



Appendix for test report

1 Appendix_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	24.00	17.25	38.5	PASS
		MCH	24.03	17.28	38.5	PASS
		HCH	24.00	17.25	38.5	PASS
Test Band	Test Mode	Test Channel	Conducted Power [dBm]	EIRP [dBm]	Limit [dBm]	Verdict
WCDMA1900	UMTS/TM1	LCH	22.50	21.5	33	PASS
		MCH	22.45	21.45	33	PASS
		HCH	22.56	21.56	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,

$$\text{ERP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBd]}$$

$$\text{EIRP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBi]}$$

b, SGP = Signal Generator Level

Note2:

$$\text{SET Span} = 1.5 * \text{OBW}$$

$$\text{SET RBW} = 1\% \text{ of the OBW, not to exceed } 1\text{MHz}$$

$$\text{SET VBW} \geq 3 * \text{RBW}$$

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
WCDMA850	UMTS/TM1	LCH	3.030	13	PASS
		MCH	2.690	13	PASS
		HCH	2.740	13	PASS
WCDMA1900	UMTS/TM1	LCH	2.690	13	PASS
		MCH	2.740	13	PASS
		HCH	2.730	13	PASS

3Appendix_C: Modulation Characteristics

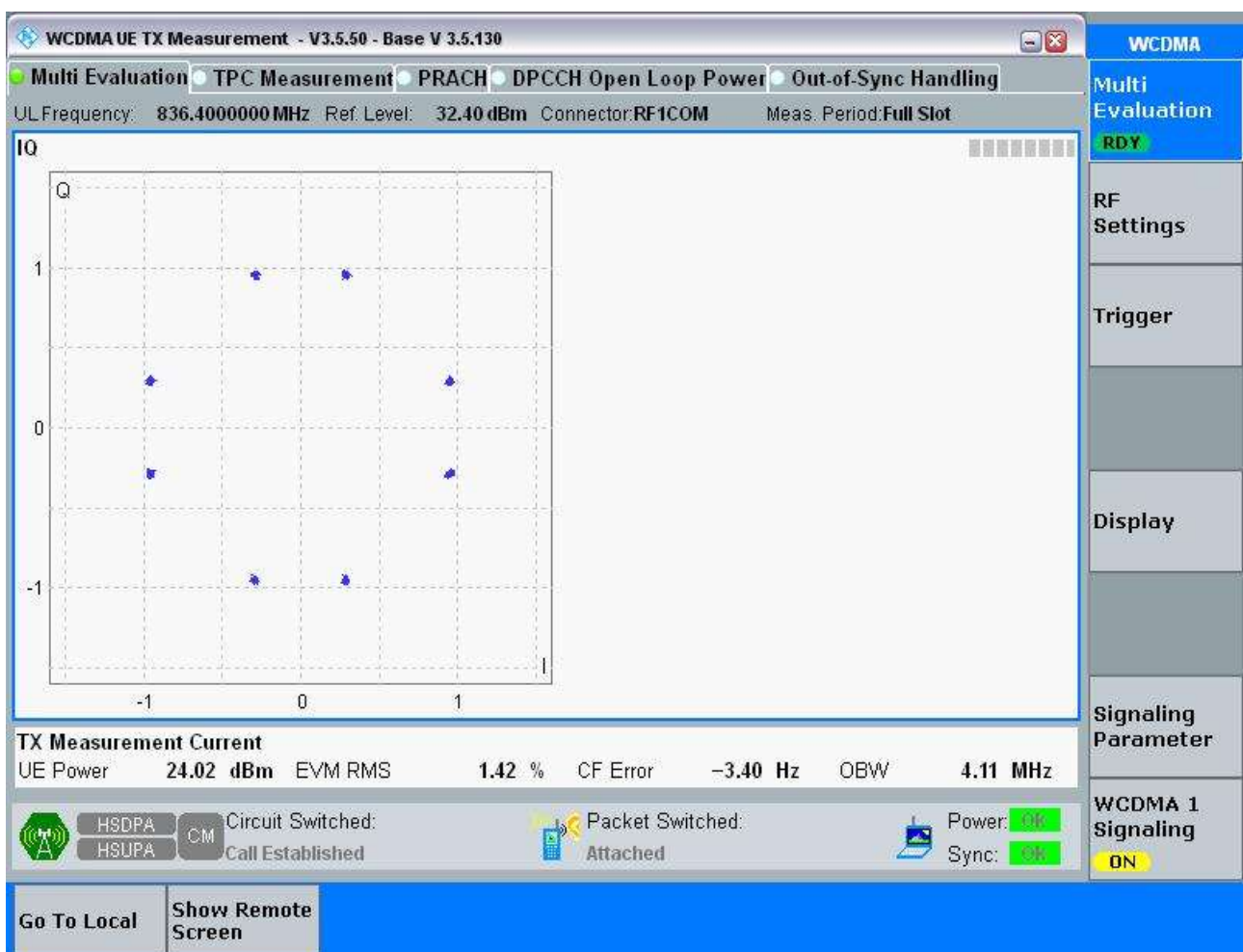
Part I - Test Plots

3.1 For UMTS

3.1.1 Test Band = WCDMA850

3.1.1.1 Test Mode = UMTS/TM1

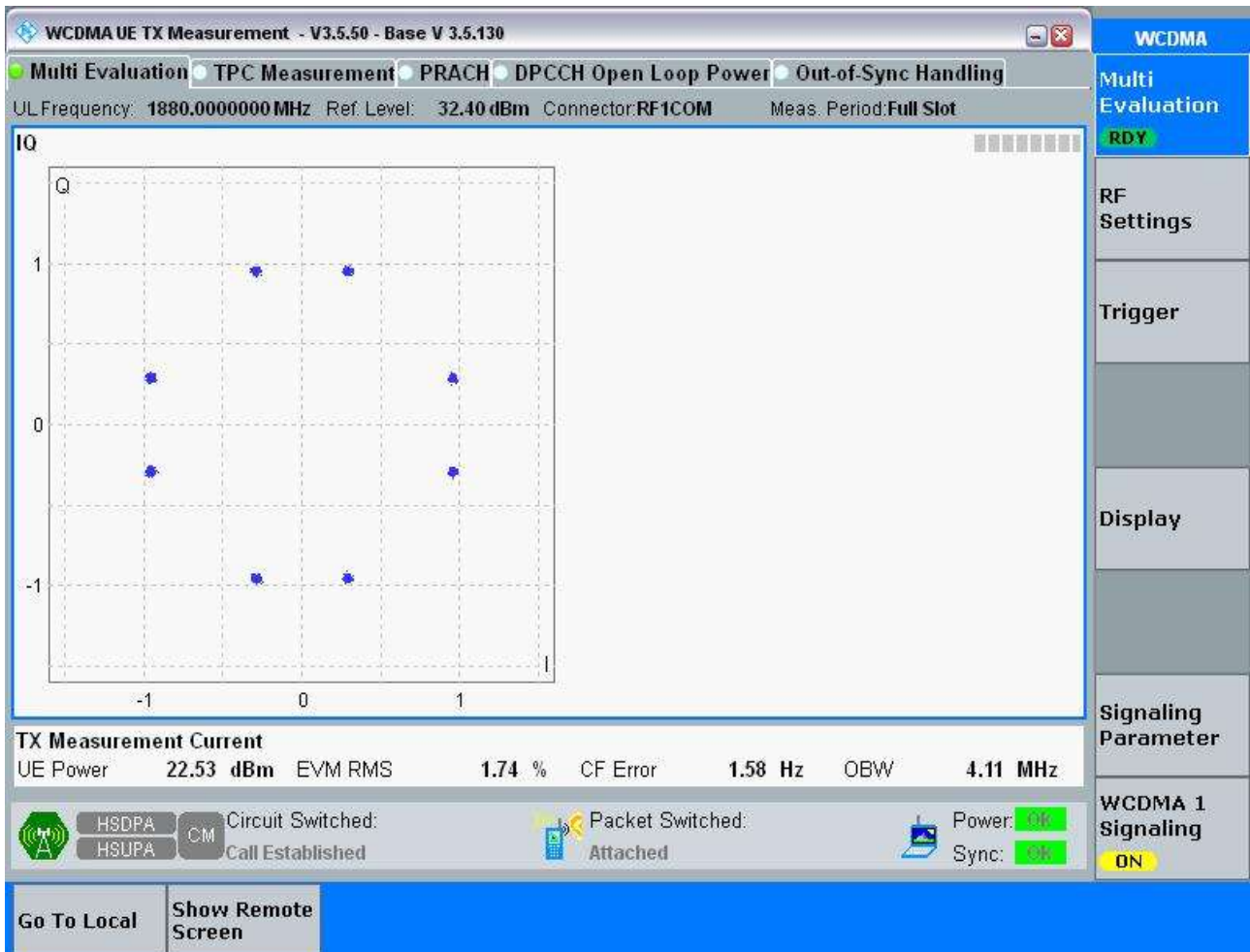
3.1.1.1.1 Test Channel = MCH



3.1.3 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	4.17	4.71	Pass
		MCH	4.17	4.72	Pass
		HCH	4.17	4.70	Pass
WCDMA1900	UMTS/TM1	LCH	4.19	4.72	Pass
		MCH	4.18	4.72	Pass
		HCH	4.17	4.71	Pass

