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	23.31	24.64	33	PASS
		MCH	23.31	24.68	33	PASS
		HCH	23.25	24.59	33	PASS
WCDMA1700	UMTS/TM1	LCH	23.81	24.01	30	PASS
		MCH	23.71	23.91	30	PASS
		HCH	23.68	23.88	30	PASS

Test Band	Test Mode	Test Channel	Conducted Power [dBm]	ERP [dBm]	Limit [dBm]	Verdict
WCDMA850	UMTS/TM1	LCH	24.06	19.81	38.5	PASS
		MCH	24.08	19.83	38.5	PASS
		HCH	23.97	19.72	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	3.44	13	PASS
		MCH	3.28	13	PASS
		HCH	3.18	13	PASS
WCDMA1700	UMTS/TM1	LCH	3.25	13	PASS
		MCH	3.24	13	PASS
		HCH	3.05	13	PASS
WCDMA850	UMTS/TM1	LCH	3.11	13	PASS
		MCH	3.1	13	PASS
		HCH	2.98	13	PASS

3Appendix_C: Modulation Characteristics

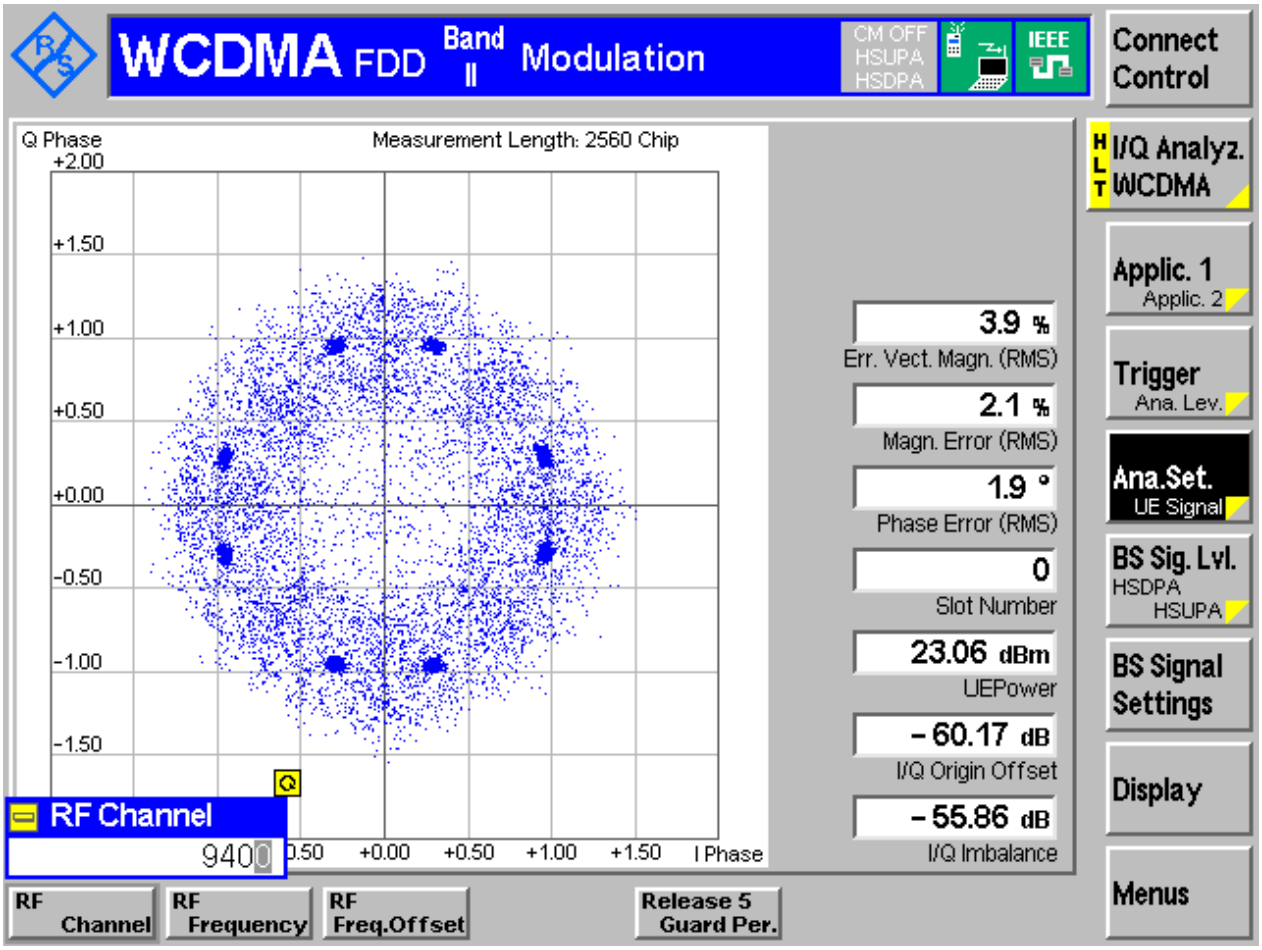
Part I - Test Plots

3.1 For UMTS

3.1.1 Test Band = WCDMA1900

3.1.1.1 Test Mode = UMTS/TM1

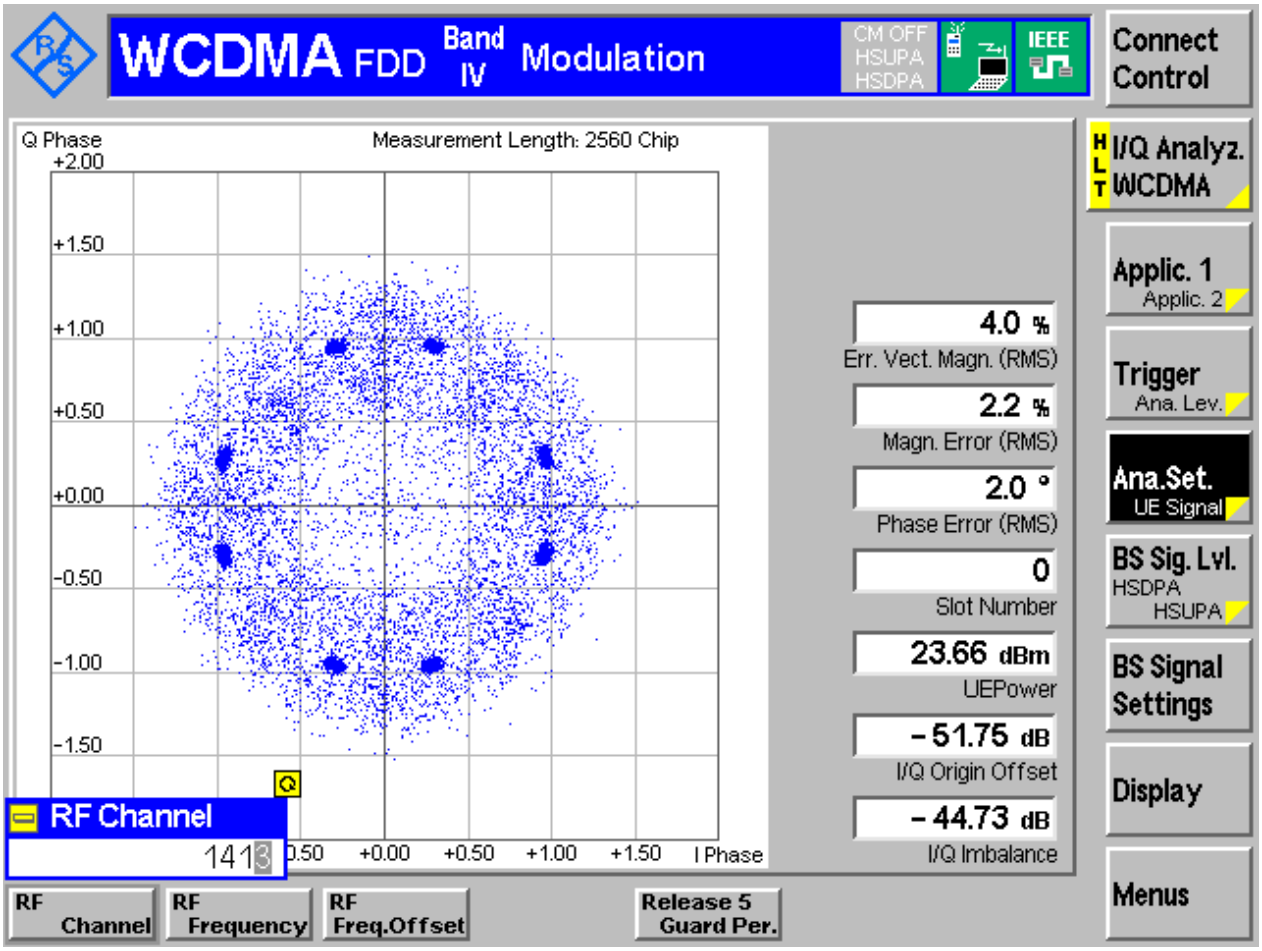
3.1.1.1.1 Test Channel = MCH



3.1.2 Test Band = WCDMA1700

3.1.2.1 Test Mode = UMTS/TM1

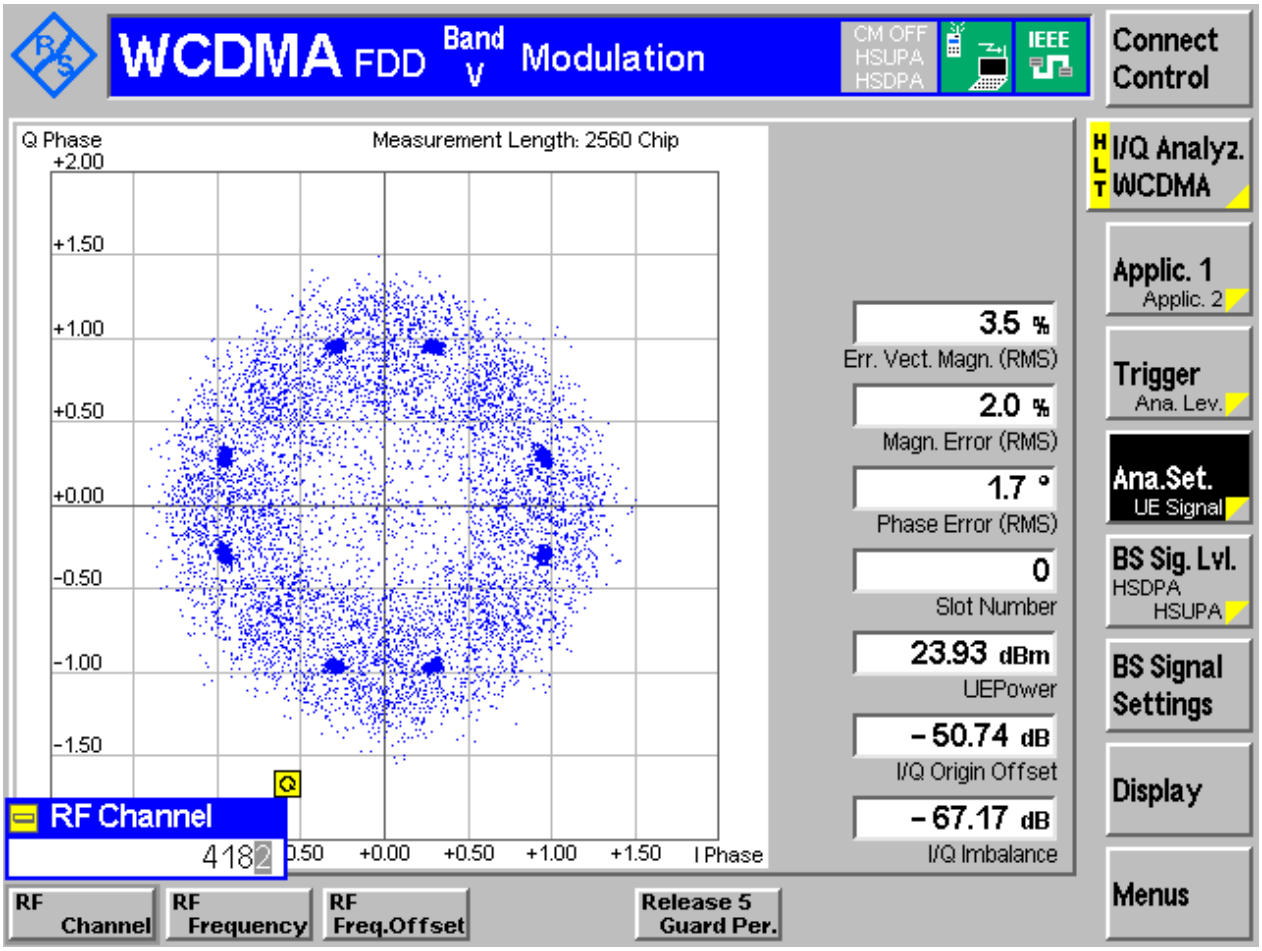
3.1.2.1.1 Test Channel = MCH



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	4.11	4.70	Pass
		MCH	4.12	4.69	Pass
		HCH	4.12	4.69	Pass
WCDMA1700	UMTS/TM1	LCH	4.12	4.70	Pass
		MCH	4.11	4.71	Pass
		HCH	4.12	4.70	Pass
WCDMA850	UMTS/TM1	LCH	4.11	4.70	Pass
		MCH	4.12	4.69	Pass
		HCH	4.12	4.71	Pass

