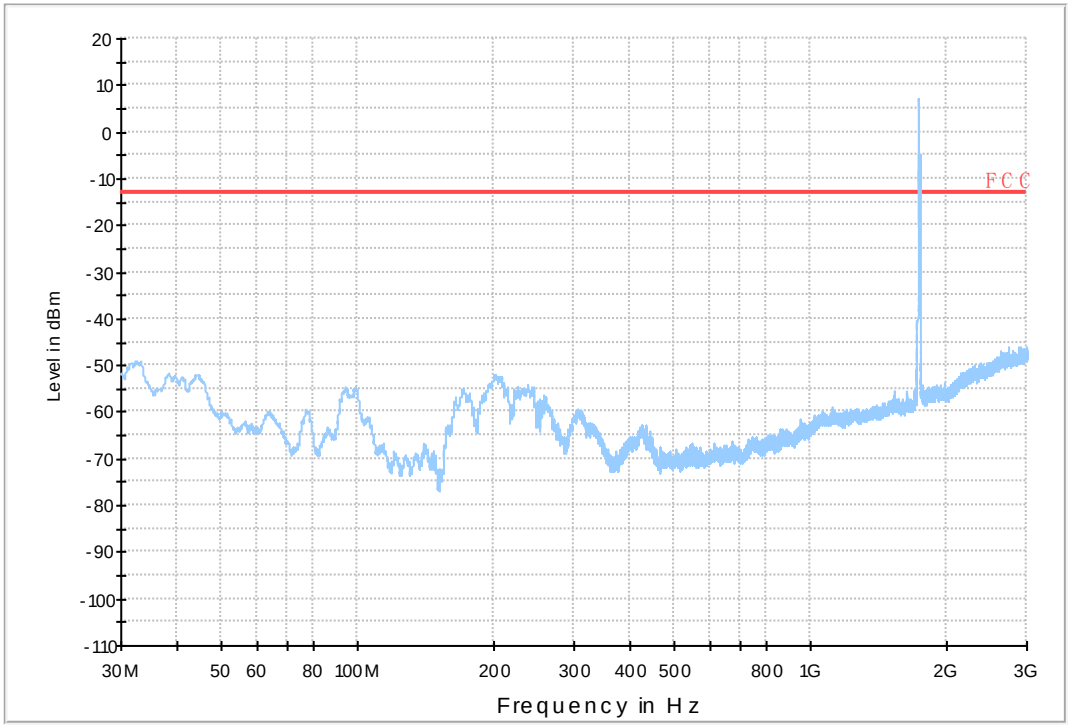

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