Appendix for test report

1Appendix_A: Effective (Isotropic) Radiated Power Output Data

Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dBm]	ERP [dBm]	Limit [dBm]	Verdict
GSM850	GSM/TM1	LCH	32.73	30.6	38.5	PASS
		MCH	32.78	30.84	38.5	PASS
		HCH	32.83	30.78	38.5	PASS
	GSM/TM2	LCH	26.47	24.5	38.5	PASS
		MCH	26.54	24.57	38.5	PASS
		HCH	26.54	24.68	38.5	PASS

Test Band	Test Mode	Test Channel	Measured[dBm]	EIRP [dBm]	Limit [dBm]	Verdict
GSM1900	GSM/TM1	LCH	29.83	29.17	33	PASS
		MCH	29.9	29.27	33	PASS
		HCH	30.21	29.57	33	PASS
	GSM/TM2	LCH	25.05	24.28	33	PASS
		MCH	24.97	24.23	33	PASS
		HCH	24.98	24.46	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:

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
GSM850	GSM/TM1	LCH	0.12	13	PASS
		MCH	0.12	13	PASS
		HCH	0.12	13	PASS
	GSM/TM2	LCH	2.74	13	PASS
		MCH	2.85	13	PASS
		HCH	2.96	13	PASS
GSM1900	GSM/TM1	LCH	0.14	13	PASS
		MCH	0.14	13	PASS
		HCH	0.14	13	PASS
	GSM/TM2	LCH	2.89	13	PASS
		MCH	2.86	13	PASS
		HCH	2.79	13	PASS

3Appendix_C: Modulation Characteristics

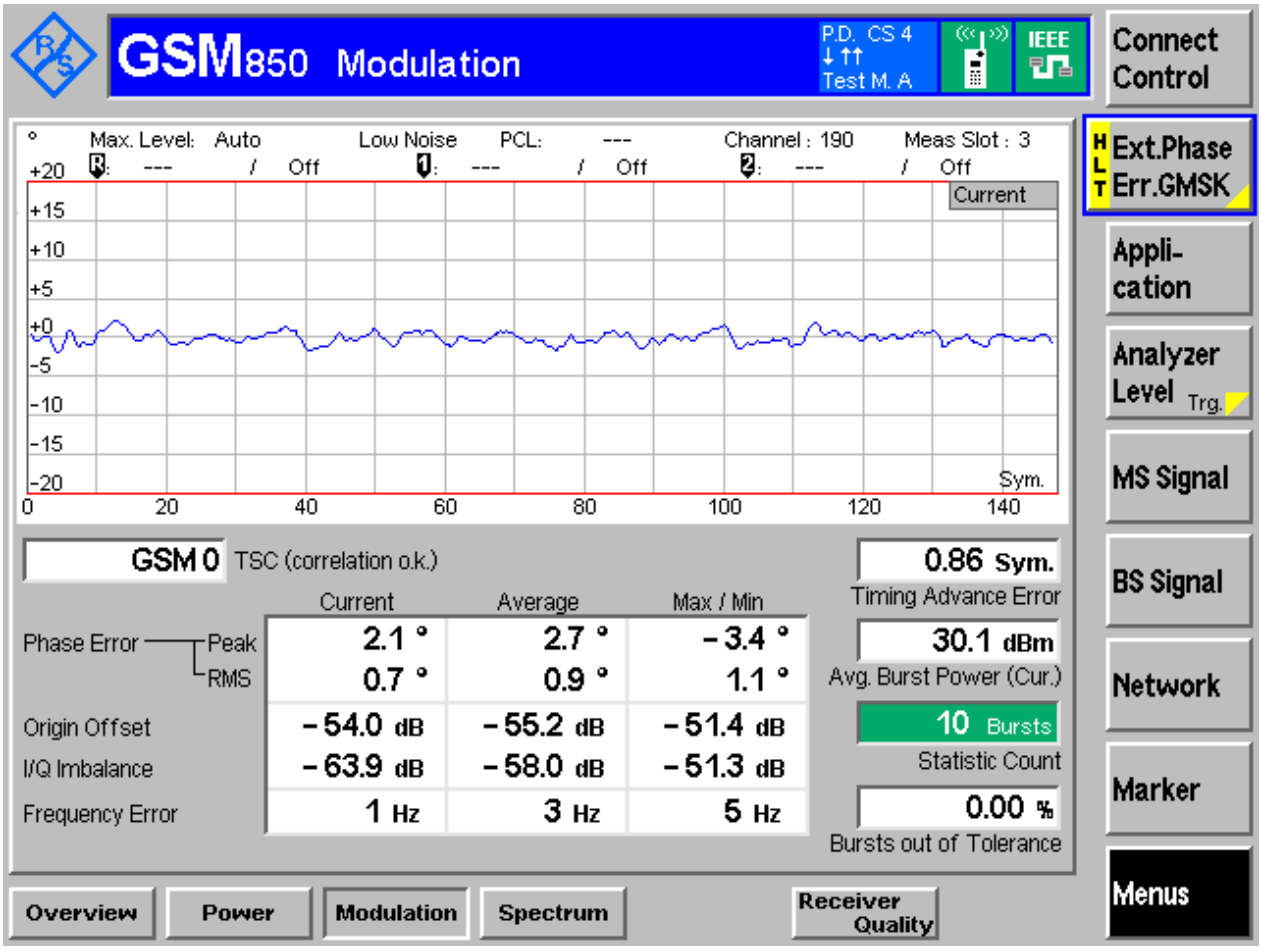
Part I - Test Plots

3.1 For GSM

3.1.1 Test Band = GSM850

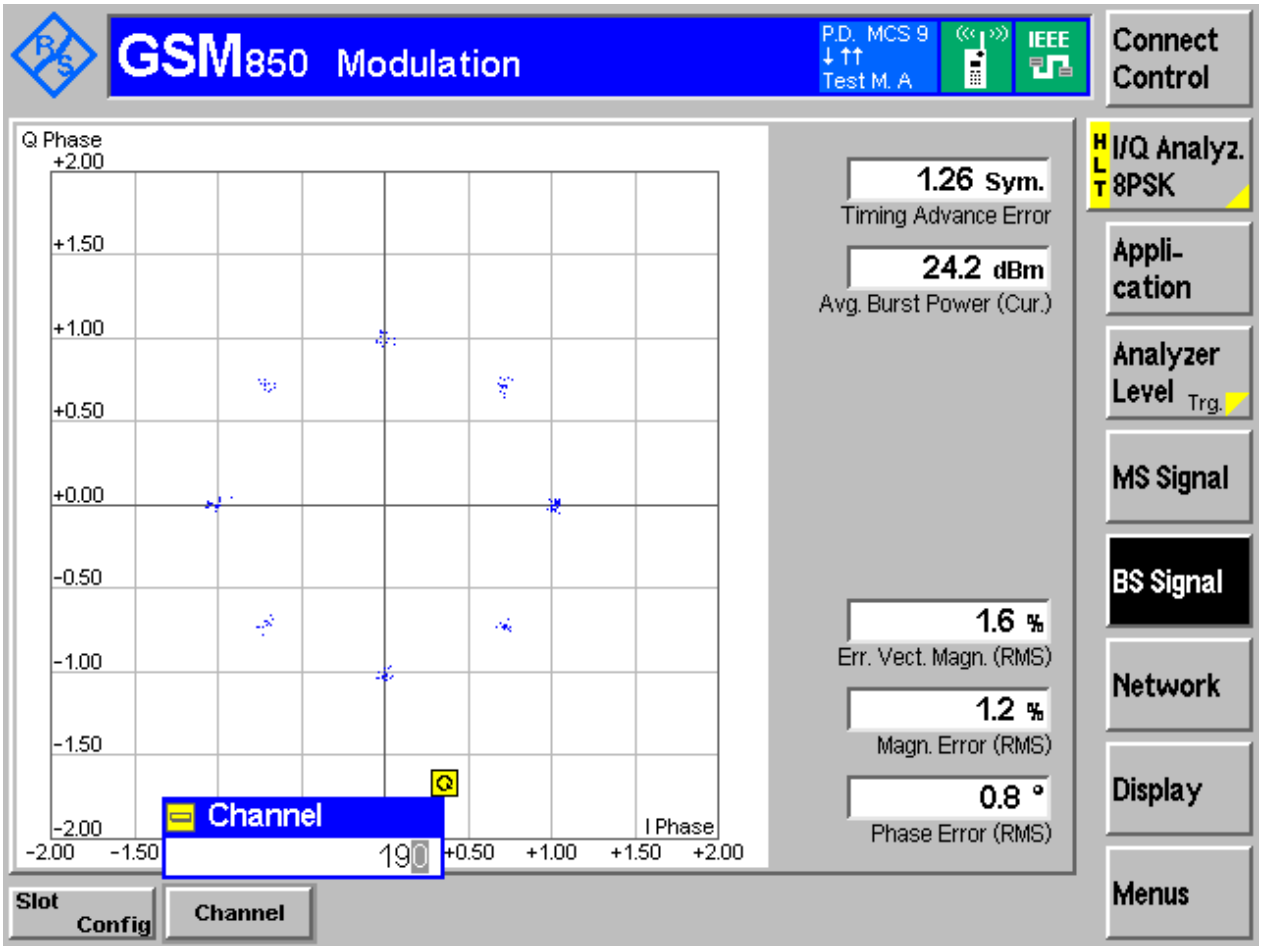
3.1.1.1 Test Mode = GSM/TM1

3.1.1.1.1 Test Channel = MCH



3.1.1.2 Test Mode = GSM/TM2

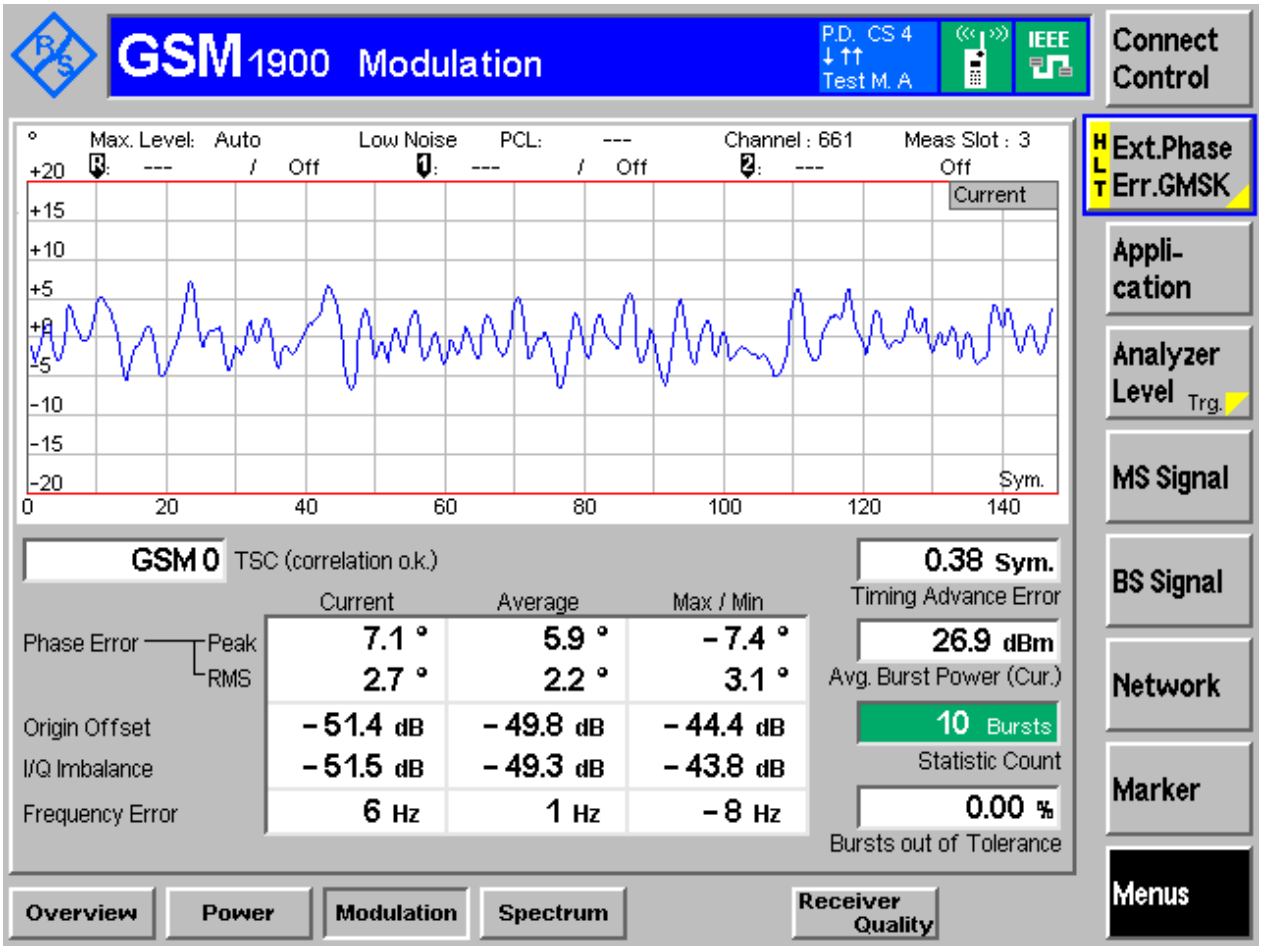
3.1.1.2.1 Test Channel = MCH



3.1.2 Test Band = GSM1900

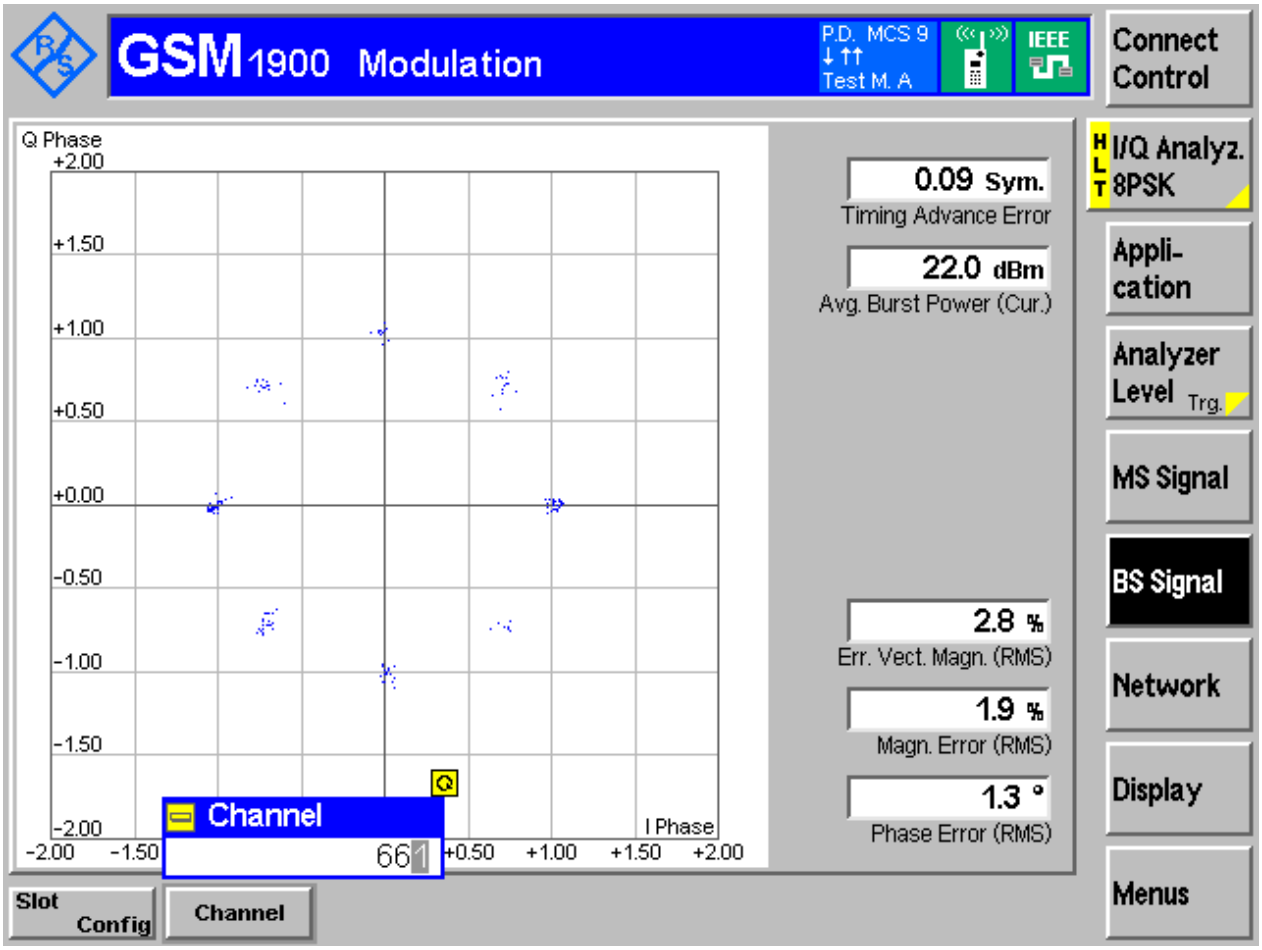
3.1.2.1 Test Mode = GSM/TM1

3.1.2.1.1 Test Channel = MCH



3.1.2.2 Test Mode = GSM/TM2

3.1.2.2.1 Test Channel = MCH



4Appendix_D: Bandwidth

Part I - Test Results

Test Band	Test Mode	Test Channel	Occupied Bandwidth [kHz]	Emission Bandwidth [kHz]	Verdict
GSM850	GSM/TM1	LCH	244.69	314.98	Pass
		MCH	242.37	318.19	Pass
		HCH	245.99	314.25	Pass
	GSM/TM2	LCH	250.69	320.96	Pass
		MCH	252.14	318.99	Pass
		HCH	252.25	326.87	Pass
GSM1900	GSM/TM1	LCH	247.82	323.66	Pass
		MCH	247.72	320.61	Pass
		HCH	248.62	318.24	Pass
	GSM/TM2	LCH	253.53	326.24	Pass
		MCH	253.13	324.19	Pass
		HCH	250.39	320.15	Pass

