

## TEST REPORT

**Product** : Bikefinder Tracker  
**Trade mark** : Bikefinder AS  
**Model/Type reference** : BFG1S  
**Serial Number** : N/A  
**Report Number** : EED32L00192302  
**FCC ID** : 2ATRU-BFG1S  
**Date of Issue** : Aug. 02, 2019  
**Test Standards** : 47 CFR Part 2  
47 CFR Part 22 subpart H  
47 CFR Part 24 subpart E  
**Test result** : PASS

Prepared for:

**Bikefinder AS**  
**Kvitsøygata 30, 4014 Stavanger**

Prepared by:

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Date:

Aug. 02, 2019

Check No: 3096360818



## 2 Version

Version No.	Date	Description
00	Aug. 02, 2019	Original

### 3 Test Summary

Test Item	Test Requirement	Test method	Result
<b>GSM 850</b>			
Conducted output power	Part 2.1046(a)/Part 22.913(a)	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
Effective Radiated Power of Transmitter(ERP)	Part 2.1046(a)/Part 22.913(a)	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
99% &26dBOccupied Bandwidth	Part 2.1049(h)	Part 22.917(b) &KDB 971168 D01v03r01	PASS
Band Edge at antenna terminals	Part 2.1051/Part 22.917(a)	Part 22.917(b) &KDB 971168 D01v03r01	PASS
Spurious emissions at antenna terminals	Part 2.1051/ Part 2.1057/ Part 22.917(a)(b)	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
Field strength of spurious radiation	Part 2.1053/ Part 2.1057/ Part 22.917(a)(b)	TIA-603-E-2016&KDB 971168 D01v03r01	N/A
Frequency stability	Part 2.1055/ Part 22.355	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
<b>GSM 1900</b>			
Conducted output power	Part 2.1046(a) /Part 24.232(c)	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
Effective Radiated Power of Transmitter(EIRP)	Part 2.1046(a) / Part 24.232(c)	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
peak-to-average ratio	Part 24.232(d)	KDB 971168 D01v03r01	PASS
99% &26dBOccupied Bandwidth	Part 2.1049(h)	Part 24.238(b) &KDB 971168 D01v03r01	PASS
Band Edge at antenna terminals	Part 2.1051/ Part 24.238(a)	Part 24.238(b) &KDB 971168 D01v03r01	PASS
Spurious emissions at antenna terminals	Part 2.1051/ Part 2.1057/ Part 24.238(a)(b)	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
Field strength of spurious radiation	Part 2.1053 /Part 2.1057 / Part 24.238(a)(b)	TIA-603-E-2016&KDB 971168 D01v03r01	N/A
Frequency stability	Part 2.1055/Part 24.235	TIA-603-E-2016&KDB 971168 D01v03r01	PASS

Remark:

The tested sample(s) and the sample information are provided by the client.



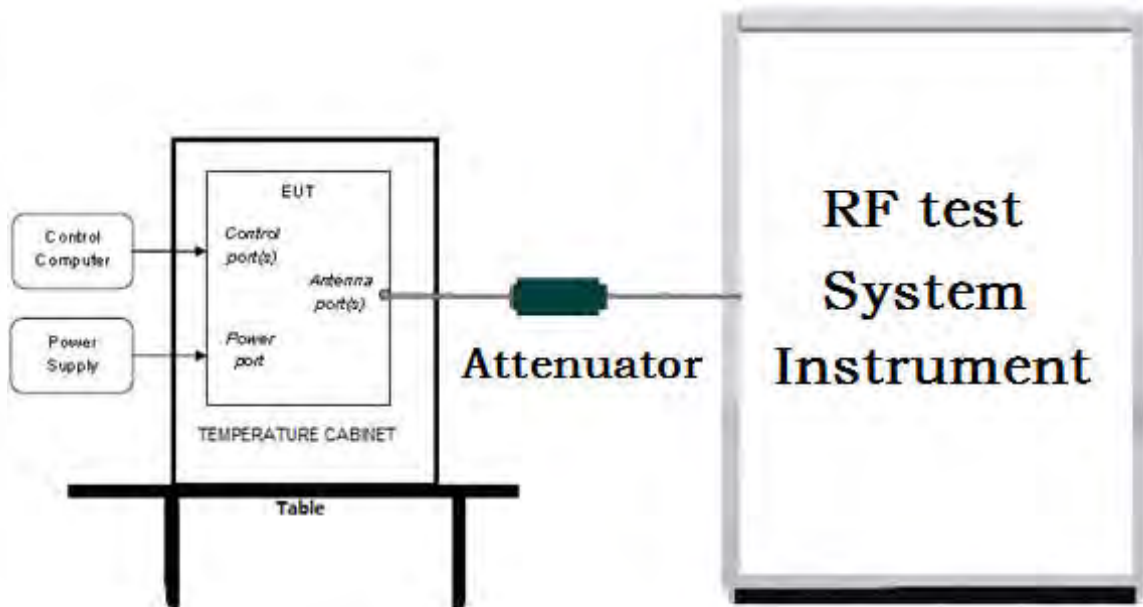
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## 5 Test Requirement

### 5.1 Test setup

#### 5.1.1 For Conducted test setup



#### 5.1.2 For Radiated Emissions test setup

Radiated Emissions setup:

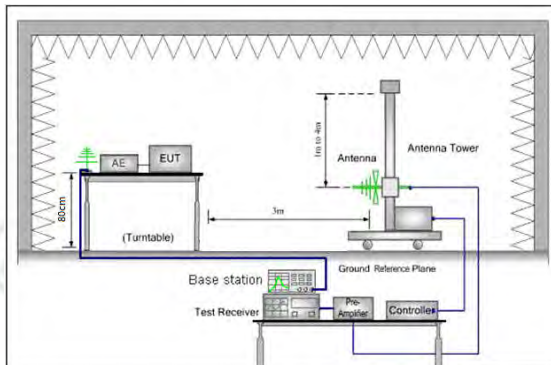


Figure 1. 30MHz to 1GHz

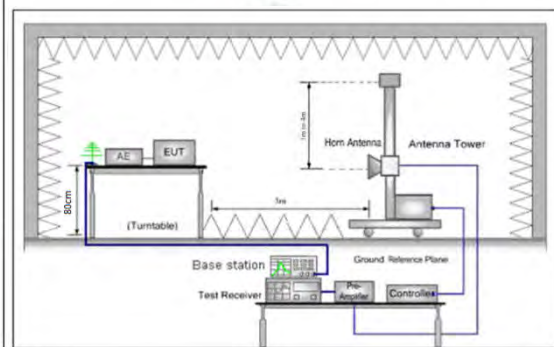


Figure 2. above 1GHz

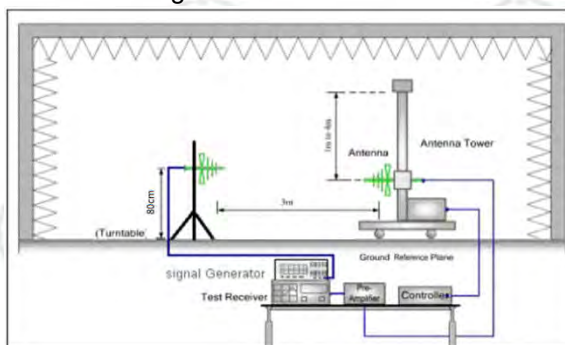


Figure 1. 30MHz to 1GHz

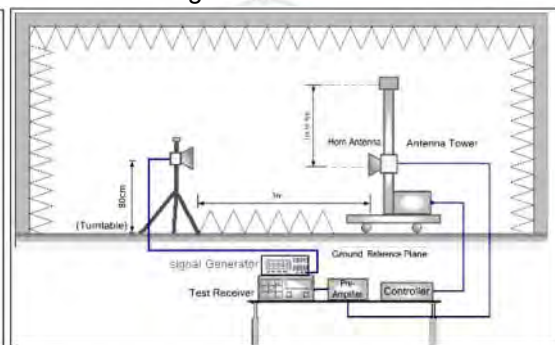


Figure 2. above 1GHz

## 5.2 Test Environment

<b>Operating Environment:</b>	
Temperature:	25.0 °C
Humidity:	56 % RH
Atmospheric Pressure:	1010kPa

## 5.3 Test Condition

### Test channel:

Test Mode	Tx/Rx	RF Channel		
		Low(L)	Middle(cm)	High(H)
GPRS850	Tx ( 824 MHz ~849 MHz )	Channel 128	Channel 190	Channel 251
		824.2MHz	836.6 MHz	848.8 MHz
	Rx ( 869 MHz ~894 MHz )	Channel 128	Channel 190	Channel 251
		869.2 MHz	881.6 MHz	893.8 MHz
GPRS1900	Tx ( 1850 MHz ~1910 MHz )	Channel 512	Channel 661	Channel 810
		1850.2MHz	1880.0 MHz	1909.8 MHz
	Rx ( 1930 MHz ~1990 MHz )	Channel 512	Channel 661	Channel 810
		1930.2 MHz	1960.0 MHz	1989.8 MHz

### Test mode:

band	Radiated	Conducted
GSM/GPRS 850	2)GPRS 8 Link	2)GPRS 8 Link
GSM/GPRS 1900	2)GPRS 8 Link	2)GPRS 8 Link

Test Mode	Test Modes description
GSM/TM2	GSM system, GPRS, GMSK modulation



## 6 General Information

### 6.1 Client Information

Applicant:	Bikefinder AS
Address of Applicant:	Kvitsøygata 30, 4014 Stavanger
Manufacturer:	Bikefinder AS
Address of Manufacturer:	Kvitsøygata 30, 4014 Stavanger
Factory:	High Quality PCB Co., Limited
Address of Factory:	1701 RM, Floor 17, Yunhua Shidai, Shajing Bao'an, Shenzhen

### 6.2 General Description of EUT

Product Name:	Bikefinder Tracker	
Model No.(EUT):	BFG1S	
Trade Mark:	Bikefinder AS	
EUT Supports Radios application:	GPRS850 824-849MHz GPRS1900 1805 –1880MHz	
Power Supply:	AC Adapter	N/A
	Battery	Model: XHP11300 Polymer Lithium Ion Batteries 3.8V Rated :960mAh
USB Micro-B Plug cable:	NA	
USB Changing cable:	NA	
AUX cable:	NA	
AC Adapter (1) line:	NA	
Sample Received Date:	Jul. 19, 2019	
Sample tested Date:	Jul. 19, 2019 to Jul. 29, 2019	

### 6.3 Product Specification subjective to this standard

Frequency Band:	GPRS 850: Tx:824.20 -848.80MHz;Rx: 869.20 – 893.80MHz GPRS 1900: Tx:1850.20 – 1909.80MHz;Rx:1930.20 – 1989.80MHz
Modulation Type:	GPRS Mode with GMSK Modulation
SIM	IMEI: 358688000000158
Power class	3
Sample Type:	Portable device
Antenna Type and Gain:	Monopole LDS Antenna, GPRS 850 -1.51dBi GPRS 1900 -0.9 dBi
Test Voltage:	DC 3.8V