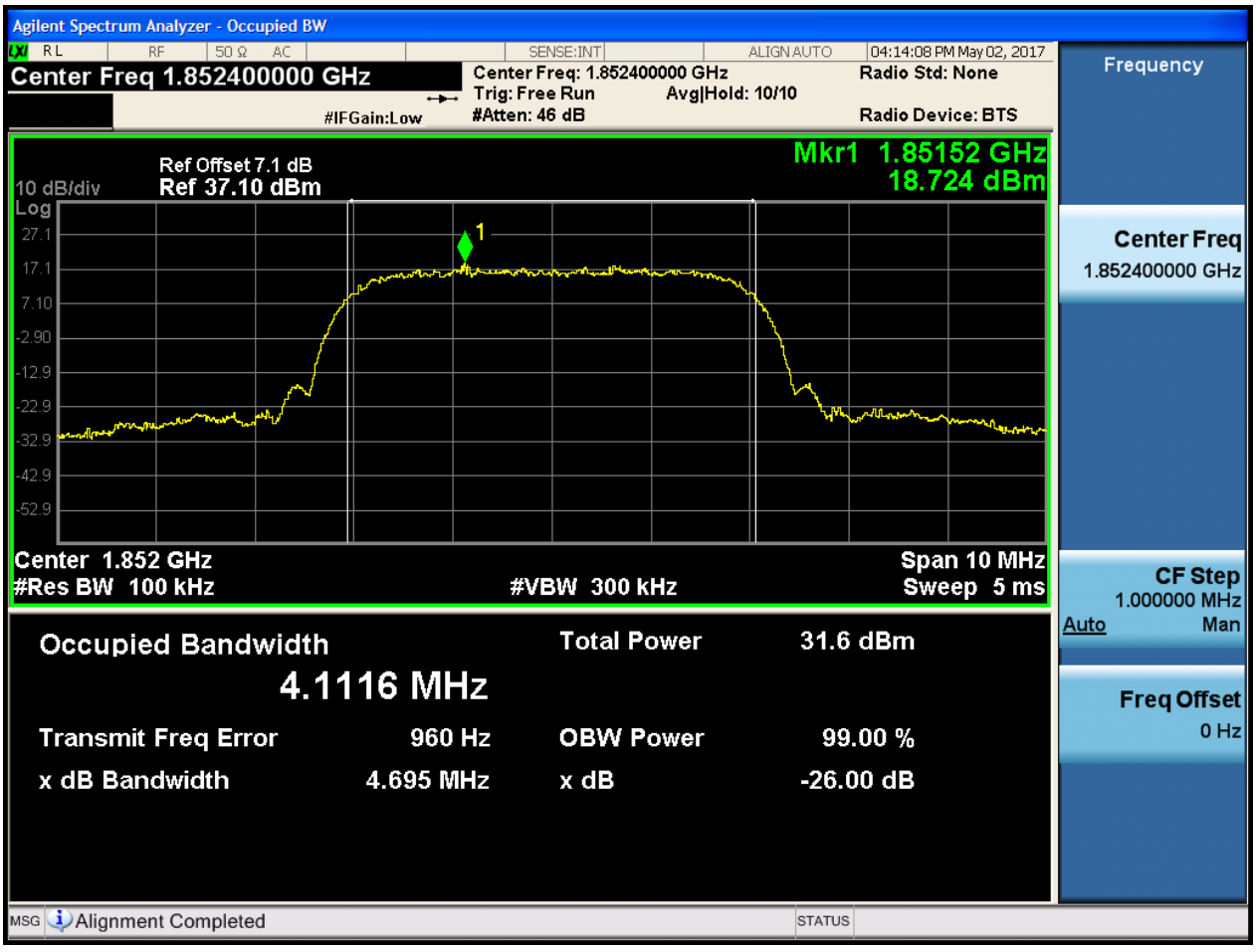
Part II - Test Plots

4.1 For UMTS

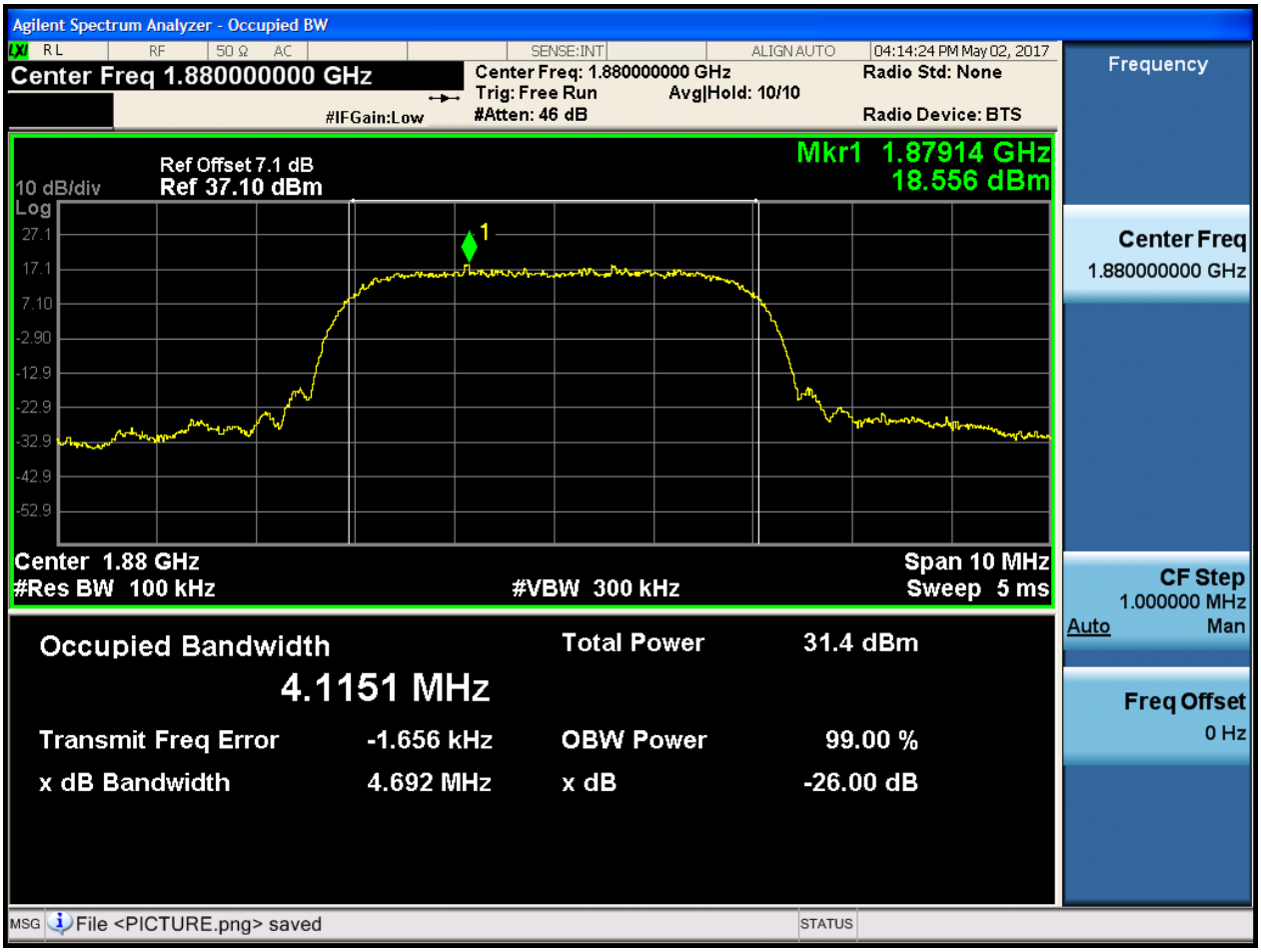
4.1.1 Test Band = WCDMA1900

4.1.1.1 Test Mode = UMTS/TM1

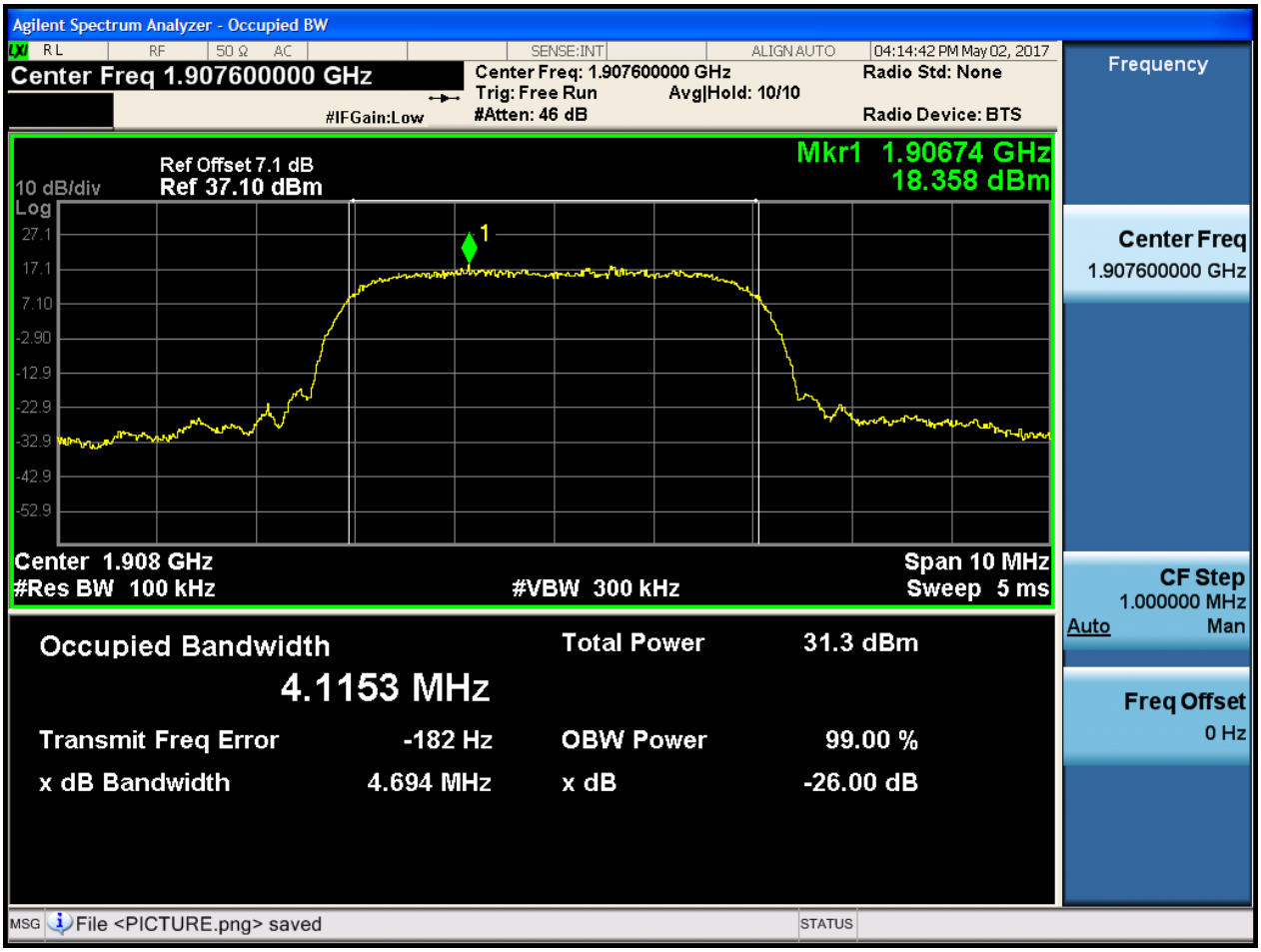
4.1.1.1.1 Test Channel = LCH



4.1.1.1.2 Test Channel = MCH



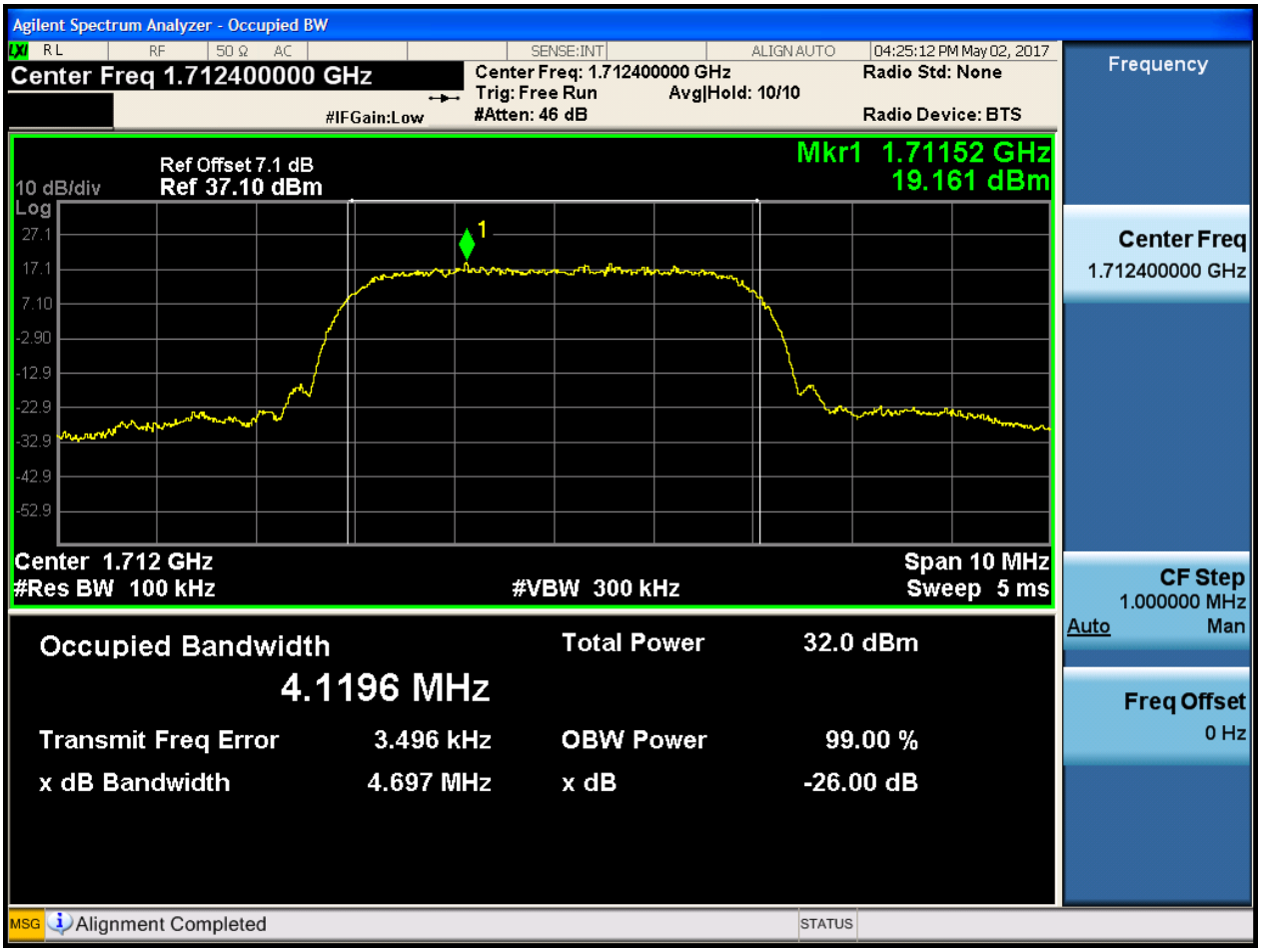
4.1.1.1.3 Test Channel = HCH



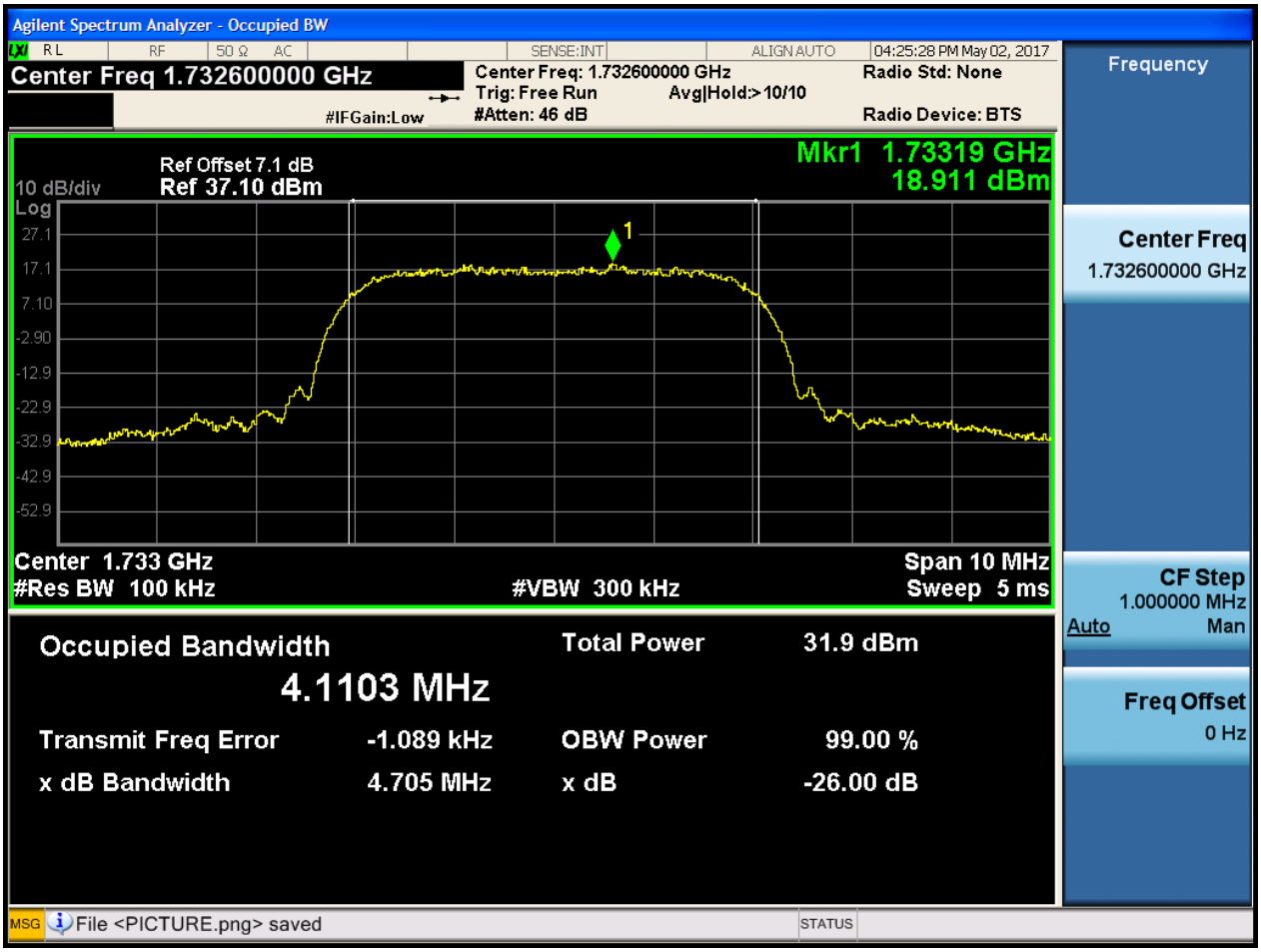
4.1.2 Test Band = WCDMA1700

4.1.2.1 Test Mode = UMTS/TM1

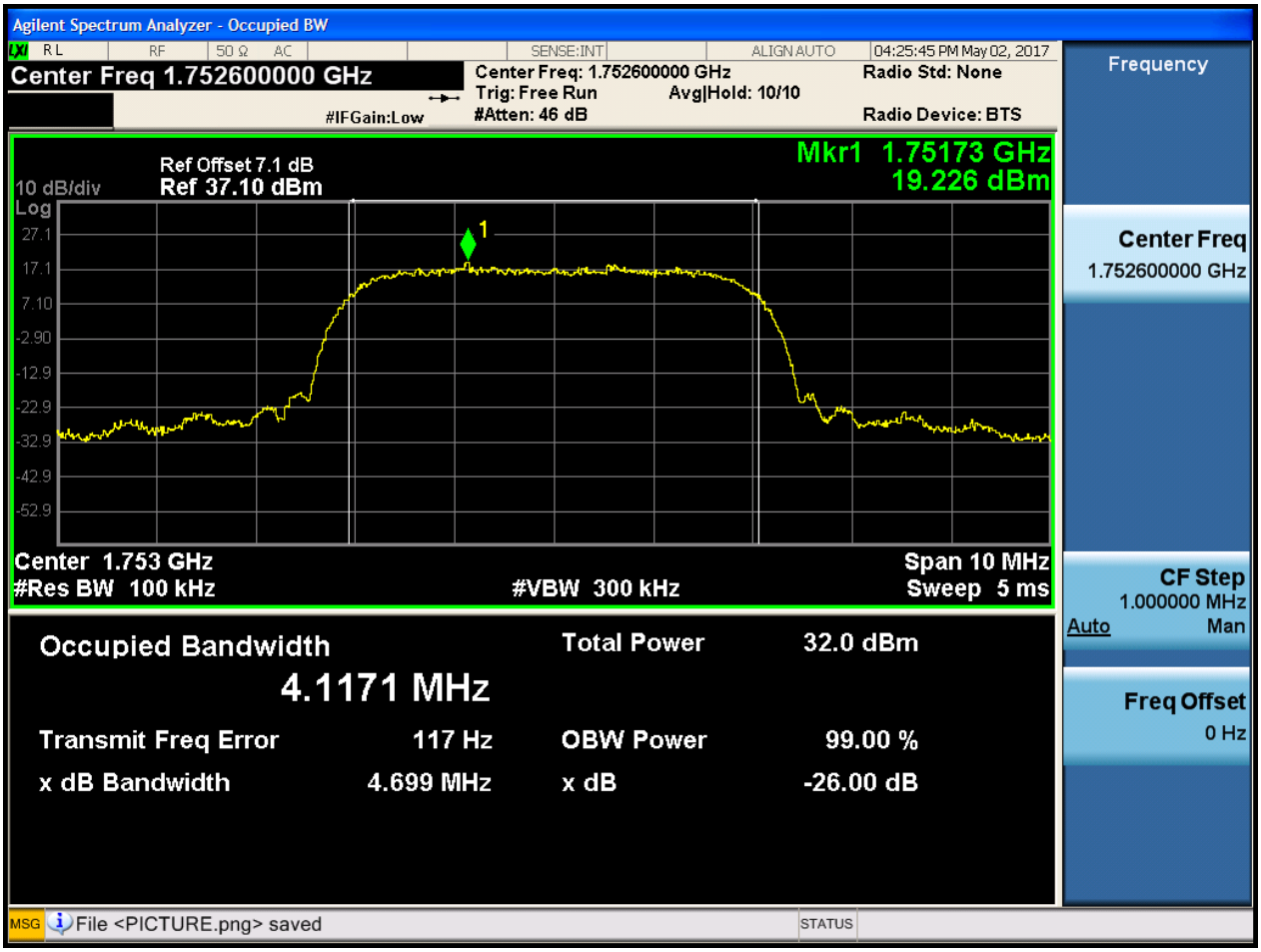
4.1.2.1.1 Test Channel = LCH



4.1.2.1.2 Test Channel = MCH