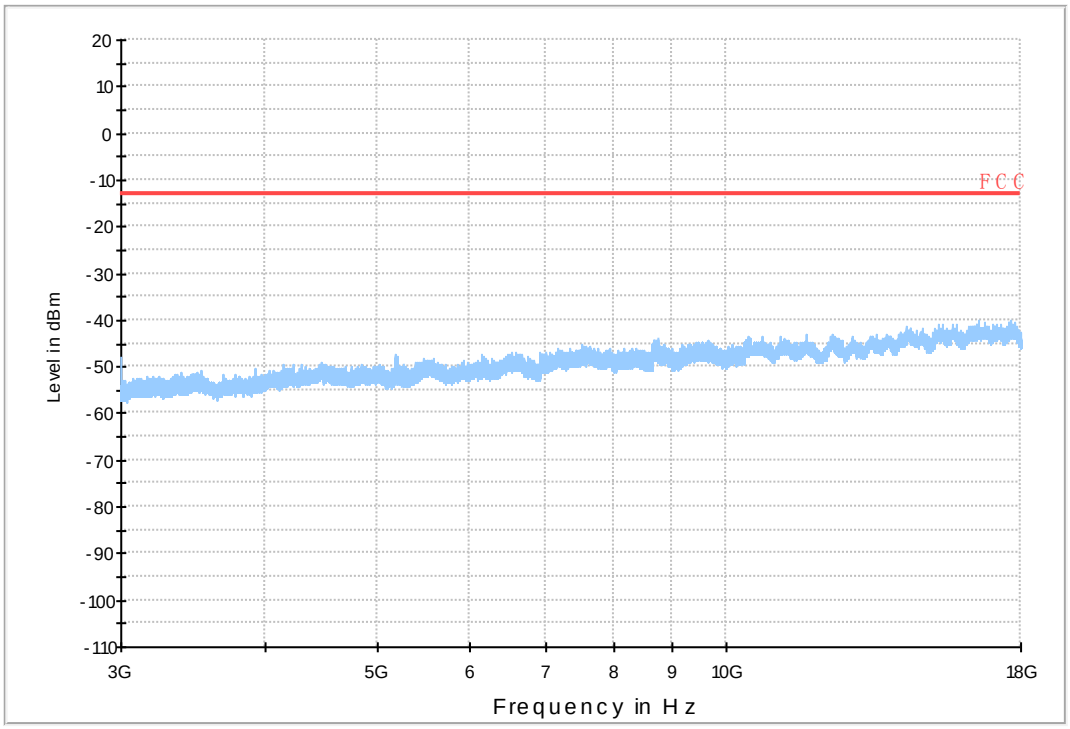
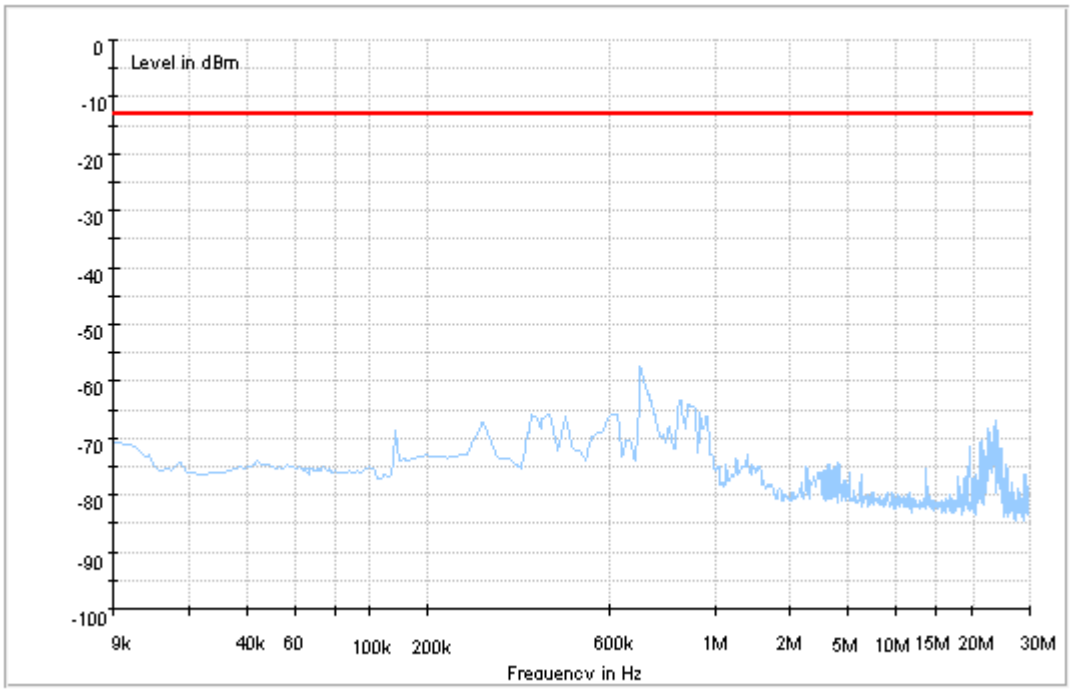