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
800	2.1	-16.77	-11.44
810	3.06	-15.14	-10.11
820	4.12	-13.85	-8.82
830	6.25	-12.04	-7.39
840	10.3	-9.87	-5.43
850	14.76	-8.31	-4.48
860	14.66	-8.34	-4.07
870	19.81	-7.03	-2.5
880	25.59	-5.92	-1.72
890	27.2	-5.65	-1.8
900	27.23	-5.65	-1.9
910	27.72	-5.57	-1.94
920	26.03	-5.84	-2.39
930	24.62	-6.09	-2.64
940	25.78	-5.89	-2.4
950	28.83	-5.4	-1.83
960	29.76	-5.26	-1.63
970	28.51	-5.45	-1.51
980	24.99	-6.02	-1.99
990	20.85	-6.81	-2.75
1000	18.8	-7.26	-3.42



Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
1700	21.29	-6.72	-1.08
1710	19.11	-7.19	-1.51
1720	17.56	-7.55	-2.07
1730	16.91	-7.72	-2.33
1740	16.66	-7.78	-2.55
1750	16.24	-7.89	-2.62
1760	15.53	-8.09	-2.84
1770	15.63	-8.06	-2.84
1780	17.18	-7.65	-2.53
1790	19.8	-7.03	-1.91
1800	22.19	-6.54	-1.34
1810	23.08	-6.37	-1.1
1820	24.09	-6.18	-0.9
1830	23.51	-6.29	-0.93
1840	24.17	-6.17	-0.49
1850	23.73	-6.25	-0.12
1860	20.94	-6.79	-0.46
1870	17.55	-7.56	-1.09
1880	15.83	-8.01	-1.51
1890	16.04	-7.95	-1.38
1900	14.39	-8.42	-1.99
1910	11.39	-9.43	-3.19
1920	10.39	-10.27	-4.35
1930	10.59	-9.75	-4.19
1940	10.37	-9.84	-4.91
1950	9.97	-10.01	-4.55
1960	9.05	-10.43	-4.41
1970	8.58	-10.67	-4.44
1980	8.63	-10.64	-4.82
1990	8.89	-10.51	-5.24

## 6.4 Description of Support Units

The EUT has been tested independently

## 6.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

## 6.6 Deviation from Standards

None.

## 6.7 Abnormalities from Standard Conditions

None.

## 6.8 Other Information Requested by the Customer

None.

## 6.9 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Radio Frequency	$7.9 \times 10^{-8}$
2	RF power, conducted	0.46dB (30MHz-1GHz)
		0.55dB (1GHz-18GHz)
3	Radiated Spurious emission test	4.3dB (30MHz-1GHz)
		4.5dB (1GHz-12.75GHz)
4	Conduction emission	3.5dB (9kHz to 150kHz)
		3.1dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	3.8%
7	DC power voltages	0.026%

## 7 Equipment List

RF test system					
Equipment	Manufacturer	Model No.	Serial Number	Cal. Date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
Signal Generator	Keysight	E8257D	MY53401106	03-01-2019	02-28-2020
Spectrum Analyzer	Keysight	N9010A	MY54510339	03-01-2019	02-28-2020
Signal Generator	Keysight	N5182B	MY53051549	03-01-2019	02-28-2020
High-pass filter	Sinoscite	FL3CX03WG1 8NM12-0398-002	---	01-09-2019	01-08-2020
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-09-2019	01-08-2020
DC Power	Keysight	E3642A	MY54426035	03-01-2019	02-28-2020
PC-1	Lenovo	R4960d	---	03-01-2019	02-28-2020
BT&WI-FI Automatic control	R&S	OSP120	101374	03-01-2019	02-28-2020
RF control unit	JS Tonscend	JS0806-2	15860006	03-01-2019	02-28-2020
RF control unit	JS Tonscend	JS0806-1	15860004	03-01-2019	02-28-2020
RF control unit	JS Tonscend	JS0806-4	158060007	03-01-2019	02-28-2020
BT&WI-FI Automatic test software	JS Tonscend	JS1120-2	---	03-01-2019	02-28-2020
Temperature/ Humidity Indicator	biaozhi	HM10	1804186	10-12-2018	10-11-2019



3M full-anechoic Chamber					
Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
RSE Automatic test software	JS Tonscend	JS36-RSE	10166	06-18-2019	06-17-2020
Receiver	Keysight	N9038A	MY57290136	03-27-2019	03-25-2020
Spectrum Analyzer	Keysight	N9020B	MY57111112	03-27-2019	03-25-2020
Spectrum Analyzer	Keysight	N9030B	MY57140871	03-27-2019	03-25-2020
Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-075	04-25-2018	04-23-2021
Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-076	04-25-2018	04-23-2021
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	9163-1148	04-25-2018	04-23-2021
Horn Antenna	Schwarzbeck	BBHA 9170	9170-832	04-25-2018	04-23-2021
Horn Antenna	Schwarzbeck	BBHA 9170	9170-829	04-25-2018	04-23-2021
Communication Antenna	Schwarzbeck	CLSA 0110L	1014	02-14-2019	02-13-2020
Biconical antenna	Schwarzbeck	VUBA 9117	9117-381	04-25-2018	04-23-2021
Horn Antenna	ETS-LINDGREN	3117	00057407	07-10-2018	07-08-2021
Preamplifier	EMCI	EMC184055SE	980596	05-22-2019	05-20-2020
Communication test set	R&S	CMW500	102898	01-18-2019	01-17-2020
Preamplifier	EMCI	EMC001330	980563	05-08-2019	05-06-2020
Preamplifier	Agilent	8449B	3008A02425	08-21-2018	08-20-2019
Temperature/Humidity Indicator	biaozhi	GM1360	EE1186631	05-01-2019	04-30-2020
Signal Generator	KEYSIGHT	E8257D	MY53401106	03-01-2019	02-28-2020
Fully Anechoic Chamber	TDK	FAC-3	---	01-17-2018	01-15-2021
Filter bank	JS Tonscend	JS0806-F	188060094	04-10-2018	04-08-2021
Cable line	Times	SFT205-NMSM-2.50M	394812-0001	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMSM-2.50M	394812-0002	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMSM-2.50M	394812-0003	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMSM-2.50M	393495-0001	01-09-2019	01-08-2020
Cable line	Times	EMC104-NMNM-1000	SN160710	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMSM-3.00M	394813-0001	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMNM-1.50M	381964-0001	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMSM-7.00M	394815-0001	01-09-2019	01-08-2020
Cable line	Times	HF160-KMKM-3.00M	393493-0001	01-09-2019	01-08-2020