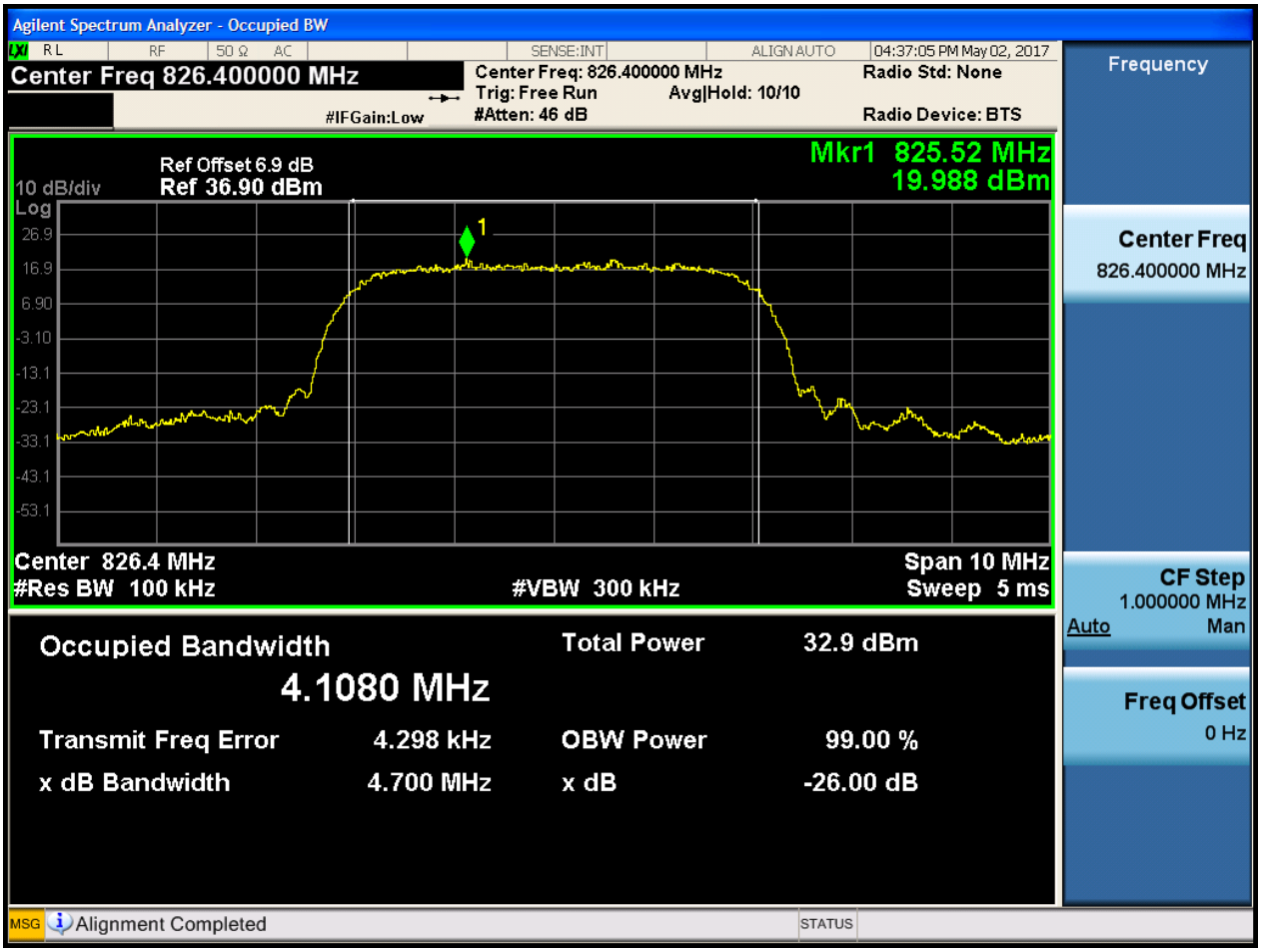
4.1.2.1.3 Test Channel = HCH



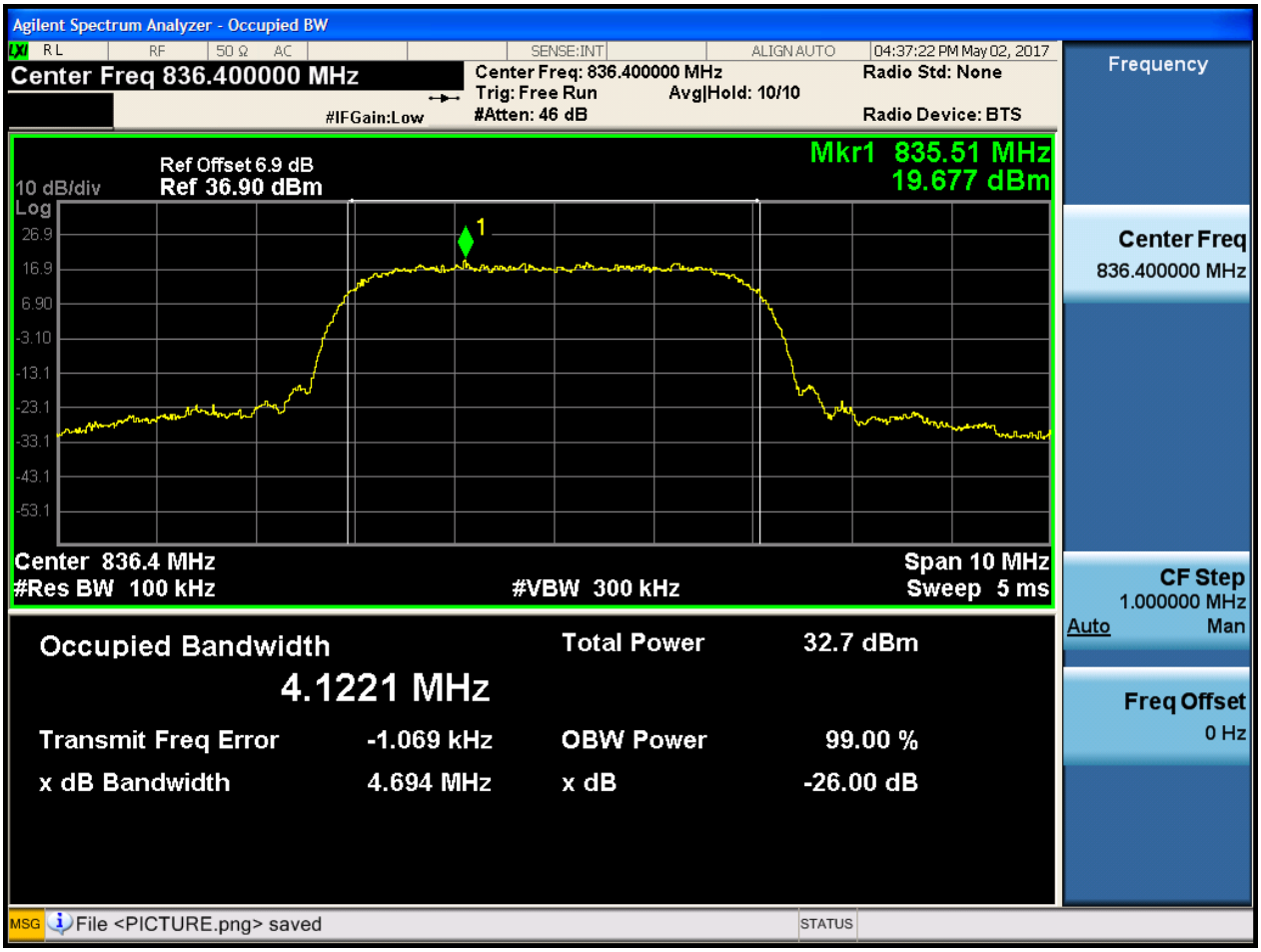
4.1.3 Test Band = WCDMA850

4.1.3.1 Test Mode = UMTS/TM1

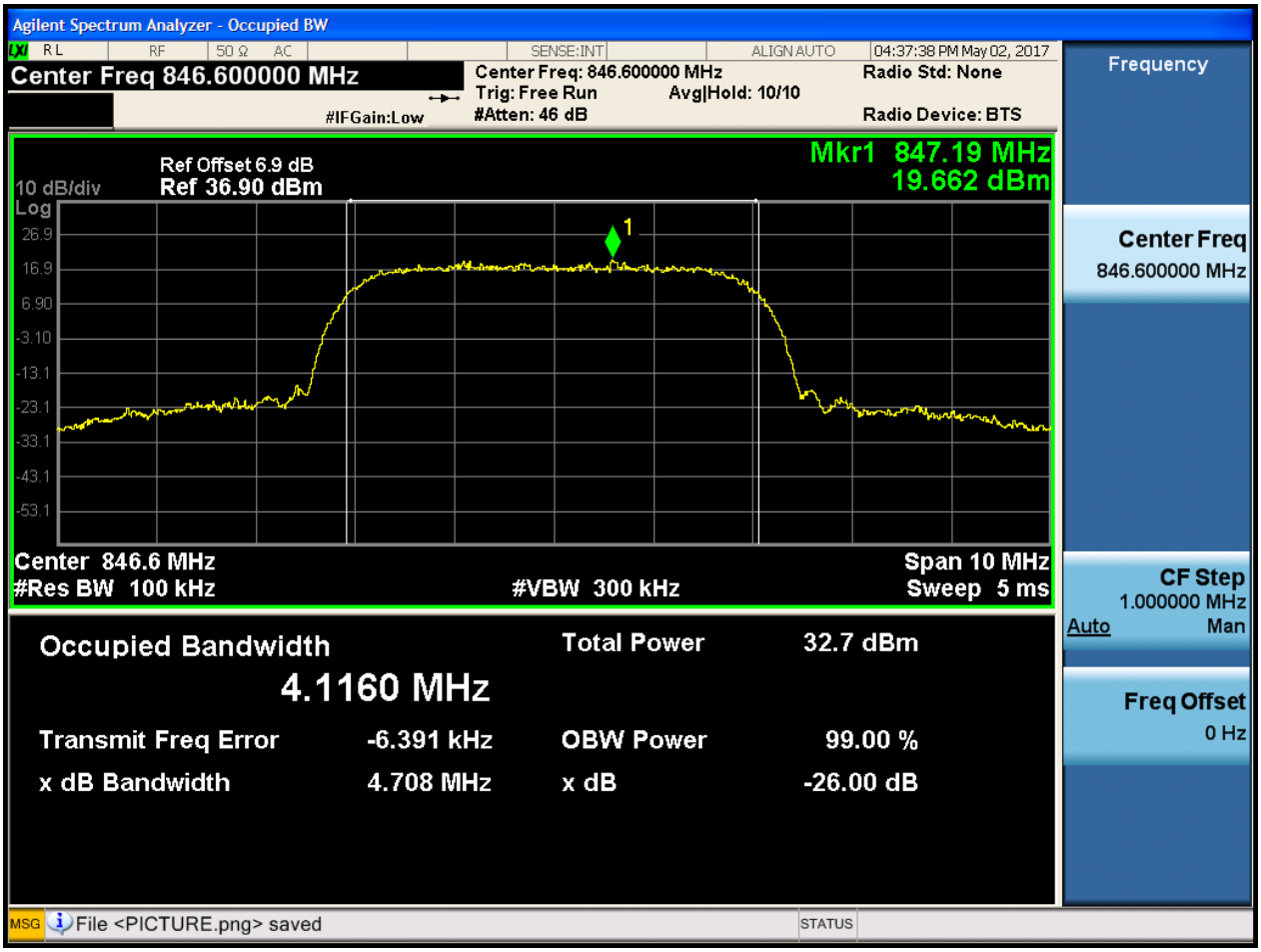
4.1.3.1.1 Test Channel = LCH



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

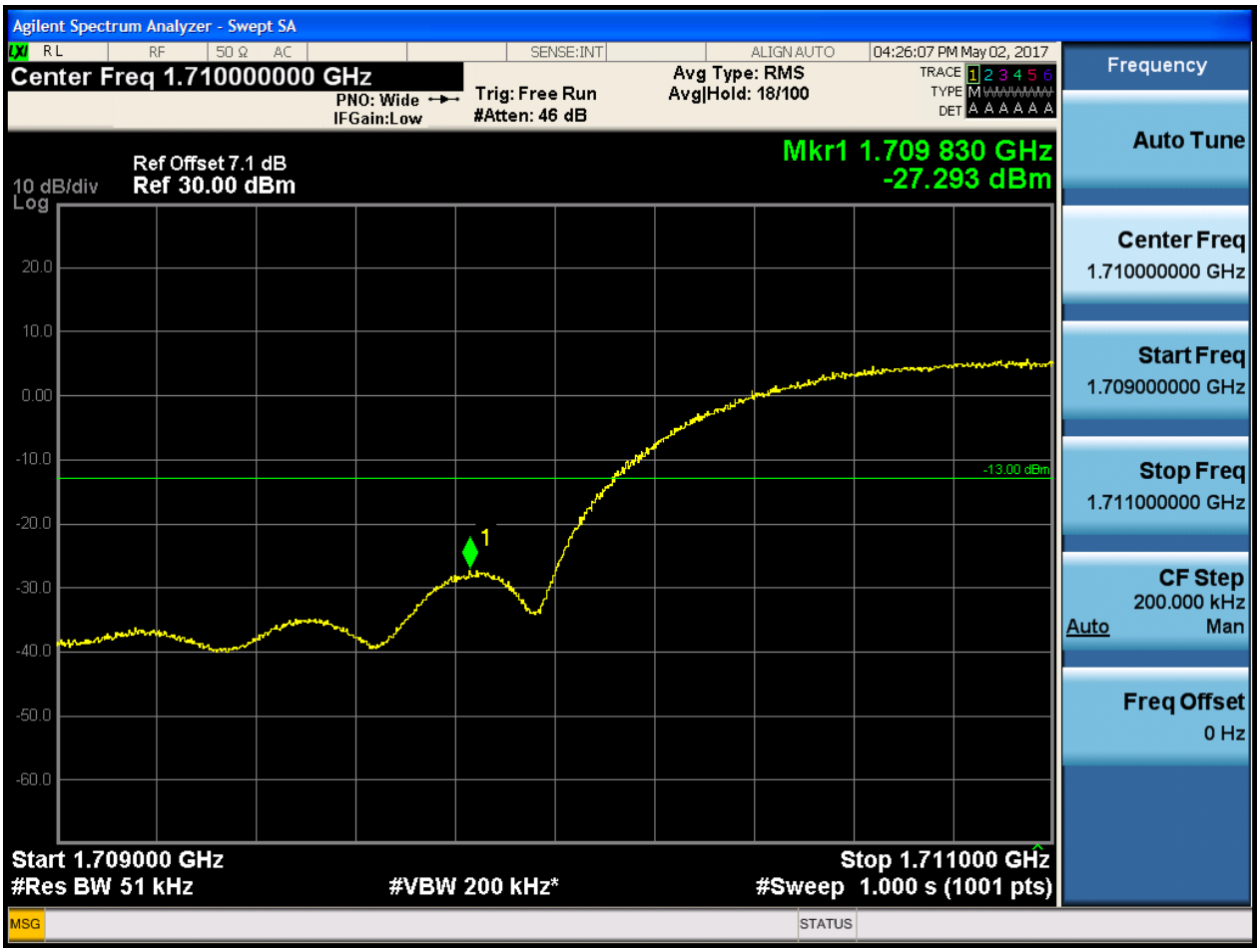
5.1.1.1.1 Test Channel = LCH

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

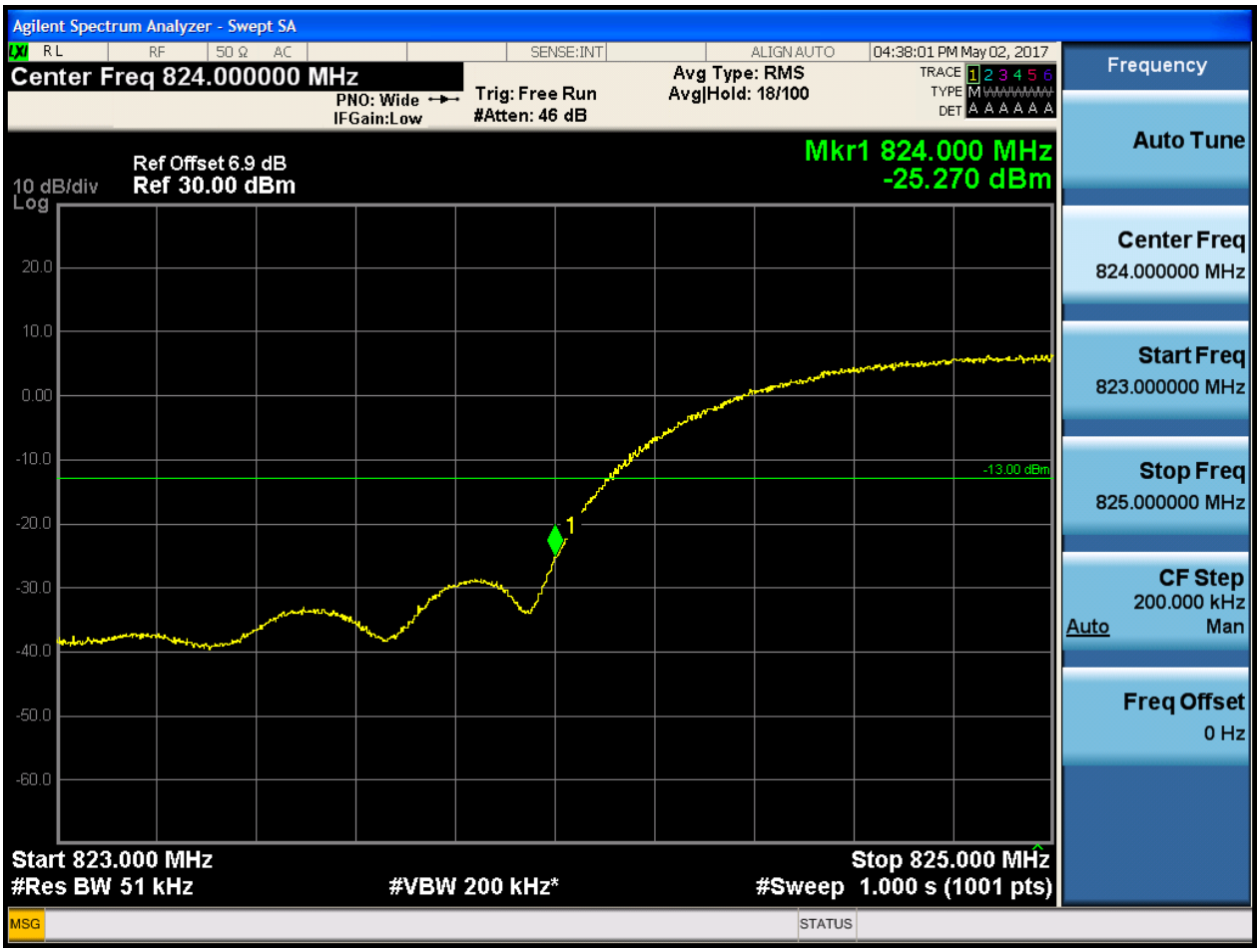


5.1.2.1.2 Test Channel = HCH

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.