7.1.5 Test Band = WCDMA850_ANT1

7.1.5.1 Test Mode = UMTS/TM1



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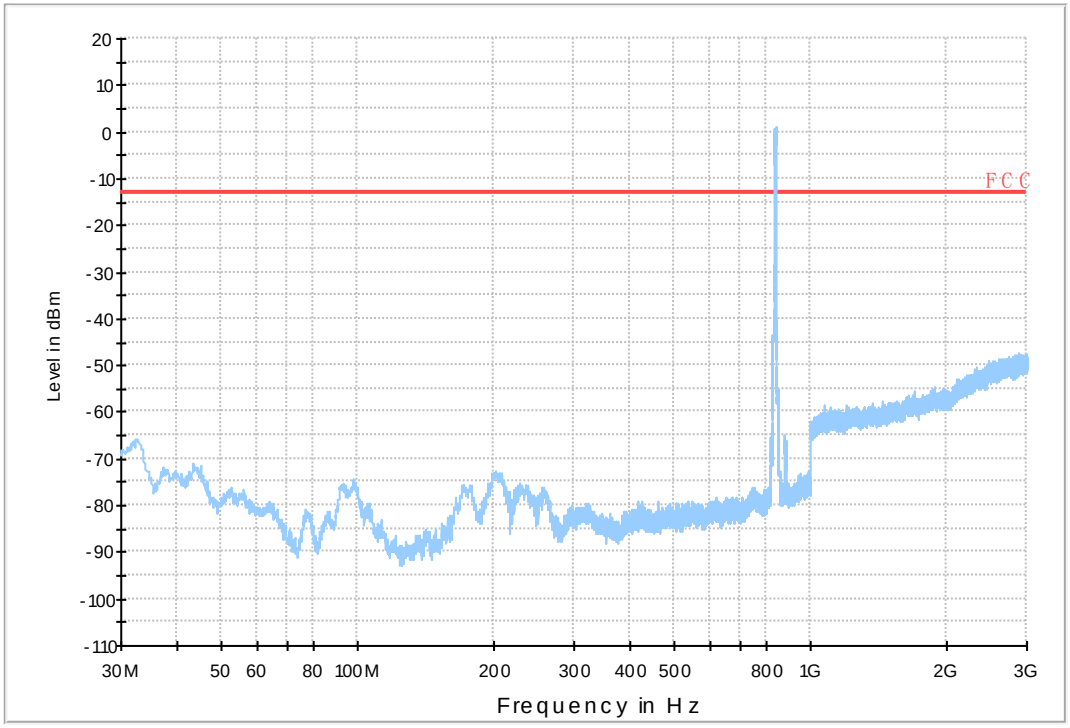