Part II - Test Plots

4.1 For GSM

4.1.1 Test Band = GSM850

4.1.1.1 Test Mode = GSM/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

4.1.1.2 Test Mode = GSM/TM2

4.1.1.2.1 Test Channel = LCH

4.1.1.2.2 Test Channel = MCH

4.1.1.2.3 Test Channel = HCH

4.1.2 Test Band = GSM1900

4.1.2.1 Test Mode = GSM/TM1

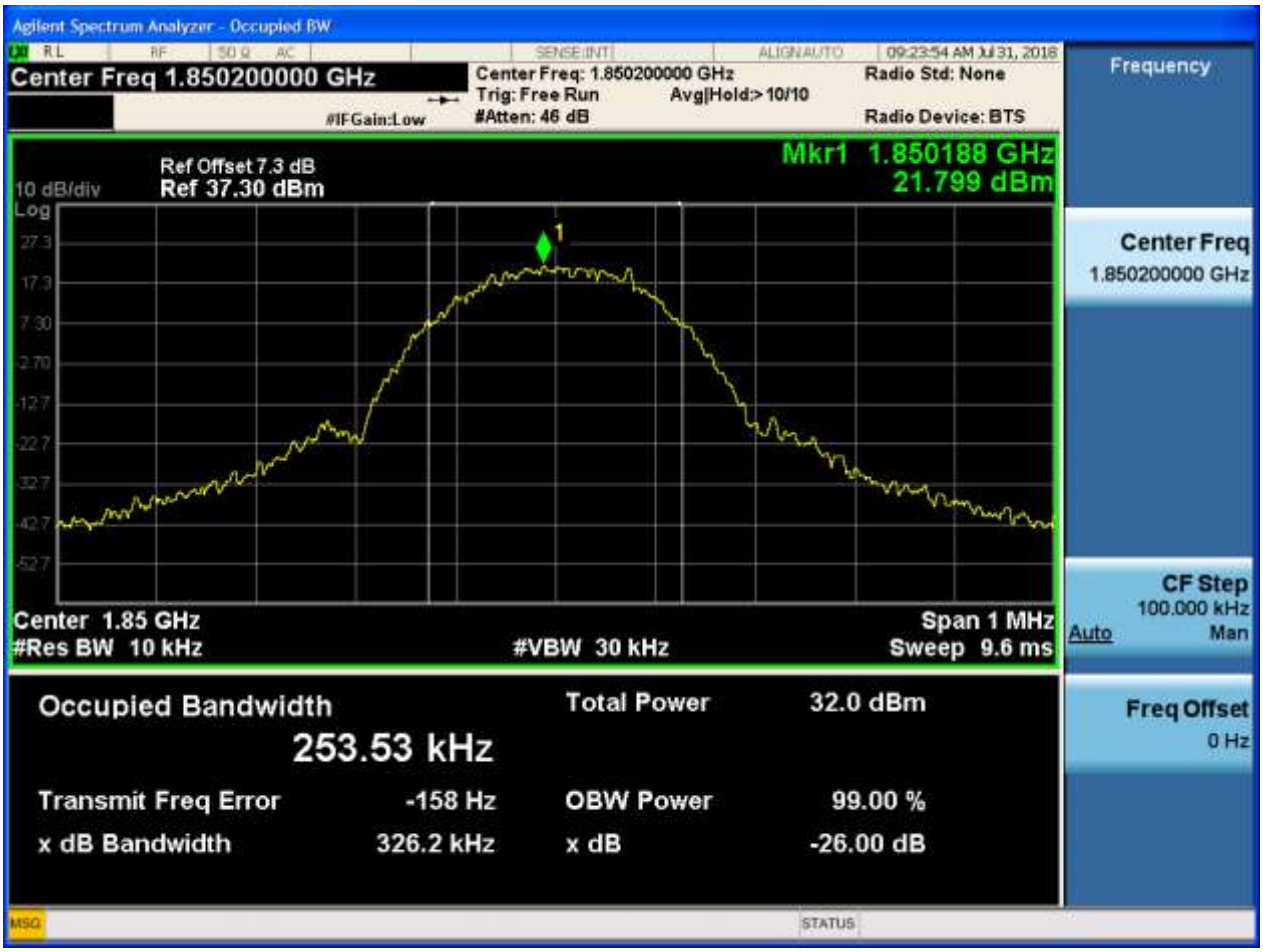
4.1.2.1.1 Test Channel = LCH

4.1.2.1.2 Test Channel = MCH

4.1.2.1.3 Test Channel = HCH

4.1.2.2 Test Mode = GSM/TM2

4.1.2.2.1 Test Channel = LCH



4.1.2.2.2 Test Channel = MCH

4.1.2.2.3 Test Channel = HCH

5Appendix_E: Band Edges Compliance

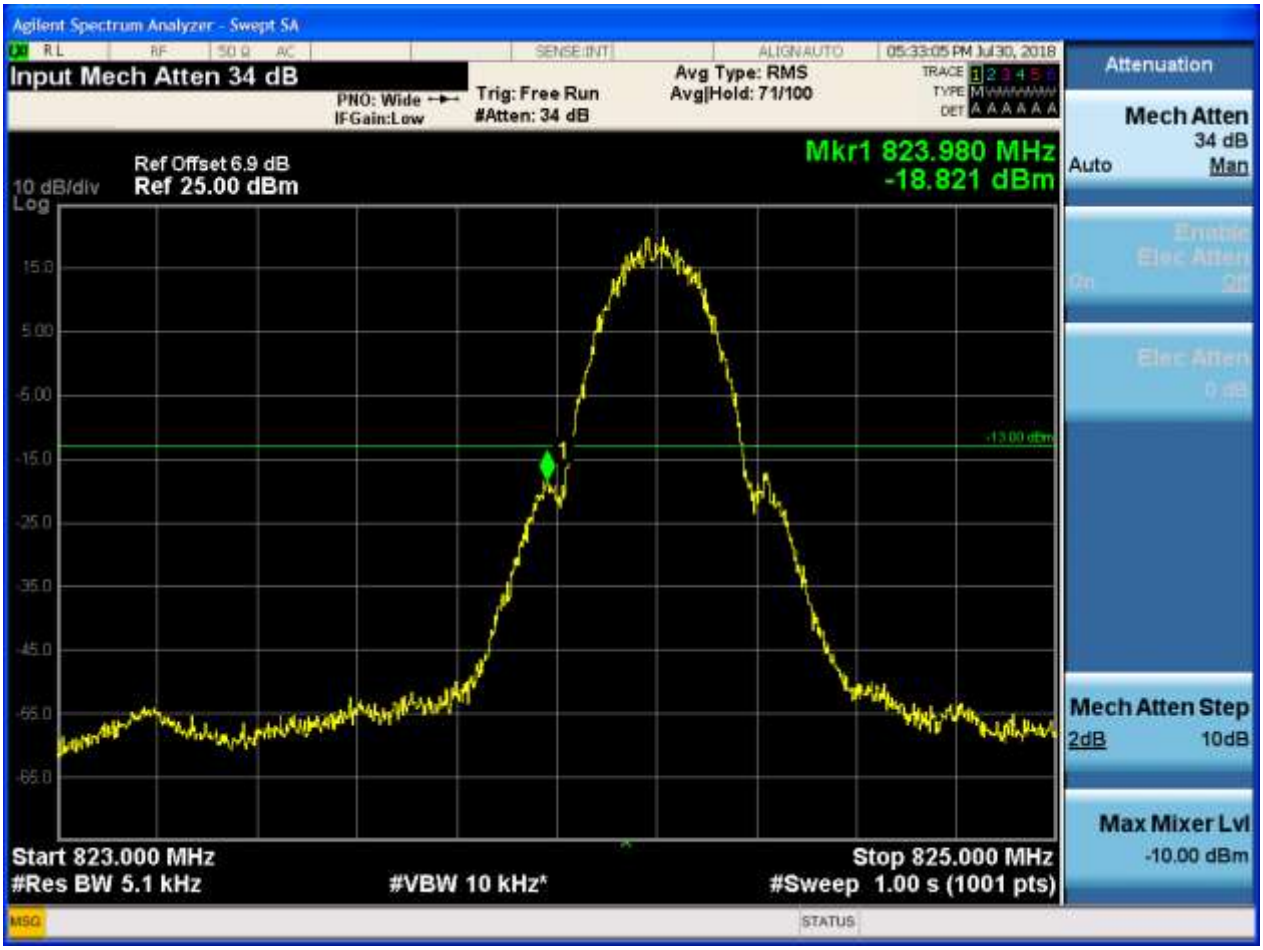
Part I - Test Plots

5.1 For GSM