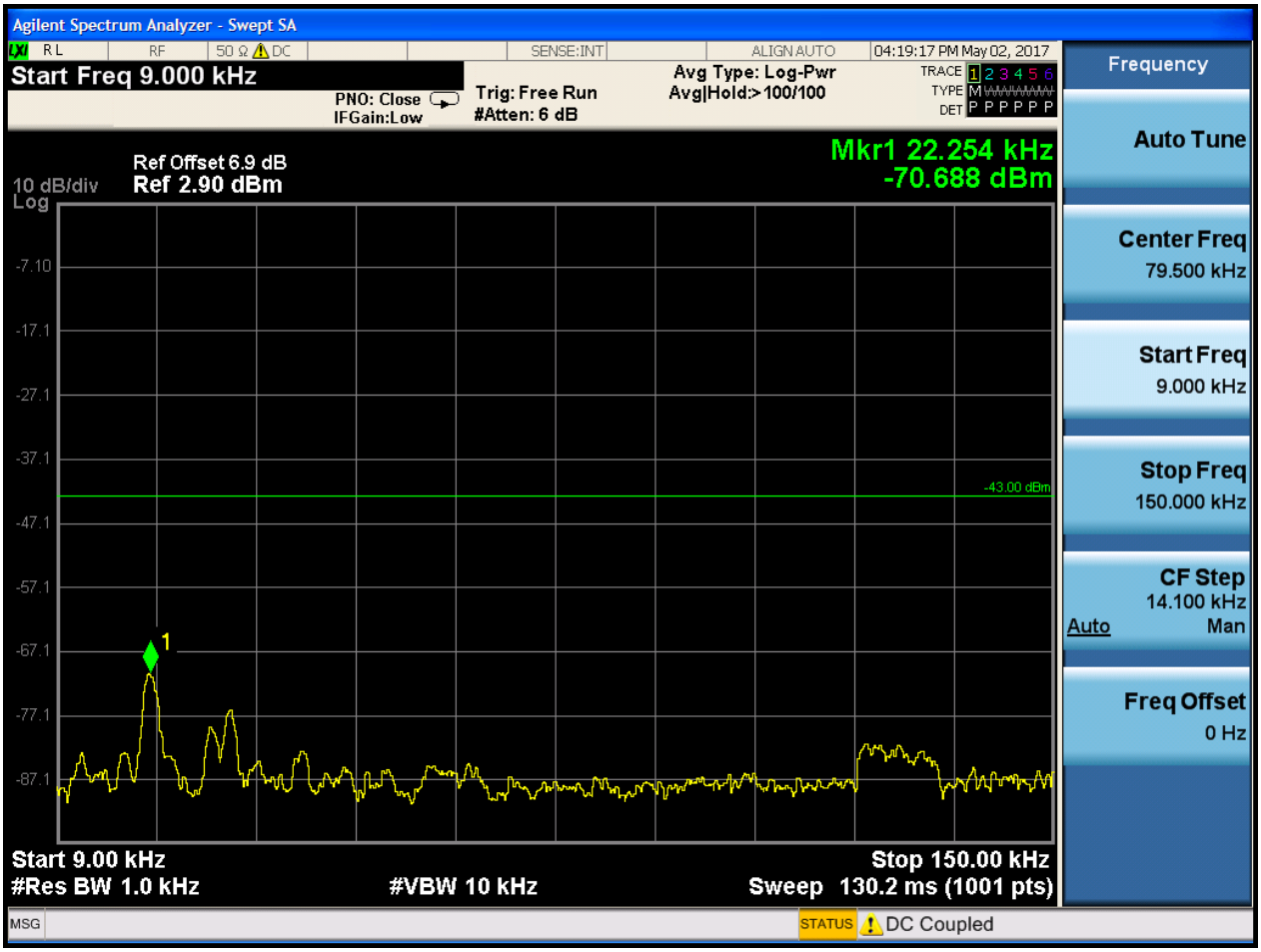
Part I - Test Plots

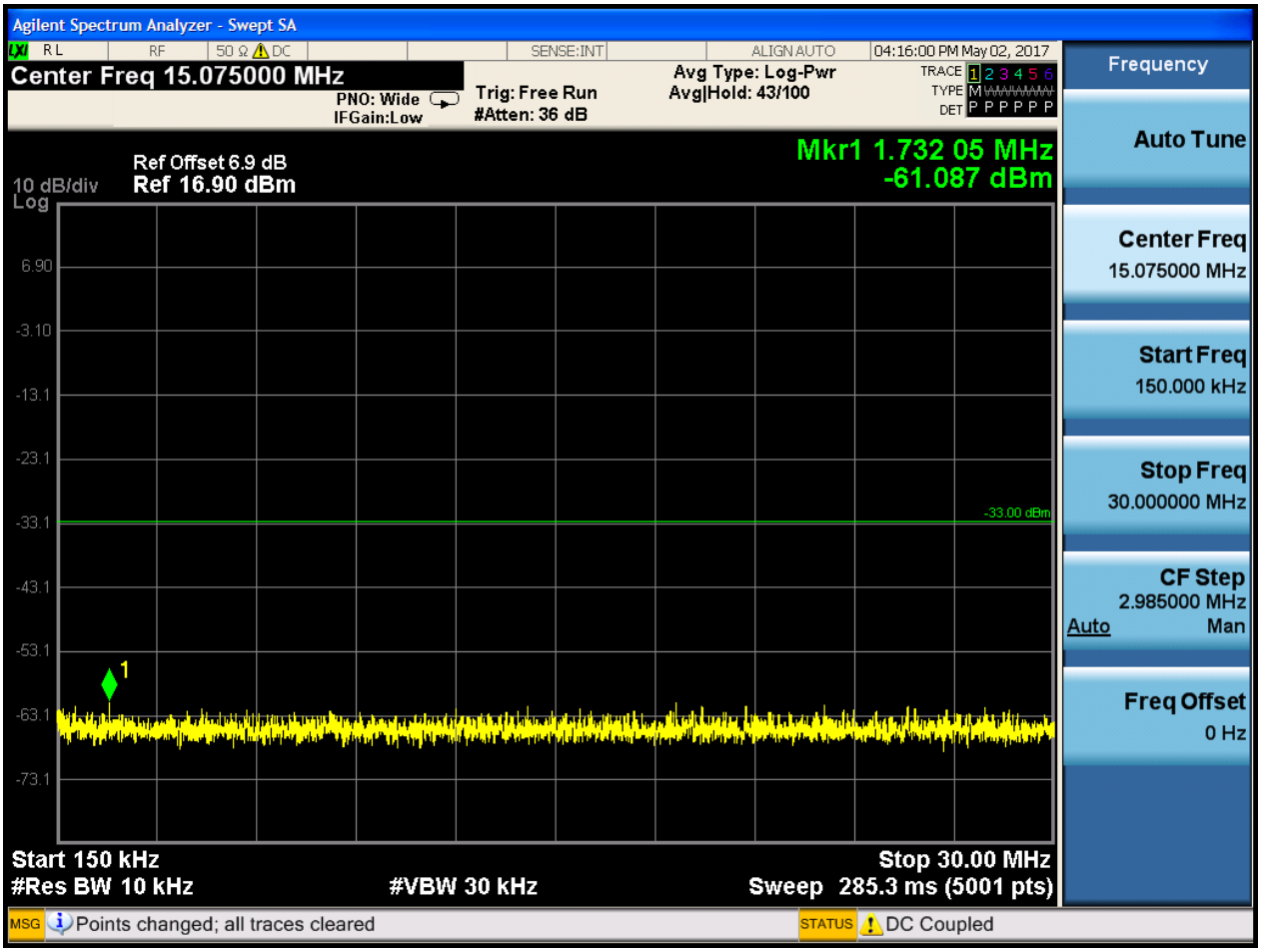
6.1 For UMTS

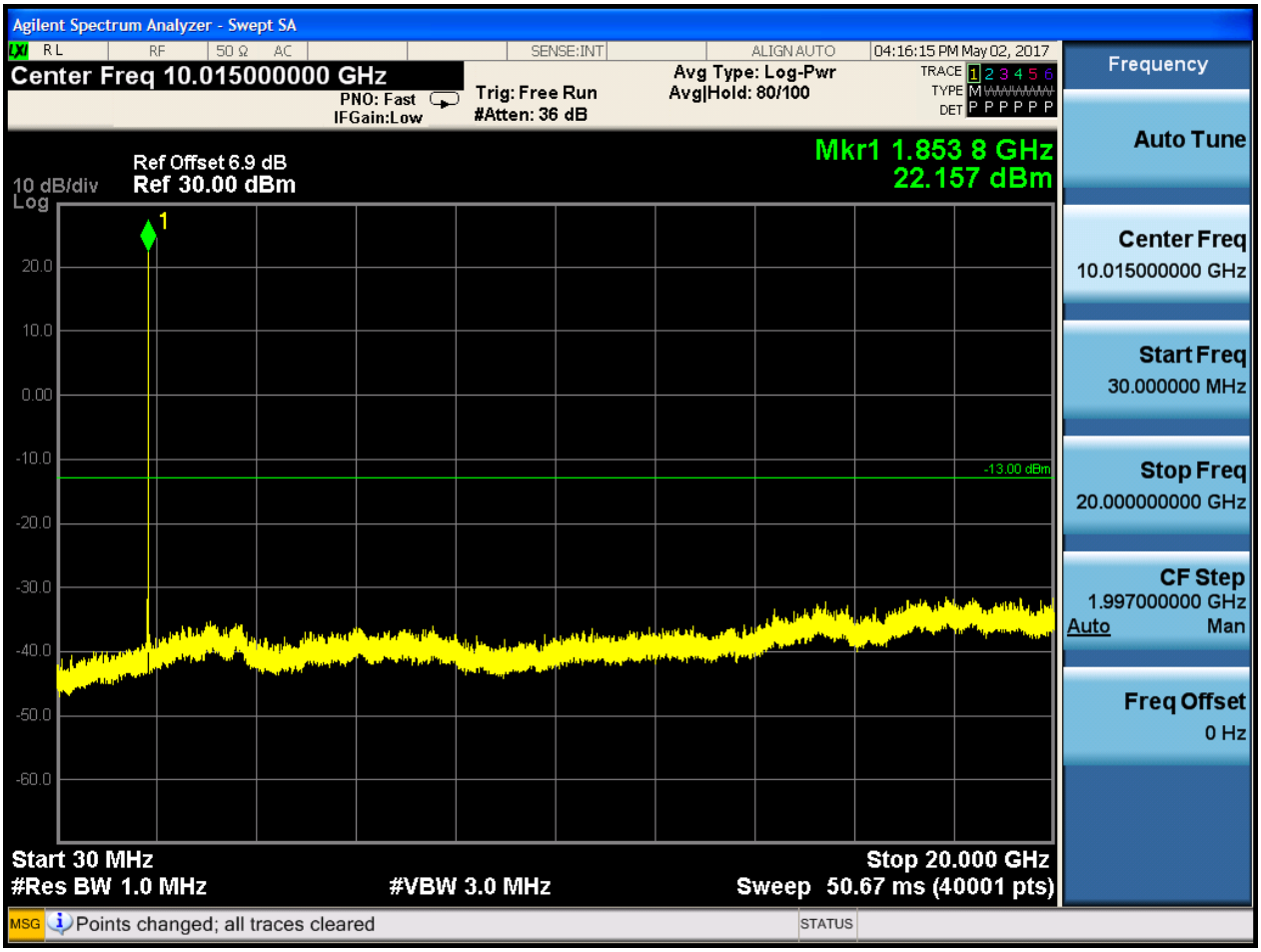
6.1.1 Test Band = WCDMA1900

6.1.1.1 Test Mode = UMTS/TM1

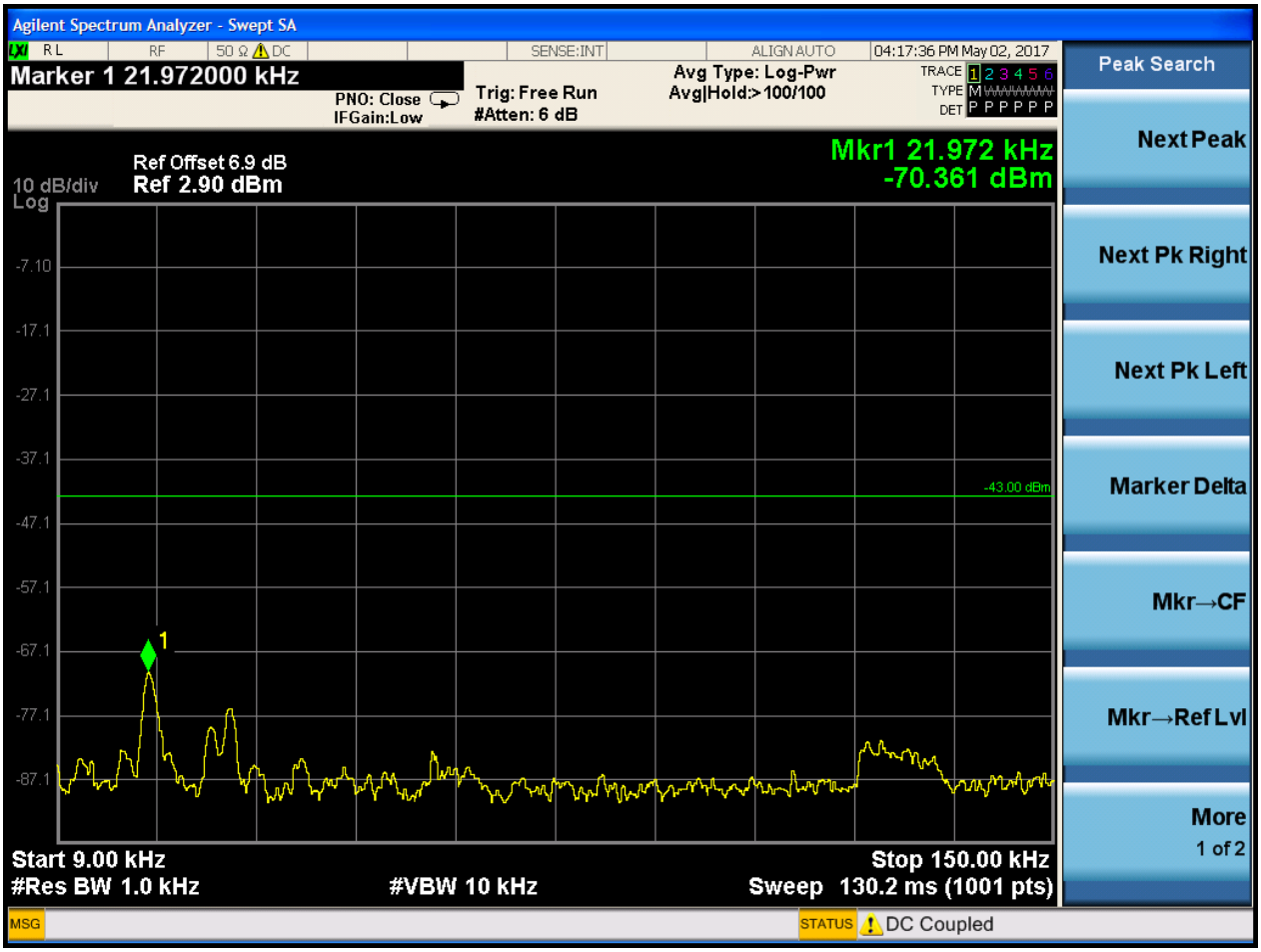
6.1.1.1.1 Test Channel = LCH

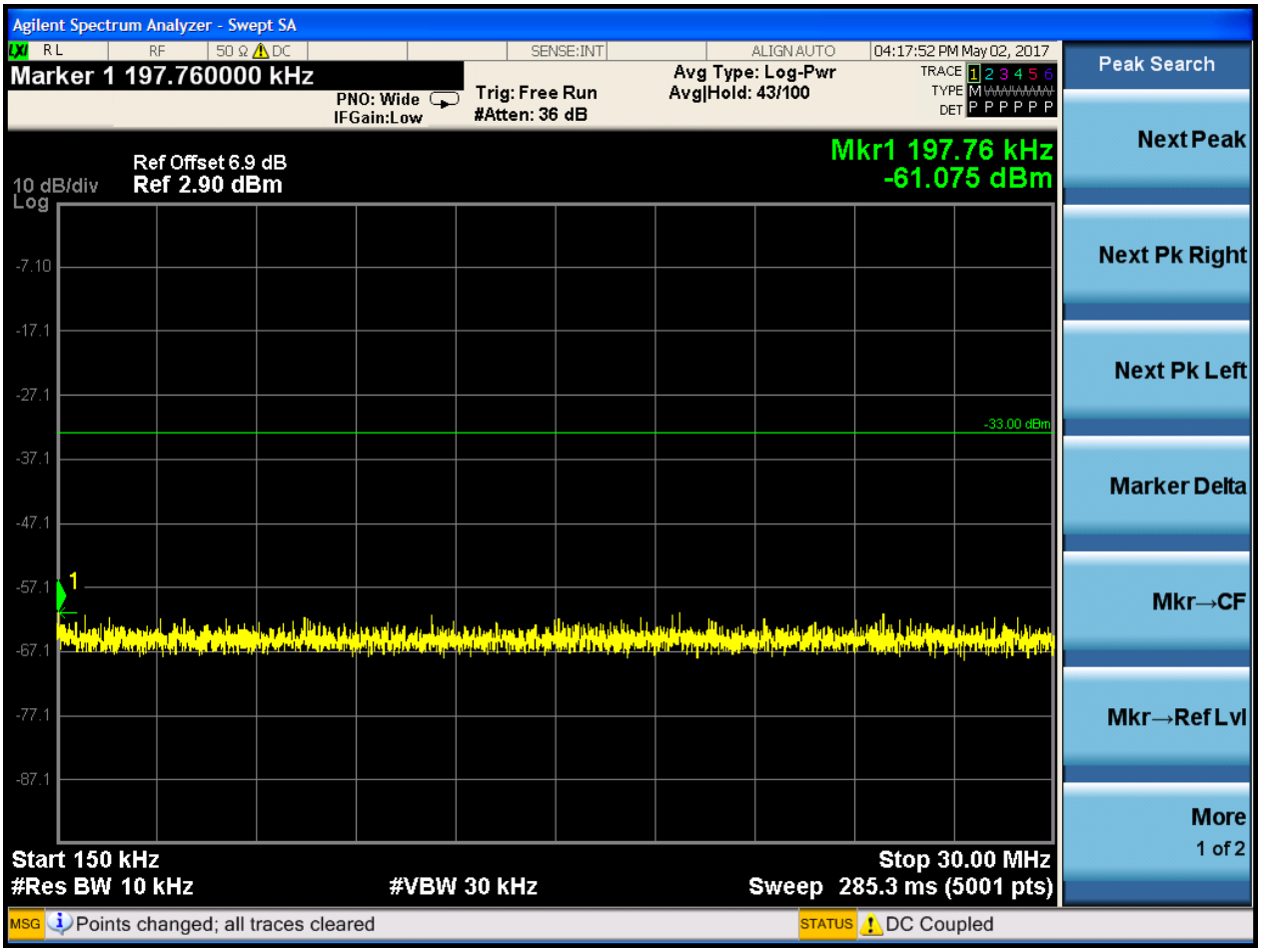


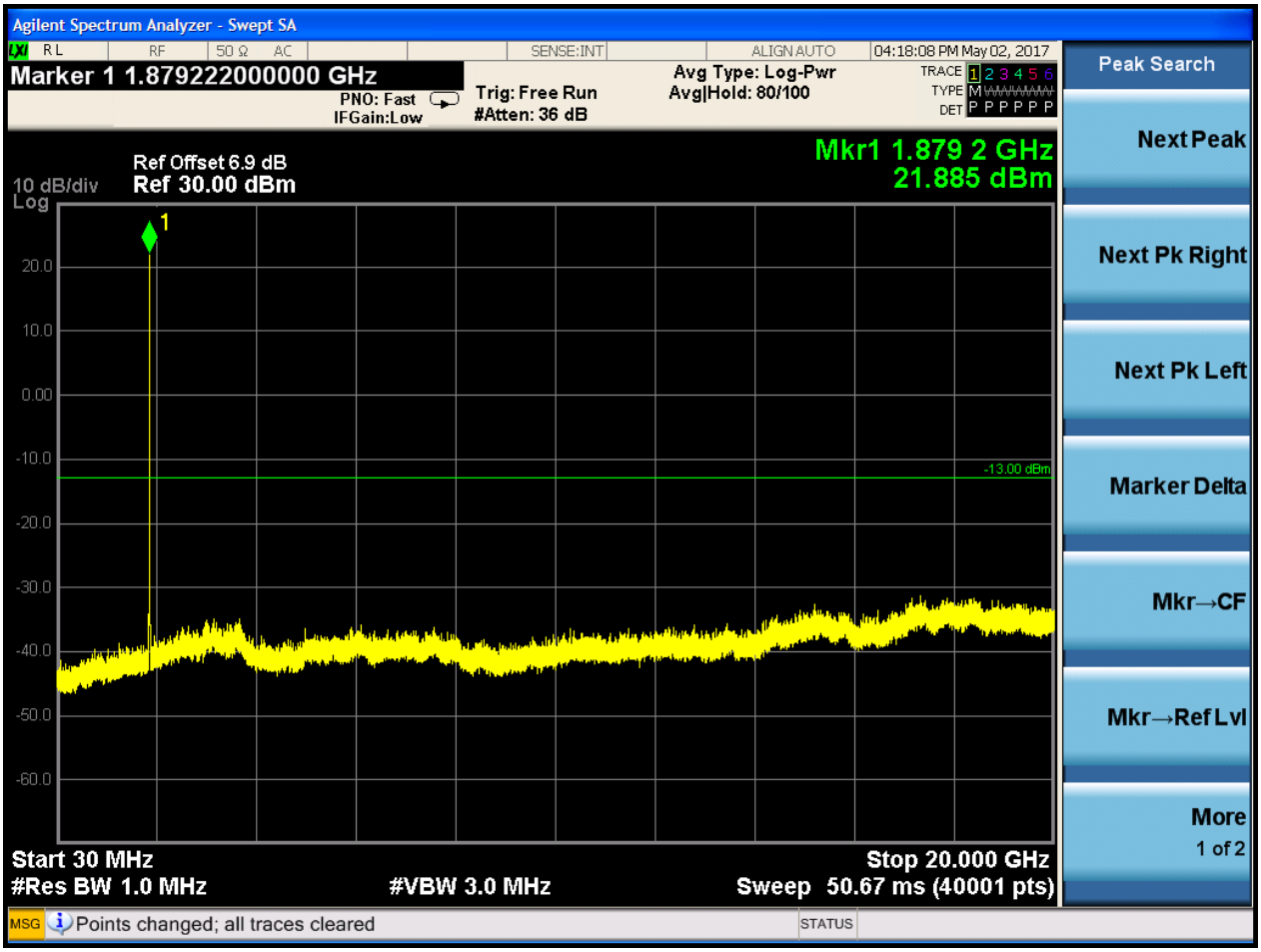




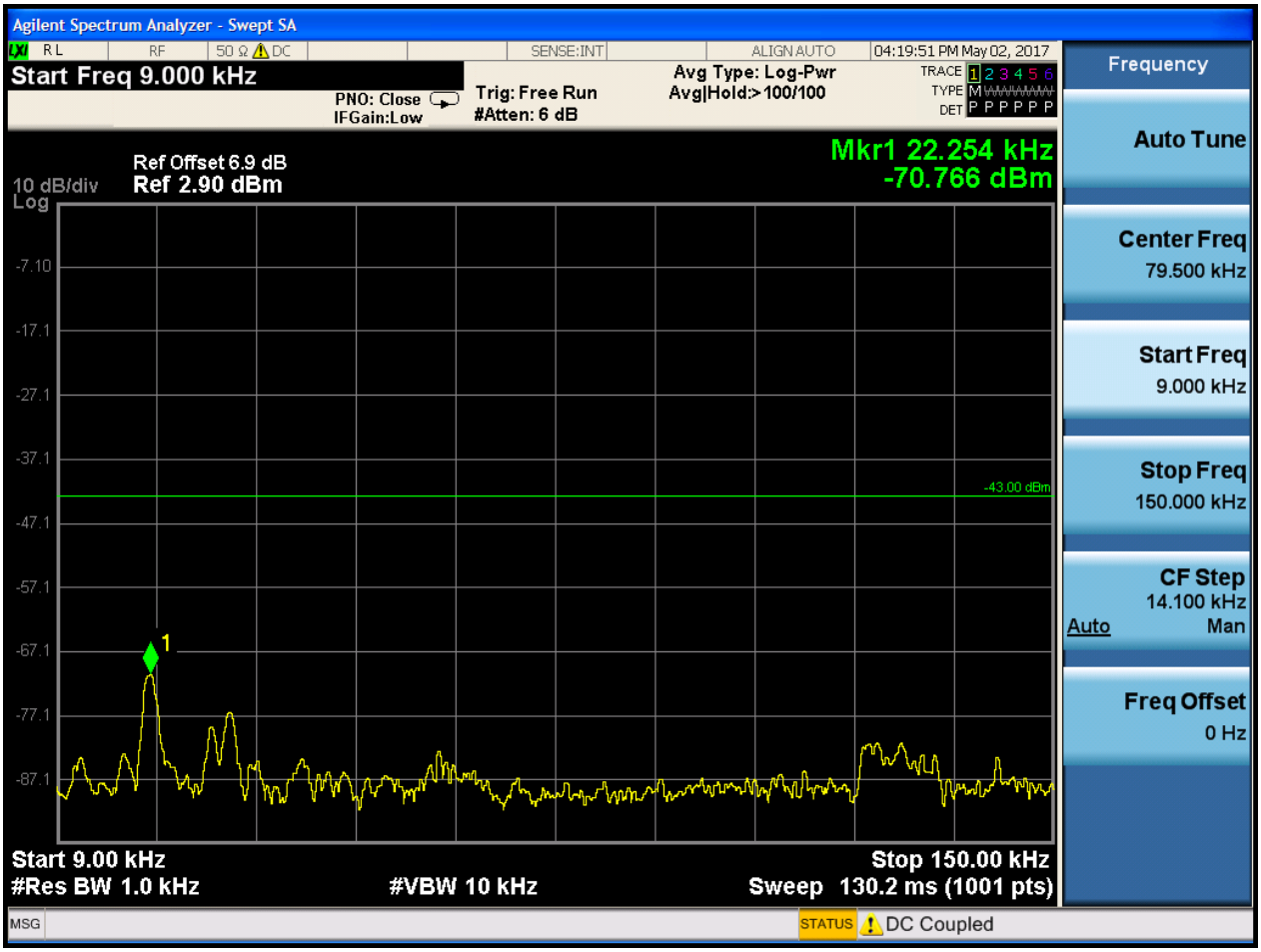
6.1.1.1.2 Test Channel = MCH

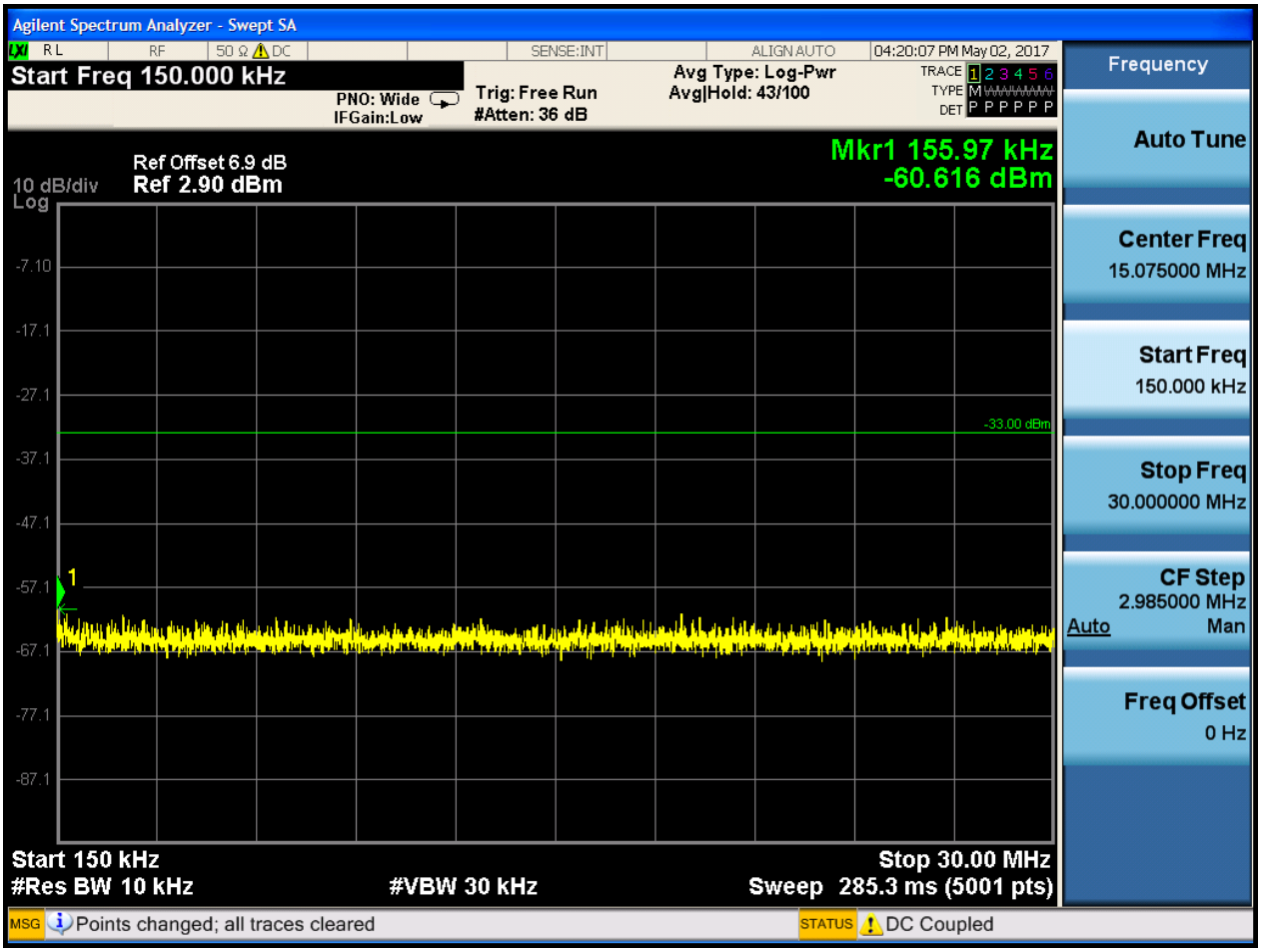