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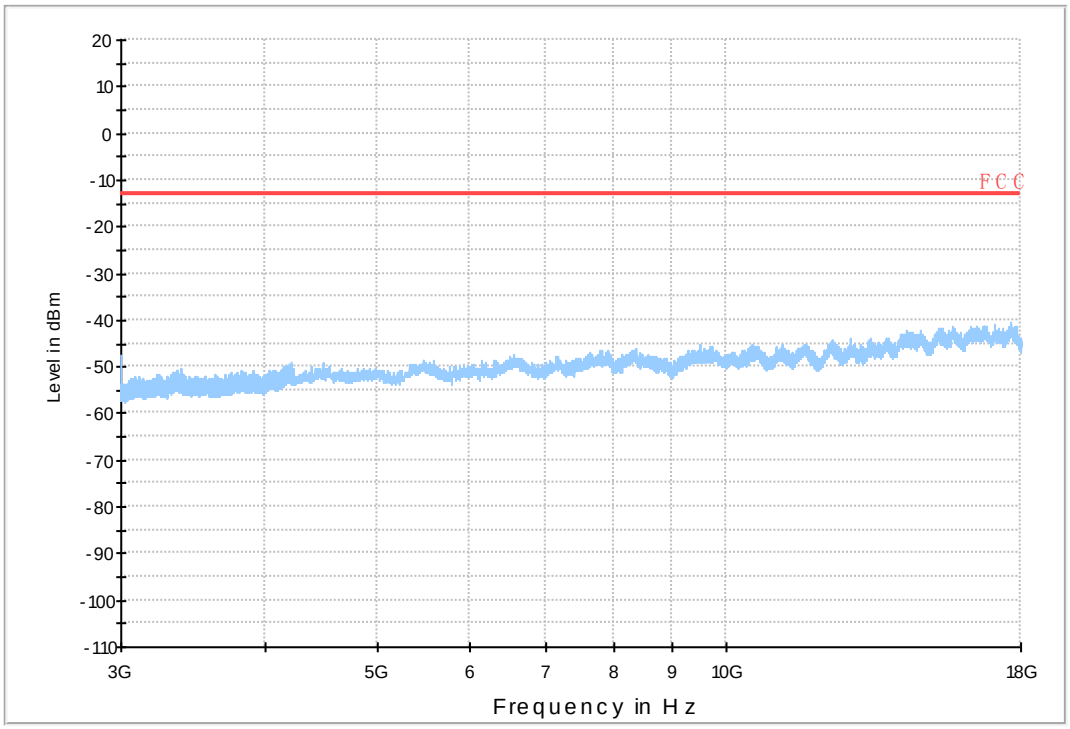
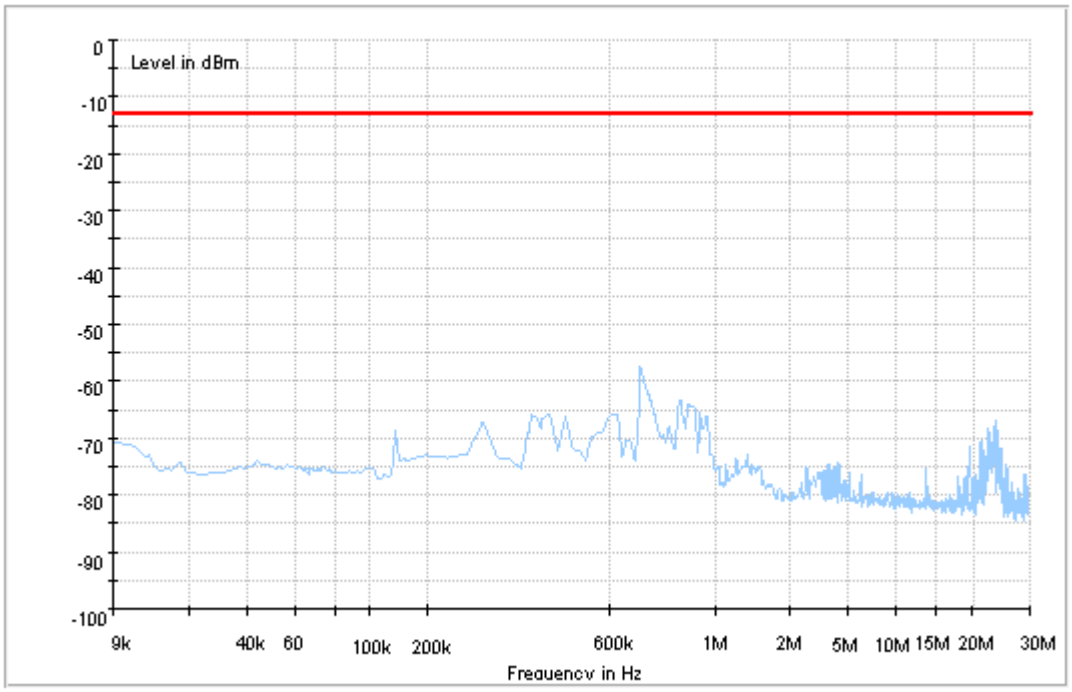