5.1.1 Test Band = GSM850

5.1.1.1 Test Mode = GSM/TM1

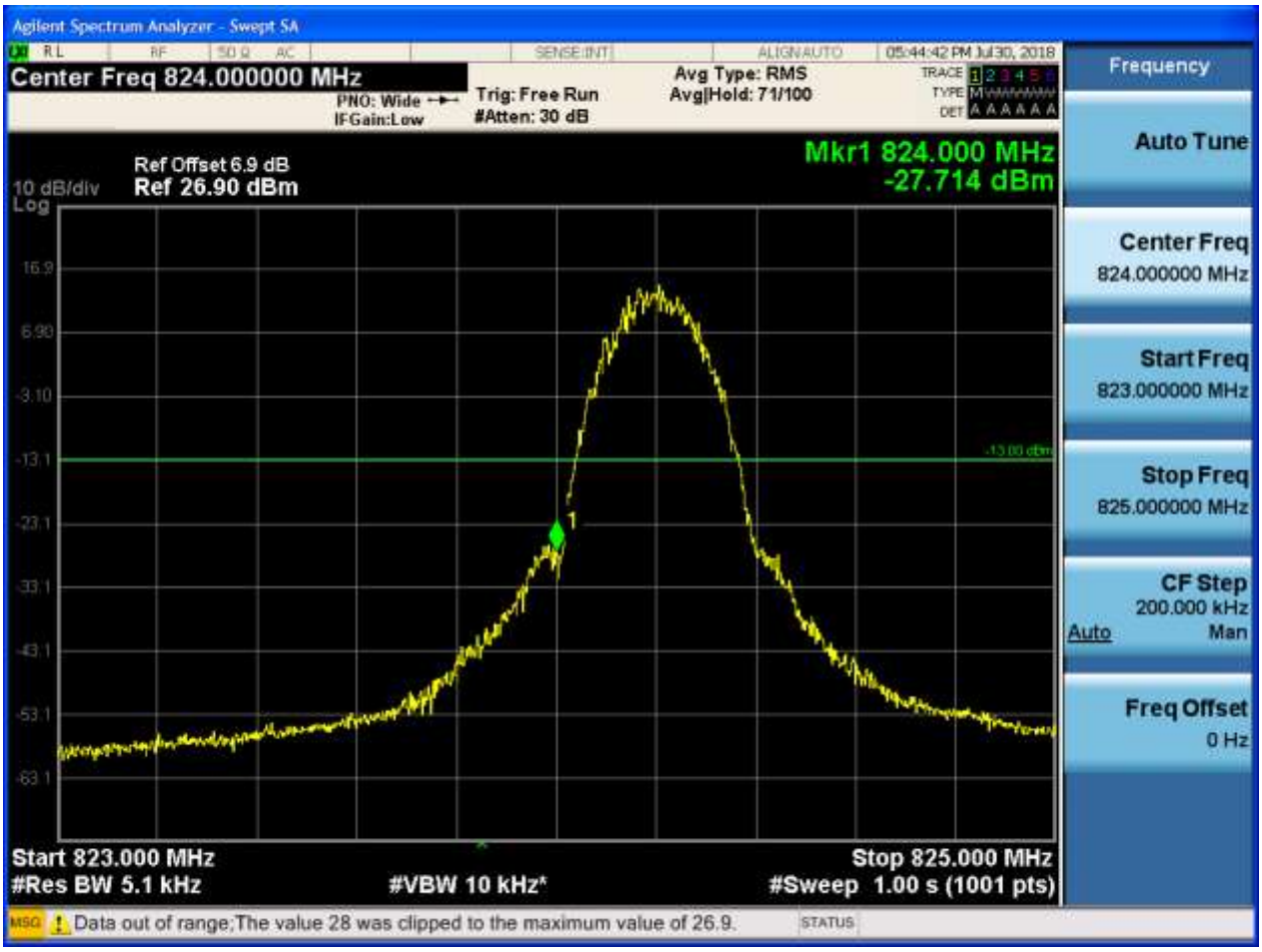
5.1.1.1.1 Test Channel = LCH



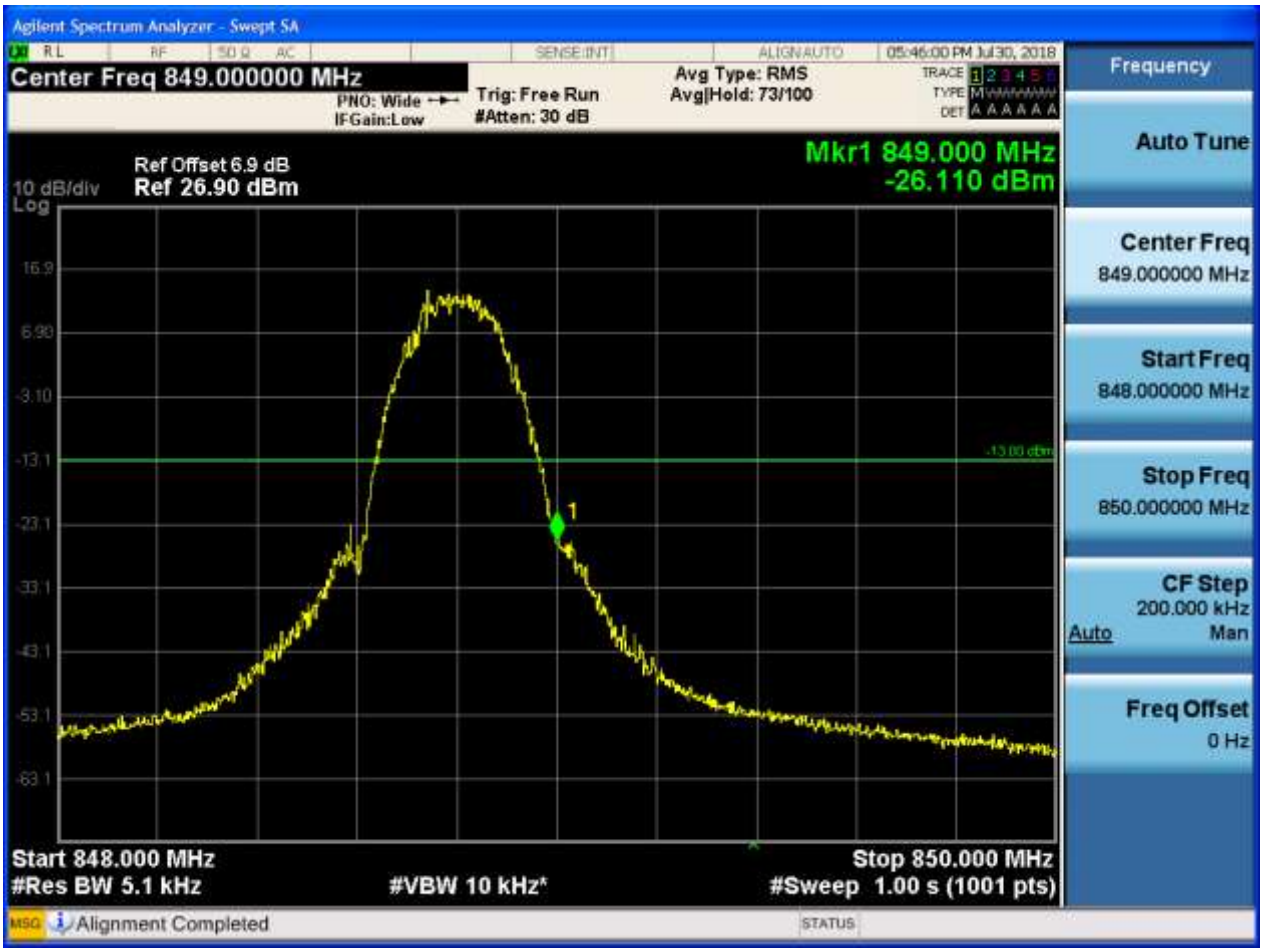
5.1.1.1.2 Test Channel = HCH

5.1.1.2 Test Mode = GSM/TM2

5.1.1.2.1 Test Channel = LCH



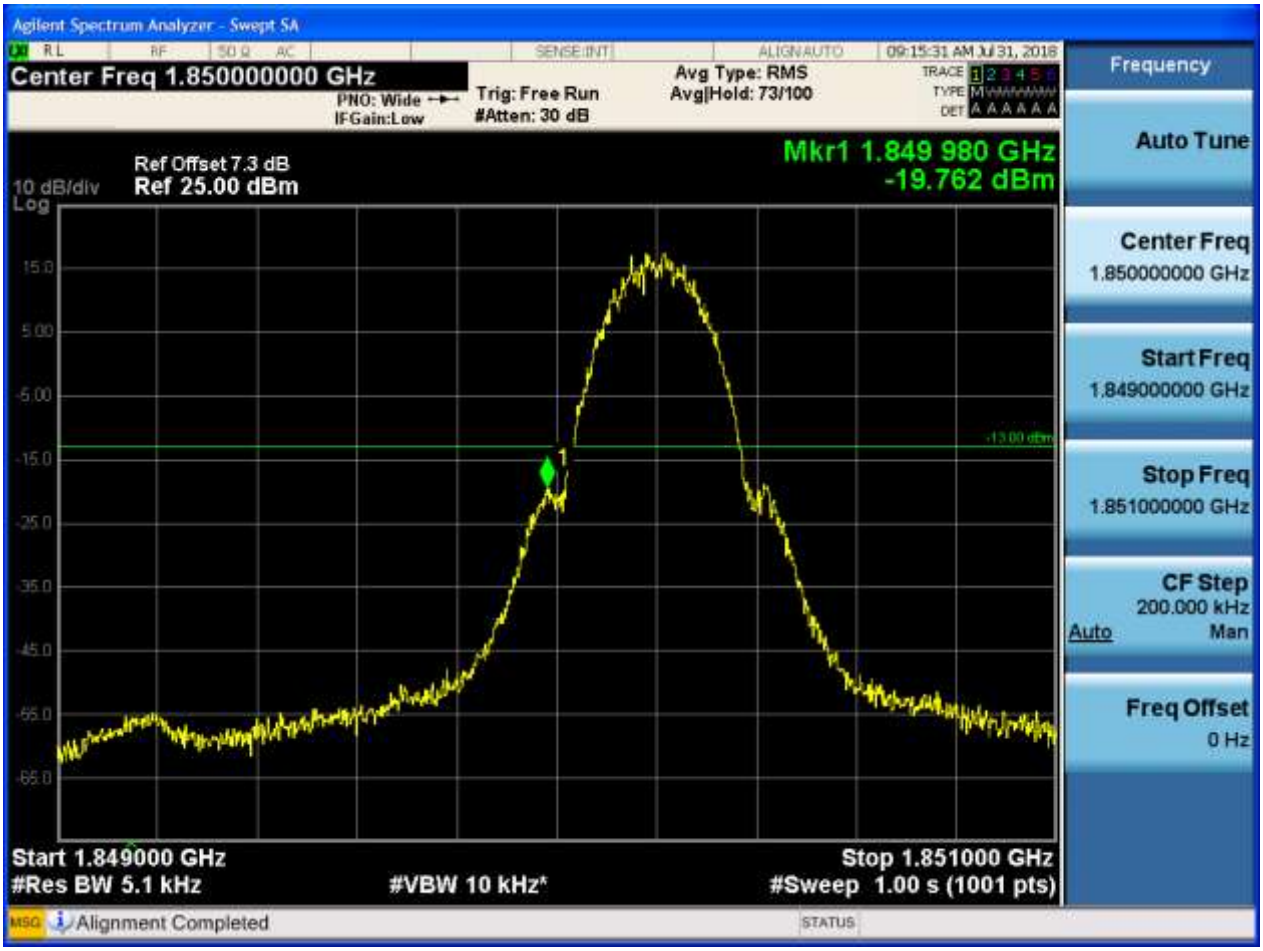
5.1.1.2.2 Test Channel = HCH



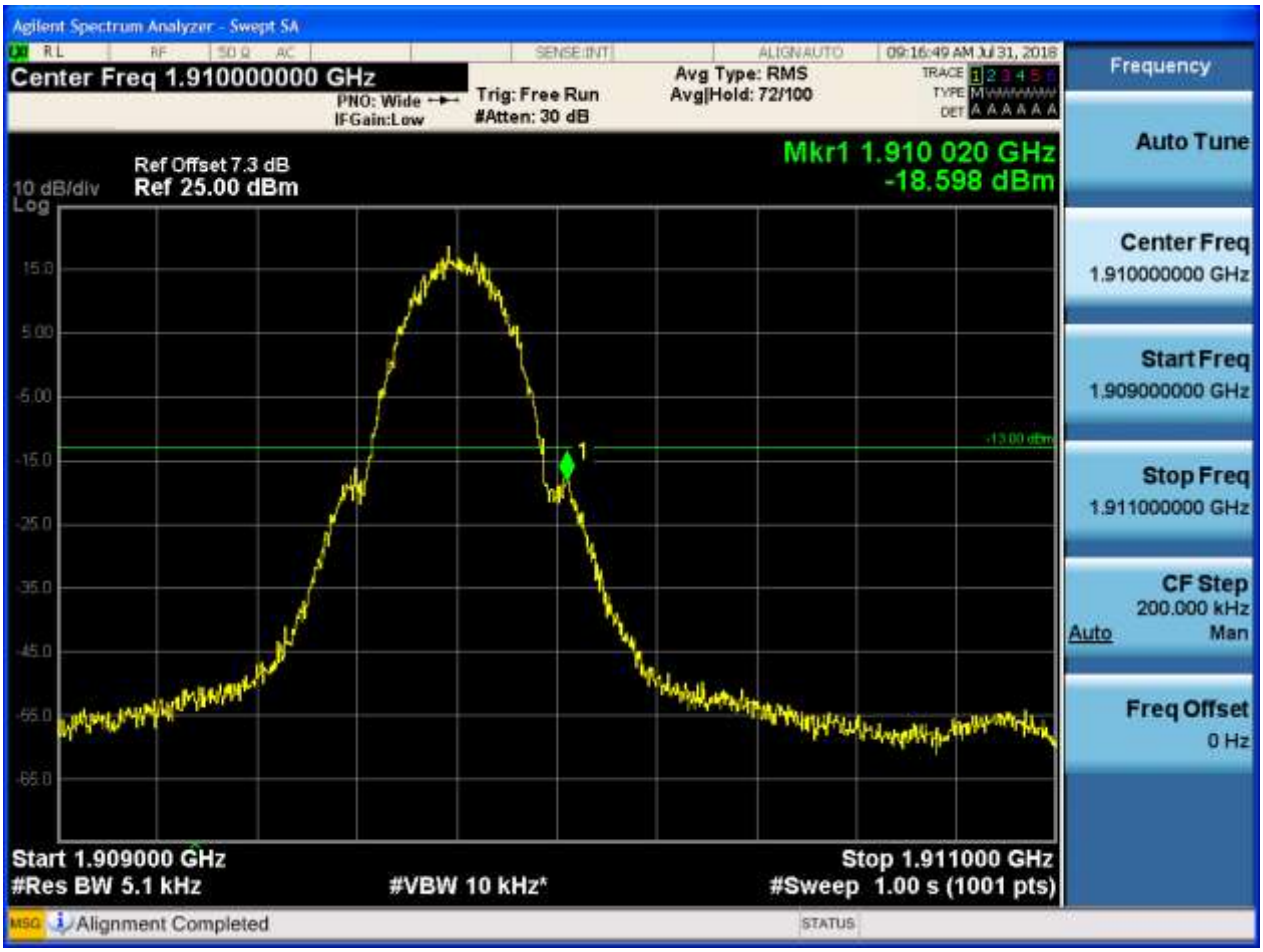
5.1.2 Test Band = GSM1900

5.1.2.1 Test Mode = GSM/TM1

5.1.2.1.1 Test Channel = LCH

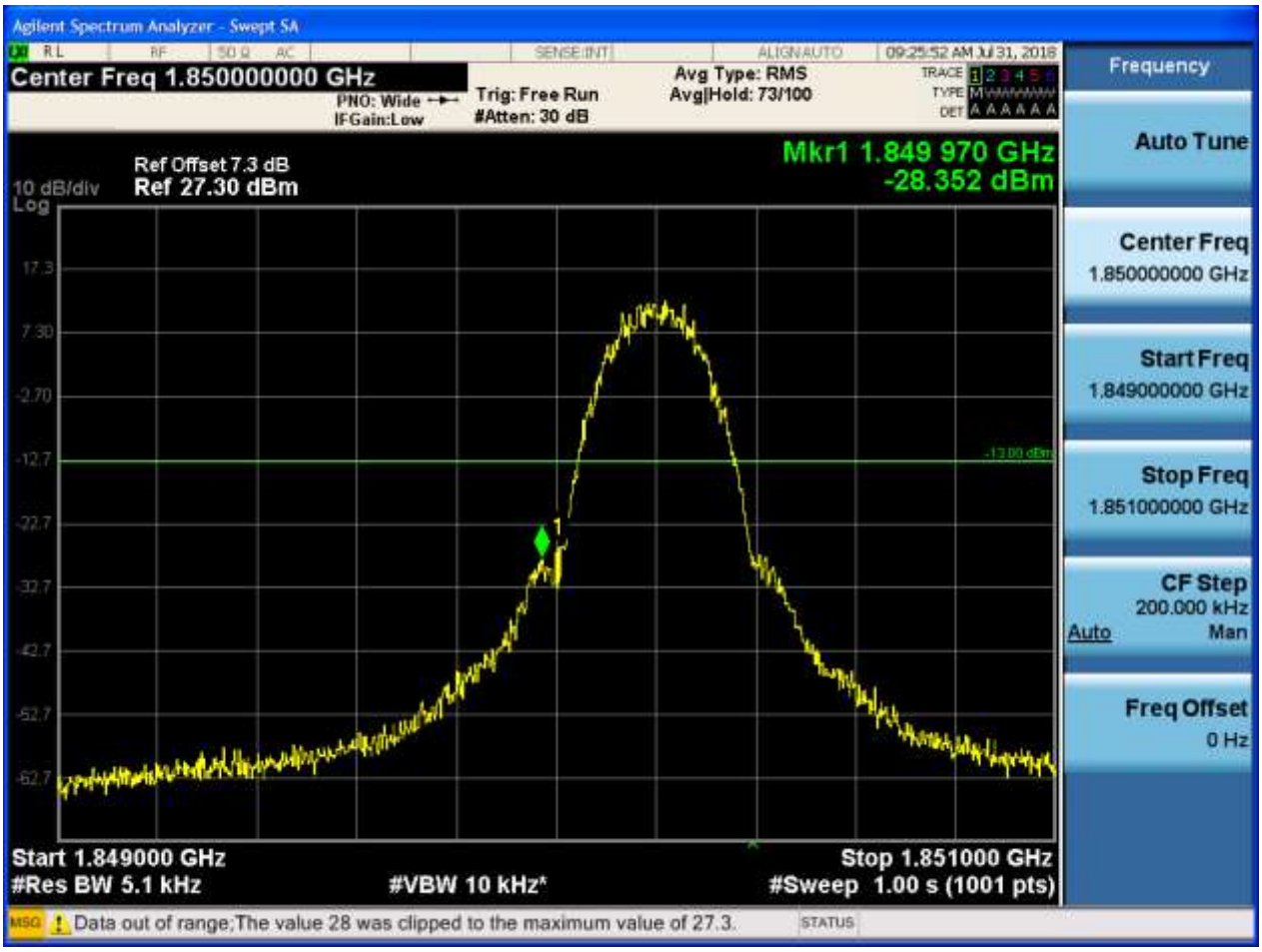


5.1.2.1.2 Test Channel = HCH

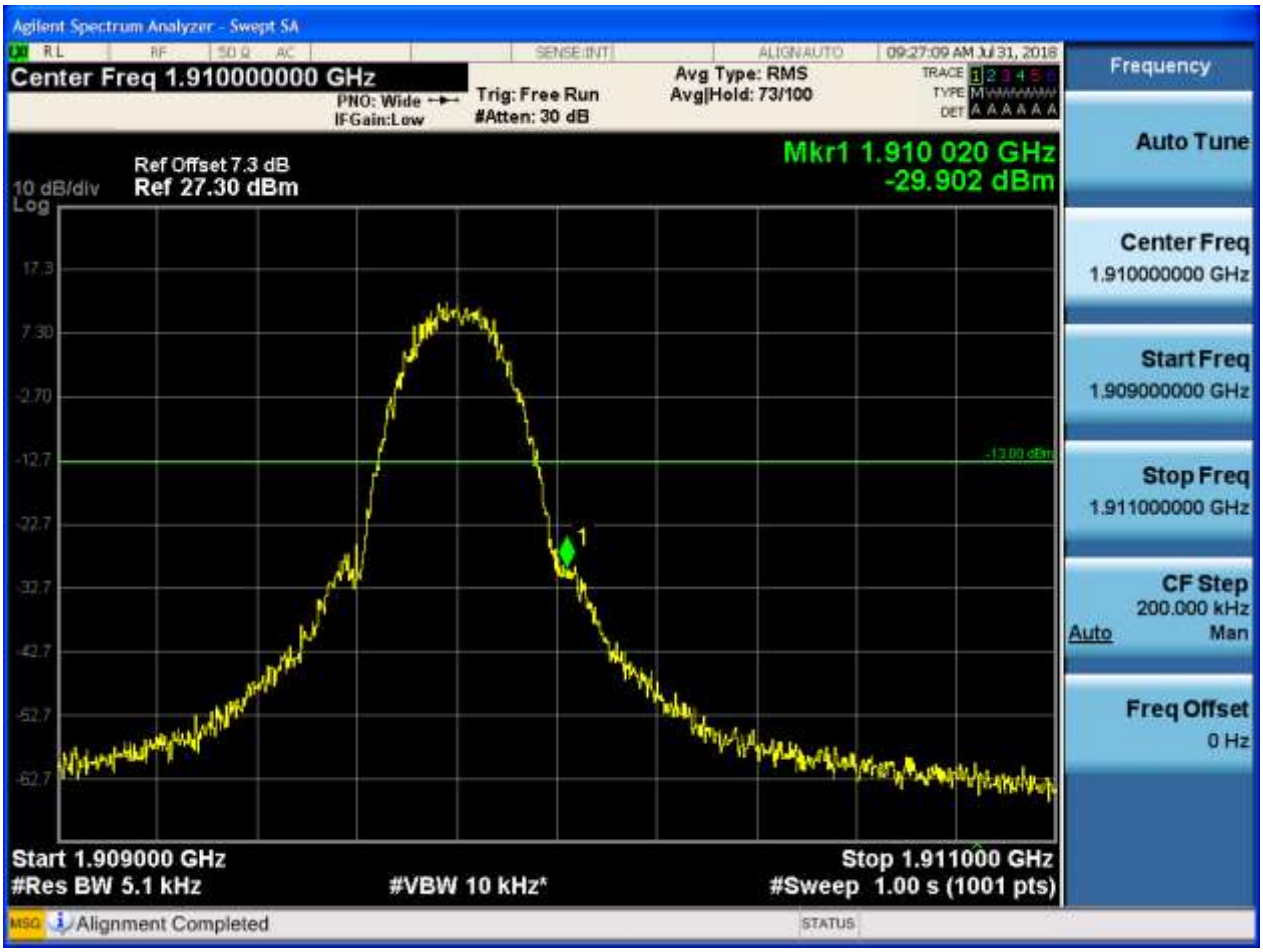


5.1.2.2 Test Mode = GSM/TM2

5.1.2.2.1 Test Channel = LCH



5.1.2.2.2 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.