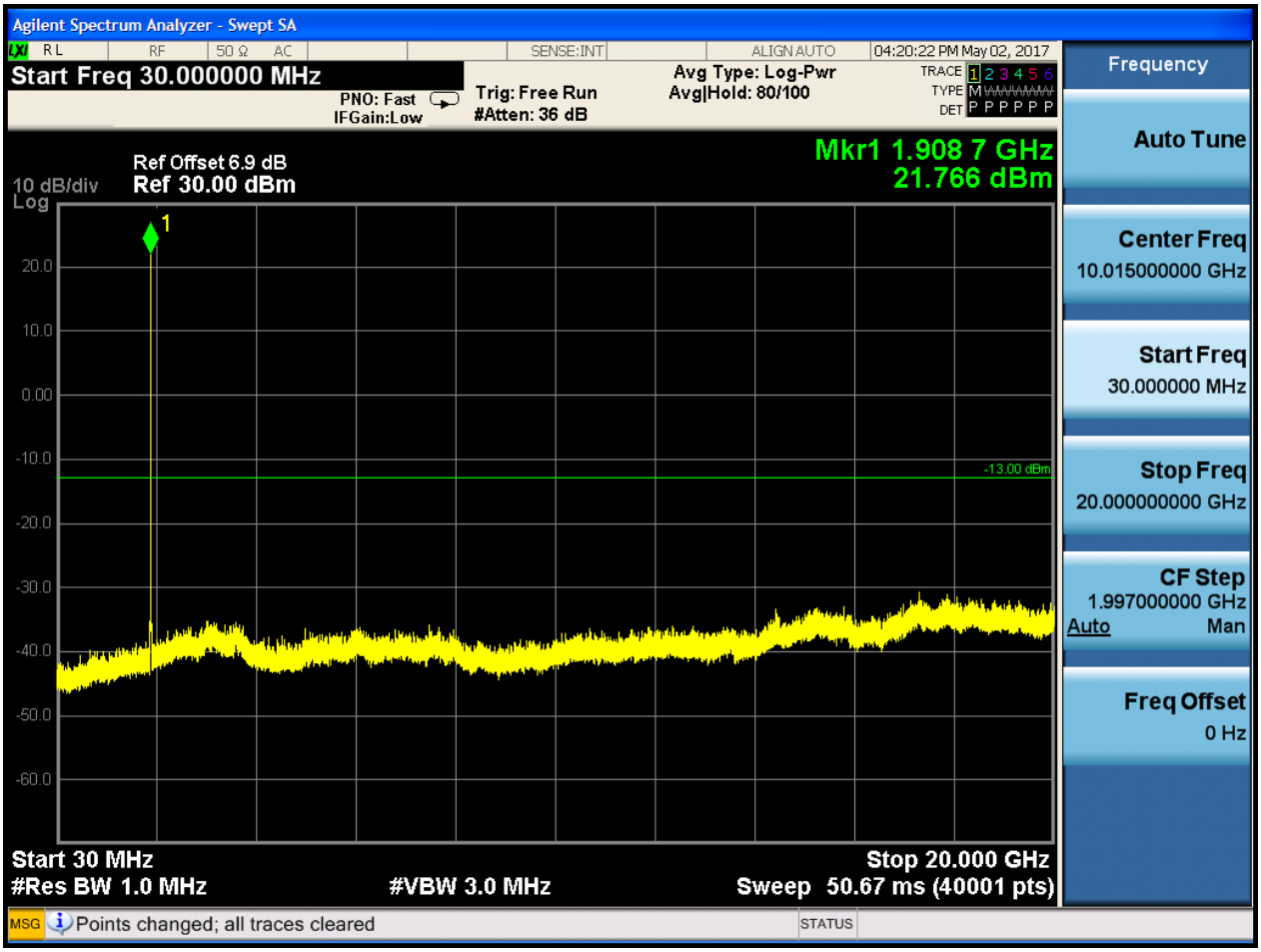




6.1.1.1.3 Test Channel = HCH



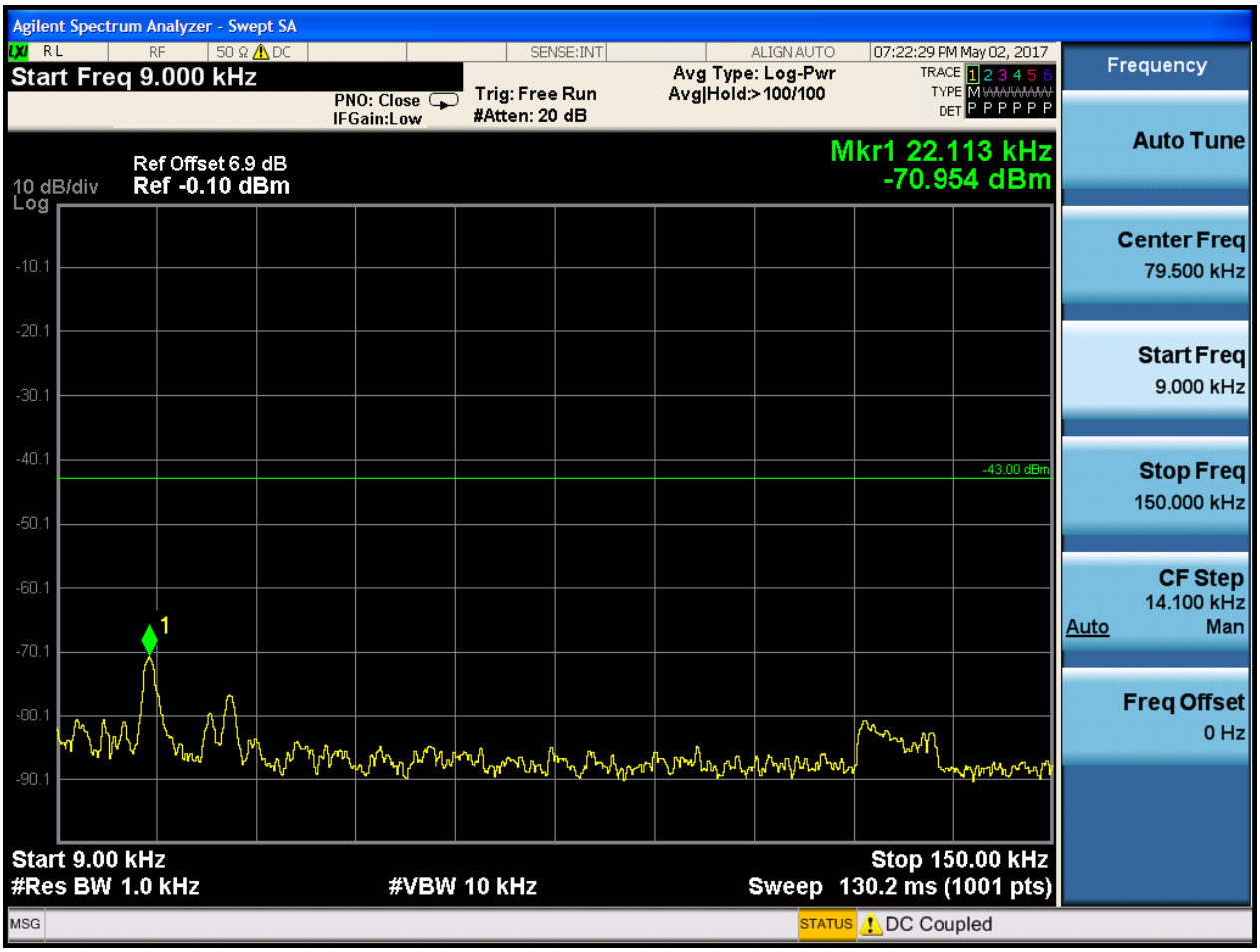


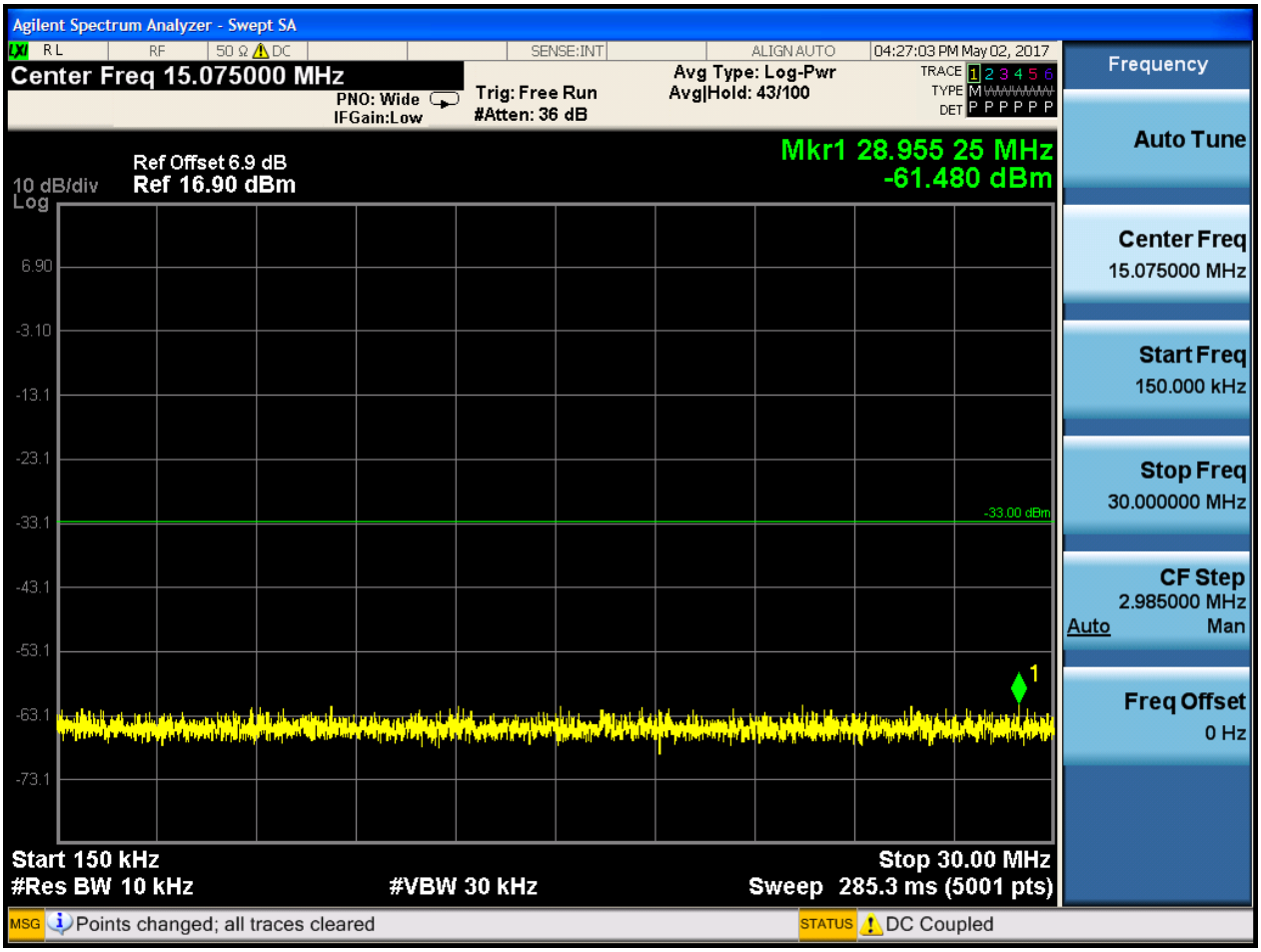


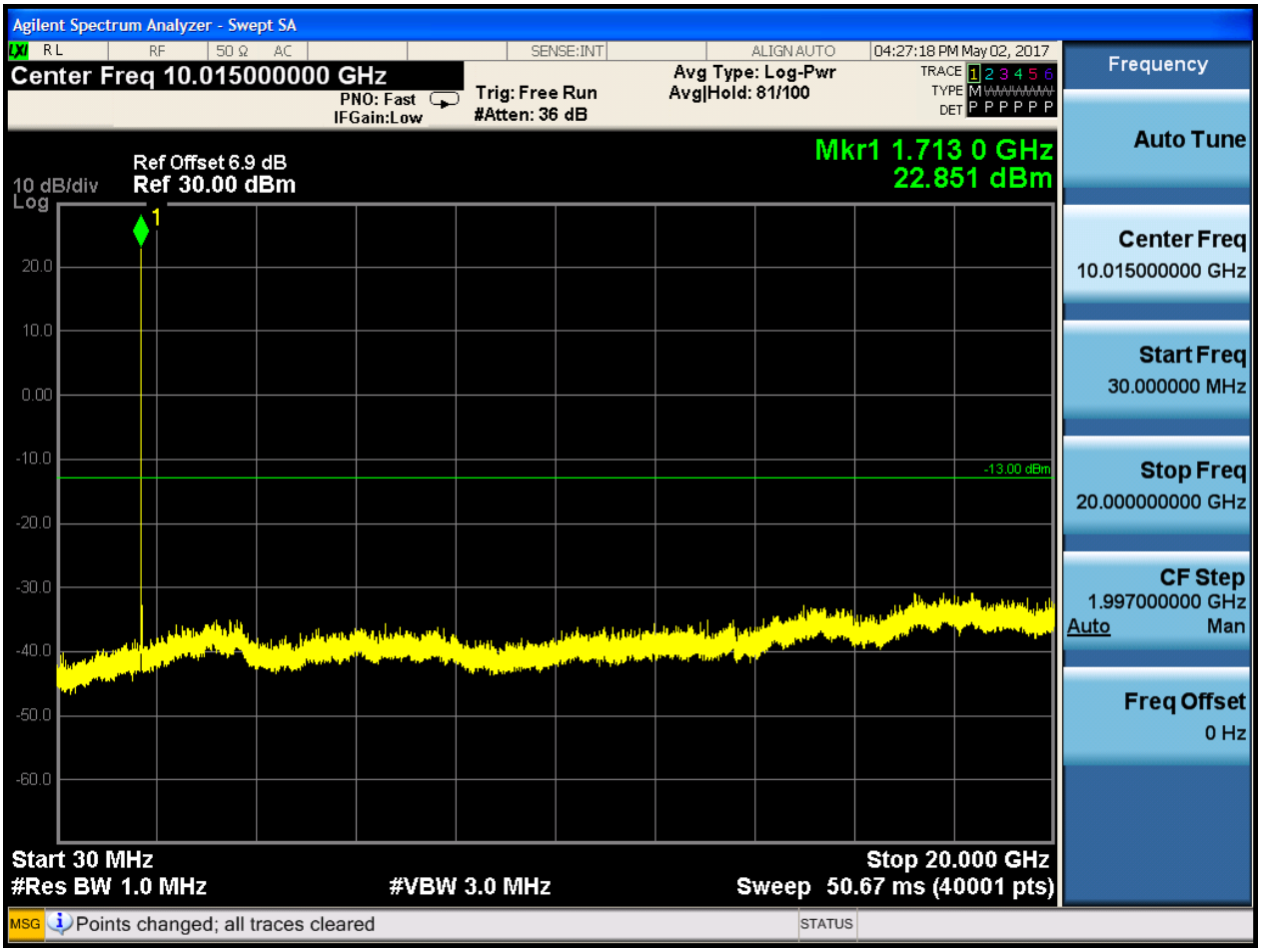
6.1.2 Test Band = WCDMA1700

6.1.2.1 Test Mode = UMTS/TM1

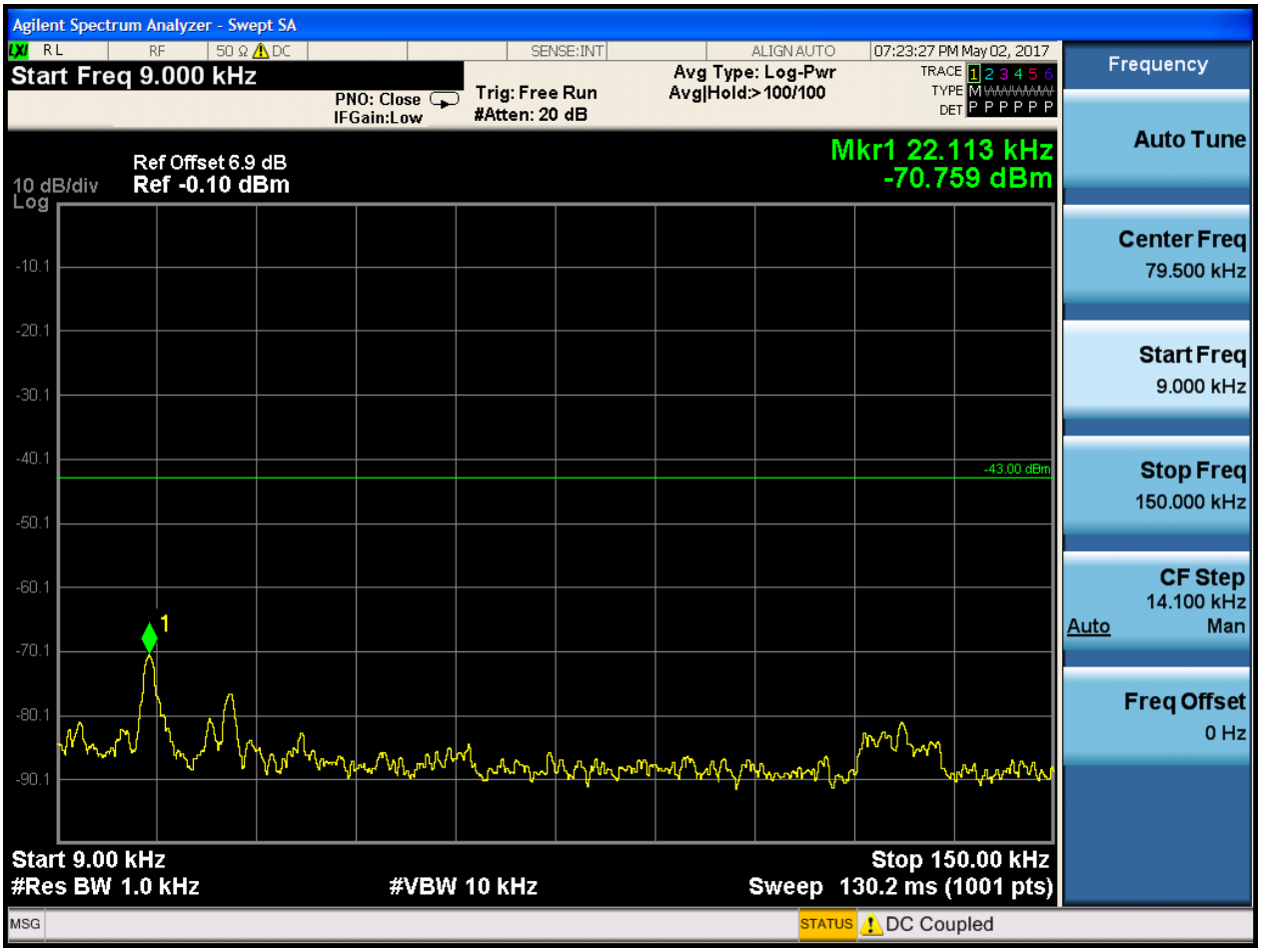
6.1.2.1.1 Test Channel = LCH

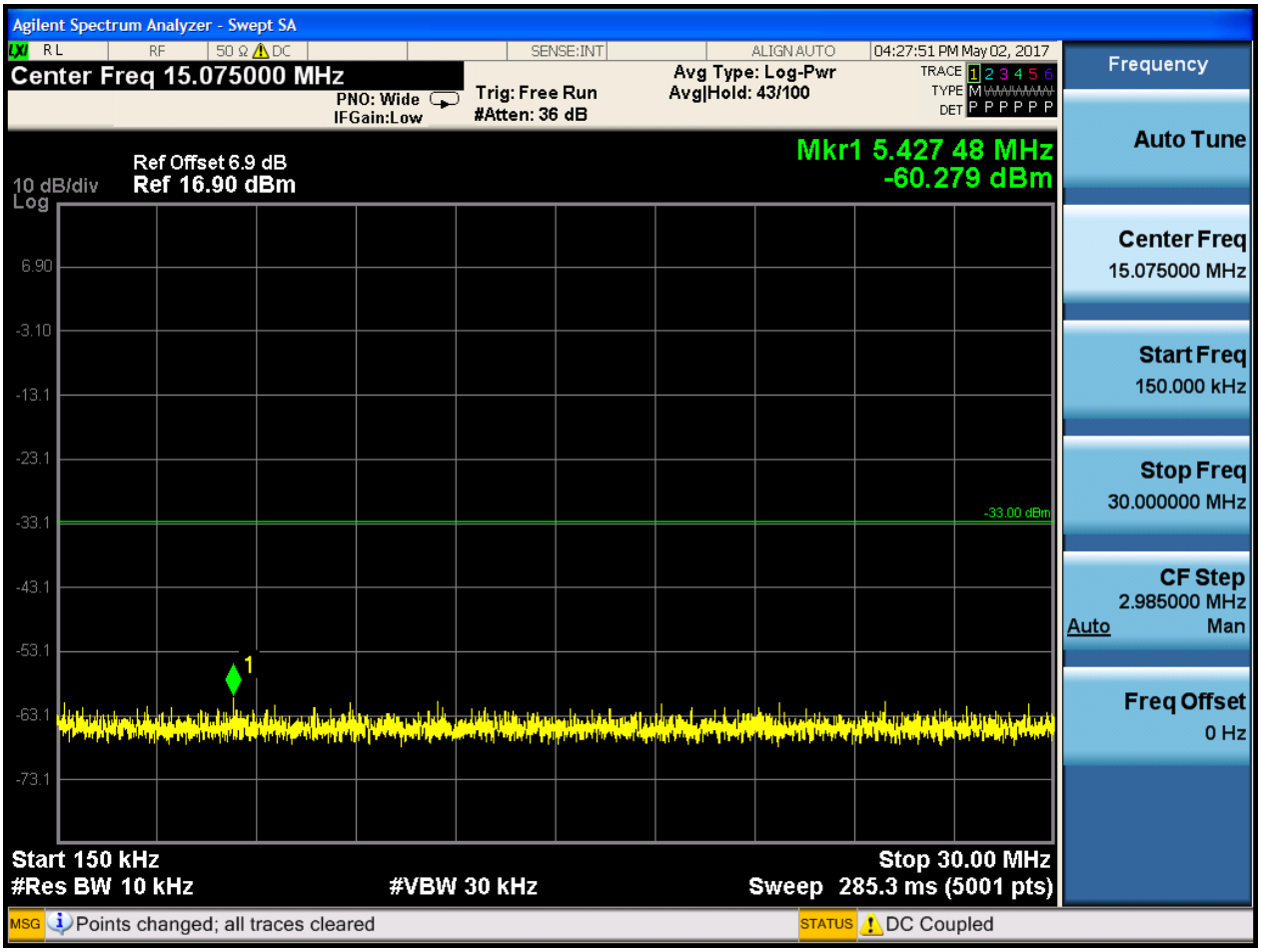


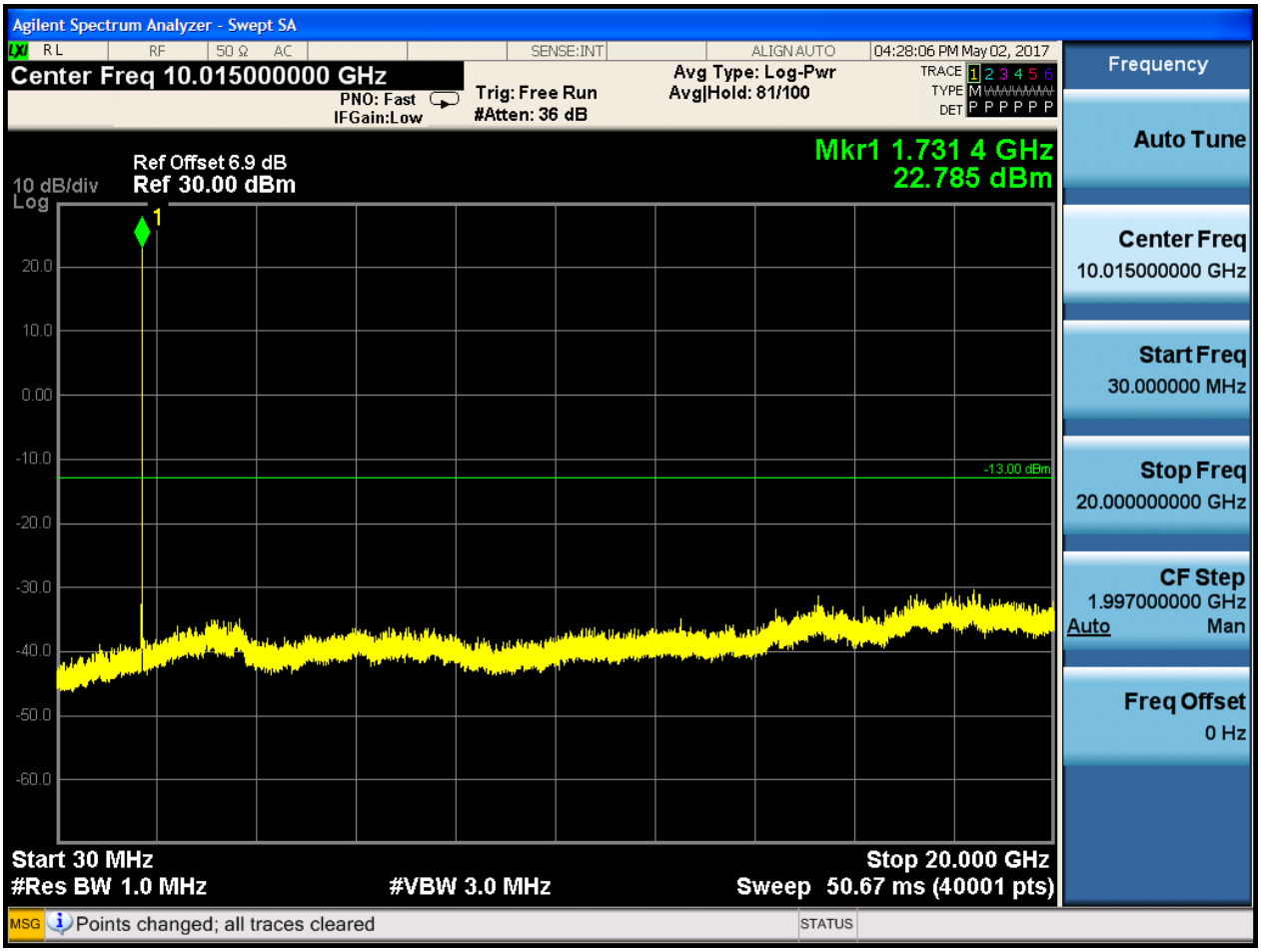




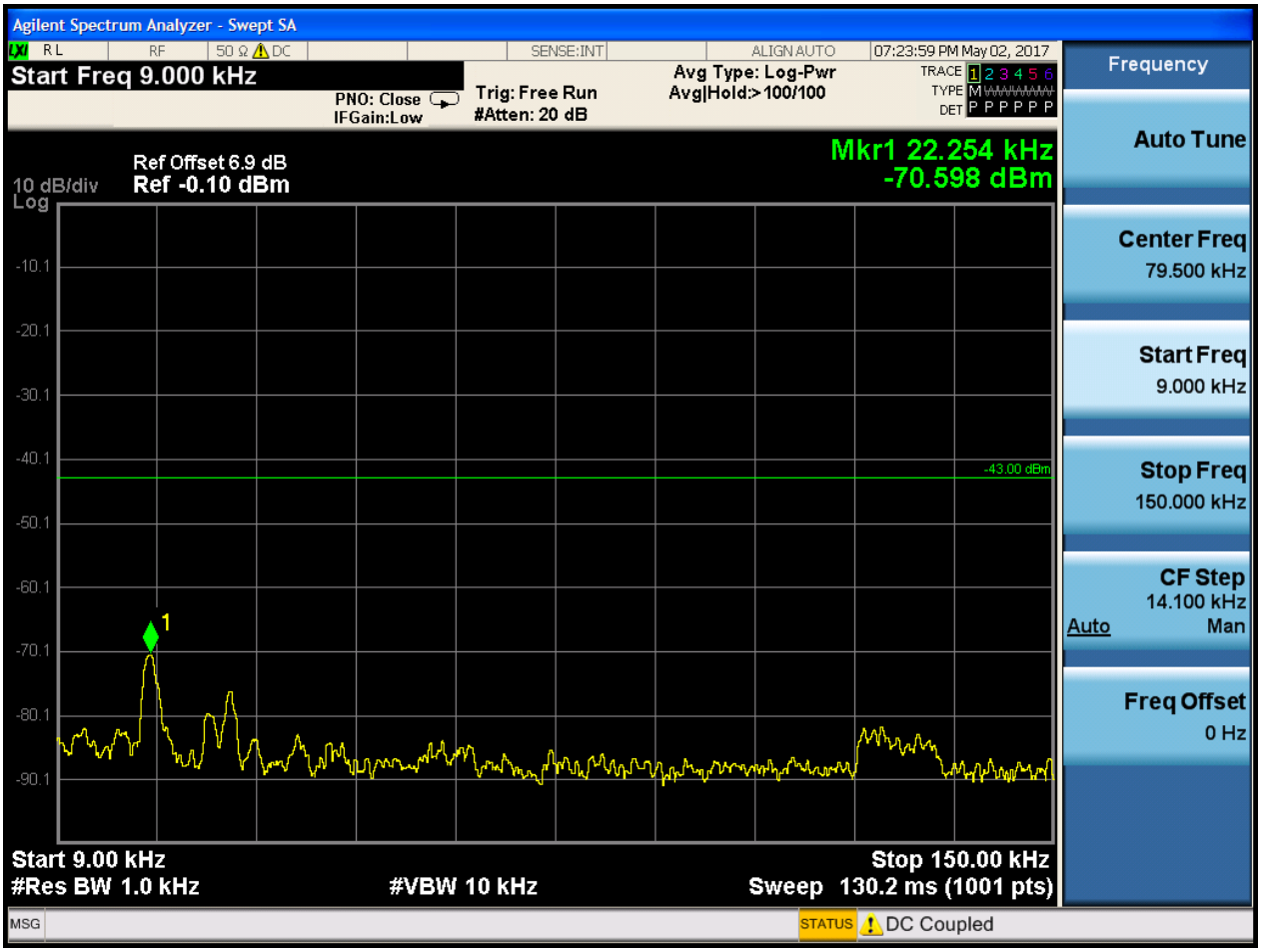
6.1.2.1.2 Test Channel = MCH

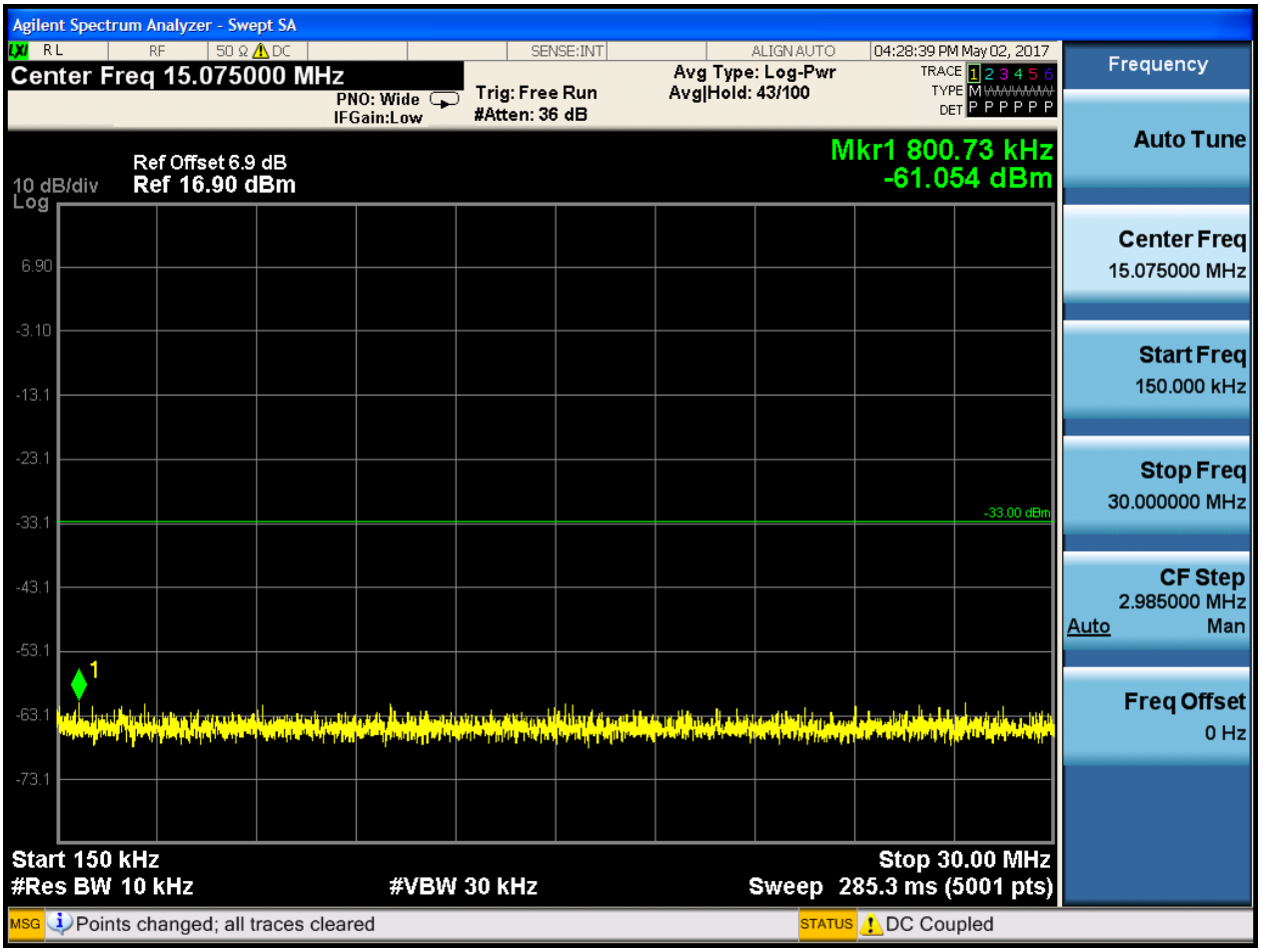