## 8 Radio Technical Requirements Specification

### Reference documents for testing:

No.	Identity	Document Title
1	PART 22	PART 22 – PUBLIC MOBILE SERVICES Subpart H – Cellular Radiotelephone Service
2	PART 24	PART 24 – PERSONAL COMMUNICATIONS SERVICES Subpart E – Broadband PCS
3	PART 2	Frequency allocations and radio treaty matters; general rules and regulations
4	TIA-603-E-2016	Land Mobile FM or PM -Communications Equipment -Measurement and Performance Standards
5	KDB971168 D01	KDB971168 D01 Power Meas License Digital Systems v03r01

### Test Results List:

Test Requirement	Test method	Test item	Verdict	Note
Part 2.1046(a)/Part 22.913(a)/ part 24.232(c)	TIA-603-E-2016& KDB 971168 D01v03r01	Conducted output power	PASS	Appendix A)
Part 24.232(d)	KDB 971168 D01v03r01	peak-to-average ratio	PASS	Appendix B)
Part 2.1049(h)	Part 22.917(b)/ Part 24.238(b)/ Part 27.53(h) &KDB 971168 D01v03r01	99% &26dB Occupied Bandwidth	PASS	Appendix C)
Part 2.1051/Part 22.917(a)/ Part 24.238(a)	Part 22.917(b)/ Part 24.238(b)/ Part 27.53(h) &KDB 971168 D01v03r01	Band Edge at antenna terminals	PASS	Appendix D)
Part 2.1051/ Part 2.1057/ Part 22.917(a)(b)/ Part 24.238(a)(b)	TIA-603-E-2016& KDB 971168 D01v03r01	Spurious emissions at antenna terminals	PASS	Appendix E)
Part 2.1055/ Part 22.355/ Part 24.235	TIA-603-E-2016& KDB 971168 D01v03r01	Frequency stability	PASS	Appendix F)
Part 2.1053/ Part 2.1057/ Part 22.917(a)(b)/ Part 24.238(a)(b)	TIA-603-E-2016& KDB 971168 D01v03r01	Field strength of spurious radiation	PASS	Appendix G)
Part 2.1046(a)/Part 22.913(a)/ Part 24.232(c)	TIA-603-E-2016& KDB 971168 D01v03r01	Effective Radiated Power of Transmitter(ERP)	PASS	Appendix H)

**Appendix A) RF Power Output**

Test Band	Test Mode	Test Channel	Measured(dbm)	Limit (dbm)	Verdict
GSM850	GSM/TM2	LCH	33.72	38.5	PASS
		MCH	33.14	38.5	PASS
		HCH	32.29	38.5	PASS
Test Band	Test Mode	Test Channel	Measured(dbm)	Limit (dbm)	Verdict
GSM1900	GSM/TM2	LCH	30.91	33	PASS
		MCH	30.15	33	PASS
		HCH	30.79	33	PASS



**Appendix B) Peak-to-Average Ratio**

Test Band	Test Mode	Test Channel	Measured (db)	Limit (db)	Verdict
GSM1900	GSM/TM2	LCH	1.25	13	PASS
		MCH	1.20	13	PASS
		HCH	1.23	13	PASS

**Appendix C) BandWidth**

Test Band	Test Mode	Test Channel	Occupied Bandwidth (MHZ)	Emission Bandwidth (MHZ)	Verdict
GSM850	GSM/TM2	LCH	243.6	313	PASS
		MCH	244.0	318	PASS
		HCH	244.9	318	PASS