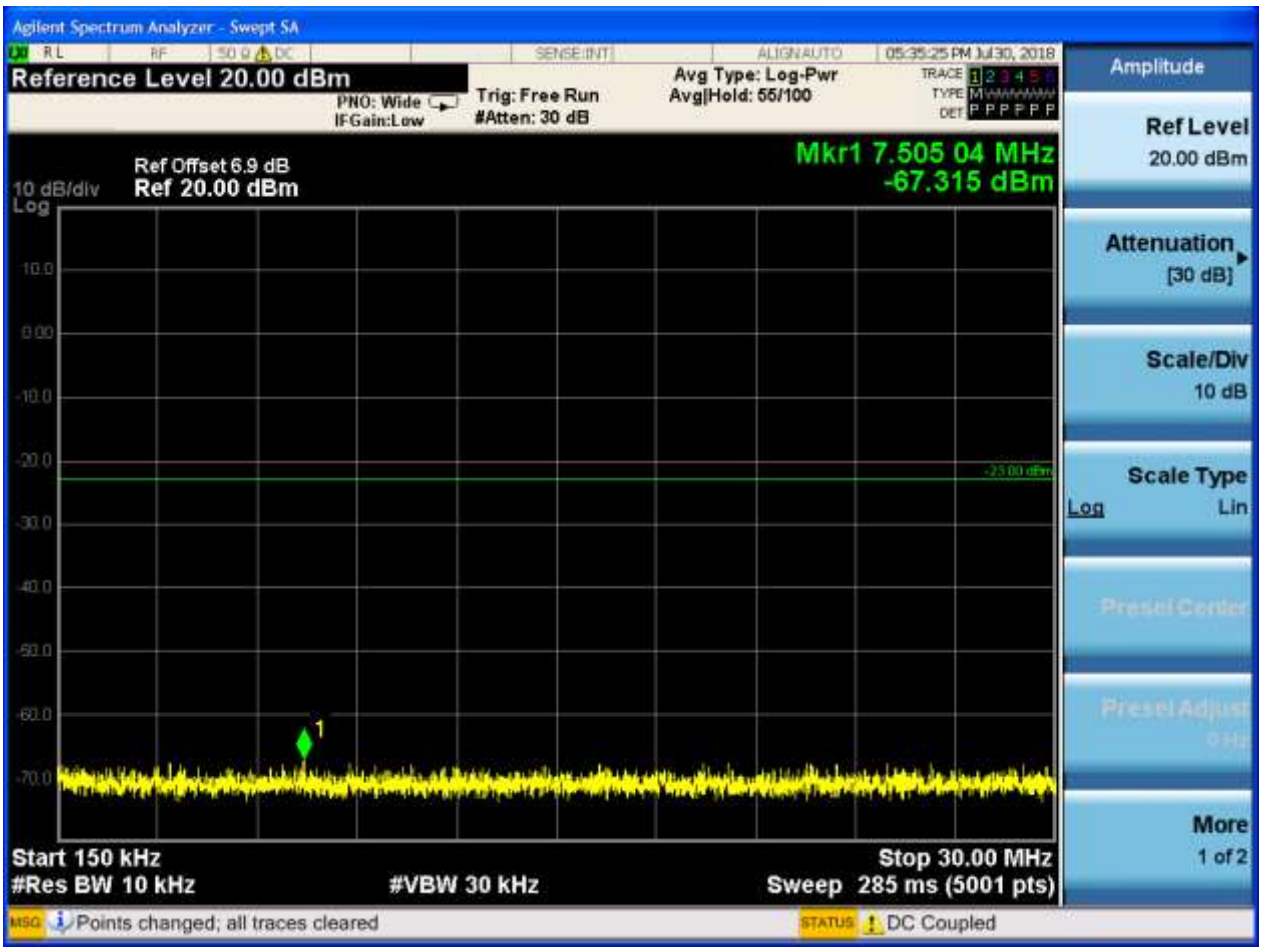
Part I - Test Plots

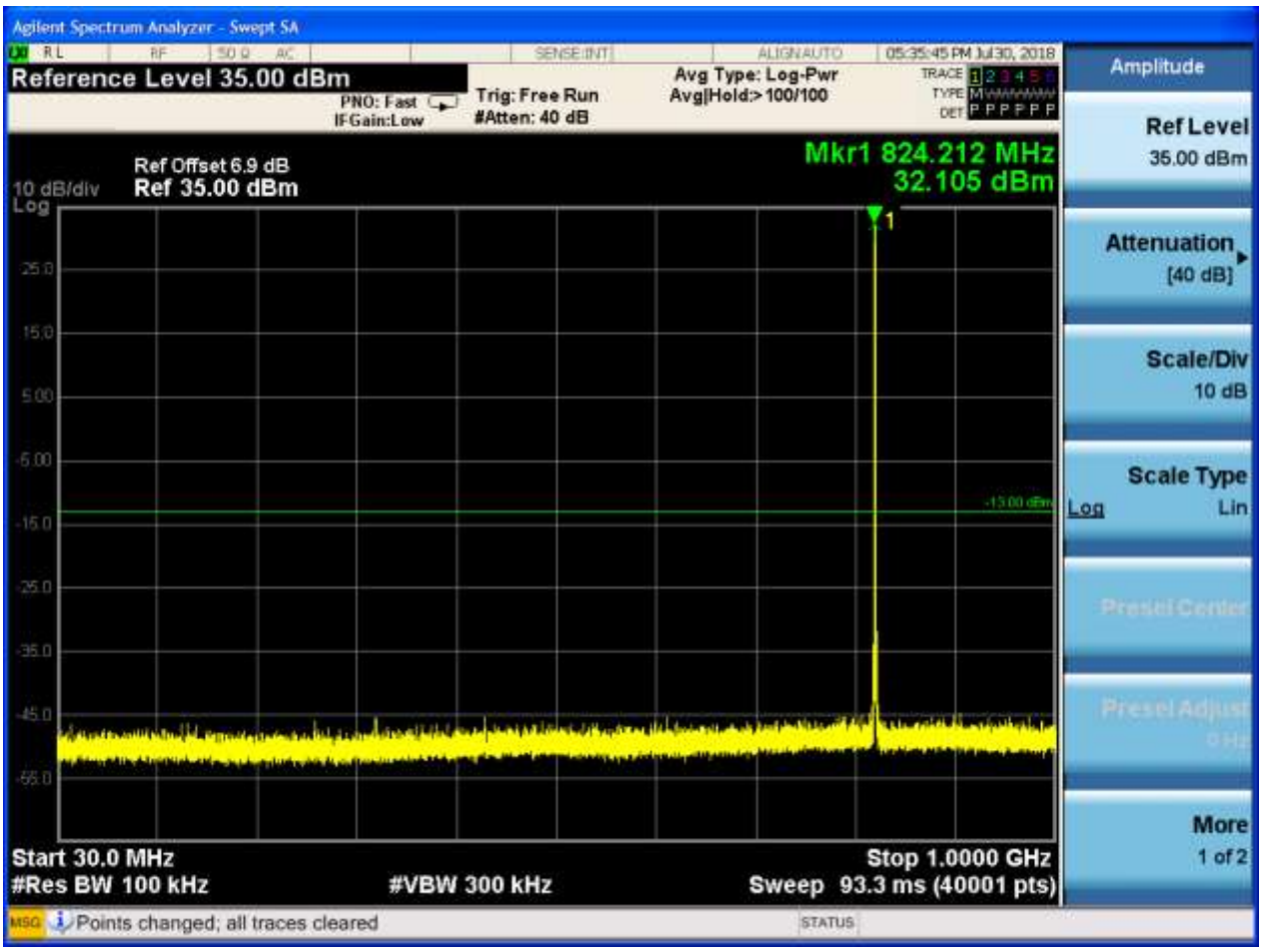
6.1 For GSM

6.1.1 Test Band = GSM850

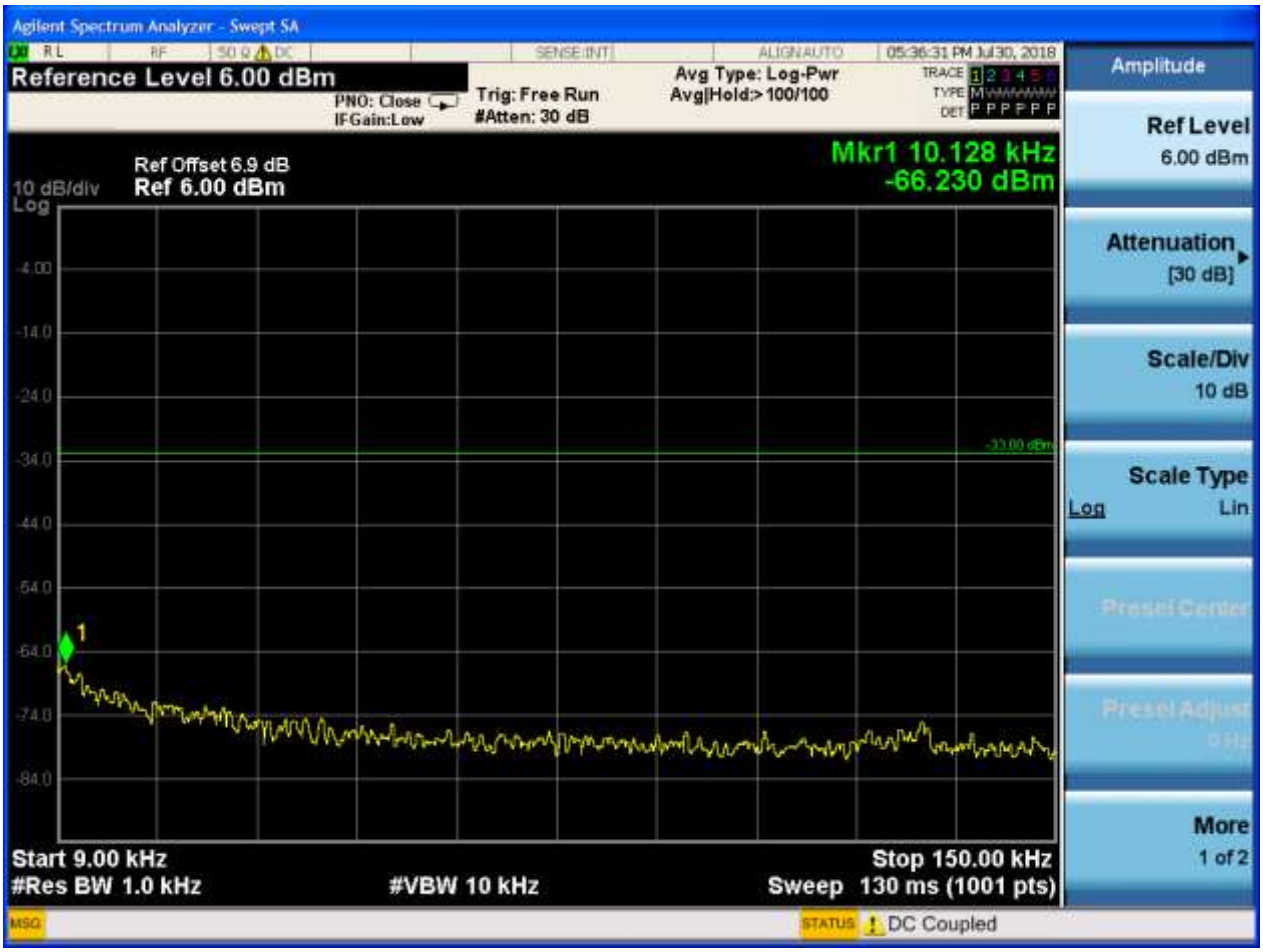
6.1.1.1 Test Mode = GSM/TM1

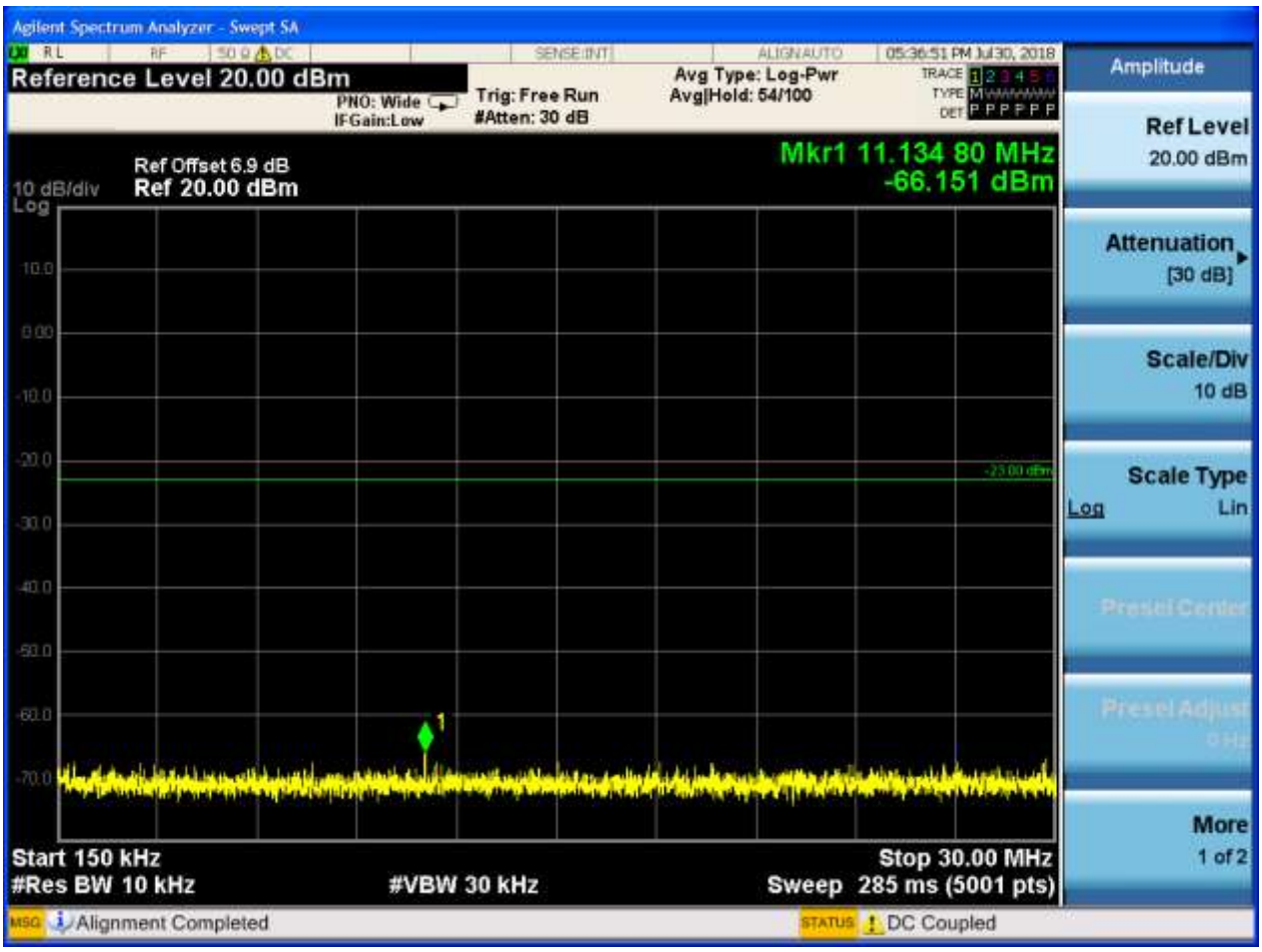
6.1.1.1.1 Test Channel = LCH

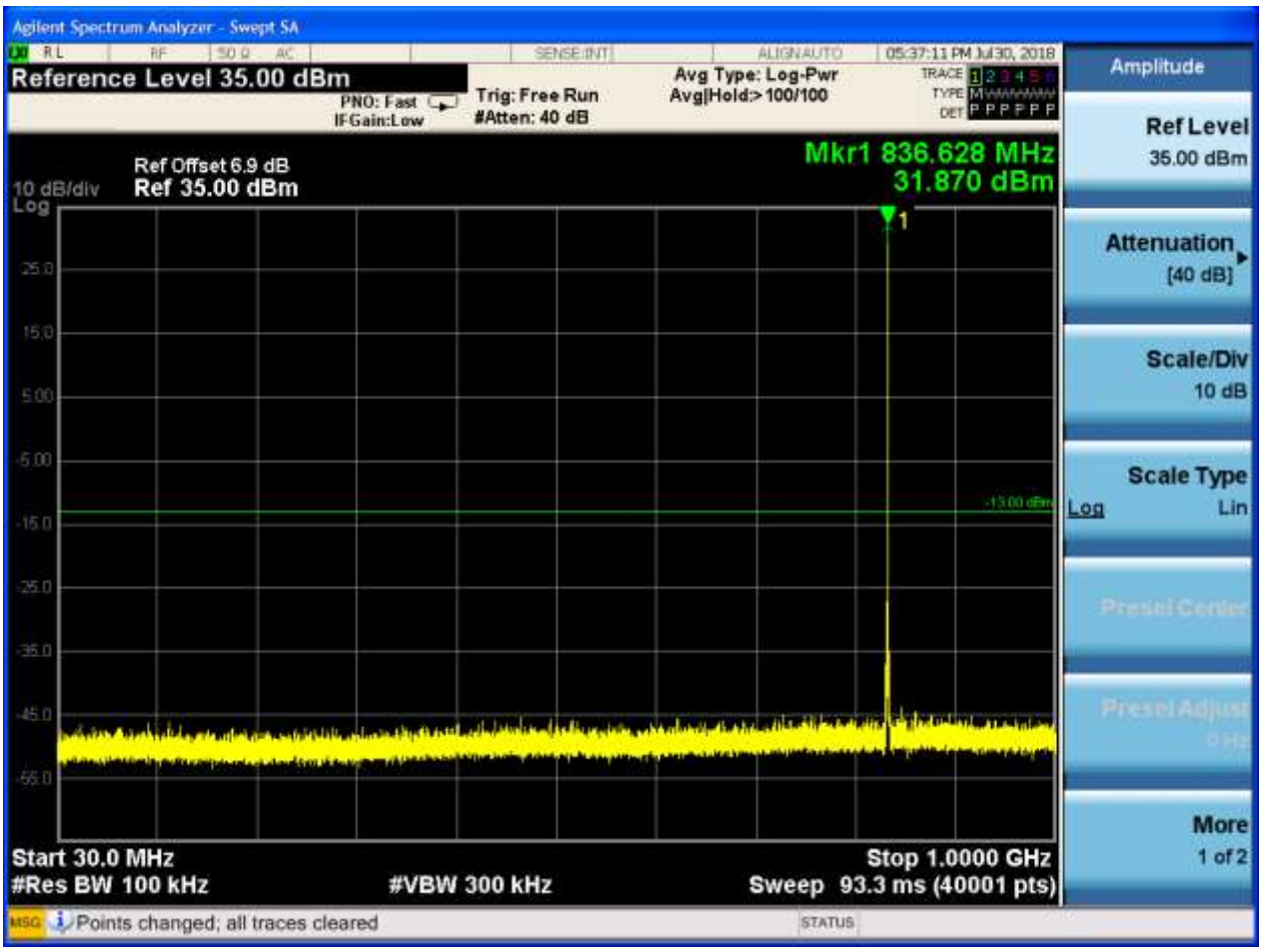




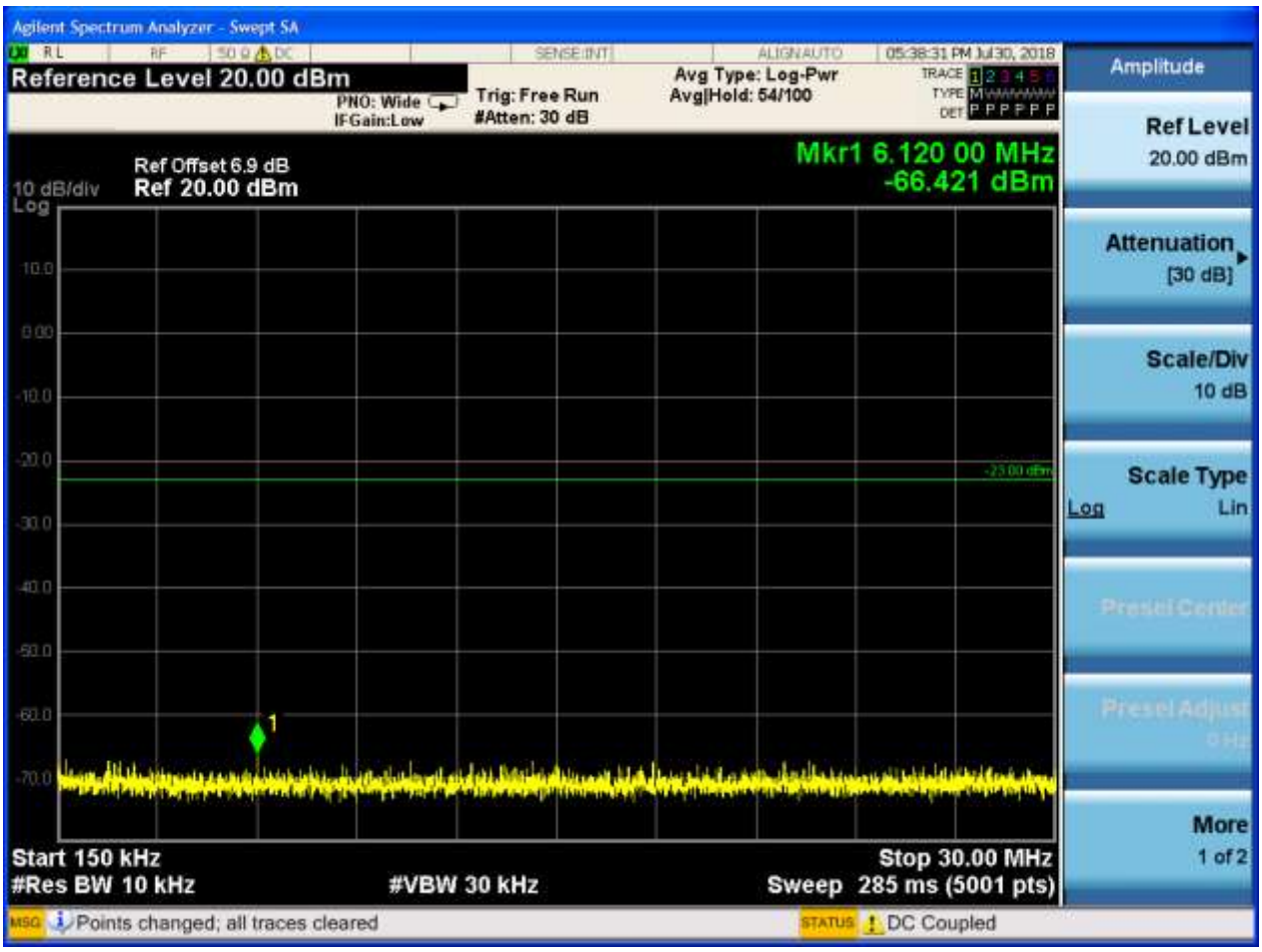
6.1.1.1.2 Test Channel = MCH

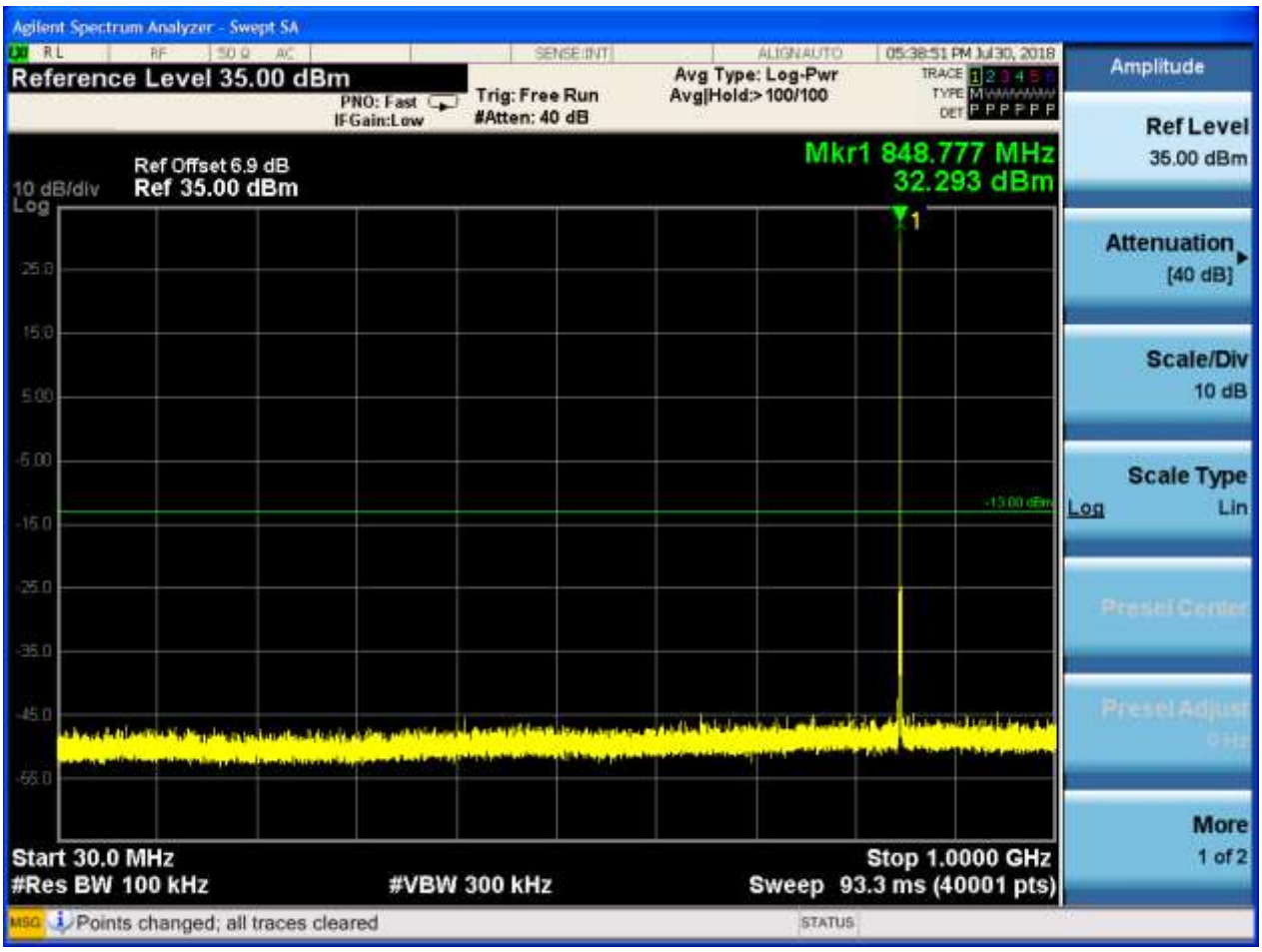






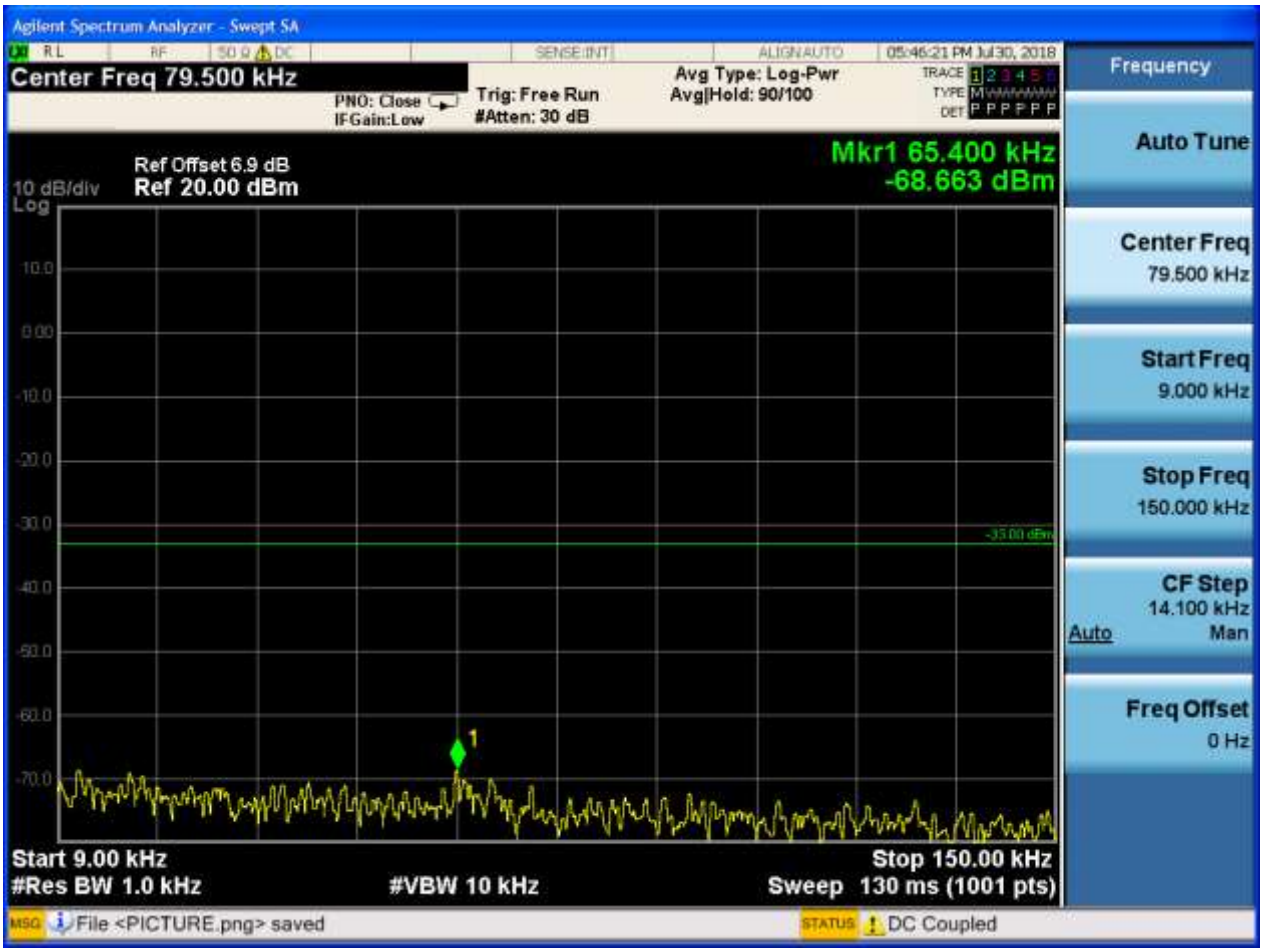
6.1.1.1.3 Test Channel = HCH

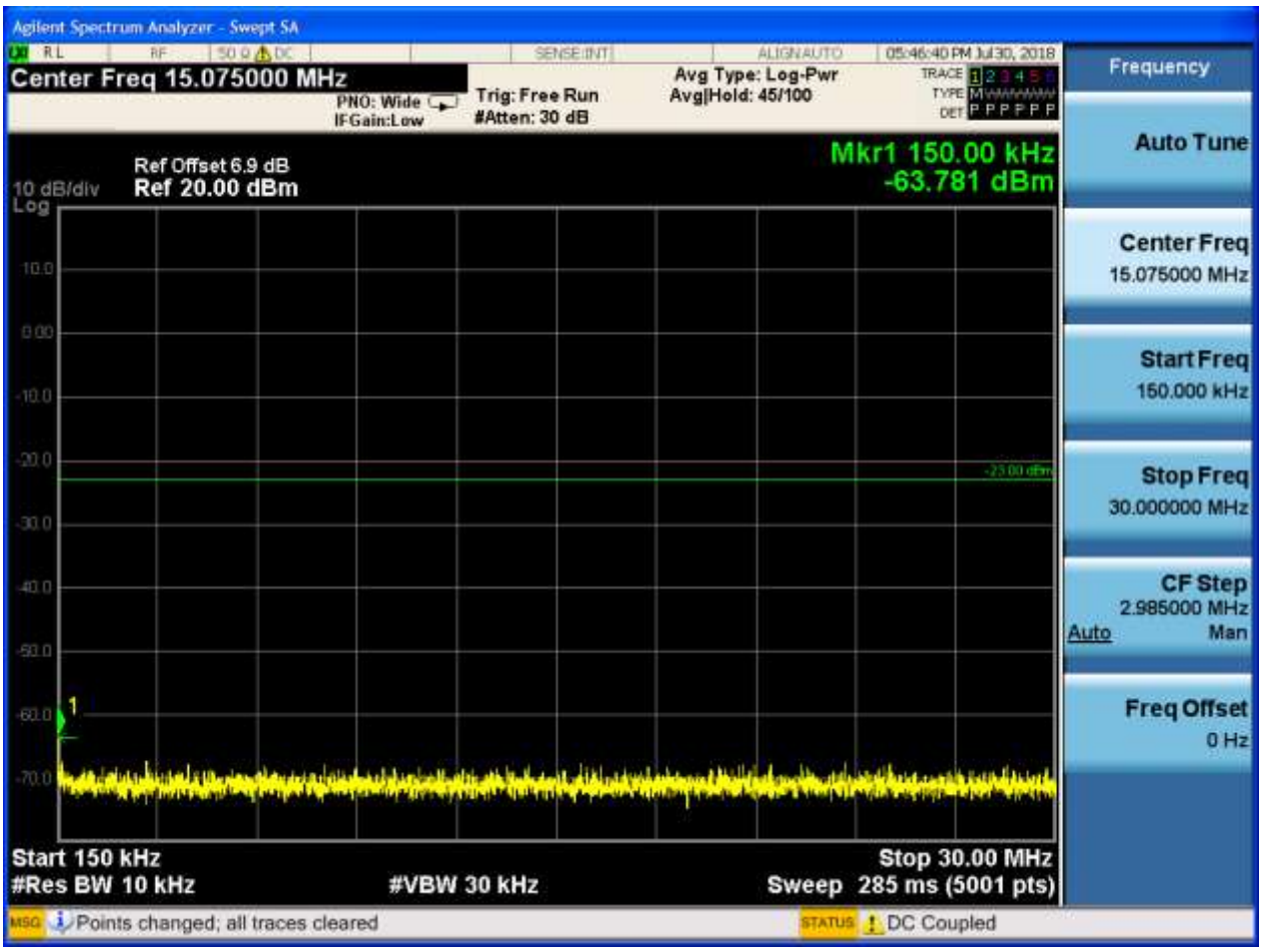


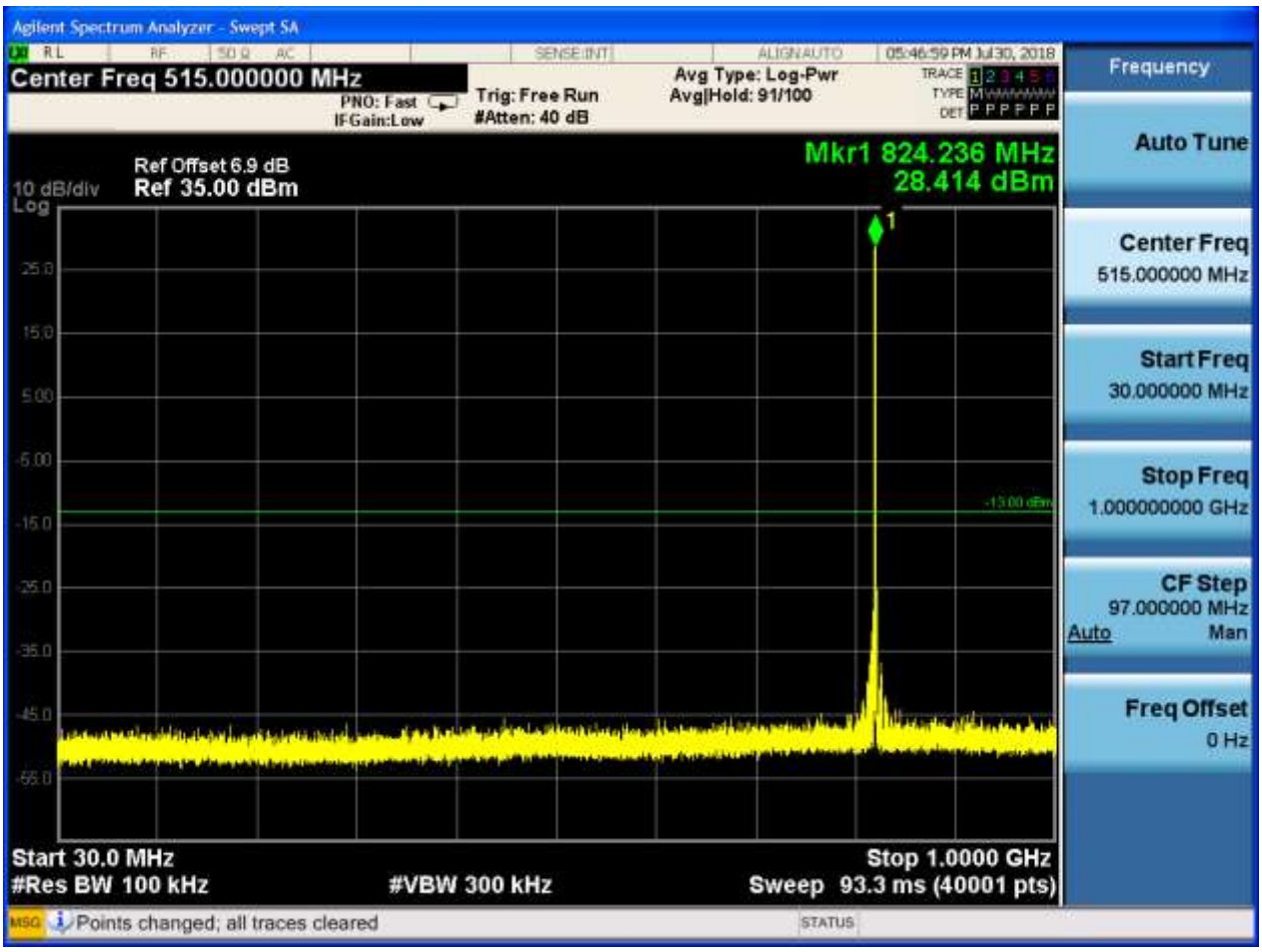


6.1.1.2 Test Mode = GSM/TM2

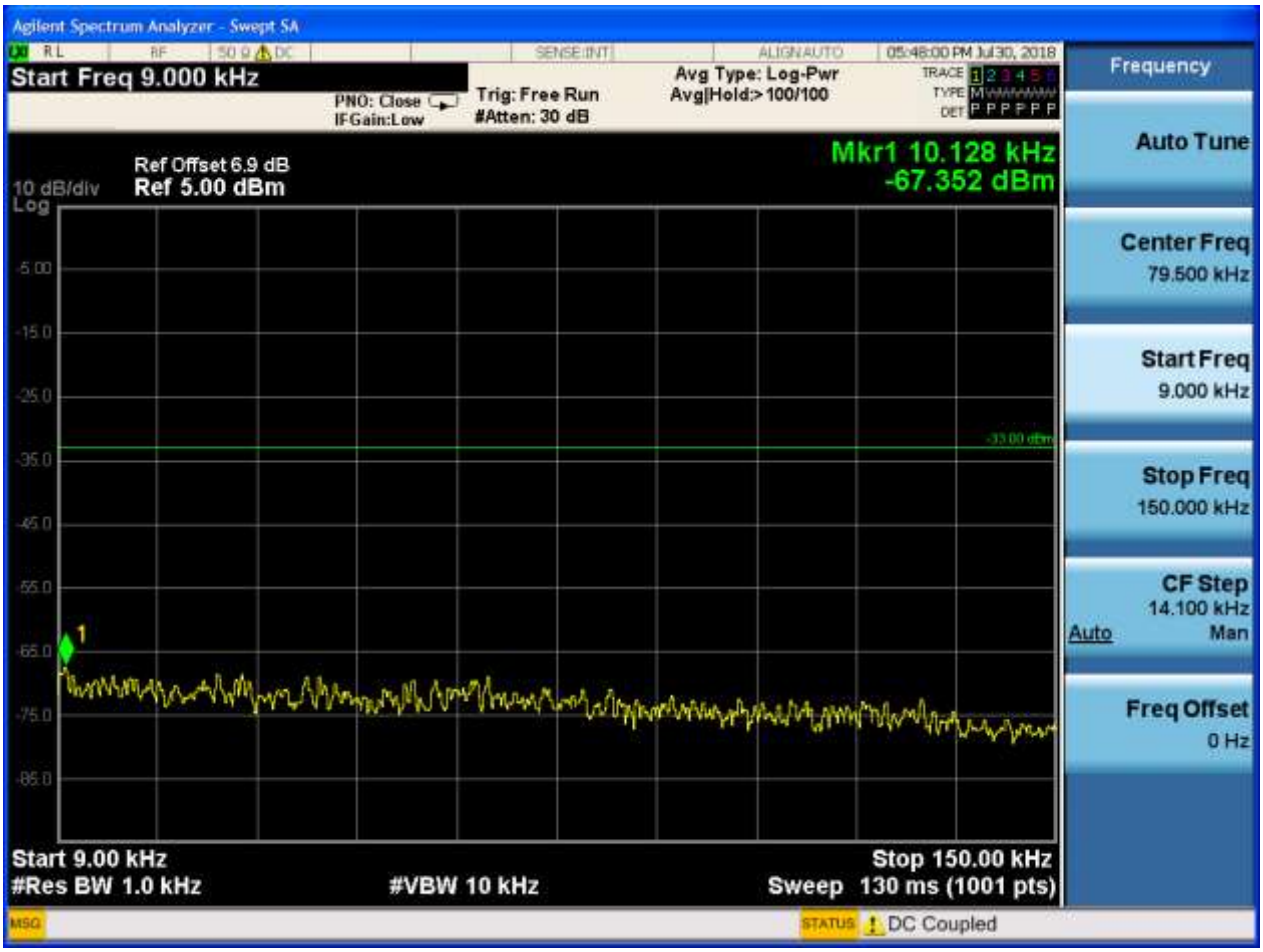
6.1.1.2.1 Test Channel = LCH

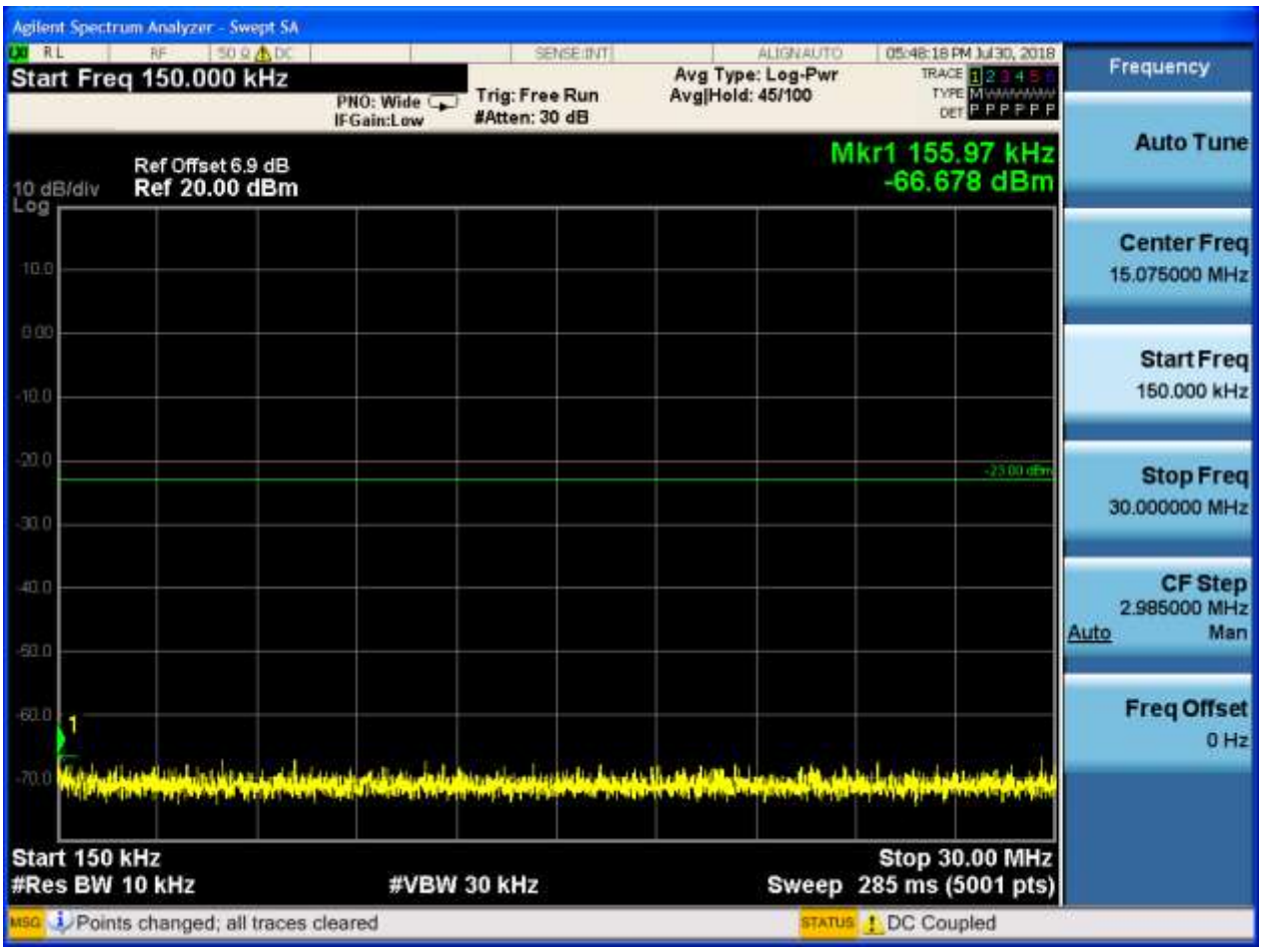


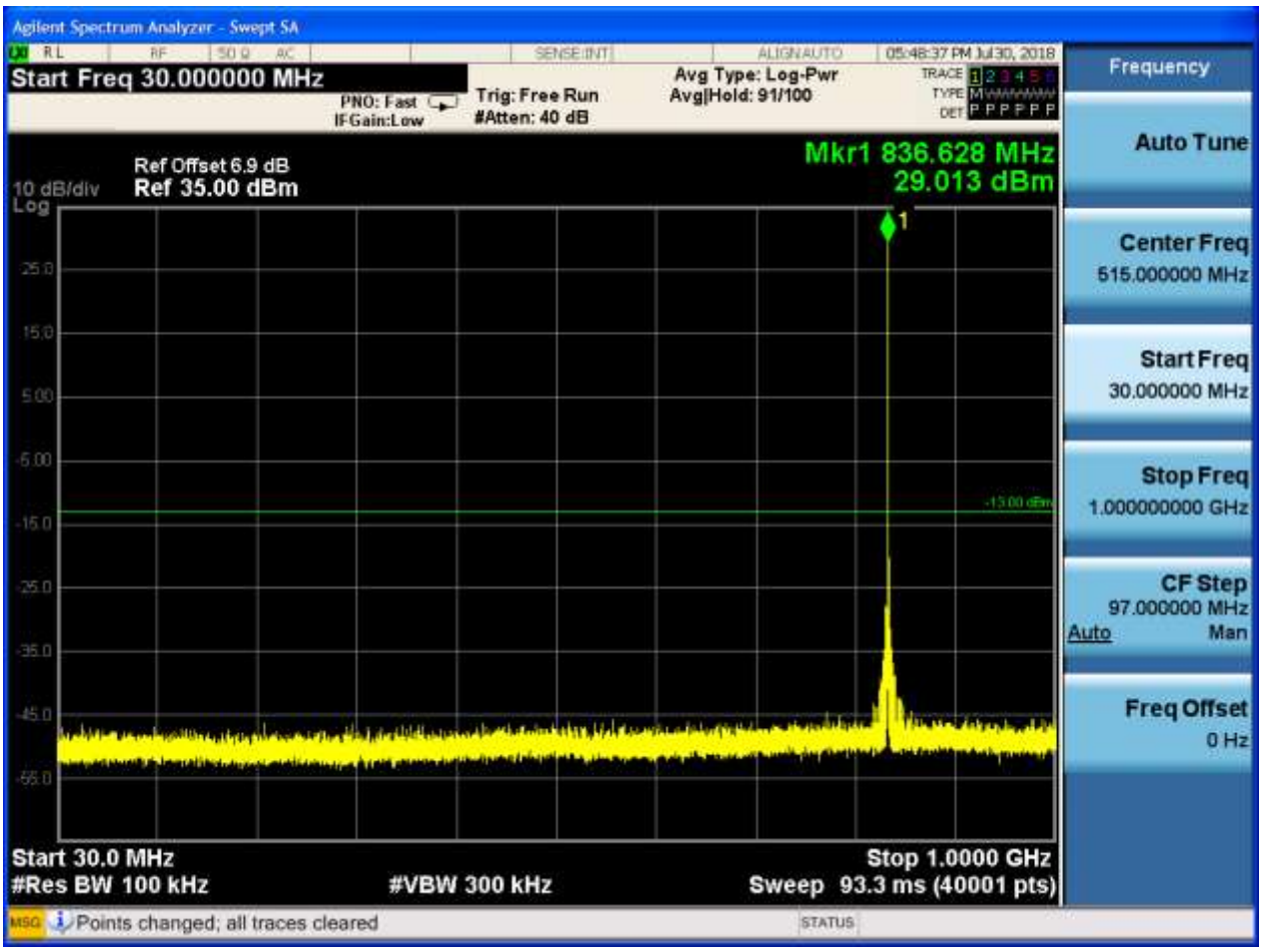




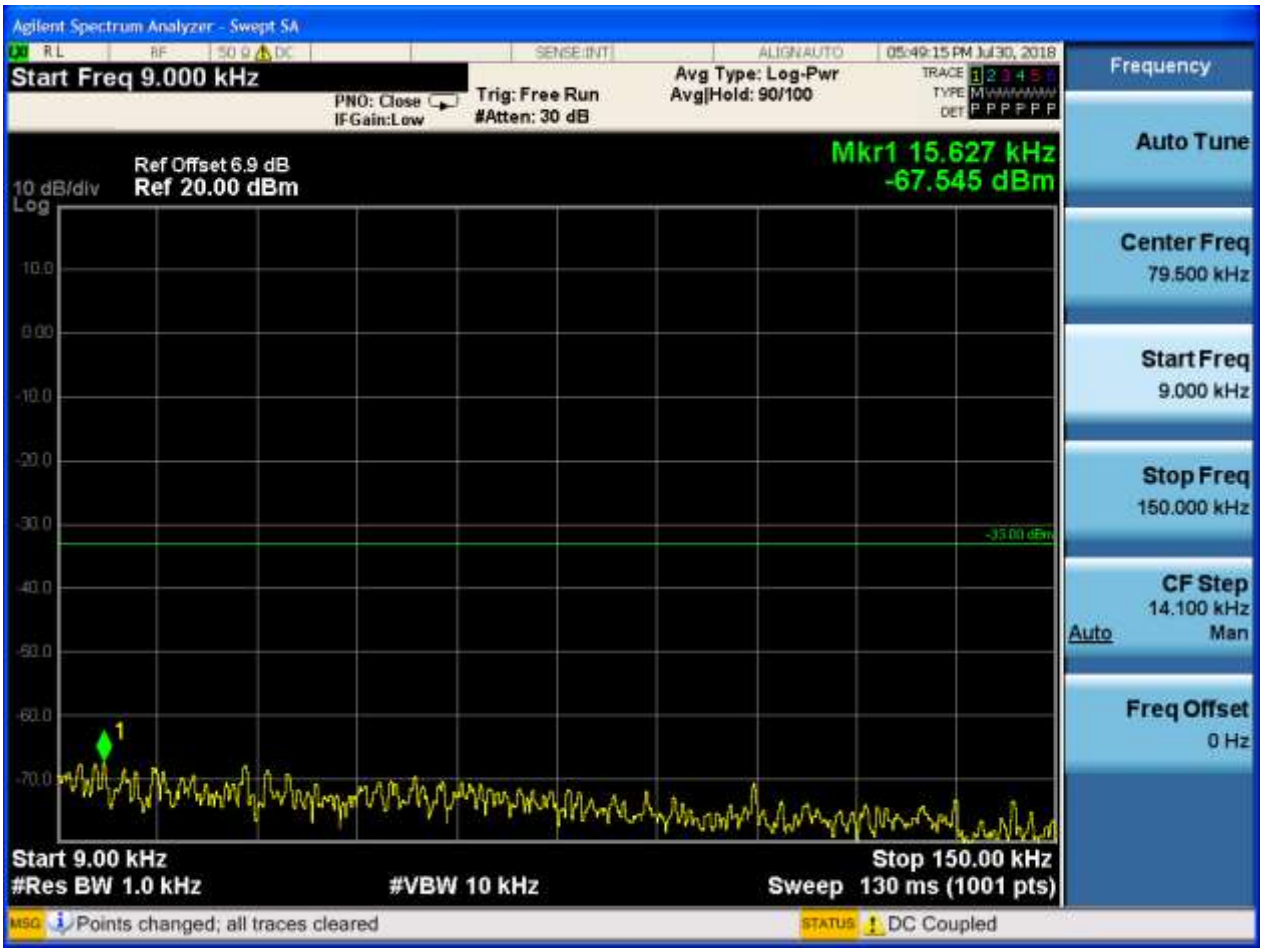
6.1.1.2.2 Test Channel = MCH

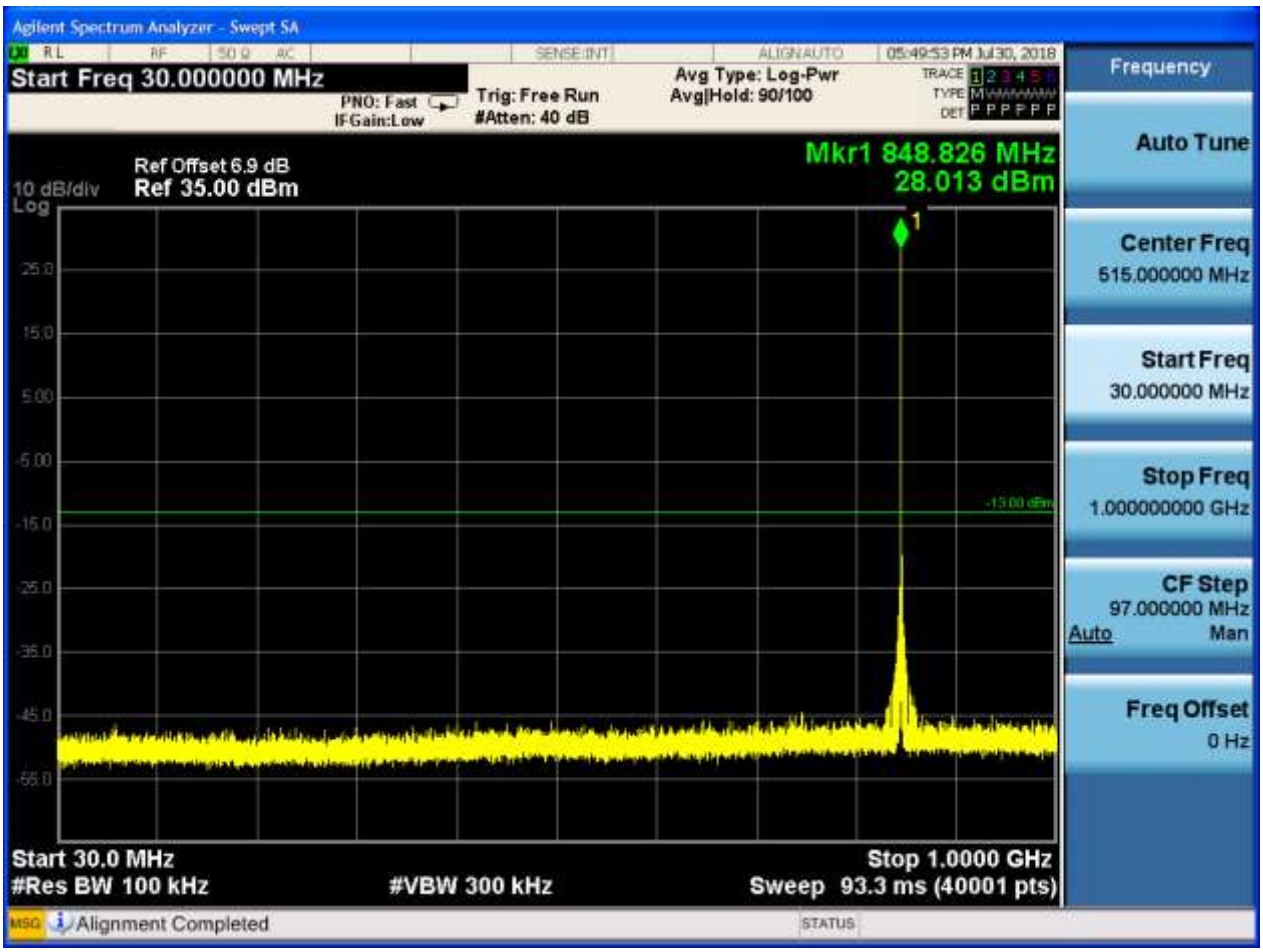






6.1.1.2.3 Test Channel = HCH

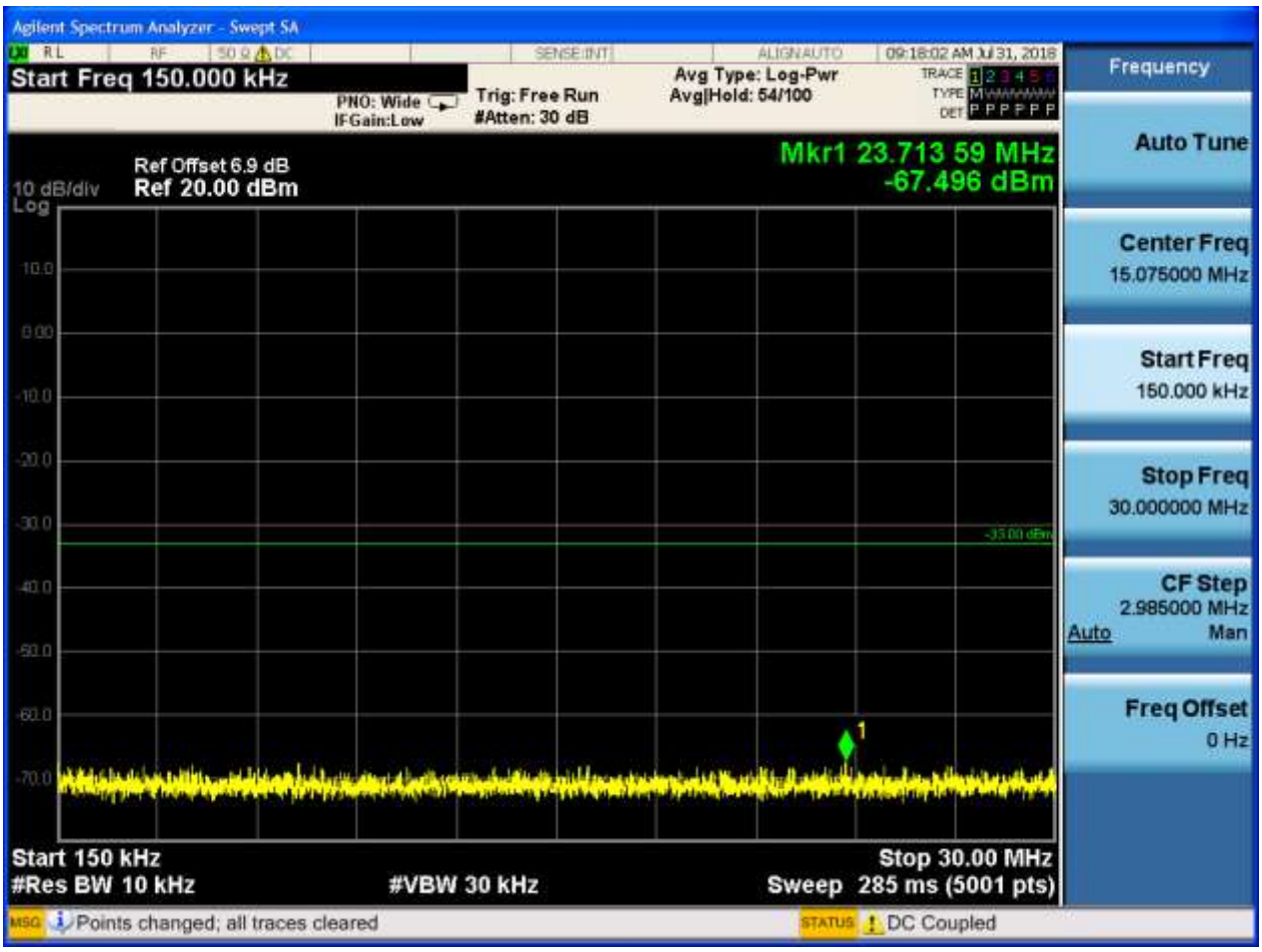




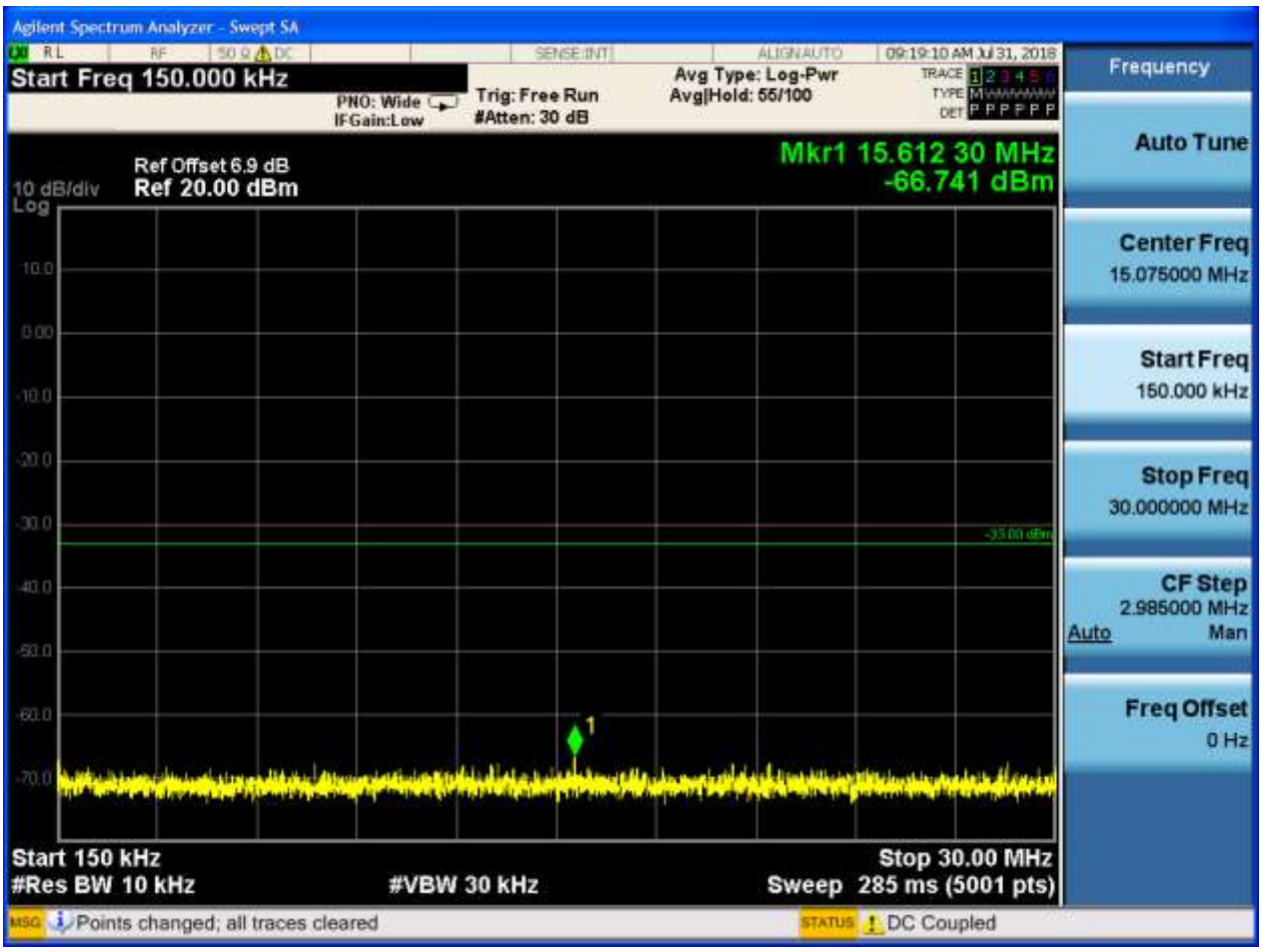
6.1.2 Test Band = GSM1900

6.1.2.1 Test Mode = GSM/TM1

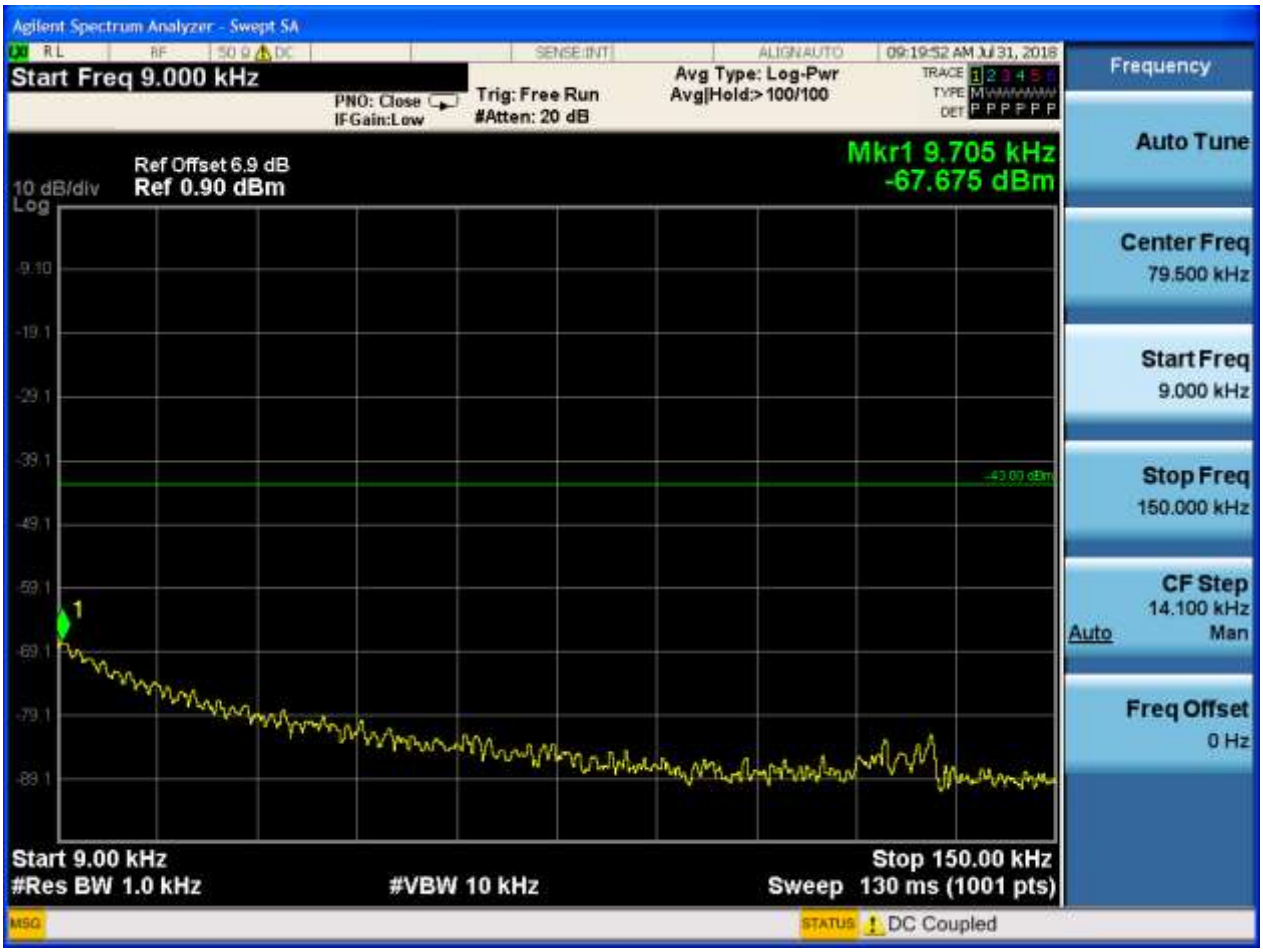
6.1.2.1.1 Test Channel = LCH

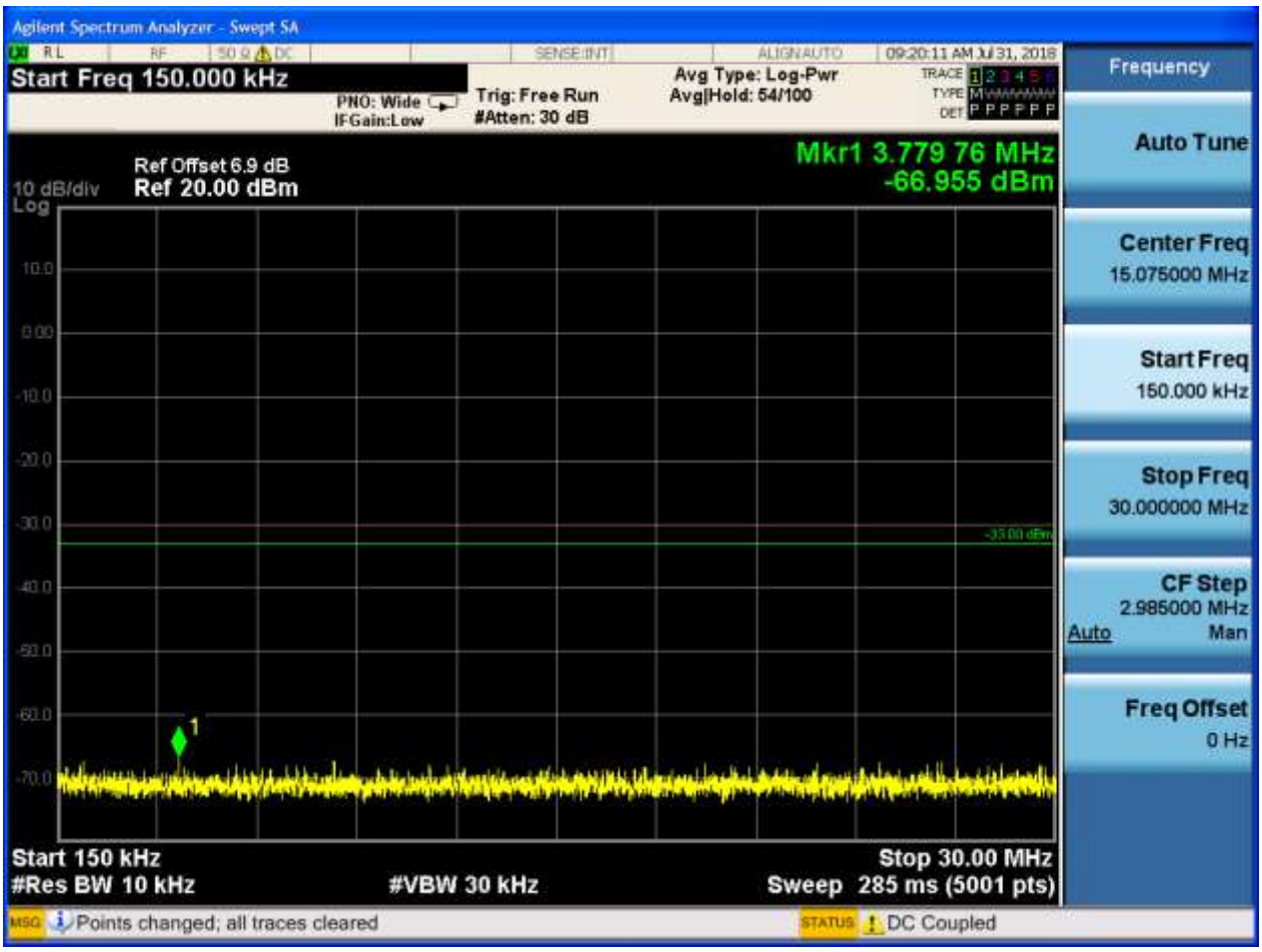