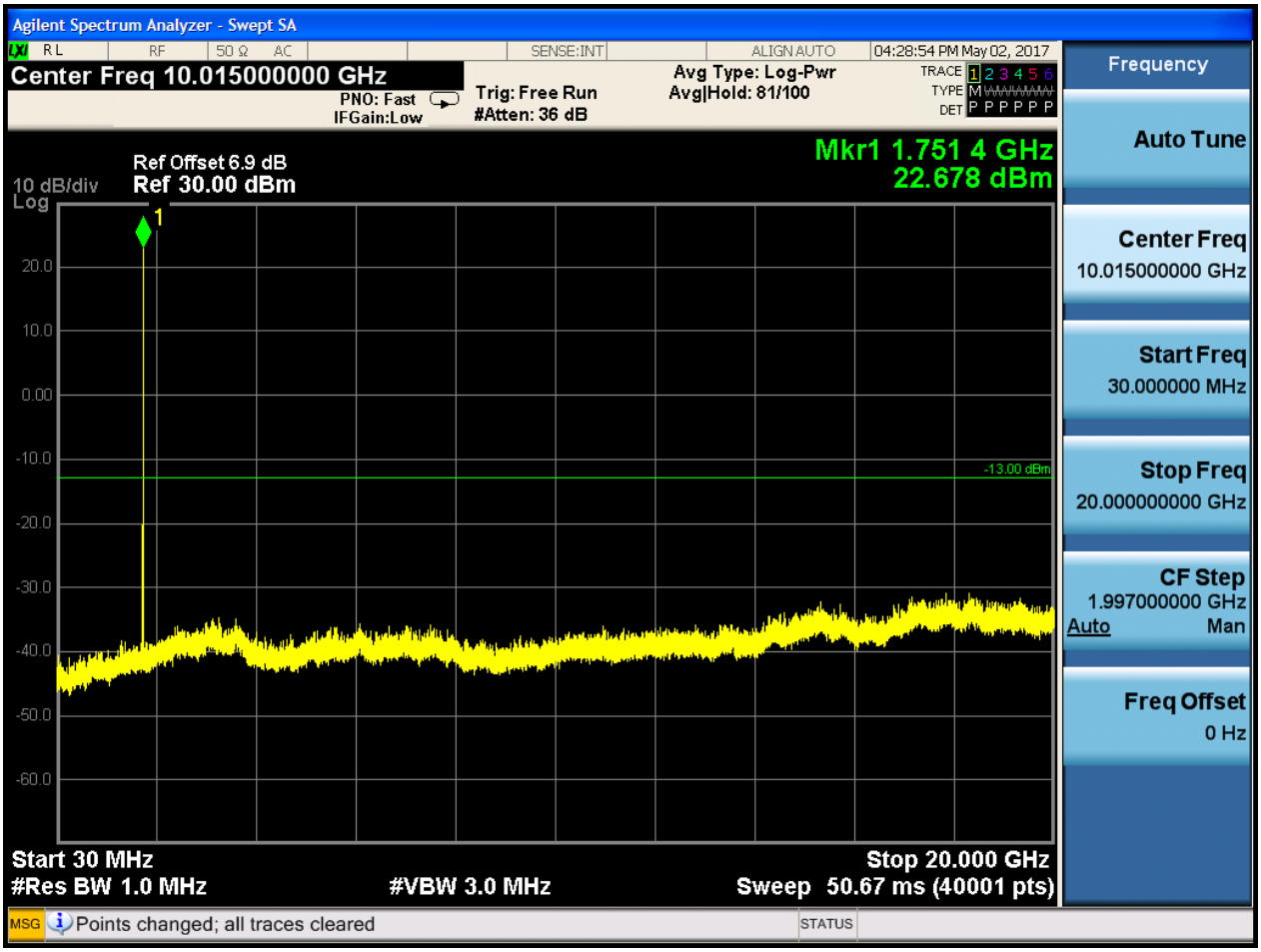




6.1.2.1.3 Test Channel = HCH



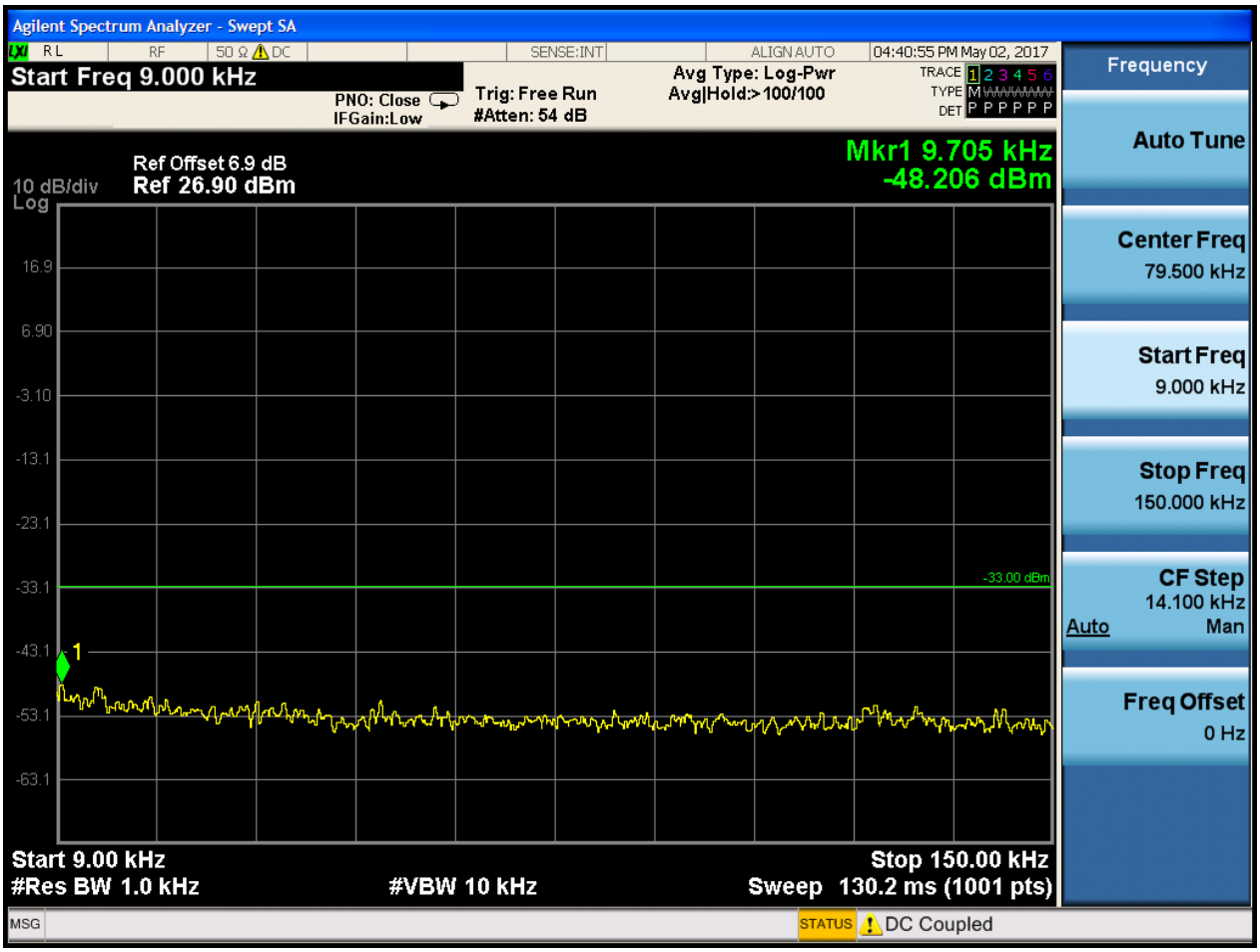


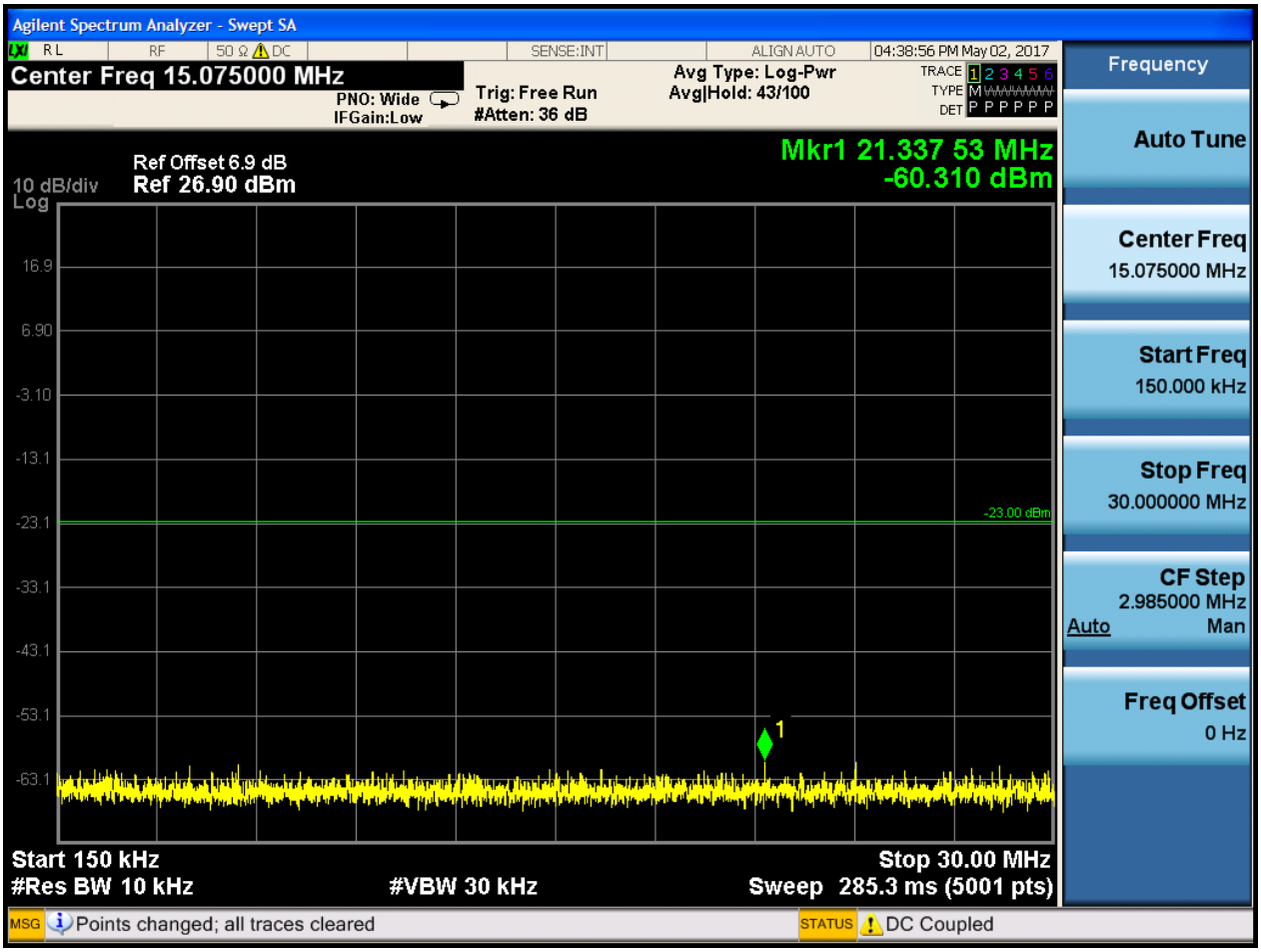


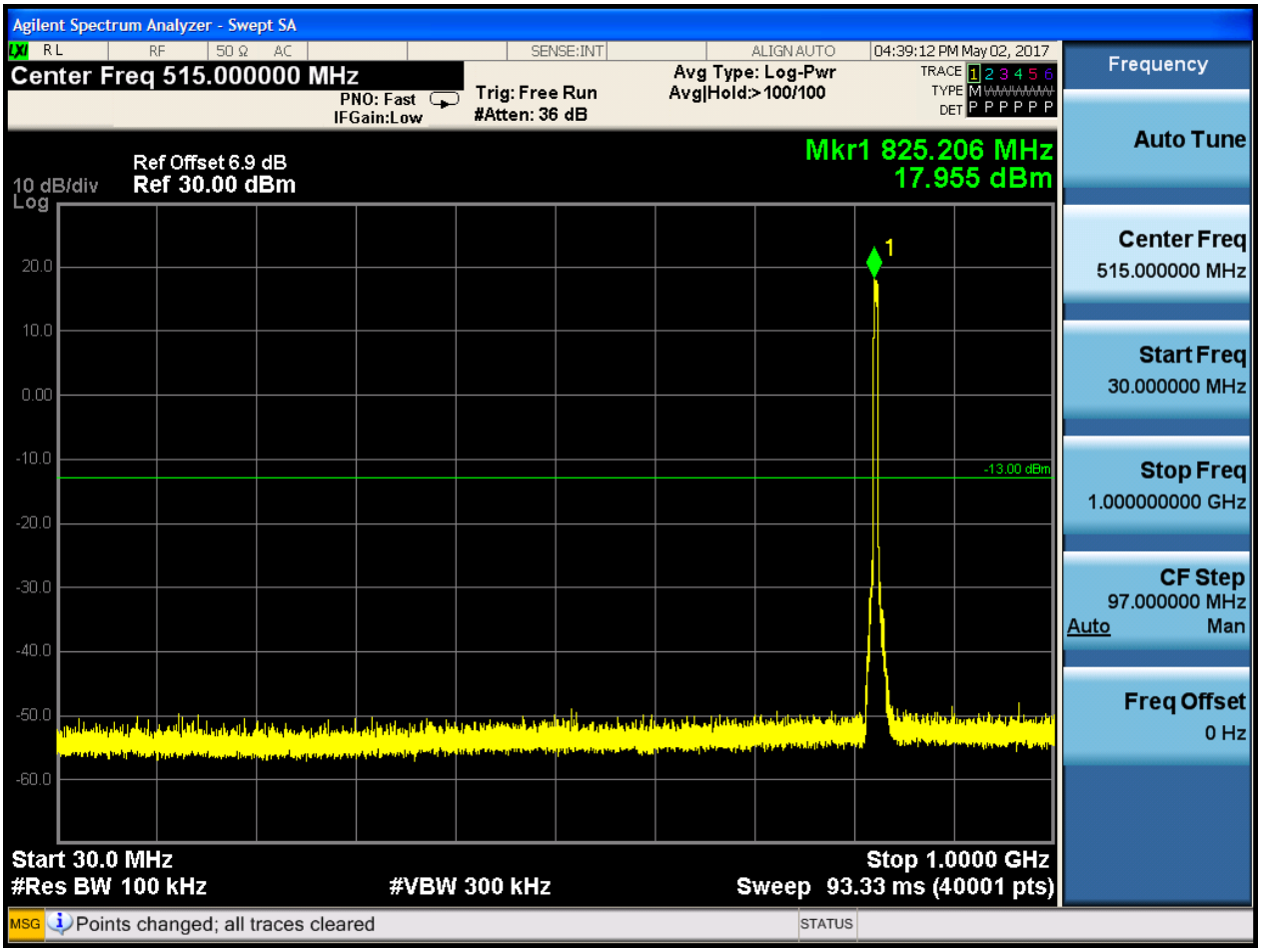
6.1.3 Test Band = WCDMA850

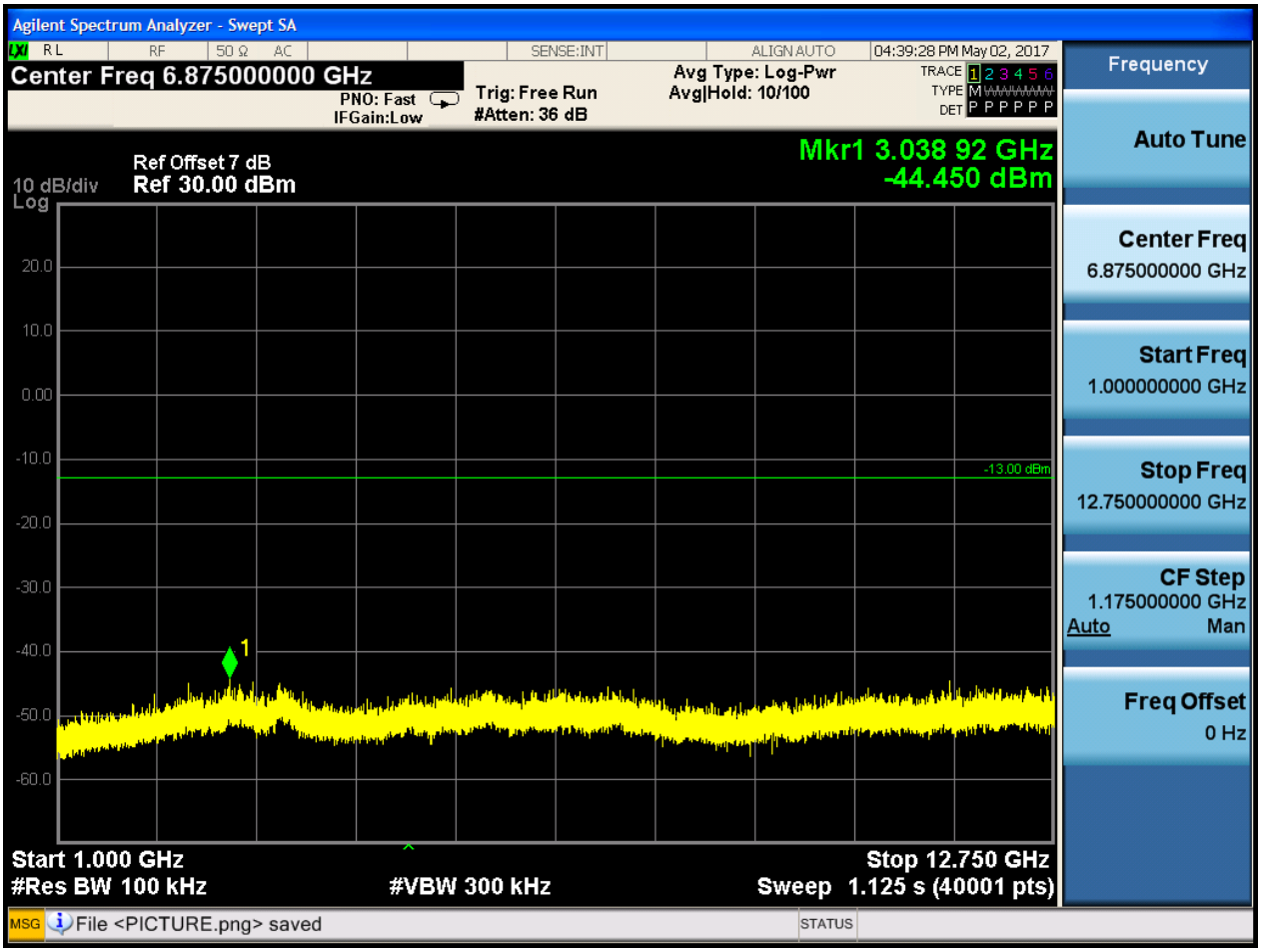
6.1.3.1 Test Mode = UMTS/TM1

6.1.3.1.1 Test Channel = LCH

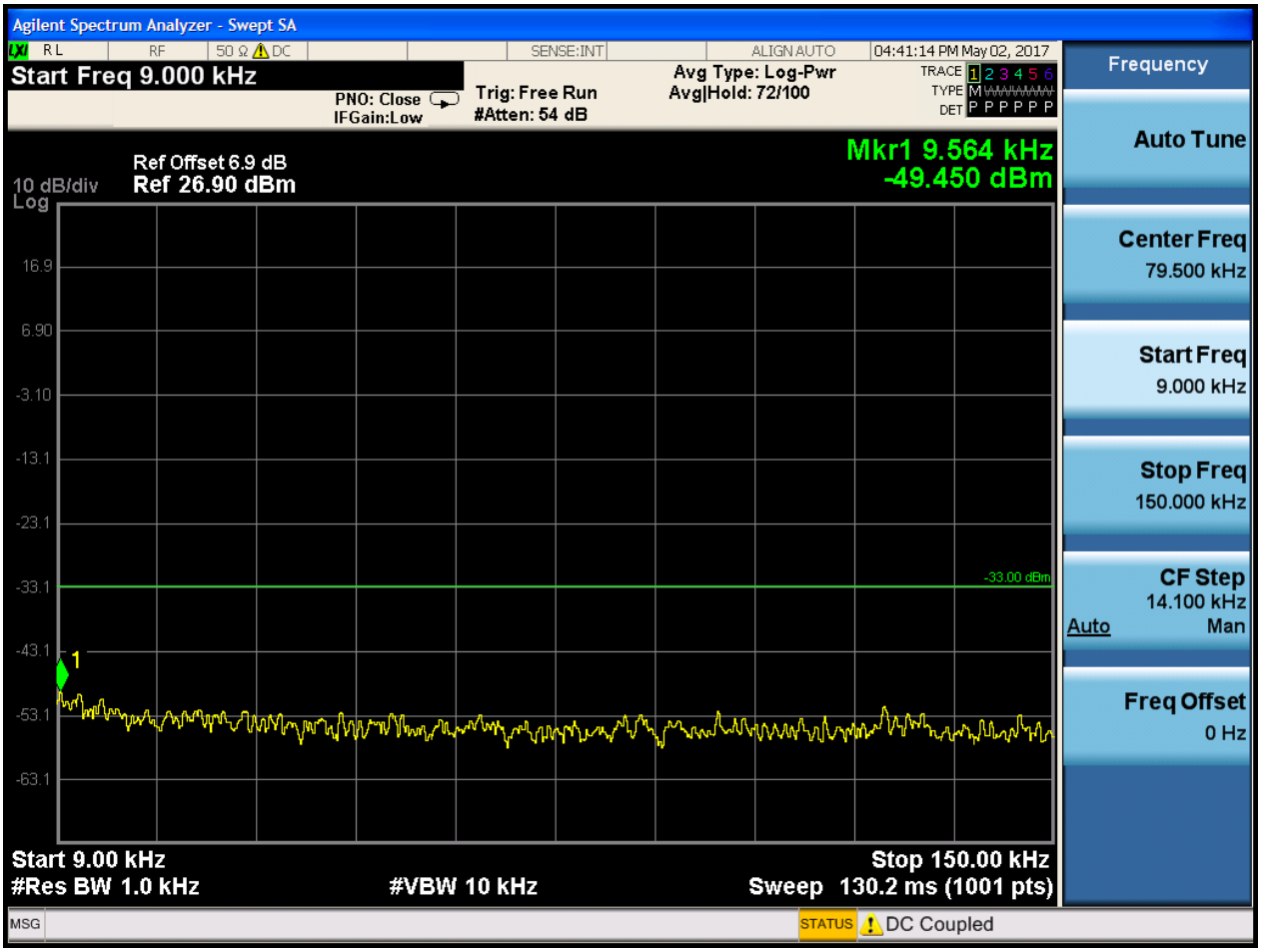


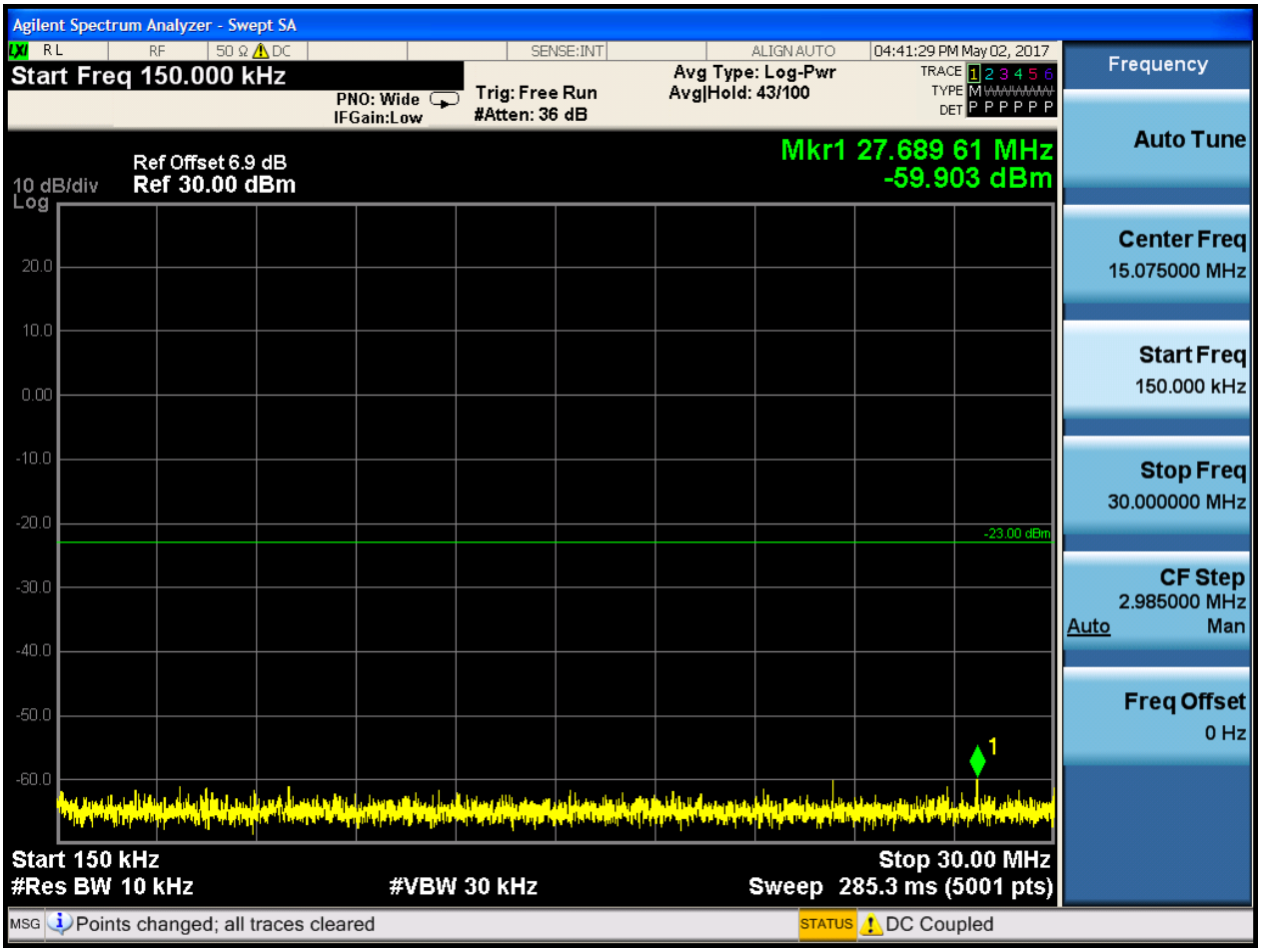


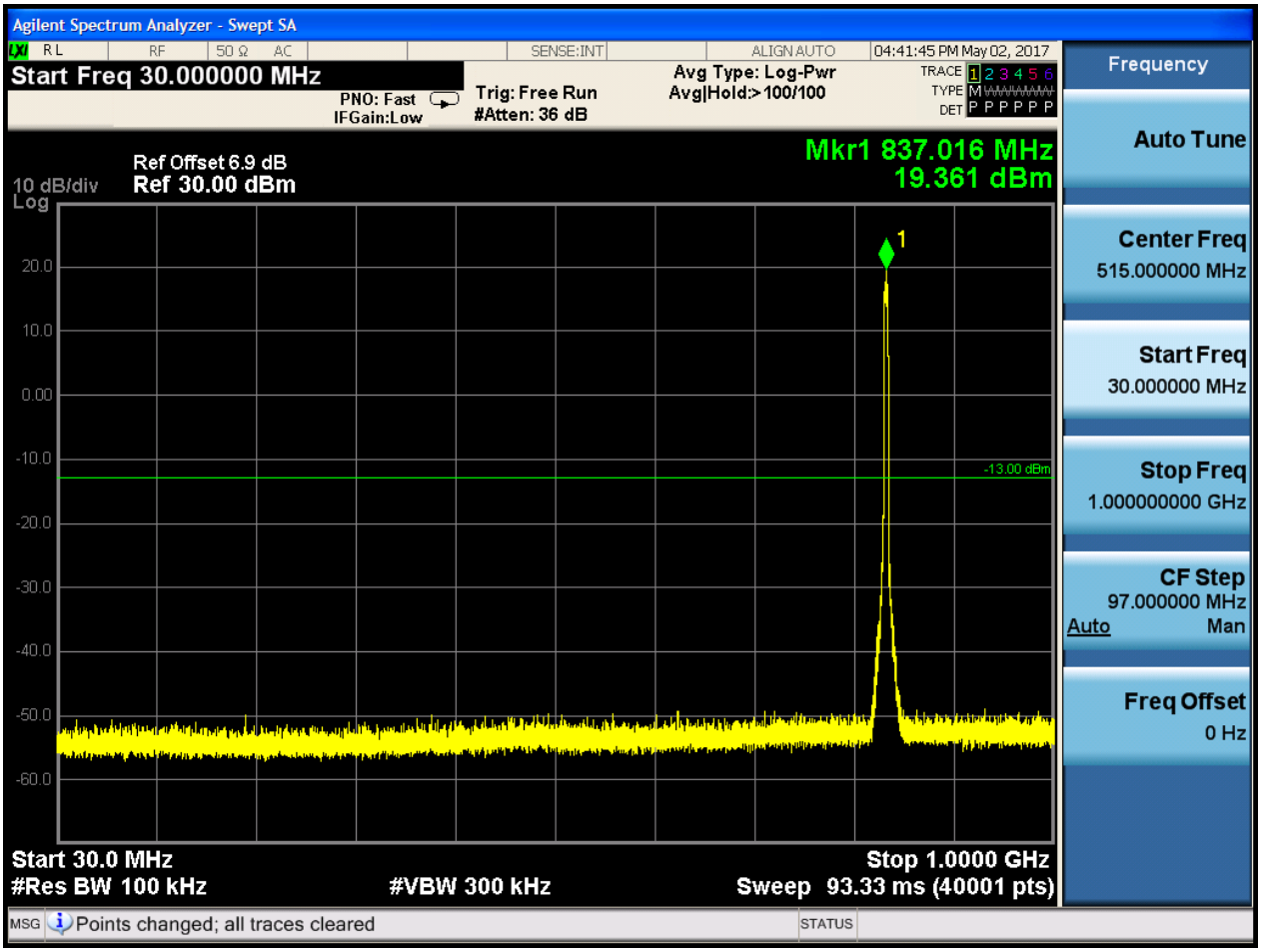


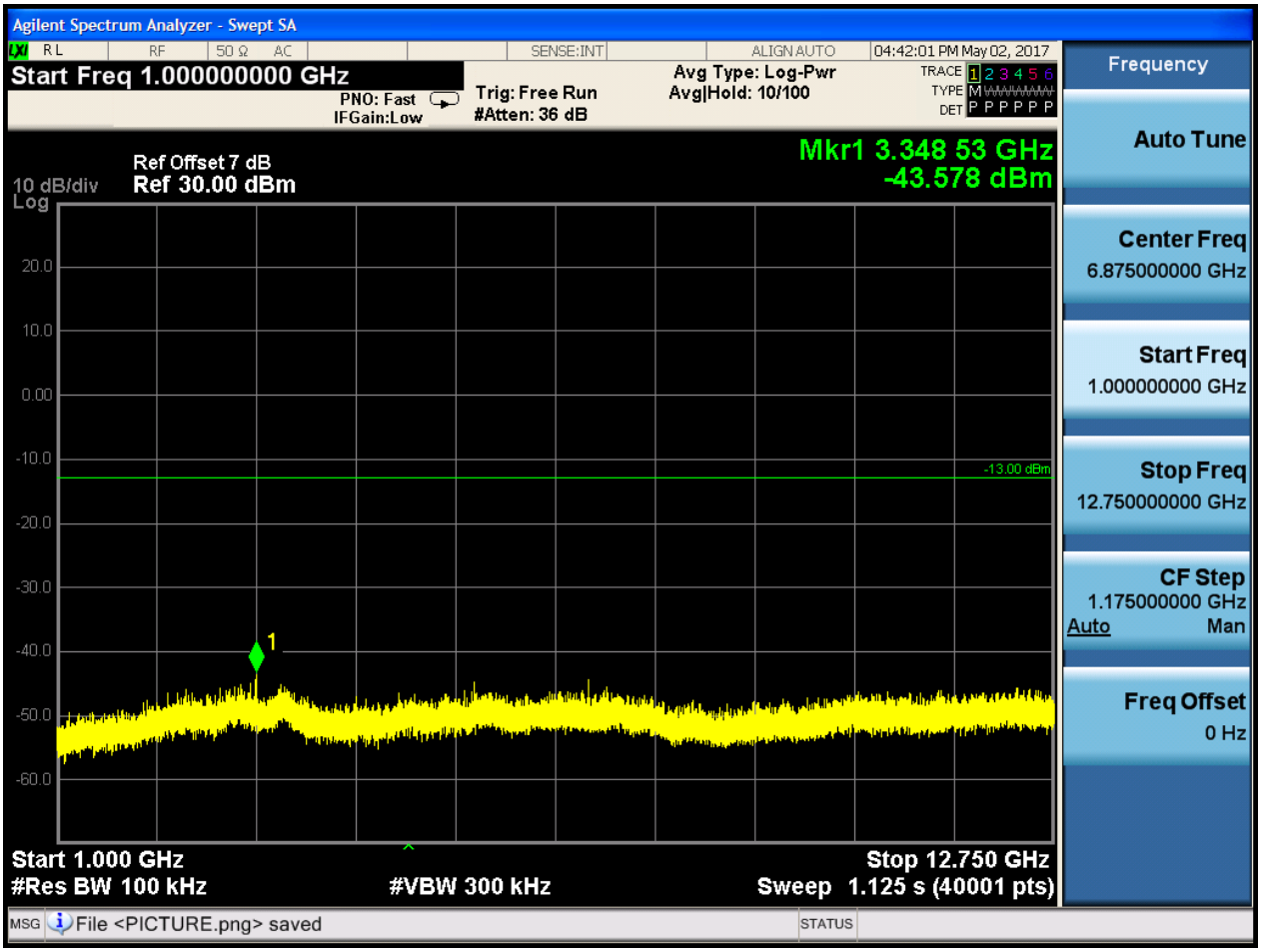