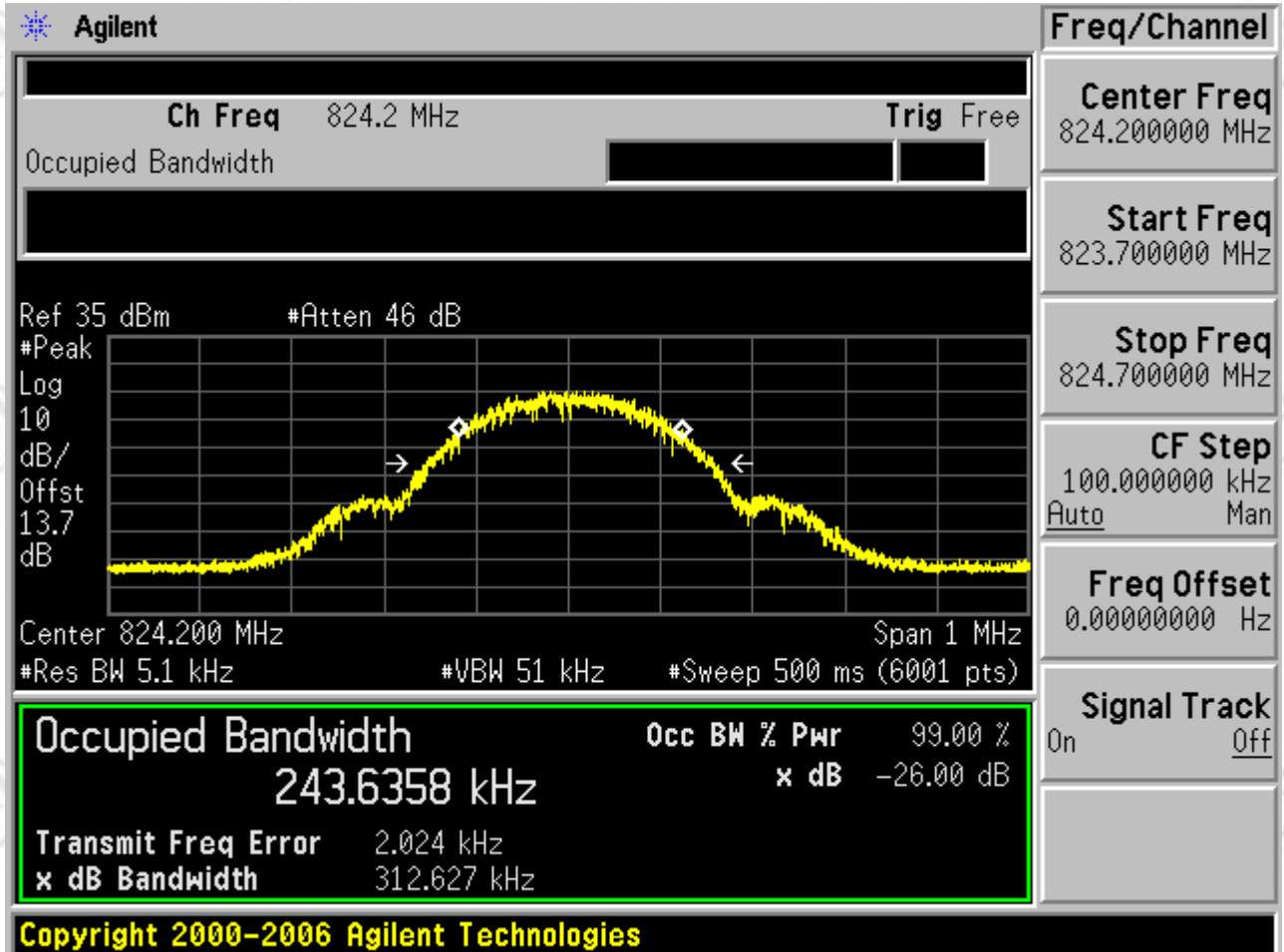
Test Band	Test Mode	Test Channel	Occupied Bandwidth (MHZ)	Emission Bandwidth (MHZ)	Verdict
GSM1900	GSM/TM2	LCH	247.2	316	PASS
		MCH	243.9	317	PASS
		HCH	246.7	313	PASS