6.1.2.1.2 Test Channel = MCH



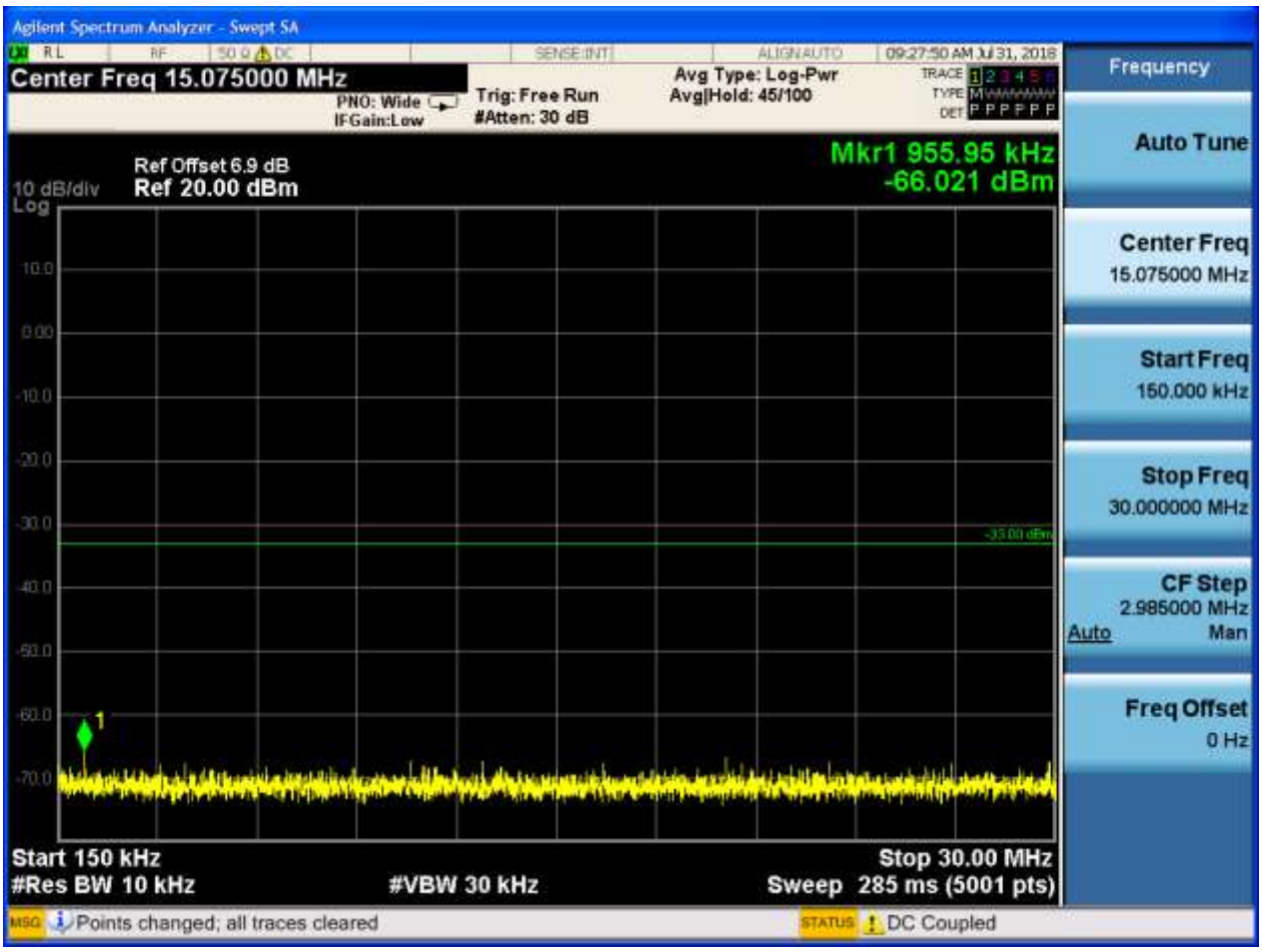
6.1.2.1.3 Test Channel = HCH

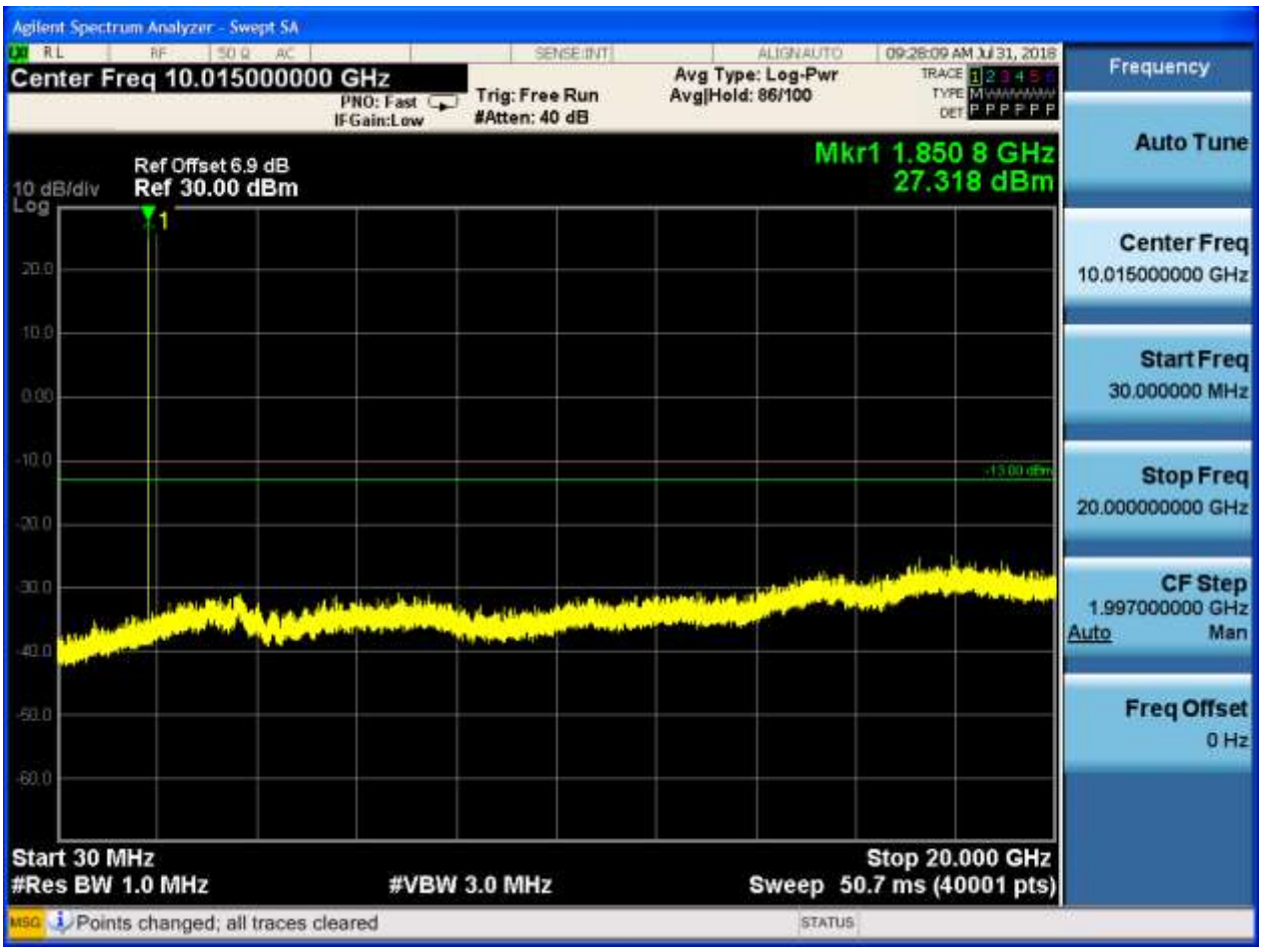




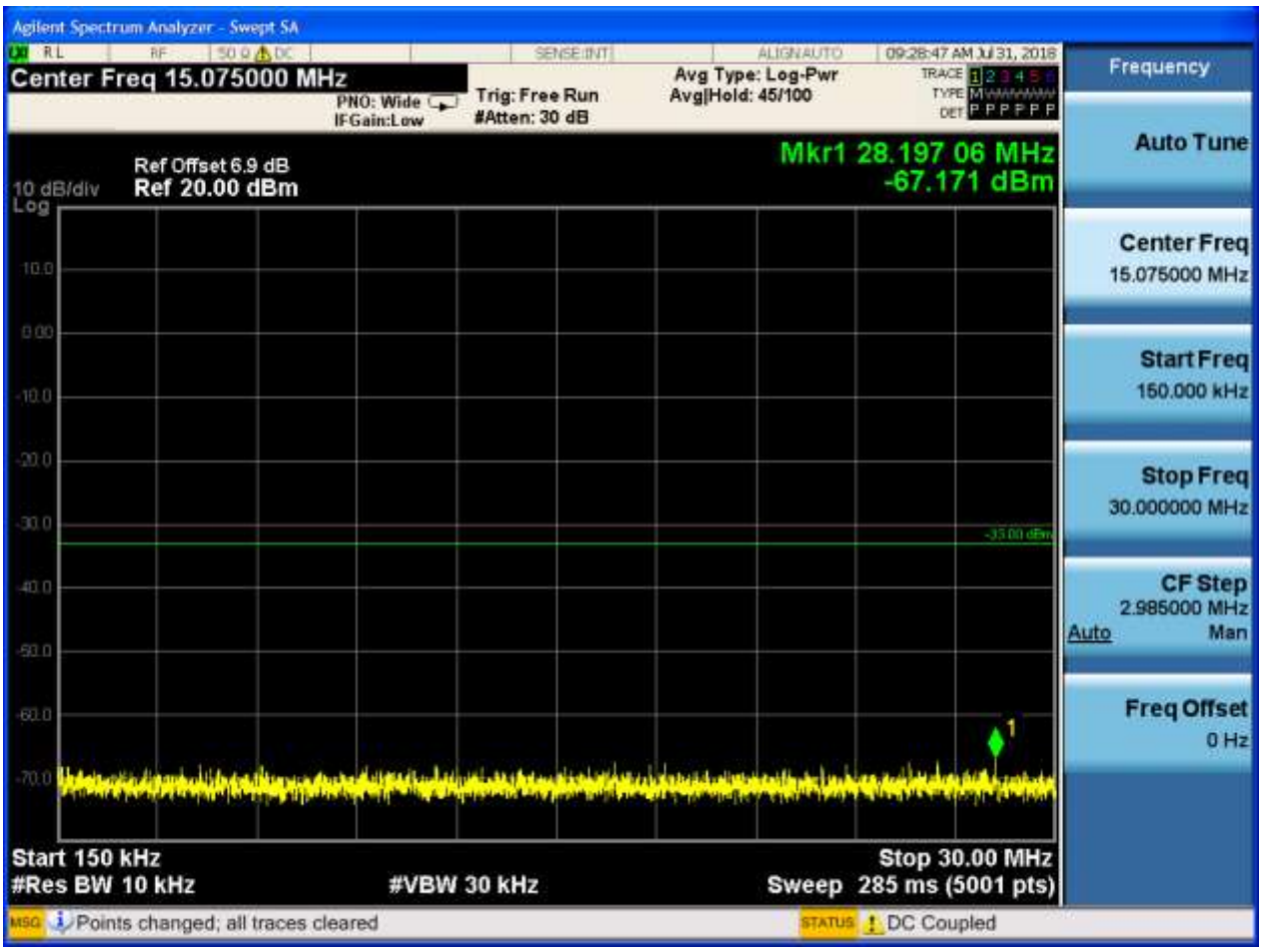
6.1.2.2 Test Mode = GSM/TM2

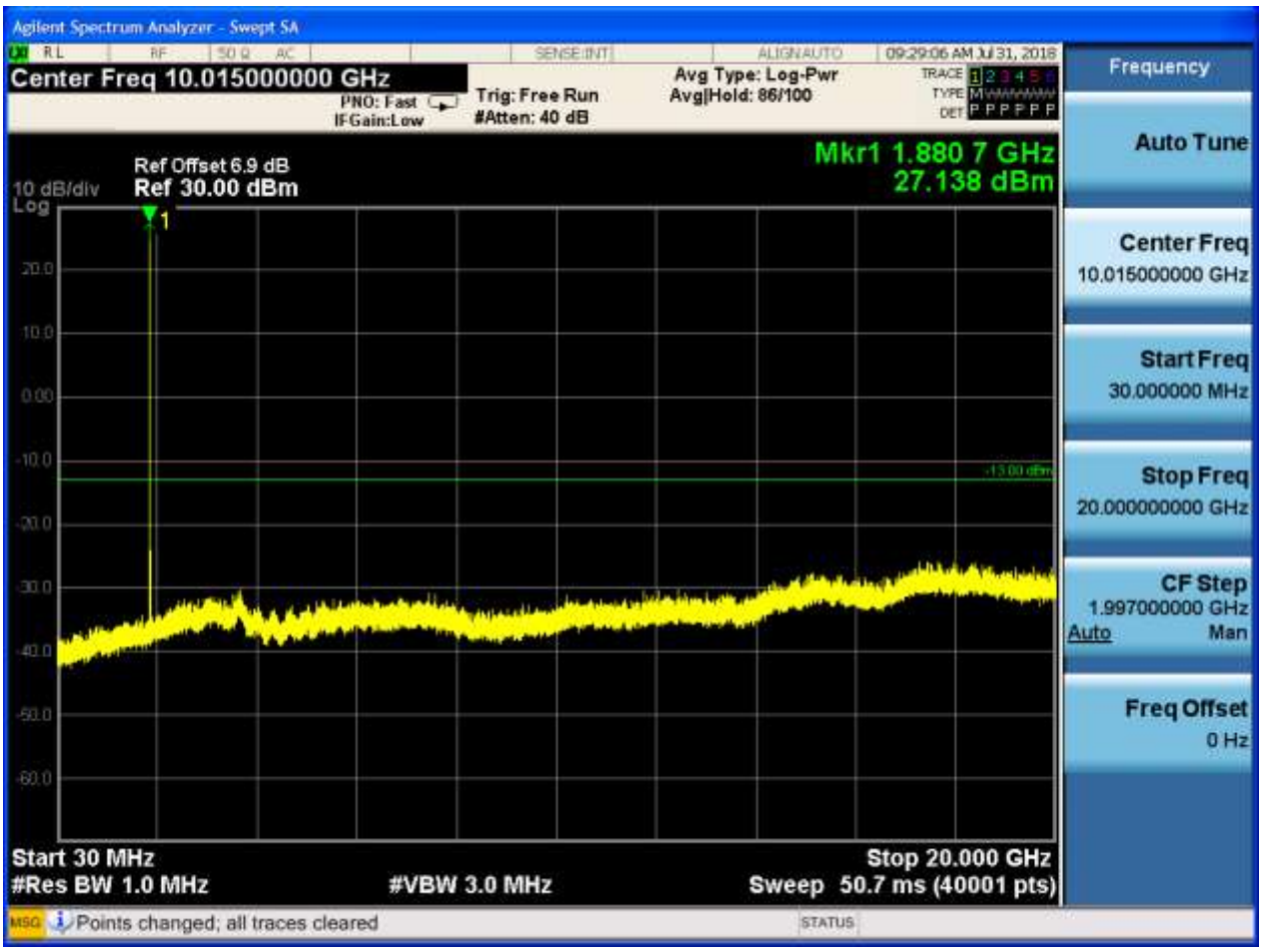
6.1.2.2.1 Test Channel = LCH



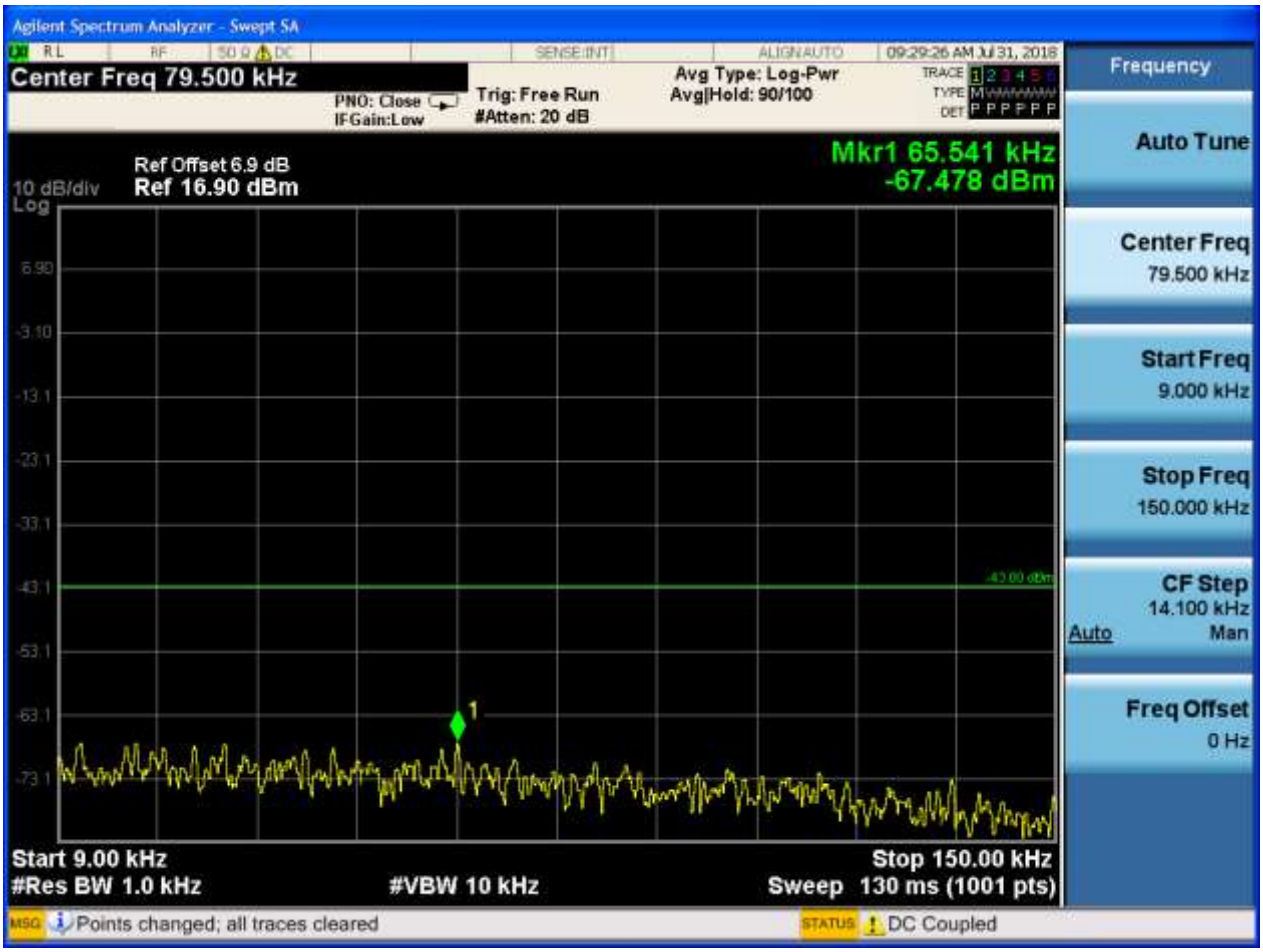


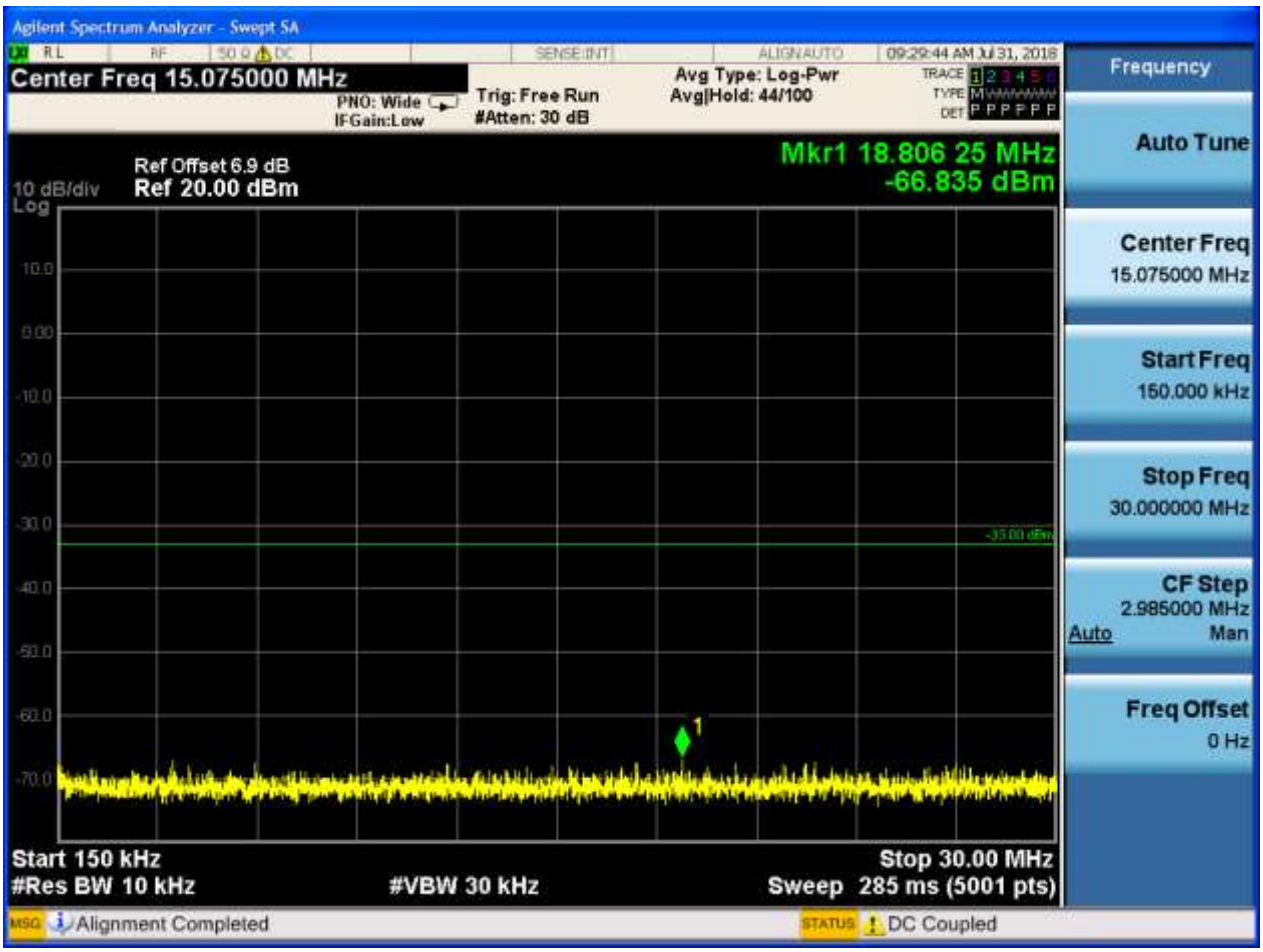
6.1.2.2.2 Test Channel = MCH





6.1.2.2.3 Test Channel = HCH





7Appendix_G: Frequency Stability

7.1 For GSM

7.1.1Frequency Error vs. Voltage:

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
GSM850	GSM/TM1	LCH	TN	VL	0.77	0.00093	PASS
				VN	1.49	0.00181	PASS
				VH	-0.39	-0.00047	PASS
		MCH	TN	VL	4.65	0.00556	PASS
				VN	1.61	0.00192	PASS
				VH	2.07	0.00247	PASS
		HCH	TN	VL	0.13	0.00015	PASS
				VN	0.19	0.00022	PASS
				VH	6.65	0.00783	PASS
	GSM/TM2	LCH	TN	VL	-4.52	-0.00548	PASS
				VN	2.10	0.00255	PASS
				VH	-6.59	-0.008	PASS
		MCH	TN	VL	-10.49	-0.01254	PASS
				VN	-7.36	-0.0088	PASS
				VH	2.49	0.00298	PASS
		HCH	TN	VL	7.68	0.00905	PASS
				VN	7.04	0.00829	PASS
				VH	3.81	0.00449	PASS
GSM1900	GSM/TM1	LCH	TN	VL	4.58	0.00248	PASS
				VN	6.13	0.00331	PASS
				VH	2.71	0.00146	PASS
		MCH	TN	VL	2.65	0.00141	PASS