Part II - Test Plots

4.1 For UMTS

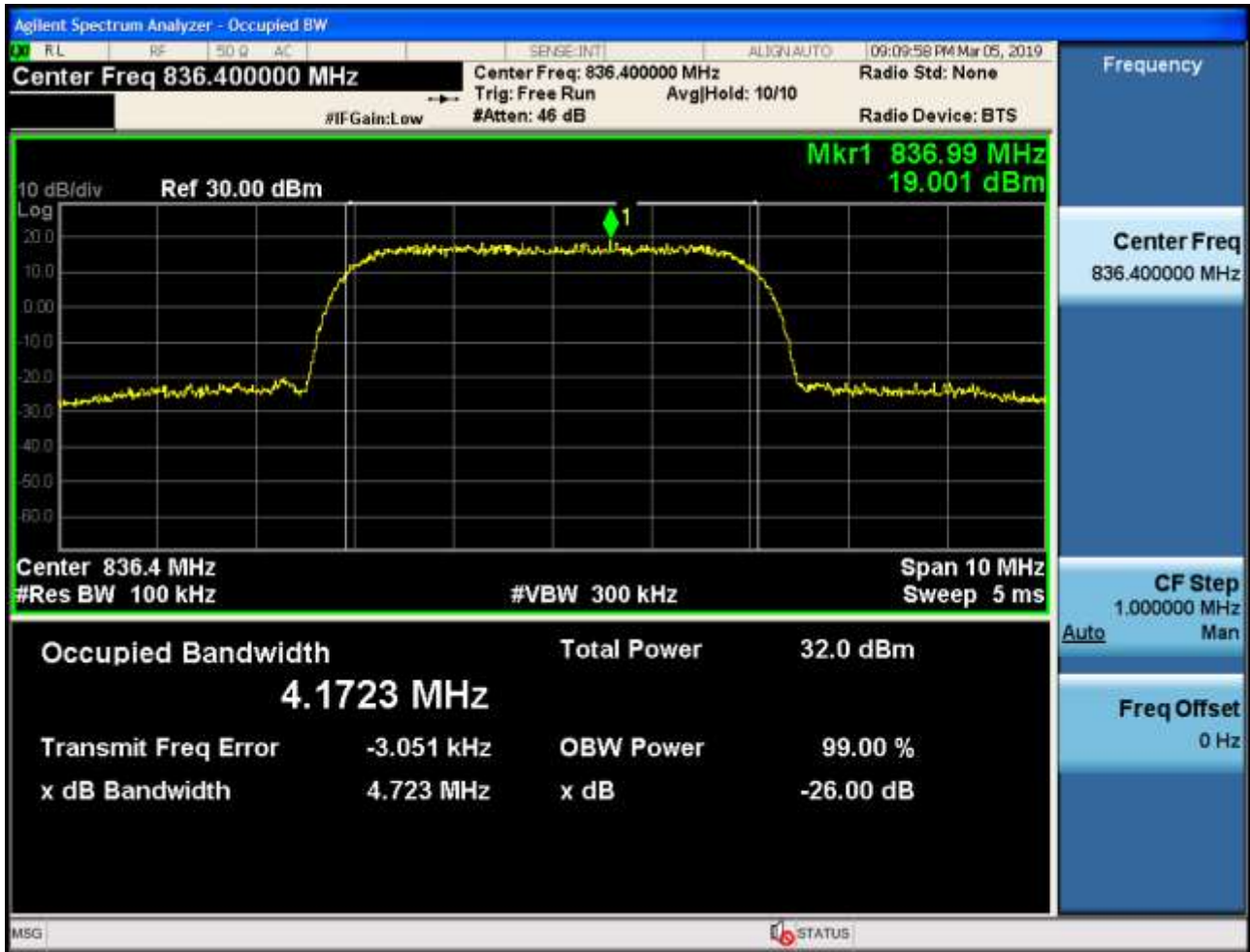
4.1.1 Test Band = WCDMA850

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



4.1.3 Test Band = WCDMA1900

4.1.3.1 Test Mode = UMTS/TM1

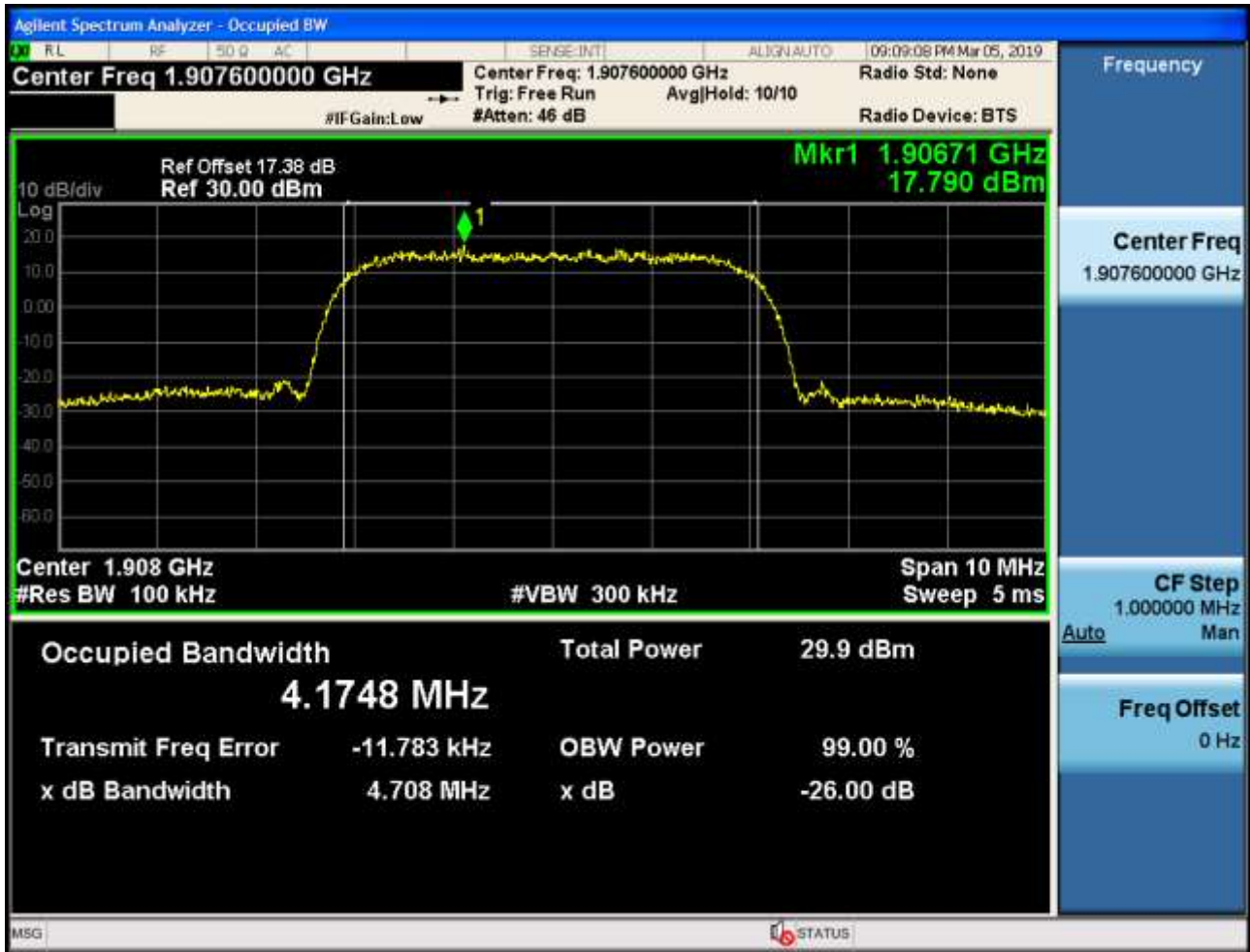
4.1.3.1.1 Test Channel = LCH



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



5.1.3 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.