7.1.6 Test Band = WCDMA850_ANT2

7.1.6.1 Test Mode = UMTS/TM1



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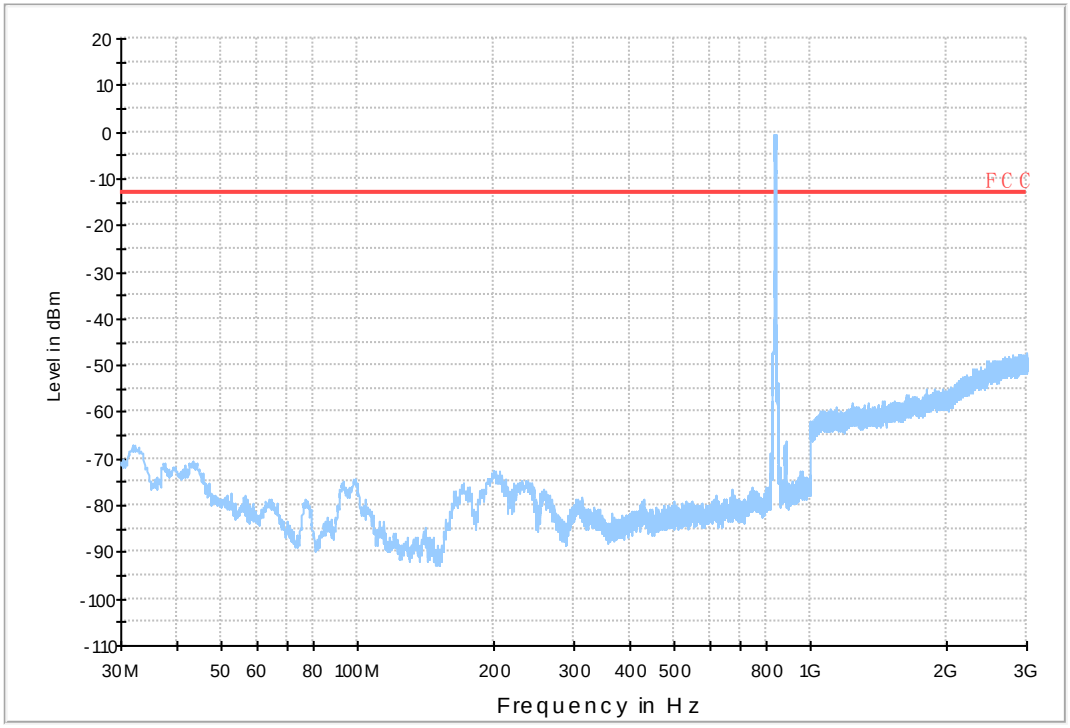

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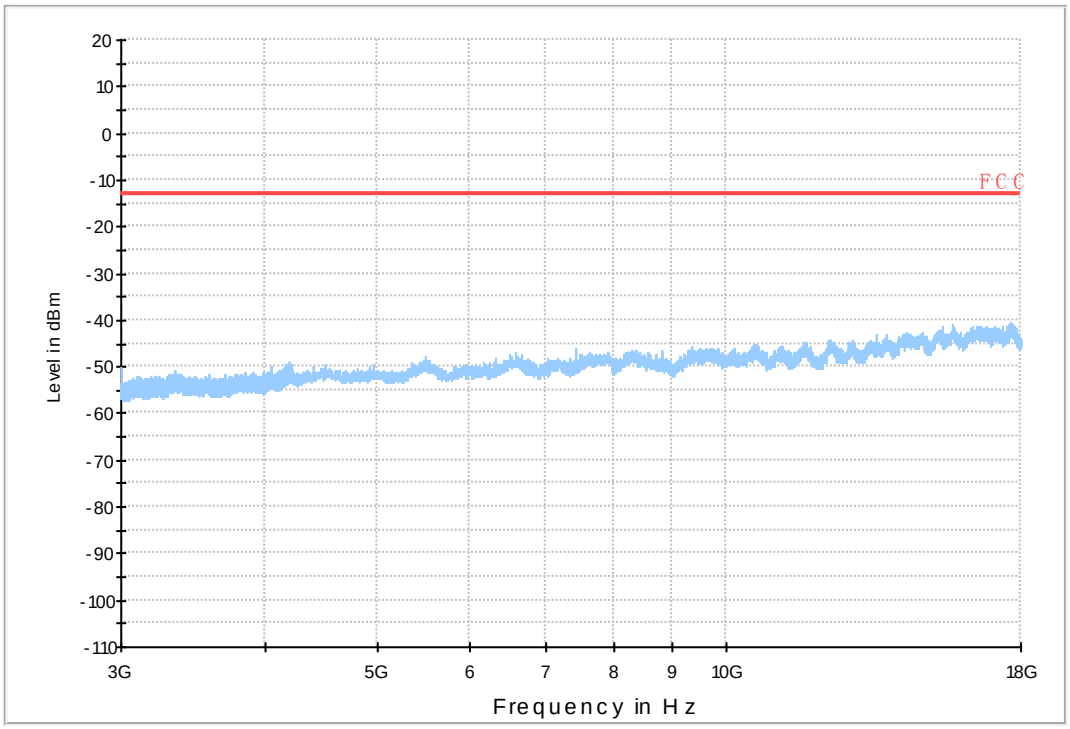