				VN	2.00	0.00106	PASS
				VH	-0.97	-0.00052	PASS
		HCH	TN	VL	-5.62	-0.00294	PASS
				VN	0.32	0.00017	PASS
				VH	2.78	0.00146	PASS
	GSM/TM2	LCH	TN	VL	4.88	0.00264	PASS
				VN	3.49	0.00189	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				VH	3.03	0.00164	PASS
		MCH	TN	VL	-6.13	-0.00326	PASS
				VN	5.75	0.00306	PASS
				VH	-0.81	-0.00043	PASS
		HCH	TN	VL	-8.43	-0.00441	PASS
				VN	1.52	0.0008	PASS
				VH	-1.78	-0.00093	PASS

7.1.2Frequency Error vs. Temperature:

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
GSM850	GSM/TM1	LCH	VN	-30	0.90	0.00109	PASS
				-20	-0.26	-0.00032	PASS
				-10	-3.03	-0.00368	PASS
				0	-1.16	-0.00141	PASS
				10	1.29	0.00157	PASS
				20	-0.84	-0.00102	PASS
				30	-1.29	-0.00157	PASS
				40	-0.52	-0.00063	PASS
				50	0.39	0.00047	PASS
		MCH	VN	-30	2.91	0.00348	PASS
				-20	6.84	0.00818	PASS
				-10	-1.36	-0.00163	PASS
				0	0.90	0.00108	PASS
				10	2.13	0.00255	PASS
				20	-5.36	-0.00641	PASS
				30	6.26	0.00748	PASS
				40	1.16	0.00139	PASS
				50	3.16	0.00378	PASS
		HCH	VN	-30	0.19	0.00022	PASS
				-20	0.39	0.00046	PASS
				-10	5.42	0.00639	PASS
				0	0.97	0.00114	PASS
				10	-0.26	-0.00031	PASS
				20	-0.65	-0.00077	PASS
				30	2.39	0.00282	PASS