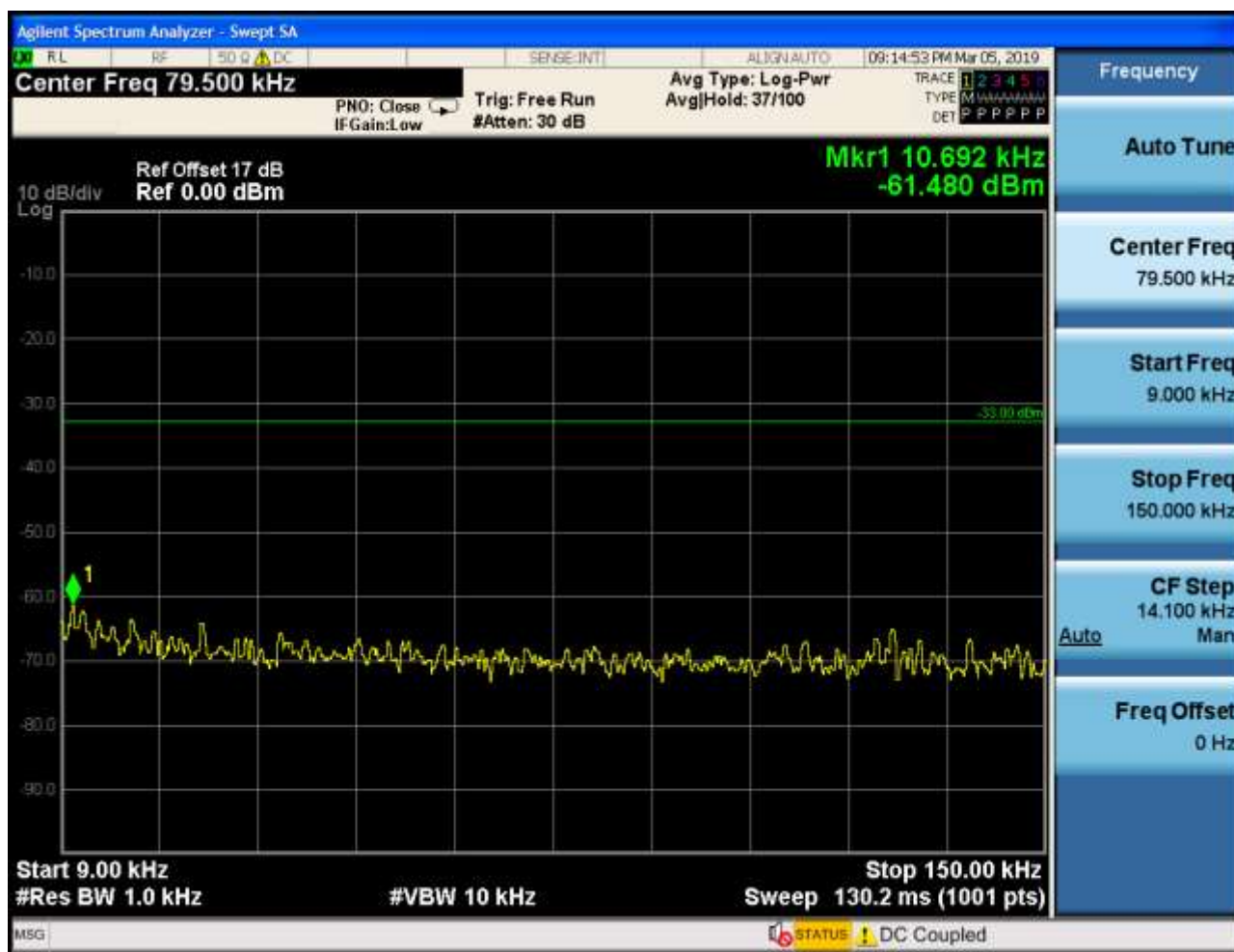
Part I - Test Plots

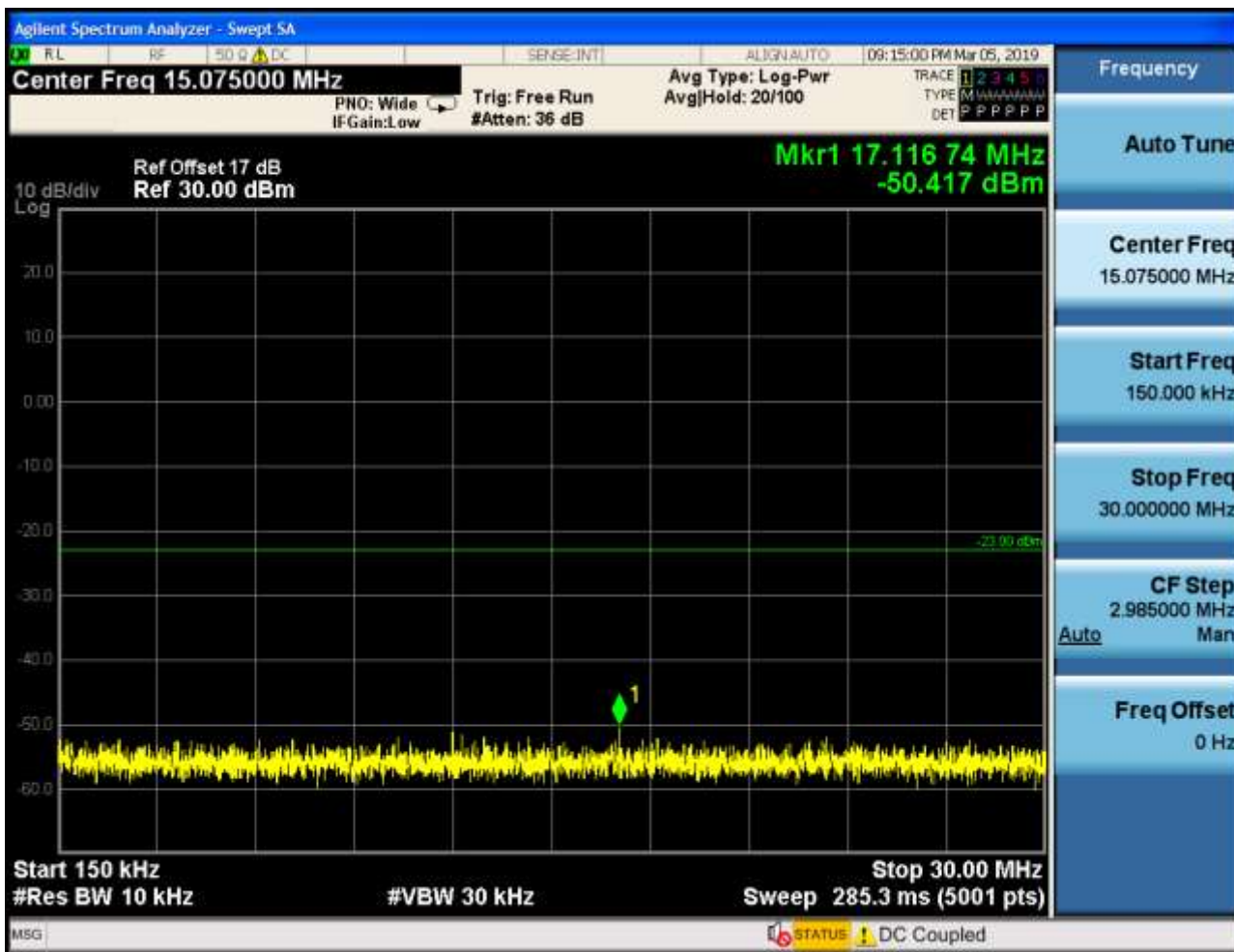
6.1 For UMTS

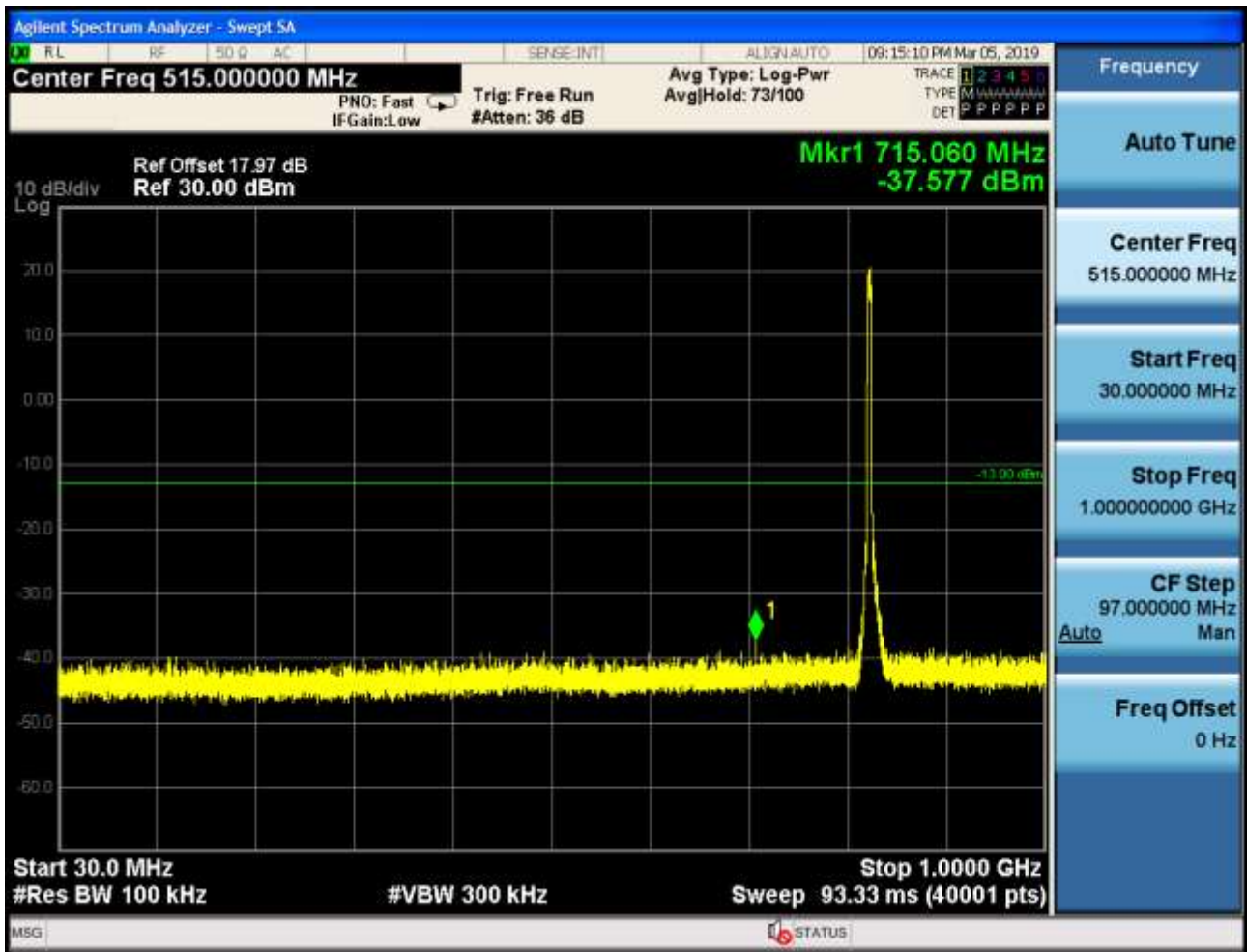
6.1.1 Test Band = WCDMA850

6.1.1.1 Test Mode = UMTS/TM1

6.1.1.1.1 Test Channel = LCH

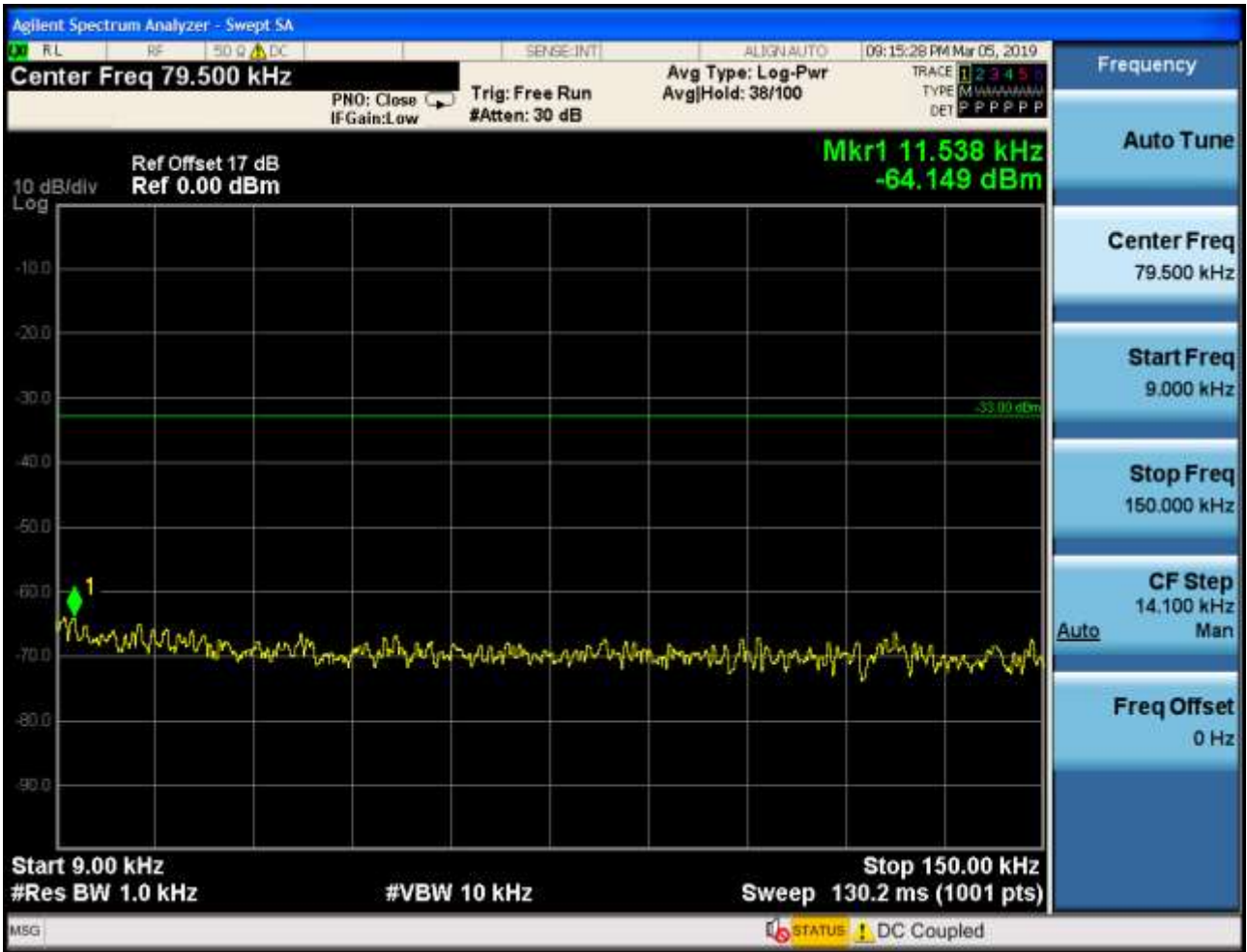


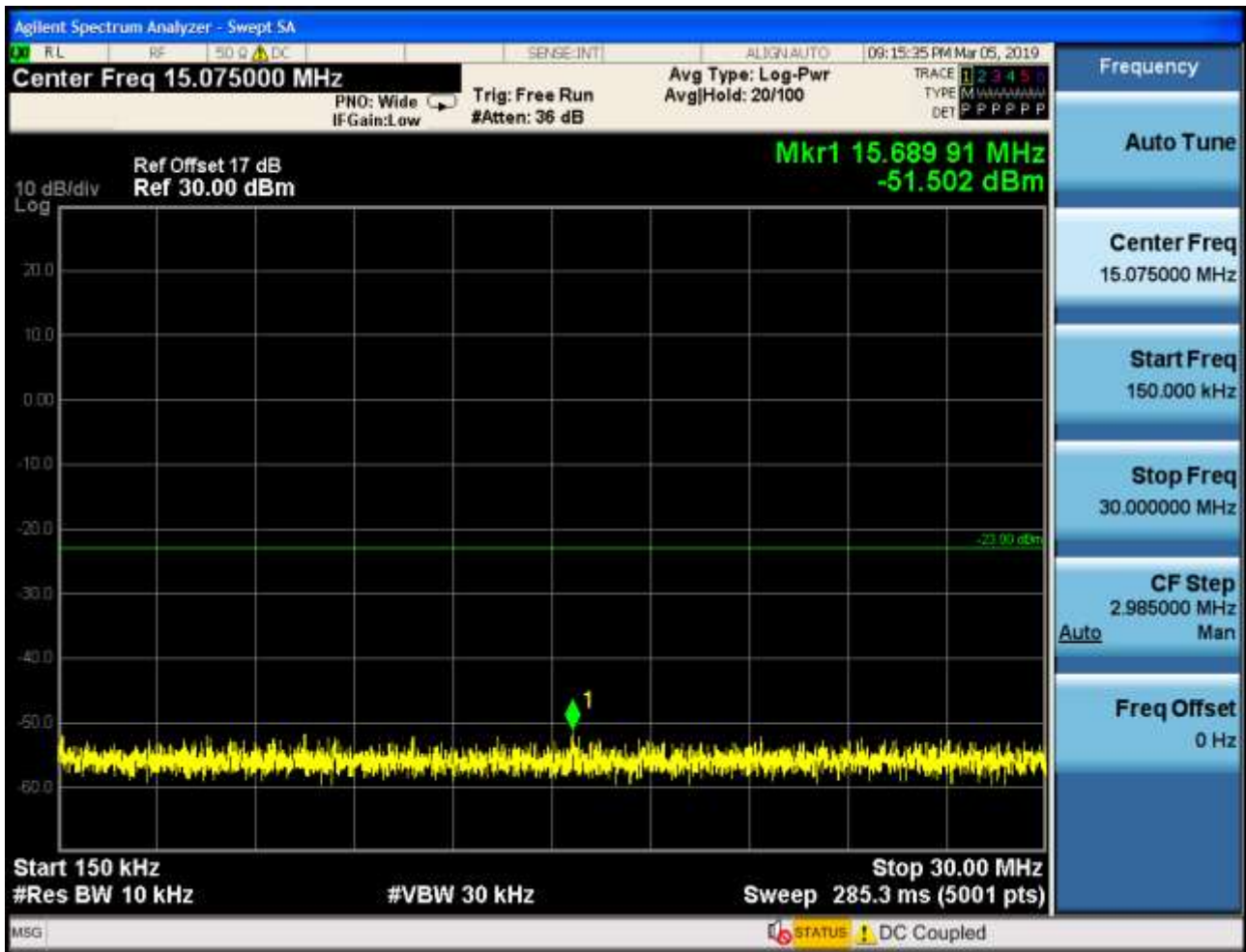


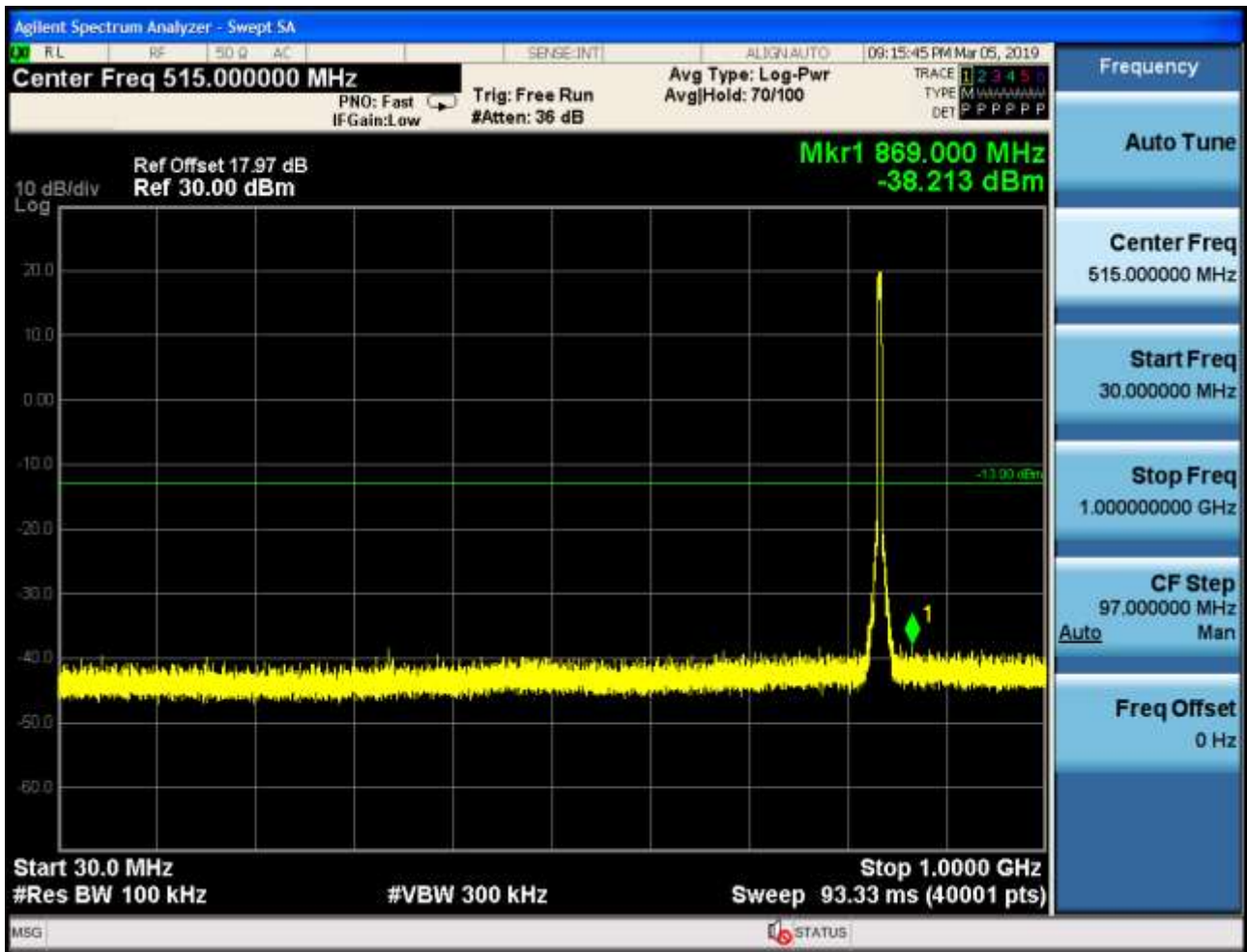




6.1.1.1.2 Test Channel = MCH



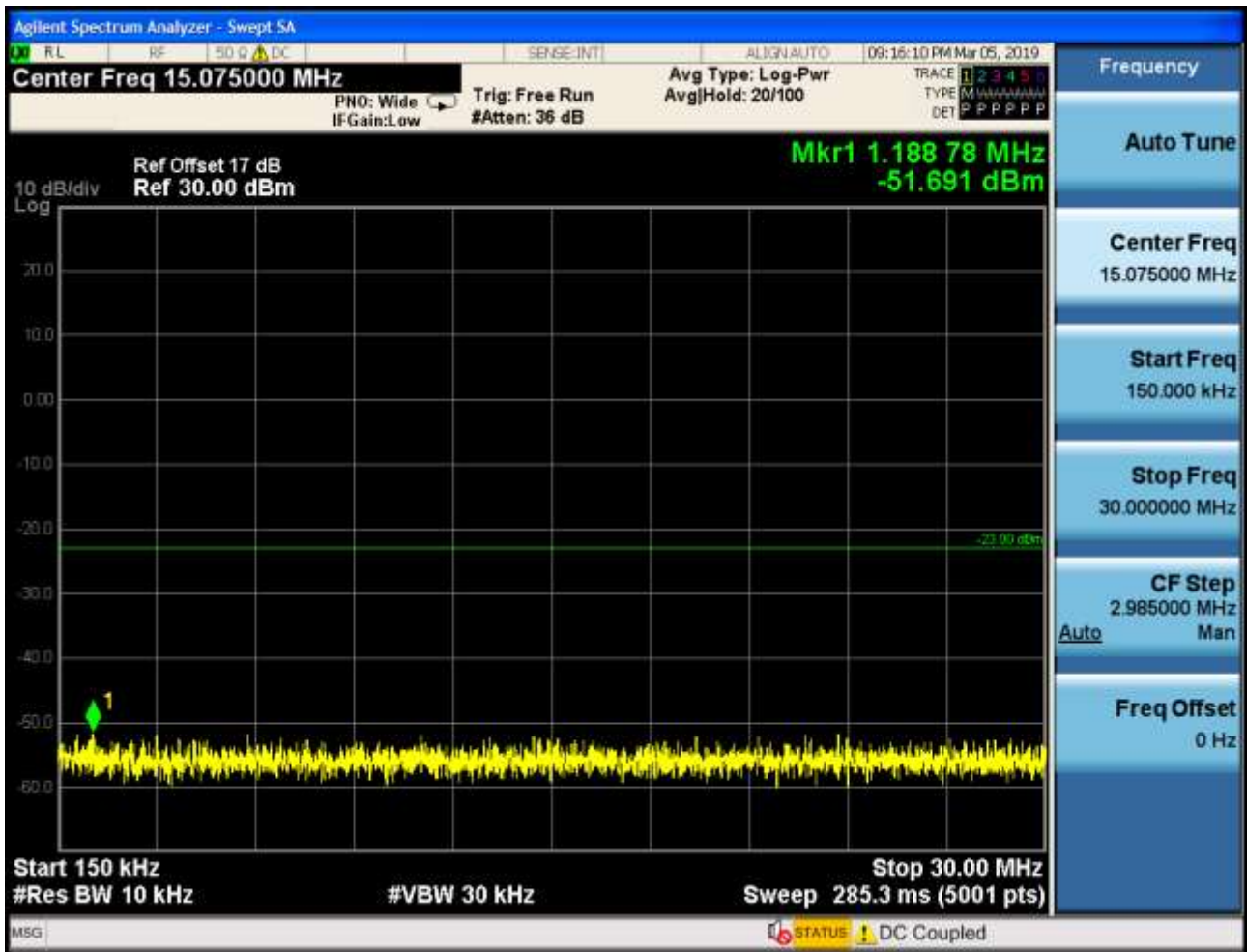


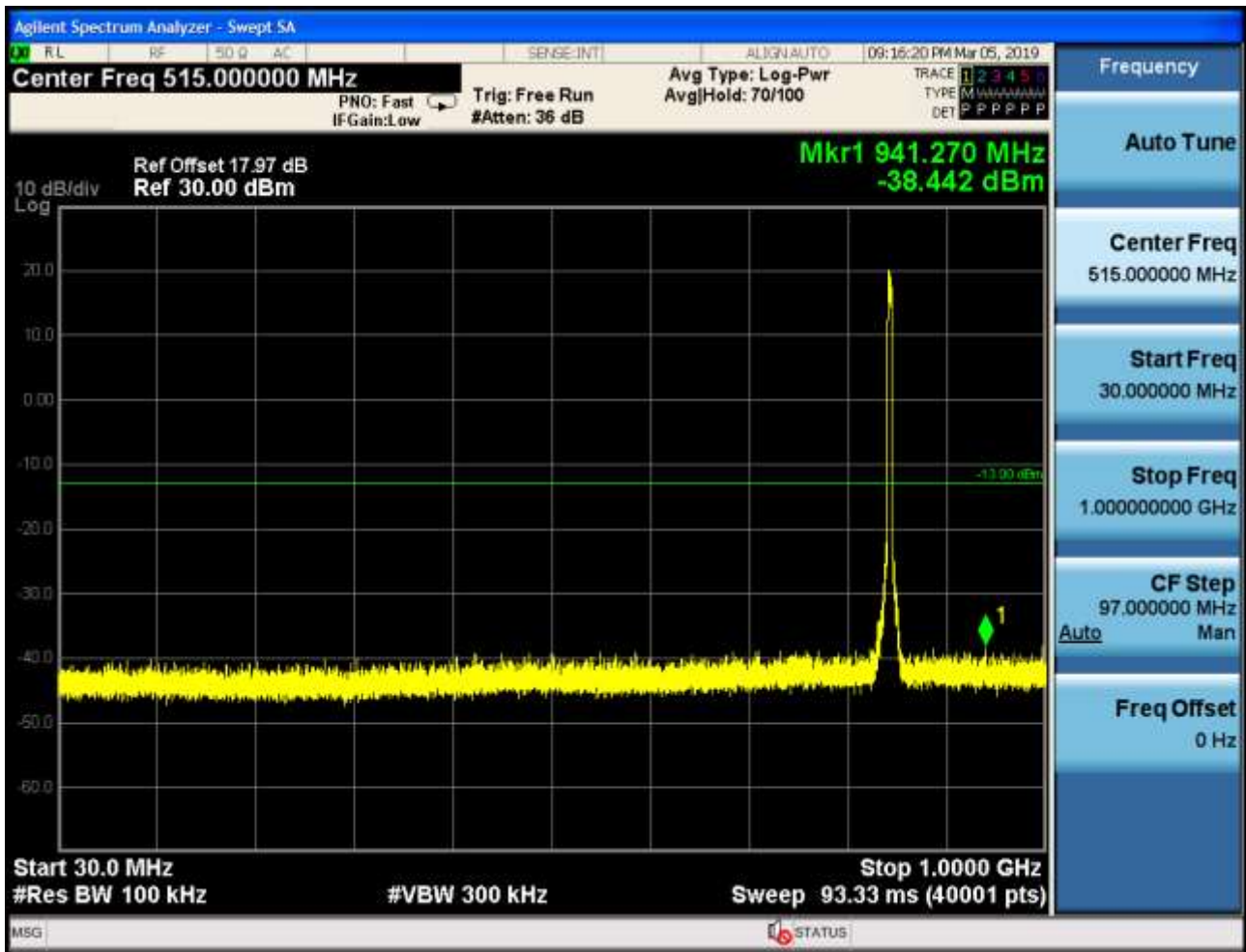


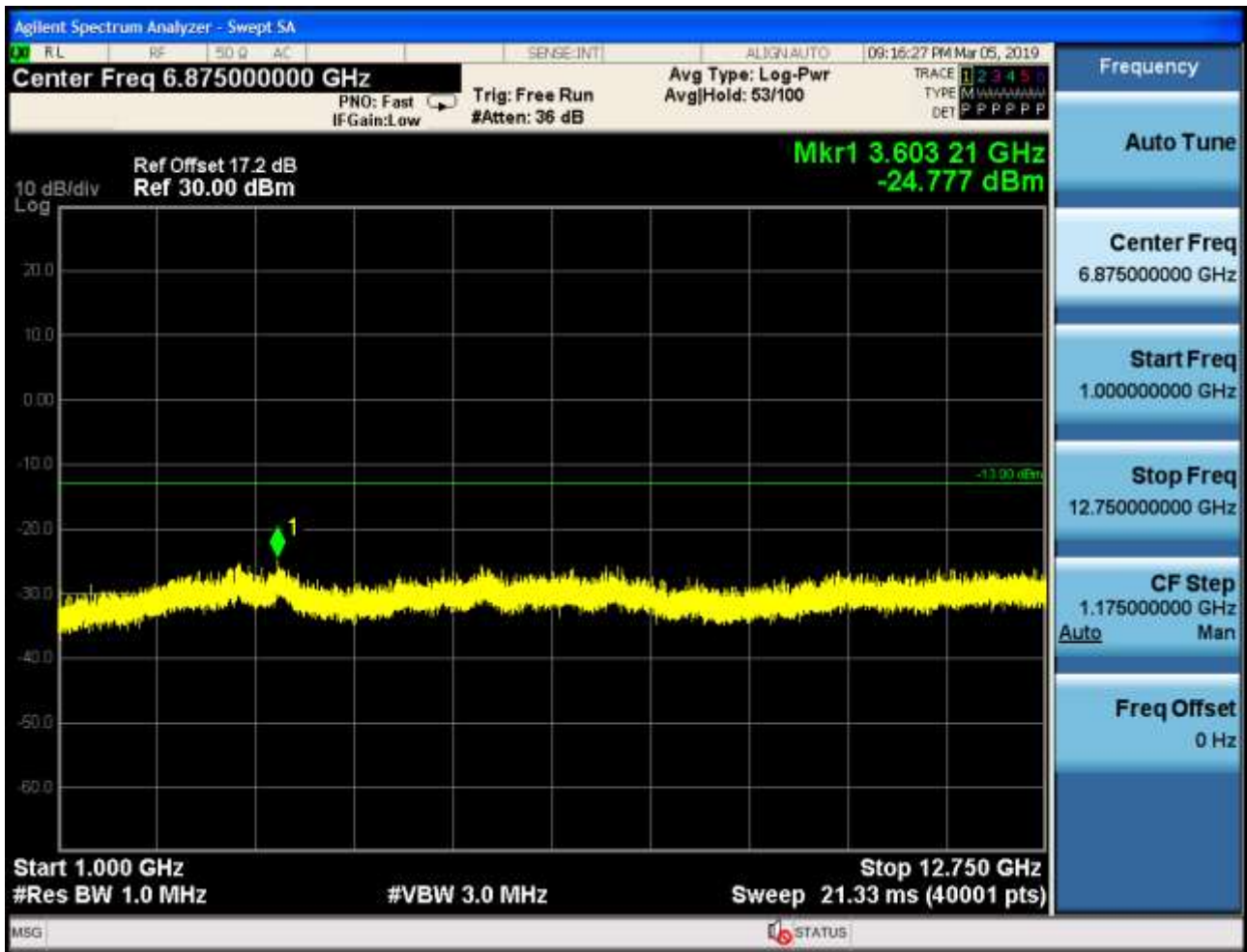


6.1.1.1.3 Test Channel = HCH







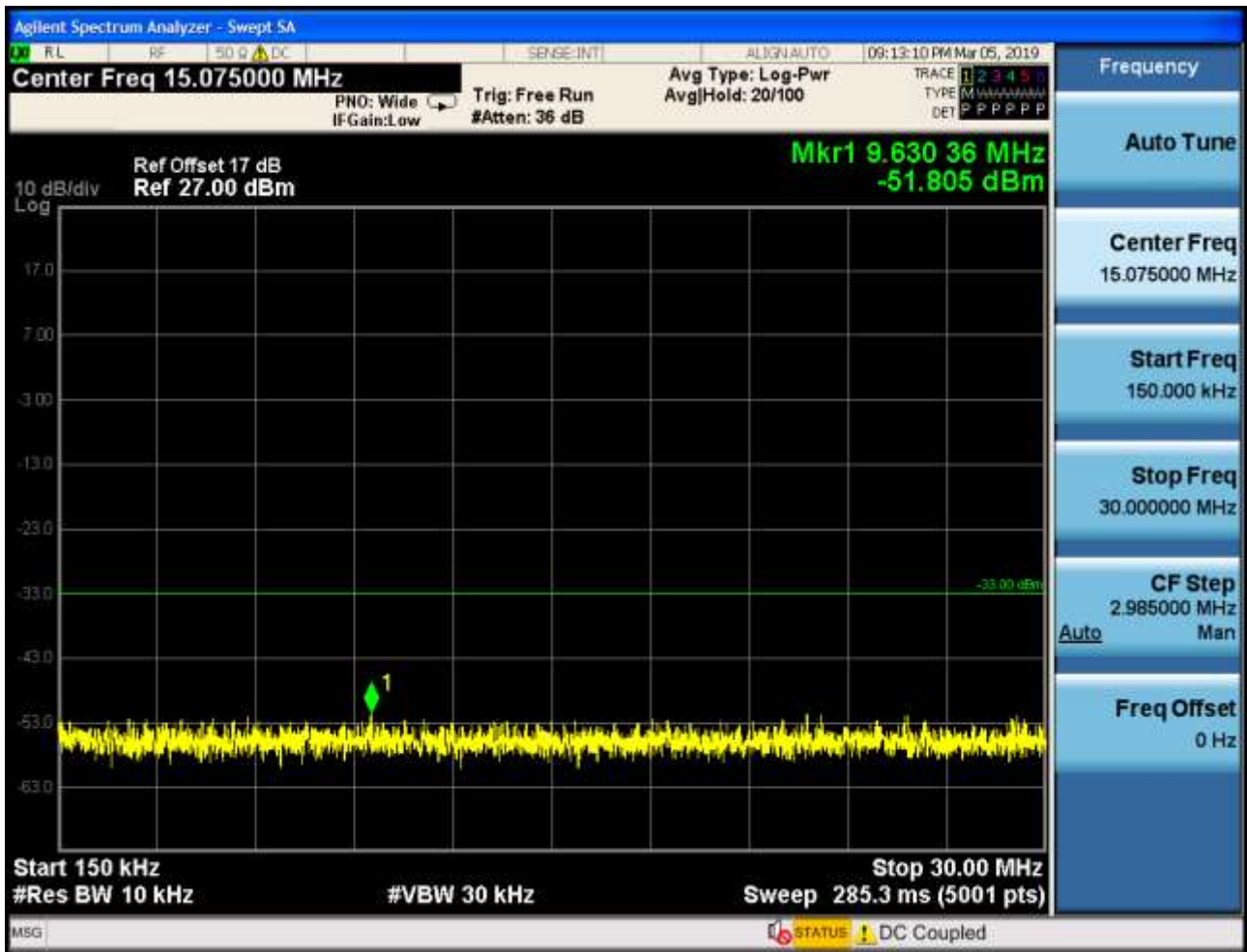