8Appendix_H: Frequency Stability

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	3.04	0.00164	PASS
				VN	6.04	0.00326	PASS
				VH	-1.40	-0.00076	PASS
		MCH	TN	VL	2.41	0.00128	PASS
				VN	7.57	0.00403	PASS
				VH	10.47	0.00557	PASS
		HCH	TN	VL	0.09	0.00005	PASS
				VN	2.00	0.00105	PASS
				VH	3.78	0.00198	PASS
WCDMA1700	UMTS/TM1	LCH	TN	VL	-5.34	-0.00312	PASS
				VN	3.74	0.00218	PASS
				VH	5.14	0.003	PASS
		MCH	TN	VL	12.22	0.00705	PASS
				VN	6.07	0.0035	PASS
				VH	0.60	0.00035	PASS
		HCH	TN	VL	7.10	0.00405	PASS
				VN	-4.94	-0.00282	PASS
				VH	8.04	0.00459	PASS
WCDMA850	UMTS/TM1	LCH	TN	VL	-16.42	-0.01987	PASS
				VN	-4.53	-0.00548	PASS
				VH	-6.84	-0.00828	PASS
		MCH	TN	VL	-2.24	-0.00268	PASS
				VN	6.68	0.00799	PASS
				VH	-2.06	-0.00246	PASS
		HCH	TN	VL	-3.94	-0.00465	PASS
				VN	3.13	0.0037	PASS
				VH	-6.09	-0.00719	PASS

8.1.2Frequency Error vs. Temperature:

Test Band	Test Temp.	Test Mode	Test Channel	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
WCDMA1900	-30	UMTS/TM1	LCH	VN	-8.97	-0.00484	PASS
			MCH	VN	-5.23	-0.00278	PASS
			HCH	VN	4.26	0.00223	PASS
	-20	UMTS/TM1	LCH	VN	-4.20	-0.00227	PASS
			MCH	VN	0.49	0.00026	PASS
			HCH	VN	1.66	0.00087	PASS
	-10	UMTS/TM1	LCH	VN	1.37	0.00074	PASS
			MCH	VN	-4.85	-0.00258	PASS
			HCH	VN	3.69	0.00193	PASS
	0	UMTS/TM1	LCH	VN	5.97	0.00322	PASS
			MCH	VN	-3.92	-0.00209	PASS
			HCH	VN	-6.59	-0.00345	PASS
	10	UMTS/TM1	LCH	VN	-8.42	-0.00455	PASS
			MCH	VN	4.21	0.00224	PASS
			HCH	VN	11.20	0.00587	PASS
	20	UMTS/TM1	LCH	VN	-5.55	-0.003	PASS
			MCH	VN	3.36	0.00179	PASS
			HCH	VN	4.26	0.00223	PASS
	30	UMTS/TM1	LCH	VN	-6.44	-0.00348	PASS
			MCH	VN	-4.47	-0.00238	PASS
			HCH	VN	2.84	0.00149	PASS
	40	UMTS/TM1	LCH	VN	-8.53	-0.0046	PASS
			MCH	VN	8.58	0.00456	PASS
			HCH	VN	-10.19	-0.00534	PASS
	50	UMTS/TM1	LCH	VN	5.43	0.00293	PASS
			MCH	VN	6.81	0.00362	PASS
			HCH	VN	5.98	0.00313	PASS
WCDMA1700	-30	UMTS/TM1	LCH	VN	9.92	0.00579	PASS
			MCH	VN	6.85	0.00395	PASS
			HCH	VN	7.22	0.00412	PASS
	-20	UMTS/TM1	LCH	VN	-0.87	-0.00051	PASS
			MCH	VN	6.35	0.00367	PASS
			HCH	VN	2.69	0.00153	PASS
	-10	UMTS/TM1	LCH	VN	3.45	0.00201	PASS
			MCH	VN	-3.45	-0.00199	PASS
			HCH	VN	5.23	0.00298	PASS
	0	UMTS/TM1	LCH	VN	-9.99	-0.00583	PASS