				40	-0.52	-0.00061	PASS
				50	7.75	0.00913	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
	GSM/TM2	LCH	VN	-30	-0.81	-0.00098	PASS
				-20	0.77	0.00093	PASS
				-10	-4.68	-0.00568	PASS
				0	-4.39	-0.00533	PASS
				10	4.58	0.00556	PASS
				20	-2.78	-0.00337	PASS
				30	-3.10	-0.00376	PASS
				40	-2.26	-0.00274	PASS
				50	1.39	0.00169	PASS
		MCH	VN	-30	-2.07	-0.00247	PASS
				-20	11.75	0.01404	PASS
				-10	1.68	0.00201	PASS
				0	3.36	0.00402	PASS
				10	0.97	0.00116	PASS
				20	0.06	0.00007	PASS
				30	6.75	0.00807	PASS
				40	-2.49	-0.00298	PASS
				50	10.49	0.01254	PASS
		HCH	VN	-30	-1.52	-0.00179	PASS
				-20	1.13	0.00133	PASS
				-10	-1.23	-0.00145	PASS
				0	-4.26	-0.00502	PASS
				10	-5.75	-0.00677	PASS
				20	-5.20	-0.00613	PASS
				30	1.61	0.0019	PASS
				40	-0.94	-0.00111	PASS
				50	1.19	0.0014	PASS
GSM1900	GSM/TM1	LCH	VN	-30	4.33	0.00234	PASS
				-20	2.32	0.00125	PASS
				-10	2.07	0.00112	PASS
				0	0.13	0.00007	PASS
				10	5.42	0.00293	PASS
				20	0.71	0.00038	PASS
				30	2.07	0.00112	PASS
				40	0.19	0.0001	PASS
				50	1.81	0.00098	PASS
		MCH	VN	-30	4.97	0.00264	PASS
				-20	6.59	0.00351	PASS
				-10	2.13	0.00113	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				0	3.23	0.00172	PASS