1 For GSM

1.1 Test Band=GSM850

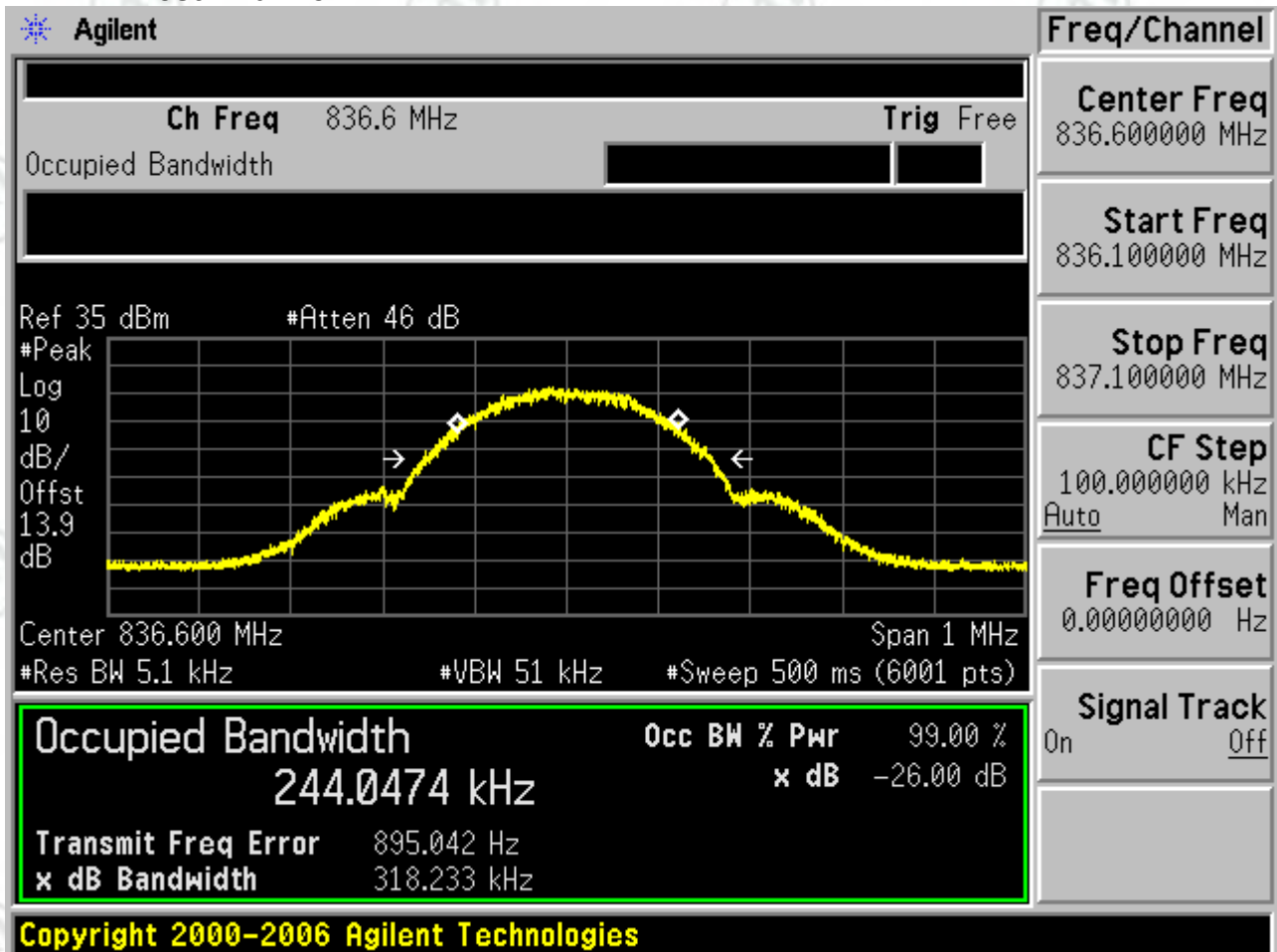
1.1.1 Test Mode=GSM/TM2

1.1.1.1 Test Channel=LCH

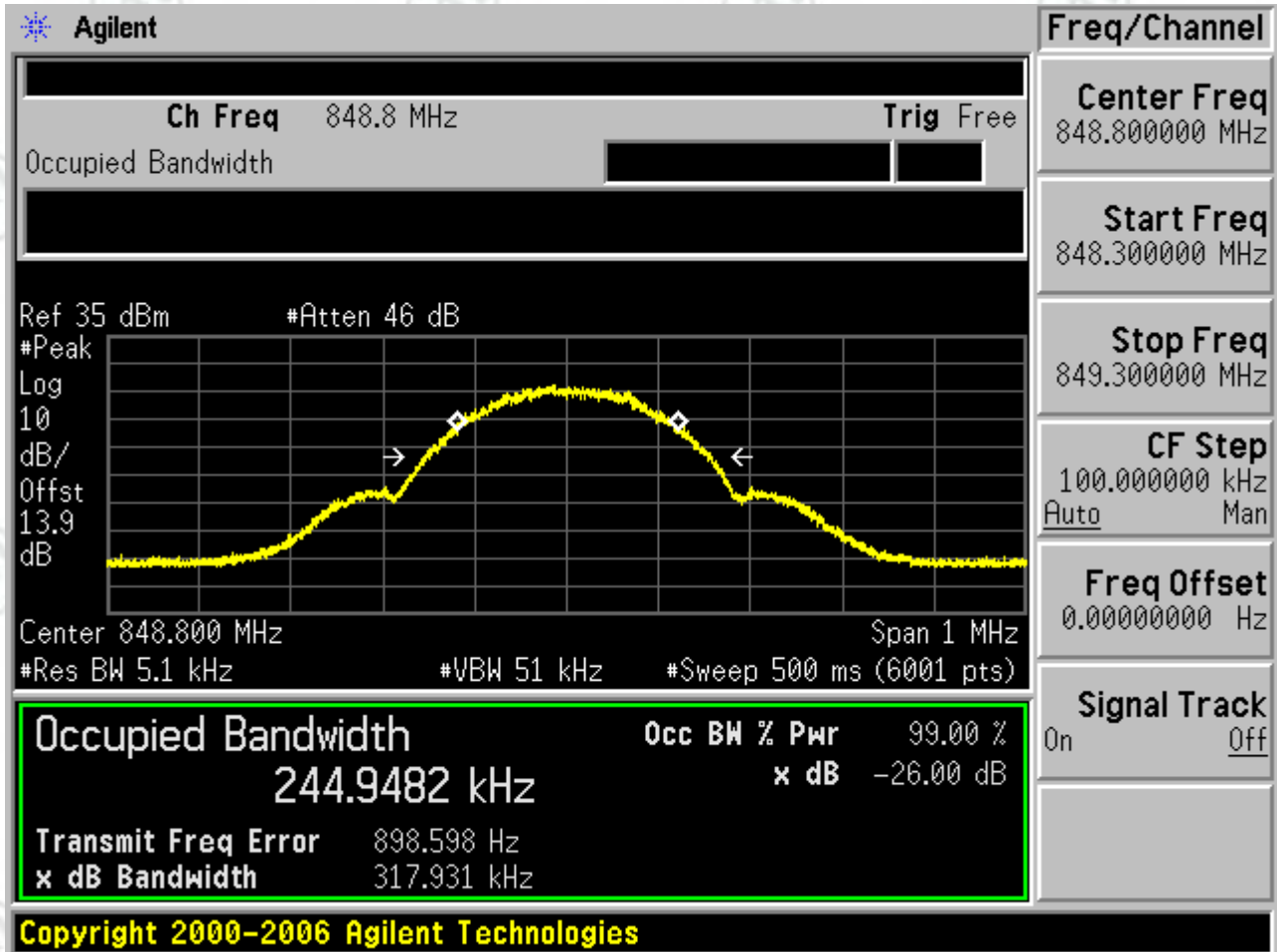