6.1.3.1.2 Test Channel = MCH

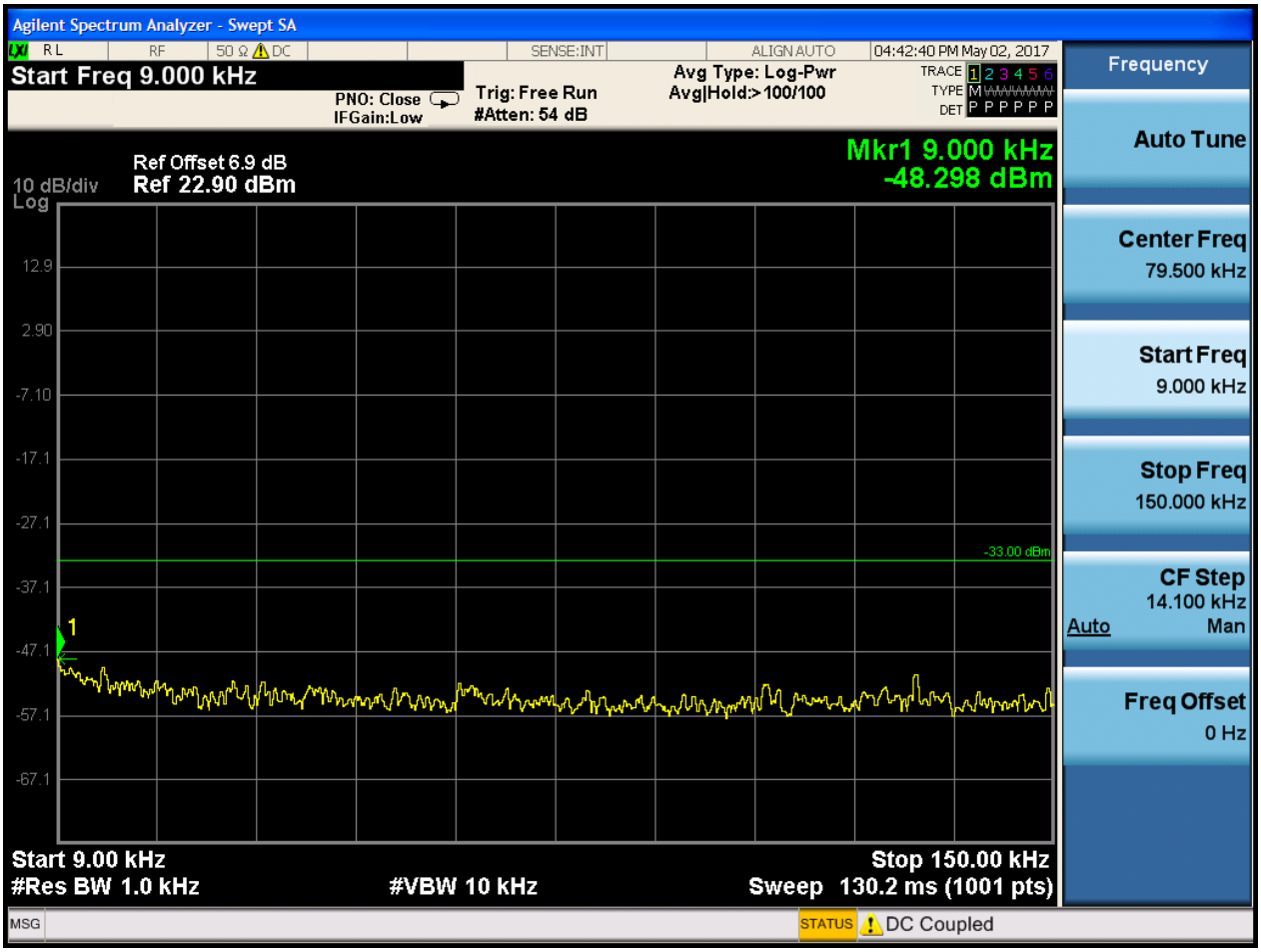


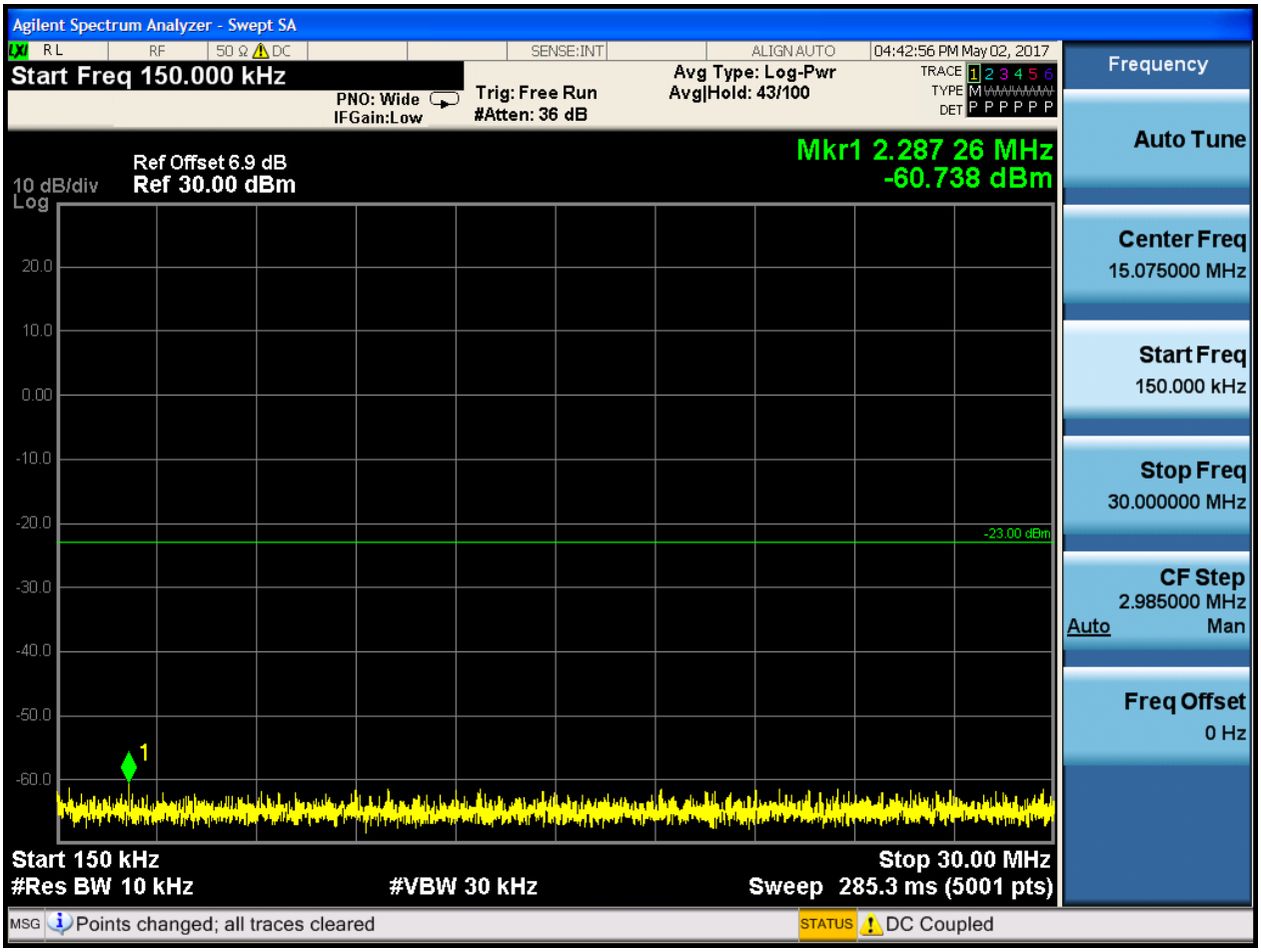


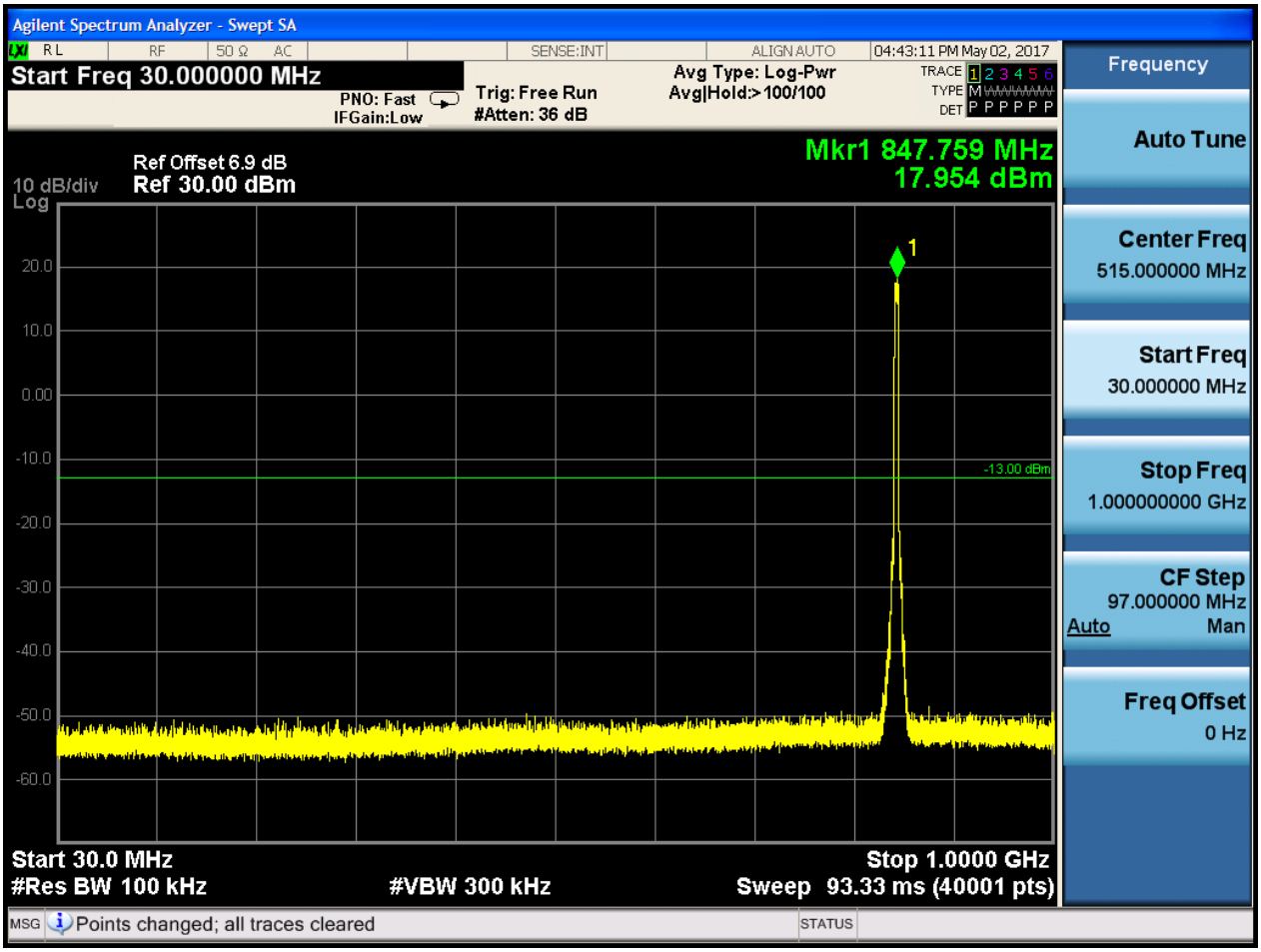


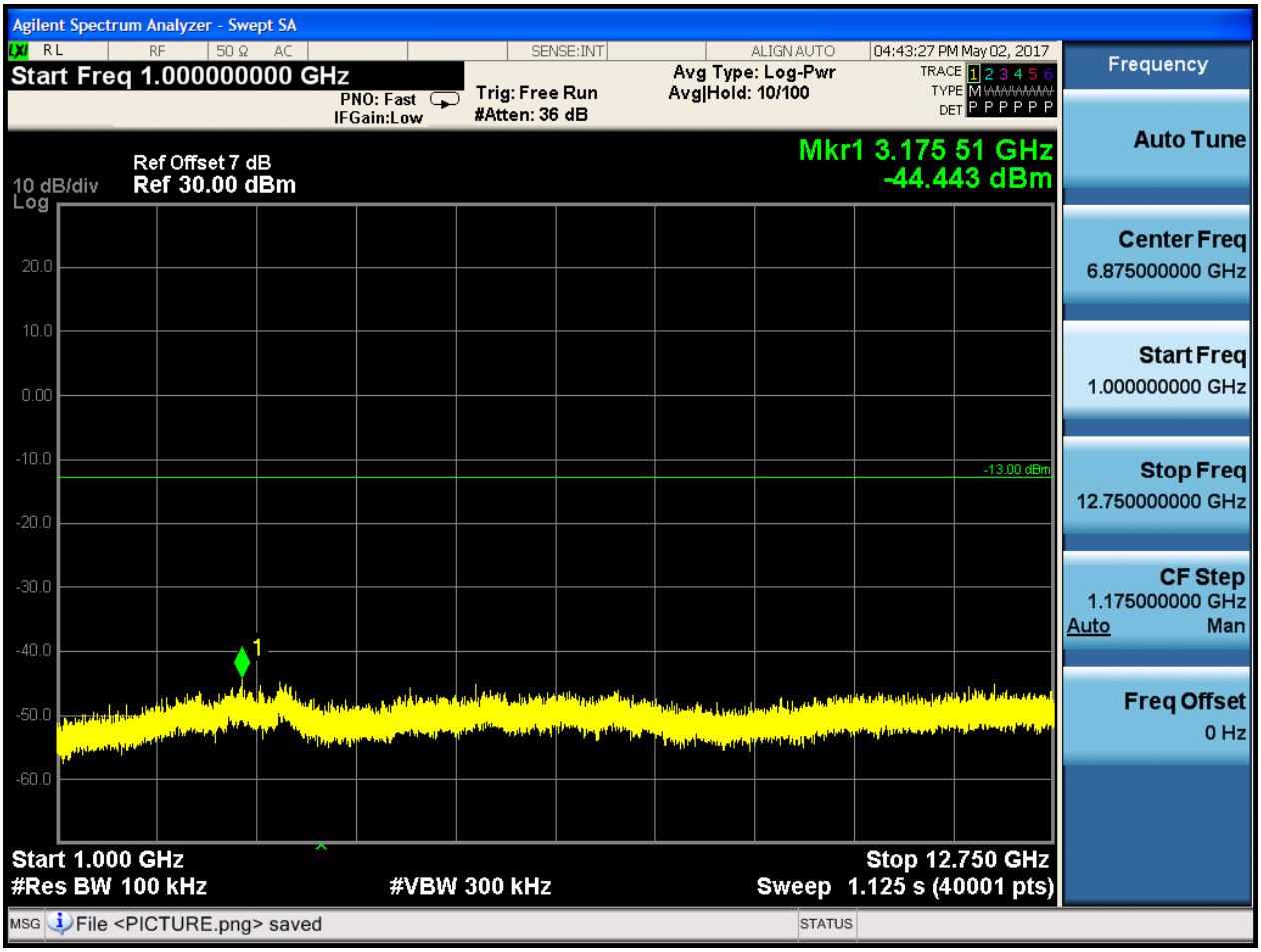


6.1.3.1.3 Test Channel = HCH









7Appendix_G: Field Strength of Spurious Radiation

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

9kHz~150kHz, 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

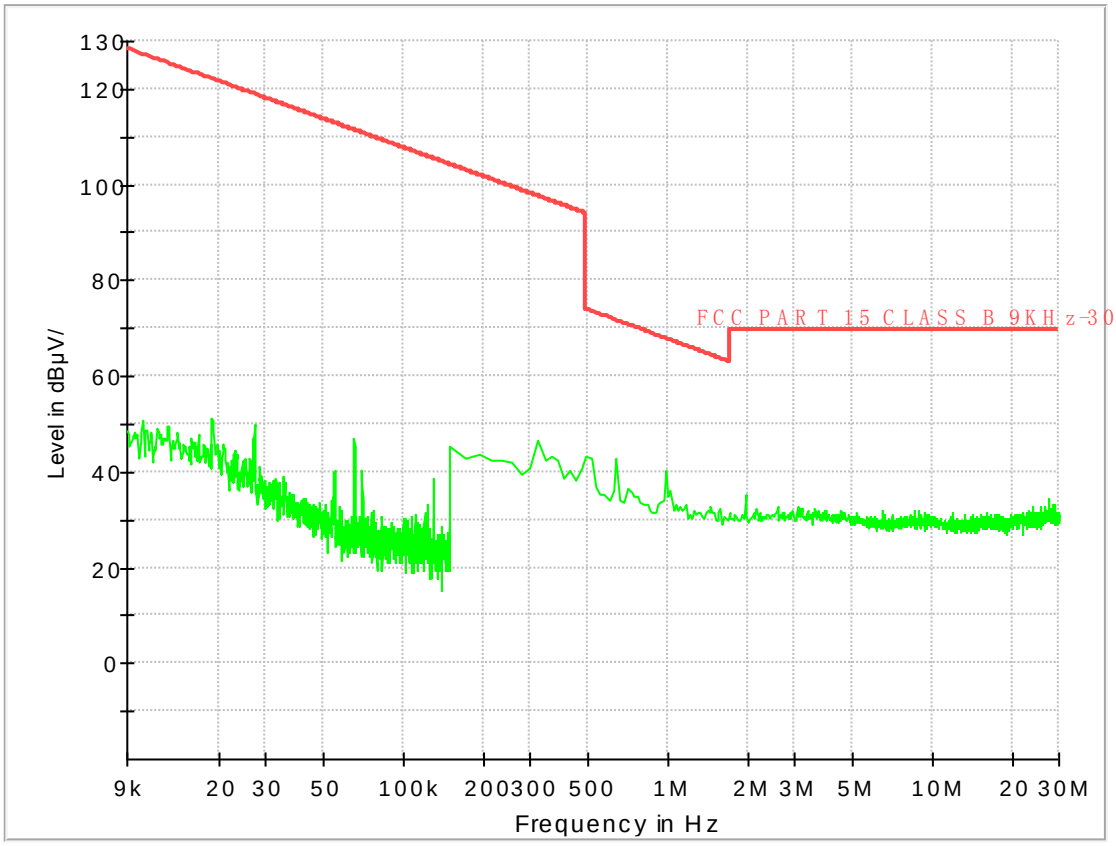
Above 1GHz, RBW = 1 MHz, VBW = 3 MHz. Detector: PK