				10	0.39	0.00021	PASS
				20	1.68	0.00089	PASS
				30	1.23	0.00065	PASS
				40	-1.42	-0.00076	PASS
				50	-2.00	-0.00106	PASS
		HCH	VN	-30	-0.39	-0.0002	PASS
				-20	-6.13	-0.00321	PASS
				-10	2.32	0.00121	PASS
				0	5.17	0.00271	PASS
				10	-1.74	-0.00091	PASS
				20	6.72	0.00352	PASS
				30	0.71	0.00037	PASS
				40	2.32	0.00121	PASS
				50	-1.61	-0.00084	PASS
	GSM/TM2	LCH	VN	-30	-2.91	-0.00157	PASS
				-20	-10.33	-0.00558	PASS
				-10	-4.55	-0.00246	PASS
				0	-1.87	-0.00101	PASS
				10	-4.88	-0.00264	PASS
				20	-5.13	-0.00277	PASS
				30	-7.49	-0.00405	PASS
				40	-2.20	-0.00119	PASS
				50	-9.07	-0.0049	PASS
		MCH	VN	-30	-5.71	-0.00304	PASS
				-20	3.65	0.00194	PASS
				-10	-5.65	-0.00301	PASS
				0	-8.20	-0.00436	PASS
				10	-0.45	-0.00024	PASS
				20	-4.23	-0.00225	PASS
				30	0.68	0.00036	PASS
				40	1.42	0.00076	PASS
				50	-6.78	-0.00361	PASS
		HCH	VN	-30	-4.13	-0.00216	PASS
				-20	-2.20	-0.00115	PASS
				-10	-6.97	-0.00365	PASS
				0	-8.27	-0.00433	PASS
				10	-2.42	-0.00127	PASS
				20	-7.46	-0.00391	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				30	-3.91	-0.00205	PASS
				40	3.75	0.00196	PASS
				50	-1.39	-0.00073	PASS

END