1.1.1.2 Test Channel=MCH

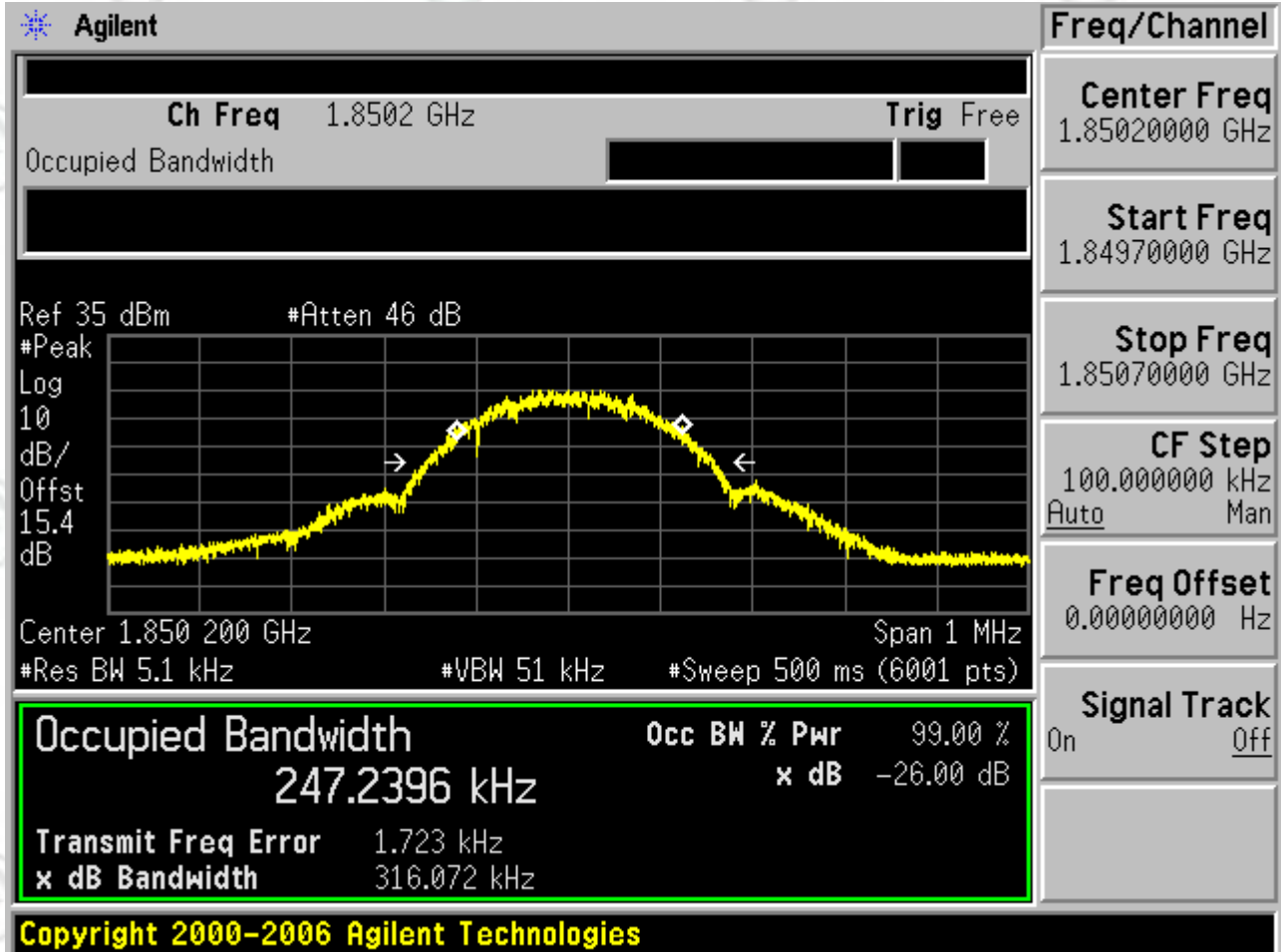


1.1.1.3 Test Channel=HCH

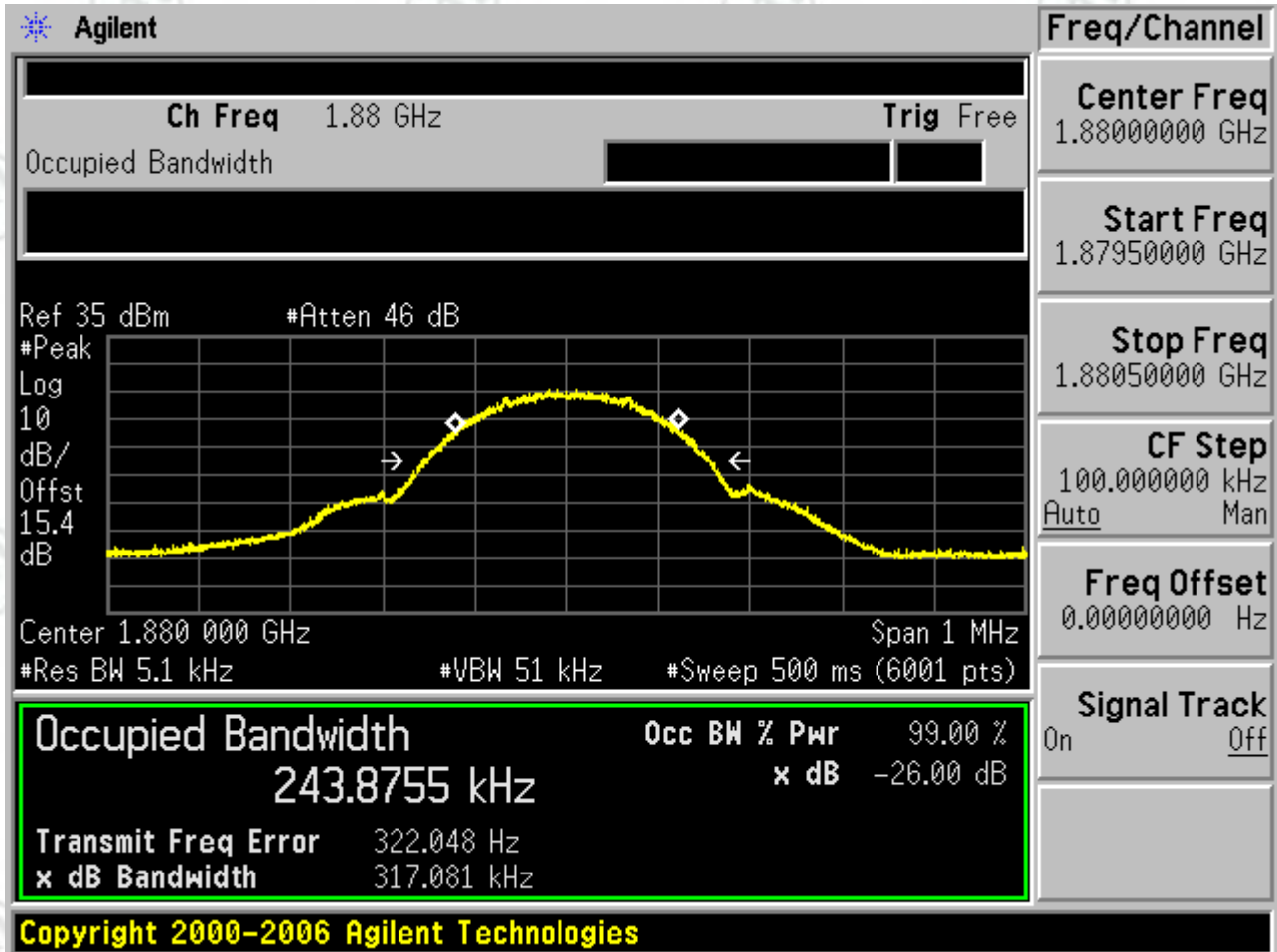