Test Band	Test Temp.	Test Mode	Test Channel	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
			MCH	VN	-8.67	-0.005	PASS
			HCH	VN	5.29	0.00302	PASS
	10	UMTS/TM1	LCH	VN	-3.13	-0.00183	PASS
			MCH	VN	2.37	0.00137	PASS
			HCH	VN	9.83	0.00561	PASS
	20	UMTS/TM1	LCH	VN	-1.43	-0.00084	PASS
			MCH	VN	10.54	0.00608	PASS
			HCH	VN	1.37	0.00078	PASS
	30	UMTS/TM1	LCH	VN	7.60	0.00444	PASS
			MCH	VN	2.72	0.00157	PASS
			HCH	VN	-7.68	-0.00438	PASS
	40	UMTS/TM1	LCH	VN	11.78	0.00688	PASS
			MCH	VN	3.40	0.00196	PASS
			HCH	VN	6.67	0.00381	PASS
	50	UMTS/TM1	LCH	VN	8.38	0.00489	PASS
			MCH	VN	10.42	0.00601	PASS
			HCH	VN	4.23	0.00241	PASS
WCDMA850	-30	UMTS/TM1	LCH	VN	-0.96	-0.00116	PASS
			MCH	VN	0.70	0.00084	PASS
			HCH	VN	-7.54	-0.00891	PASS
	-20	UMTS/TM1	LCH	VN	2.01	0.00243	PASS
			MCH	VN	-0.76	-0.00091	PASS
			HCH	VN	-7.78	-0.00919	PASS
	-10	UMTS/TM1	LCH	VN	-3.28	-0.00397	PASS
			MCH	VN	-4.75	-0.00568	PASS
			HCH	VN	-2.91	-0.00344	PASS
	0	UMTS/TM1	LCH	VN	-2.17	-0.00263	PASS
			MCH	VN	3.46	0.00414	PASS
			HCH	VN	-4.17	-0.00493	PASS
	10	UMTS/TM1	LCH	VN	-5.86	-0.00709	PASS
			MCH	VN	-5.92	-0.00708	PASS
			HCH	VN	-9.41	-0.01112	PASS
	20	UMTS/TM1	LCH	VN	-6.06	-0.00733	PASS
			MCH	VN	-2.33	-0.00279	PASS
			HCH	VN	-20.40	-0.0241	PASS
	30	UMTS/TM1	LCH	VN	-7.89	-0.00955	PASS
			MCH	VN	-4.91	-0.00587	PASS
			HCH	VN	-11.51	-0.0136	PASS
	40	UMTS/TM1	LCH	VN	0.92	0.00111	PASS
			MCH	VN	5.72	0.00684	PASS

Test Band	Test Temp.	Test Mode	Test Channel	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
			HCH	VN	0.09	0.00011	PASS
	50	UMTS/TM1	LCH	VN	-1.21	-0.00146	PASS
			MCH	VN	-6.81	-0.00814	PASS
			HCH	VN	-5.48	-0.00647	PASS

END