6.1.3 Test Band = WCDMA1900

6.1.3.1 Test Mode = UMTS/TM1

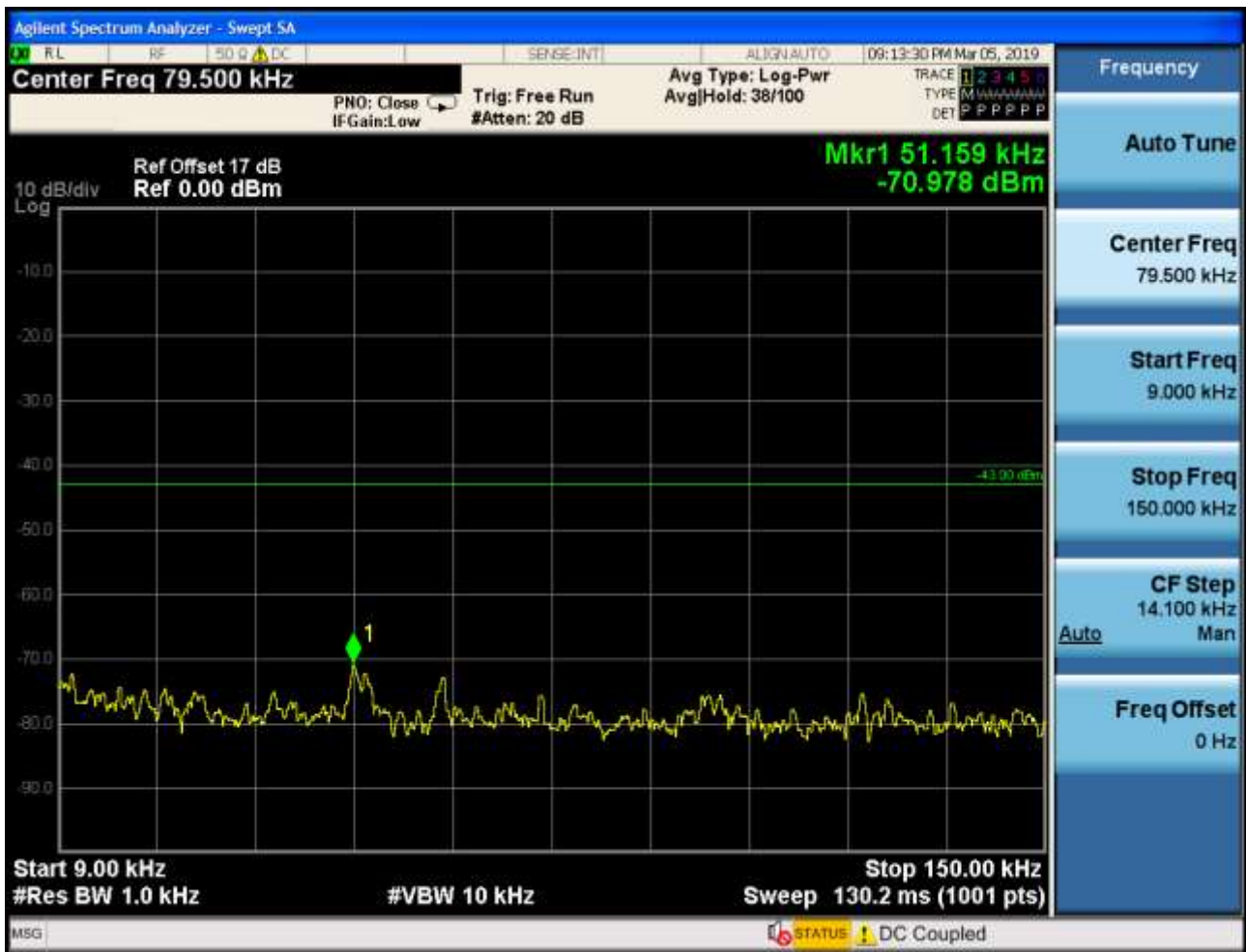
6.1.3.1.1 Test Channel = LCH

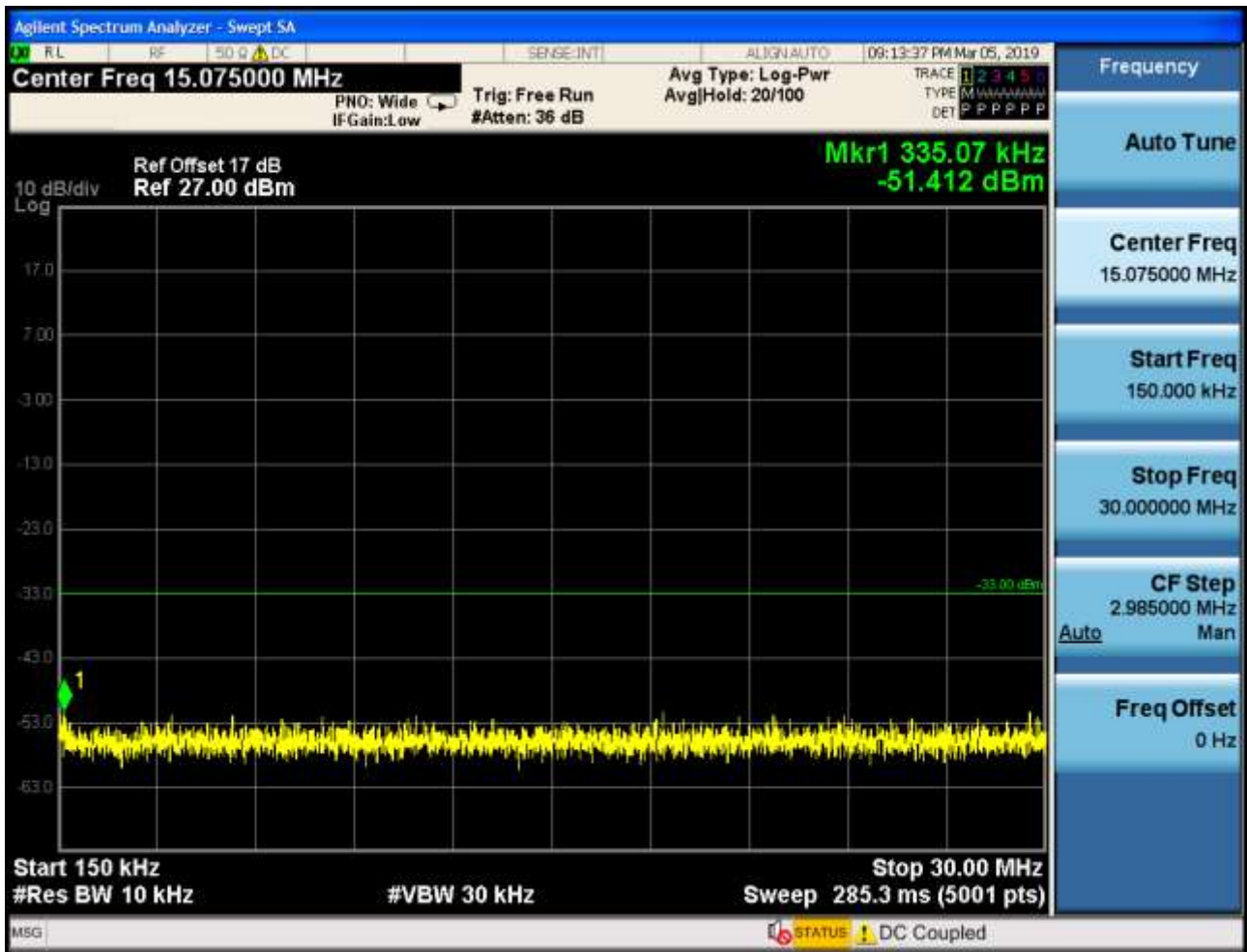






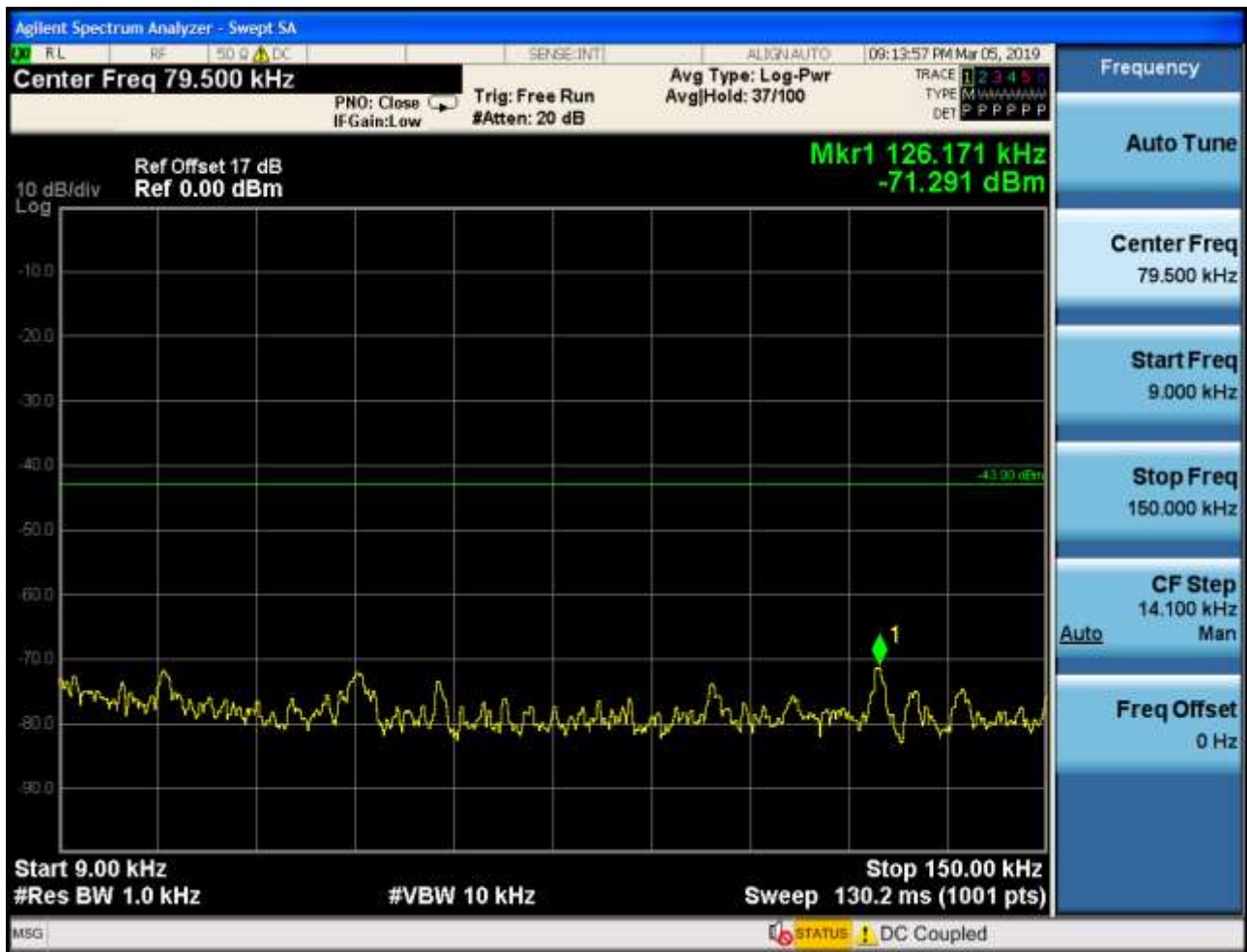
6.1.3.1.2 Test Channel = MCH

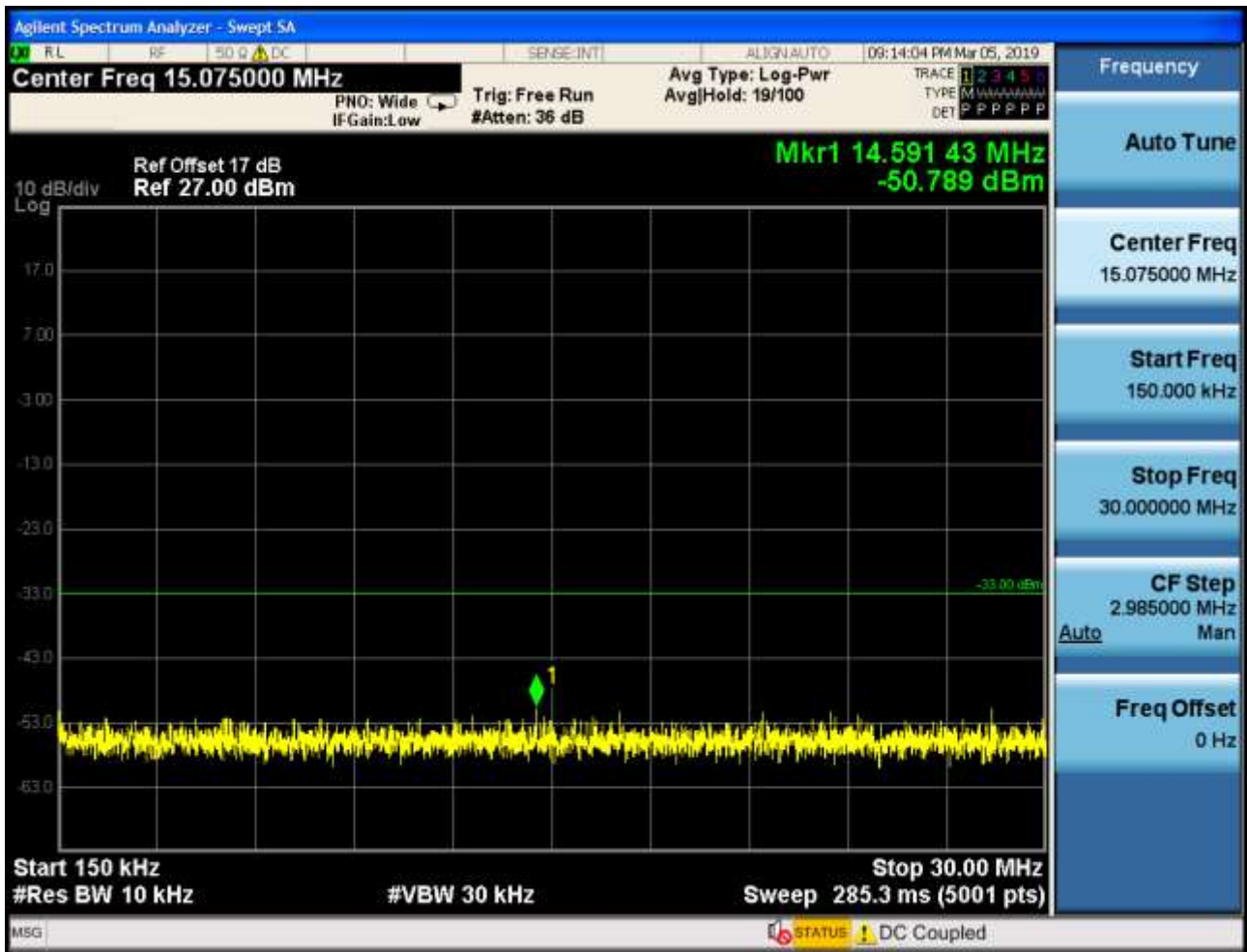






6.1.3.1.3 Test Channel = HCH







8Appendix_G: Frequency Stability

8.1 For UMTS

8.1.1 Frequency 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	1.43051	0.00173	PASS
				VN	-0.17166	-0.00021	PASS
				VH	0.94414	0.00114	PASS
		MCH	TN	VL	4.39882	0.00526	PASS
				VN	-1.95265	-0.00233	PASS
				VH	3.92675	0.00469	PASS