Part I - Test Plots

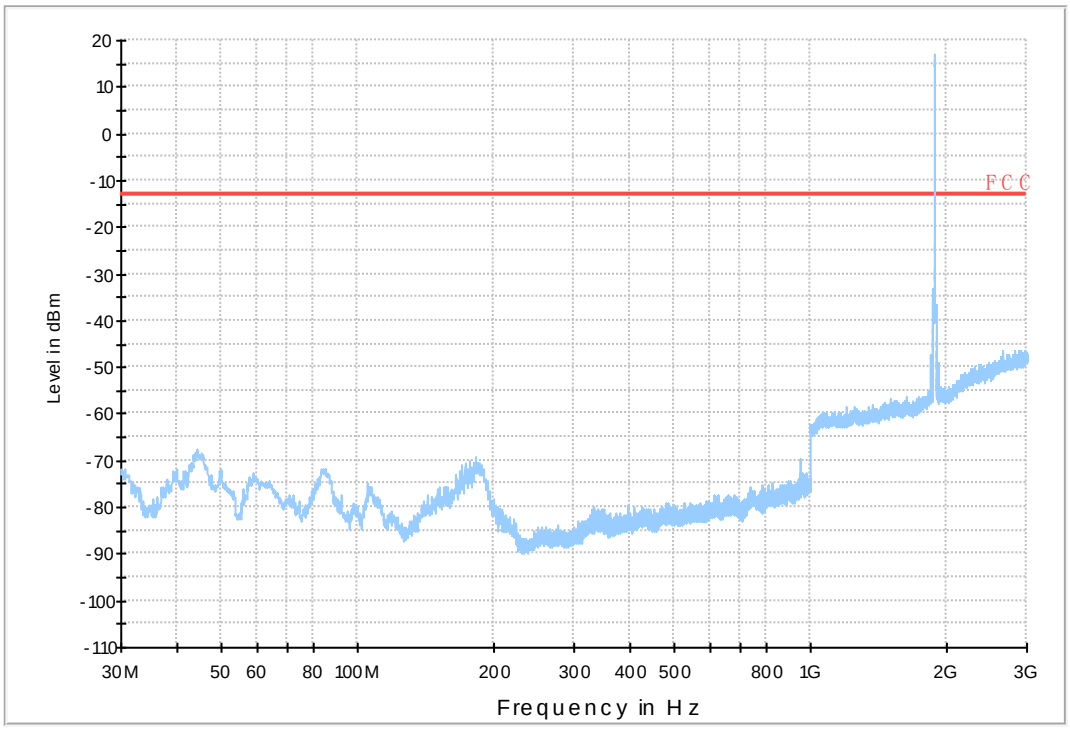
7.1 For UMTS

7.1.1 Test Band = WCDMA1900

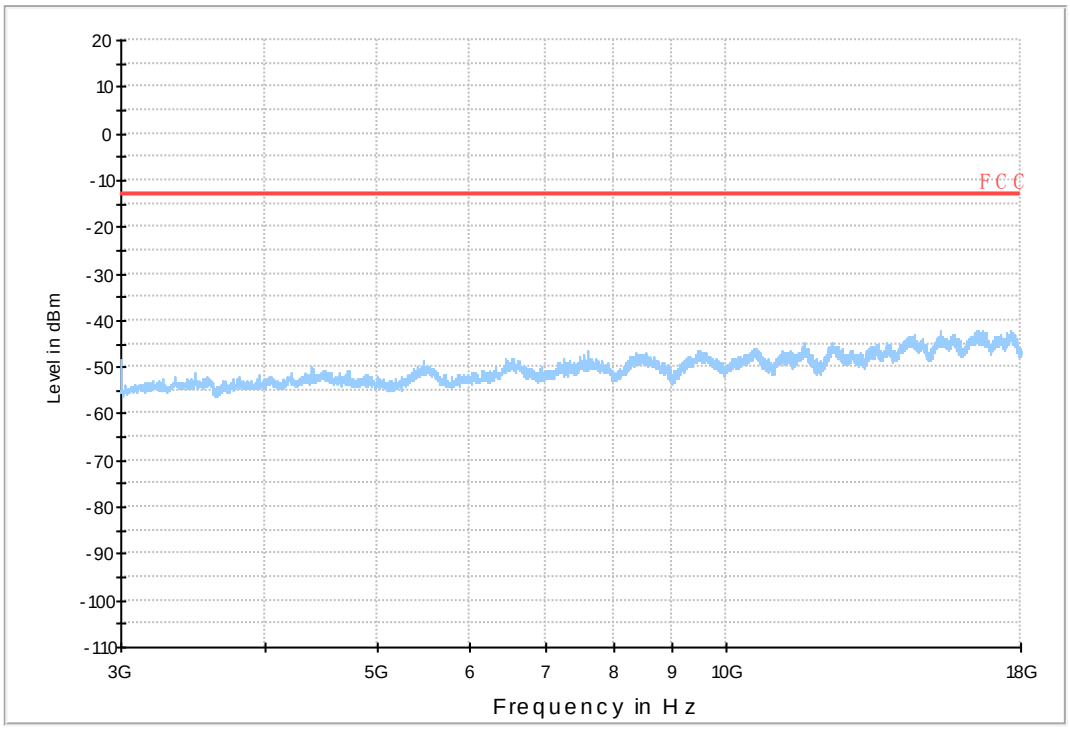
7.1.1.1 Test Mode = UMTS/TM1

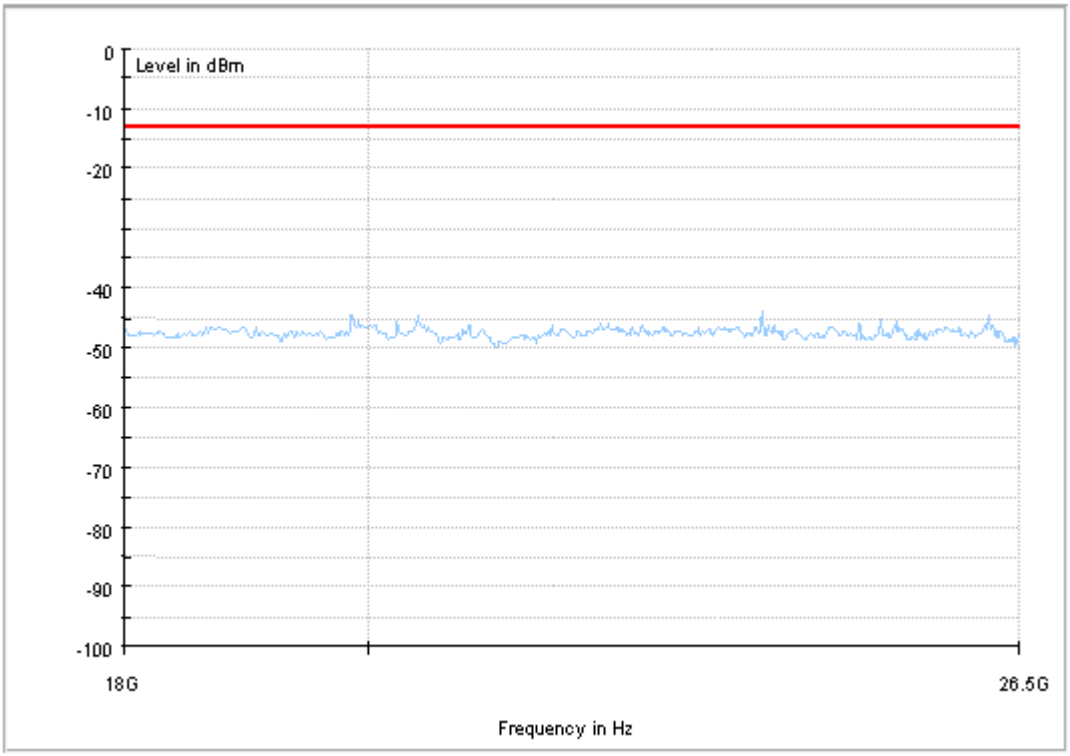


Copy of FCC PART24 WCDMA1900_L



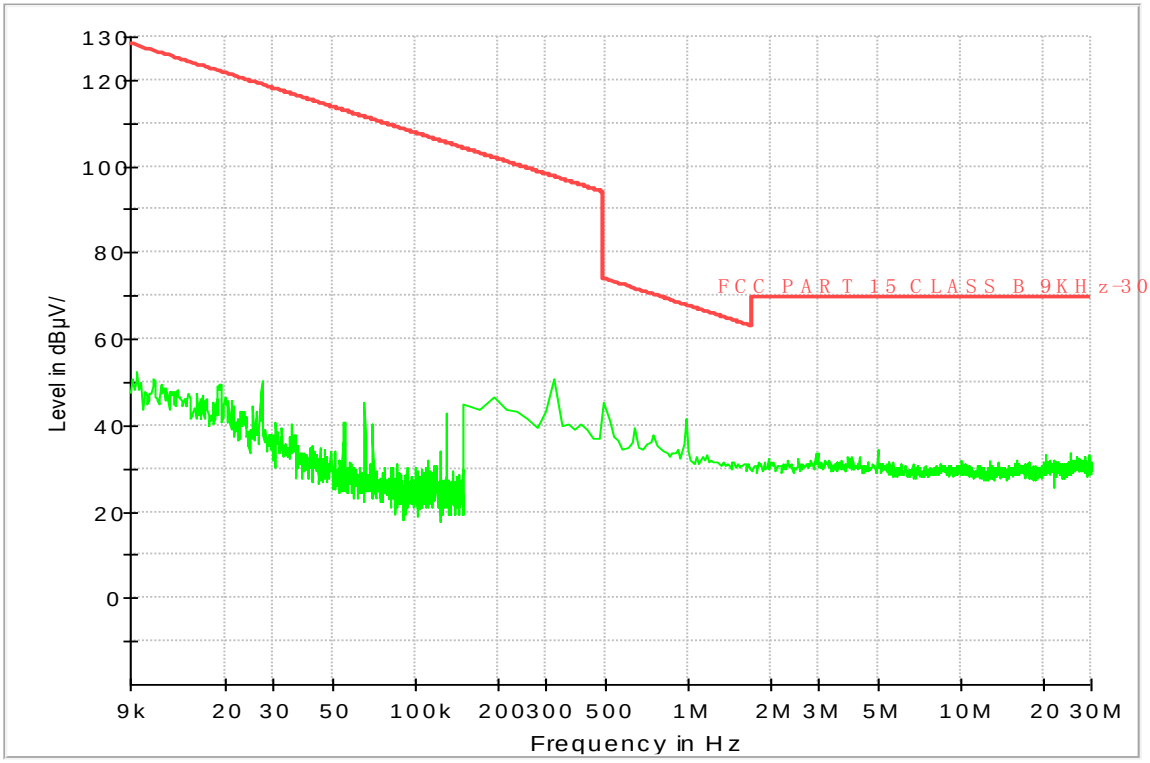
Copy of FCC PART24 WCDMA1900_H





7.1.2 Test Band = WCDMA1700

7.1.2.1 Test Mode = UMTS/TM1



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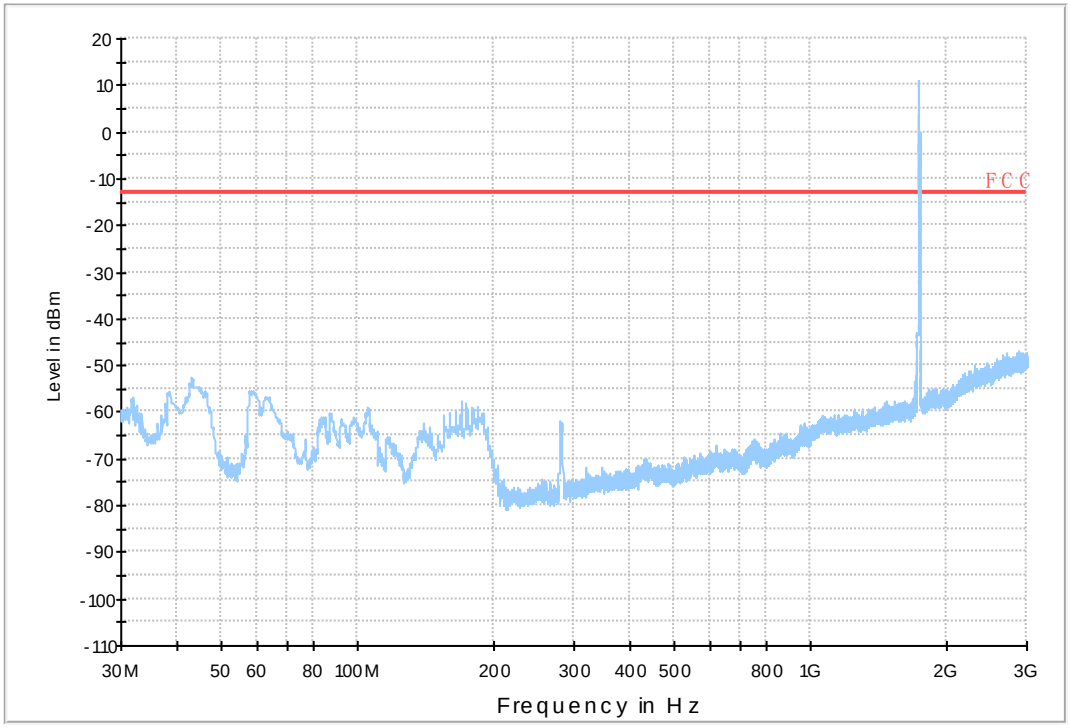

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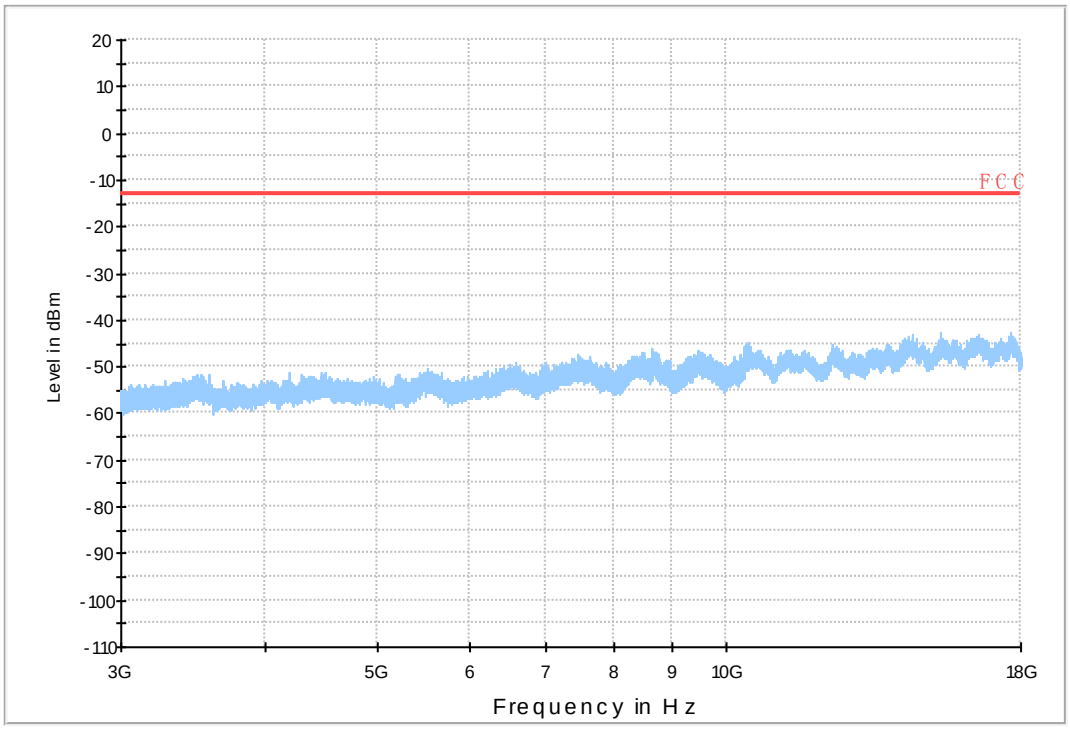
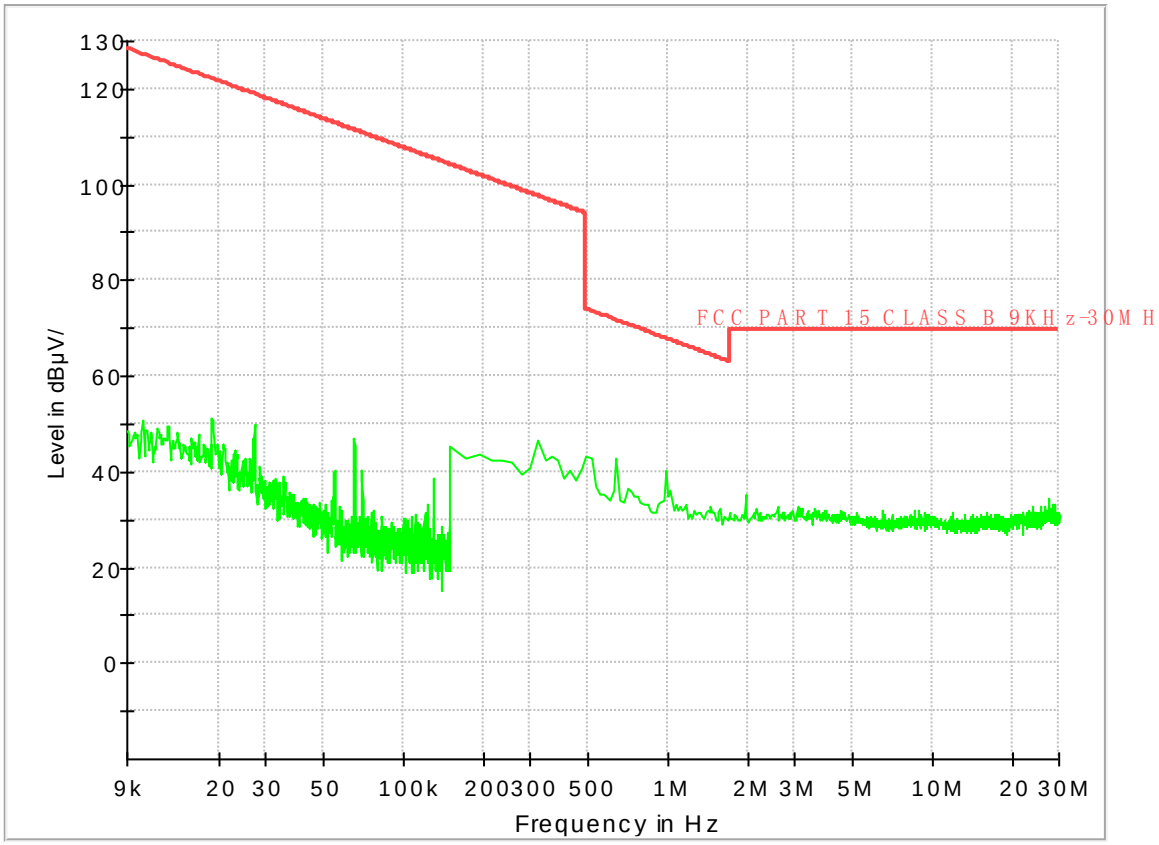


7.1.3 Test Band = WCDMA850

7.1.3.1 Test Mode = UMTS/TM1



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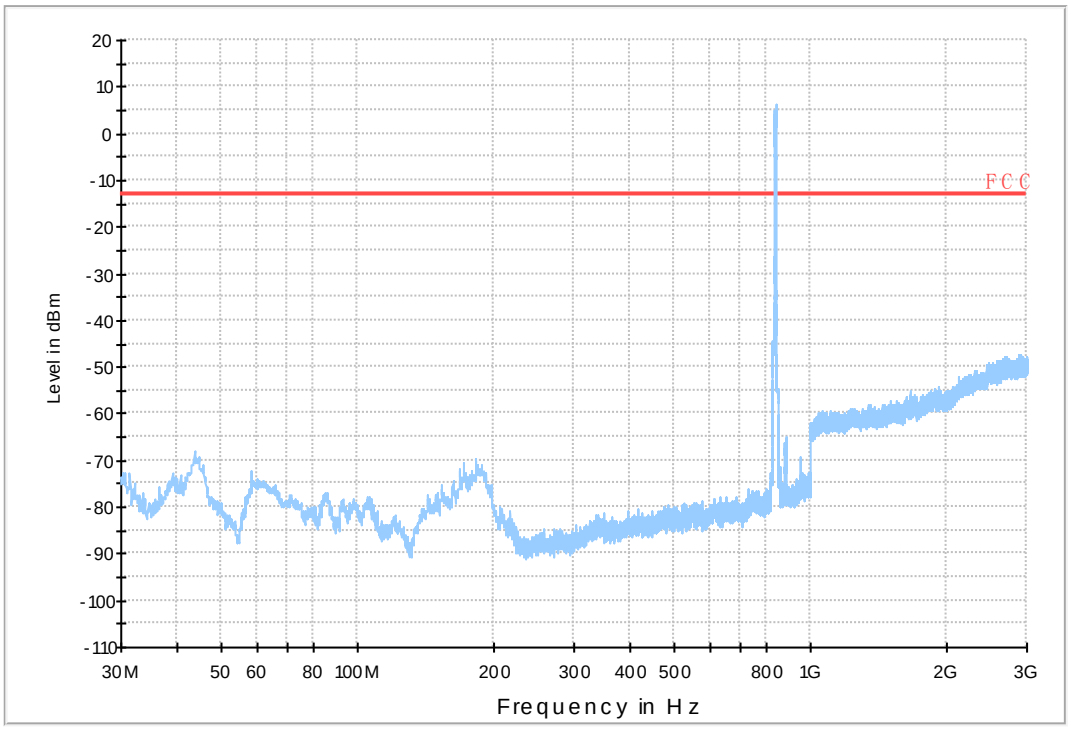
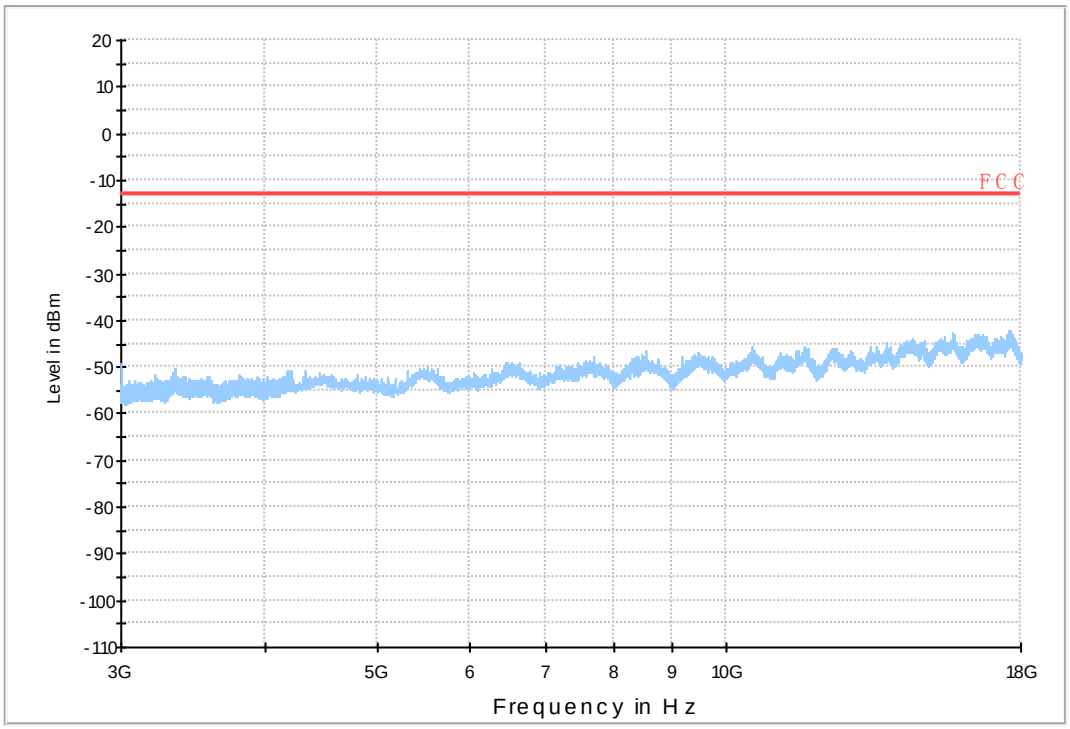


Copy of FCC PART22 WCDMA850_H



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	-3.45	-0.00186	PASS
				VN	0.18	0.0001	PASS
				VH	-2.40	-0.0013	PASS
		MCH	TN	VL	-3.65	-0.00194	PASS
				VN	-0.49	-0.00026	PASS
				VH	-0.18	-0.0001	PASS
		HCH	TN	VL	-1.53	-0.0008	PASS
				VN	-2.49	-0.00131	PASS
				VH	-2.43	-0.00127	PASS
WCDMA1700	UMTS/TM1	LCH	TN	VL	4.27	0.00249	PASS
				VN	4.71	0.00275	PASS
				VH	7.31	0.00427	PASS
		MCH	TN	VL	-0.52	-0.0003	PASS
				VN	0.06	0.00003	PASS
				VH	-0.53	-0.00031	PASS
		HCH	TN	VL	-6.09	-0.00347	PASS
				VN	-6.56	-0.00374	PASS
				VH	-2.50	-0.00143	PASS
WCDMA850	UMTS/TM1	LCH	TN	VL	-0.17	-0.00021	PASS
				VN	0.27	0.00033	PASS
				VH	0.89	0.00108	PASS
		MCH	TN	VL	-0.43	-0.00051	PASS
				VN	-1.92	-0.0023	PASS
				VH	0.79	0.00094	PASS
		HCH	TN	VL	1.01	0.00119	PASS
				VN	-0.72	-0.00085	PASS
				VH	-2.33	-0.00275	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	0.87	0.00047	PASS
				-20	1.07	0.00058	PASS
				-10	1.75	0.00094	PASS
				0	3.04	0.00164	PASS
				10	0.49	0.00026	PASS
				20	-0.52	-0.00028	PASS
				30	0.11	0.00006	PASS
				40	1.75	0.00094	PASS
				50	-0.40	-0.00022	PASS
		MCH	VN	-30	-1.04	-0.00055	PASS
				-20	0.31	0.00016	PASS
				-10	-0.84	-0.00045	PASS
				0	-1.43	-0.00076	PASS
				10	0.46	0.00024	PASS
				20	-1.30	-0.00069	PASS
				30	-1.53	-0.00081	PASS
				40	-0.17	-0.00009	PASS
				50	-3.08	-0.00164	PASS
		HCH	VN	-30	-3.62	-0.0019	PASS
				-20	-3.34	-0.00175	PASS
				-10	-1.80	-0.00094	PASS
				0	-3.52	-0.00185	PASS
				10	-2.47	-0.00129	PASS
				20	-1.08	-0.00057	PASS
				30	-3.75	-0.00197	PASS
				40	-0.79	-0.00041	PASS
				50	-1.60	-0.00084	PASS
WCDMA1700	UMTS/TM1	LCH	VN	-30	5.08	0.00297	PASS
				-20	7.69	0.00449	PASS
				-10	7.28	0.00425	PASS
				0	5.78	0.00338	PASS
				10	10.07	0.00588	PASS
				20	6.82	0.00398	PASS
				30	6.59	0.00385	PASS
				40	8.91	0.0052	PASS
				50	9.77	0.00571	PASS
		MCH	VN	-30	-1.69	-0.00098	PASS
				-20	-0.02	-0.00001	PASS
				-10	0.66	0.00038	PASS
				0	1.21	0.0007	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				10	-1.46	-0.00084	PASS
				20	1.85	0.00107	PASS
				30	-1.17	-0.00068	PASS
				40	0.93	0.00054	PASS
				50	2.11	0.00122	PASS
		HCH	VN	-30	-6.36	-0.00363	PASS
				-20	-4.96	-0.00283	PASS
				-10	-7.00	-0.00399	PASS
				0	-2.21	-0.00126	PASS
				10	-5.80	-0.00331	PASS
				20	-3.72	-0.00212	PASS
				30	-3.57	-0.00204	PASS
				40	-5.23	-0.00298	PASS
				50	-4.44	-0.00253	PASS
WCDMA850	UMTS/TM1	LCH	VN	-30	0.05	0.00006	PASS
				-20	-1.98	-0.0024	PASS
				-10	0.11	0.00013	PASS
				0	-0.12	-0.00015	PASS
				10	-2.93	-0.00355	PASS
				20	0.58	0.0007	PASS
				30	1.54	0.00186	PASS
				40	-2.08	-0.00252	PASS
				50	-0.72	-0.00087	PASS
		MCH	VN	-30	-3.34	-0.00399	PASS
				-20	-0.34	-0.00041	PASS
				-10	-1.22	-0.00146	PASS
				0	-0.73	-0.00087	PASS
				10	0.93	0.00111	PASS
				20	-1.11	-0.00133	PASS
				30	0.41	0.00049	PASS
				40	0.21	0.00025	PASS
				50	1.25	0.00149	PASS
		HCH	VN	-30	-2.01	-0.00237	PASS
				-20	-2.01	-0.00237	PASS
				-10	-0.75	-0.00089	PASS
				0	1.19	0.00141	PASS
				10	-1.57	-0.00185	PASS
				20	-0.99	-0.00117	PASS
				30	-1.95	-0.0023	PASS
				40	-2.06	-0.00243	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				50	1.37	0.00162	PASS

END