		HCH	TN	VL	-5.07832	-0.00600	PASS
				VN	0.61512	0.00073	PASS
				VH	-5.72205	-0.00676	PASS
WCDMA1900	UMTS/TM1	LCH	TN	VL	2.48194	0.00134	PASS
				VN	1.74522	0.00094	PASS
				VH	1.68085	0.00091	PASS
		MCH	TN	VL	8.30412	0.00442	PASS
				VN	5.47886	0.00291	PASS
				VH	4.46320	0.00237	PASS
		HCH	TN	VL	1.50919	0.00134	PASS
				VN	2.47478	0.00094	PASS
				VH	0.39339	0.00091	PASS

8.1.2 Frequency 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	0.99421	0.00120	PASS
				-20	3.24726	0.00393	PASS
				-10	3.69787	0.00447	PASS
				0	-2.16723	-0.00262	PASS
				10	-6.34432	-0.00768	PASS
				20	-0.17166	-0.00021	PASS
				30	-1.64509	-0.00199	PASS
				40	-1.56641	-0.00190	PASS
				50	-0.74387	-0.00090	PASS
		MCH	VN	-30	-2.83956	-0.00339	PASS
				-20	-3.18289	-0.00381	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict						
				-10	6.18696	0.00740	PASS						
				0	-0.16451	-0.00020	PASS						
				10	-3.05414	-0.00365	PASS						
				20	-1.95265	-0.00233	PASS						
				30	0.14305	0.00017	PASS						
				40	-0.19312	-0.00023	PASS						
				50	-5.49316	-0.00657	PASS						
		HCH	VN			-30	3.54767	0.00419	PASS				
						-20	1.57356	0.00186	PASS				
						-10	-4.97818	-0.00588	PASS				
						0	0.42200	0.00050	PASS				
						10	1.47343	0.00174	PASS				
						20	0.61512	0.00073	PASS				
						30	3.48330	0.00412	PASS				
						40	4.70638	0.00556	PASS				
						50	1.89543	0.00224	PASS				
WCDMA1900	UMTS/TM1	LCH	VN										
								-30	-6.13689	-0.00331	PASS		
								-20	-3.62635	-0.00196	PASS		
								-10	0.88692	0.00048	PASS		
								0	8.69036	0.00469	PASS		
								10	3.46899	0.00187	PASS		
								20	1.74522	0.00094	PASS		
								30	1.57356	0.00085	PASS		
								40	0.82254	0.00044	PASS		
		50	8.76904	0.00473	PASS								
		MCH	VN										
										-30	-5.02109	-0.00267	PASS
										-20	-2.83241	-0.00151	PASS
										-10	3.86953	0.00206	PASS
										0	0.72241	0.00038	PASS
										10	0.55790	0.00030	PASS
										20	5.47886	0.00291	PASS
										30	6.48022	0.00345	PASS
										40	-2.48909	-0.00132	PASS
		50	-1.55211	-0.00083	PASS								
		HCH	VN										
										-30	6.32286	0.00331	PASS
										-20	0.53644	0.00028	PASS
										-10	-0.43631	-0.00023	PASS
0	4.50611									0.00236	PASS		
10	0.82970									0.00043	PASS		
20	2.47478	0.00130	PASS										



Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				30	4.61340	0.00242	PASS
				40	3.13997	0.00165	PASS
				50	4.06980	0.00213	PASS

END