1.2 Test Mode=GSM/TM2

1.2.1.1 Test Channel=LCH

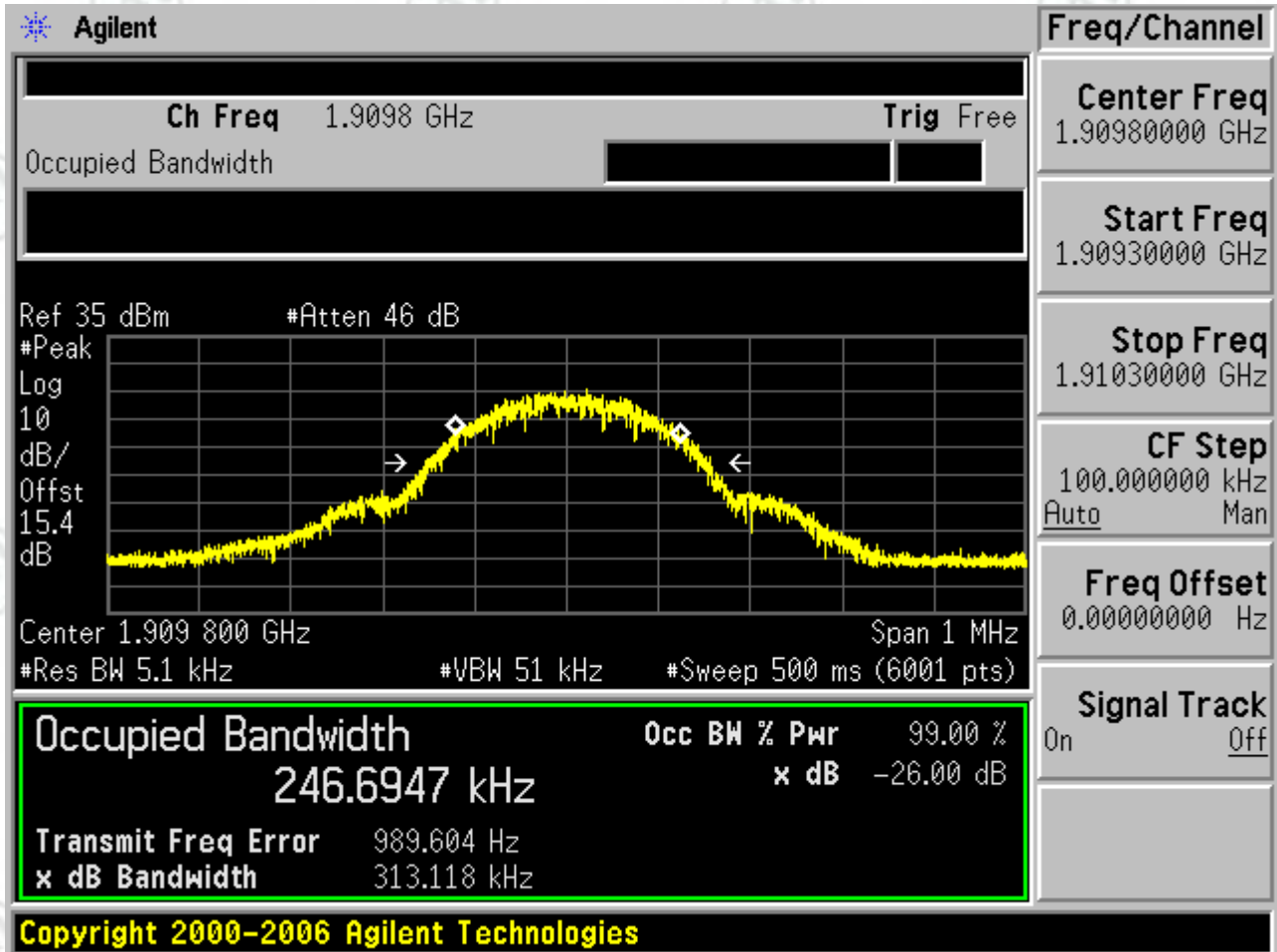


1.2.1.2 Test Channel=MCH





1.2.1.3 Test Channel=HCH



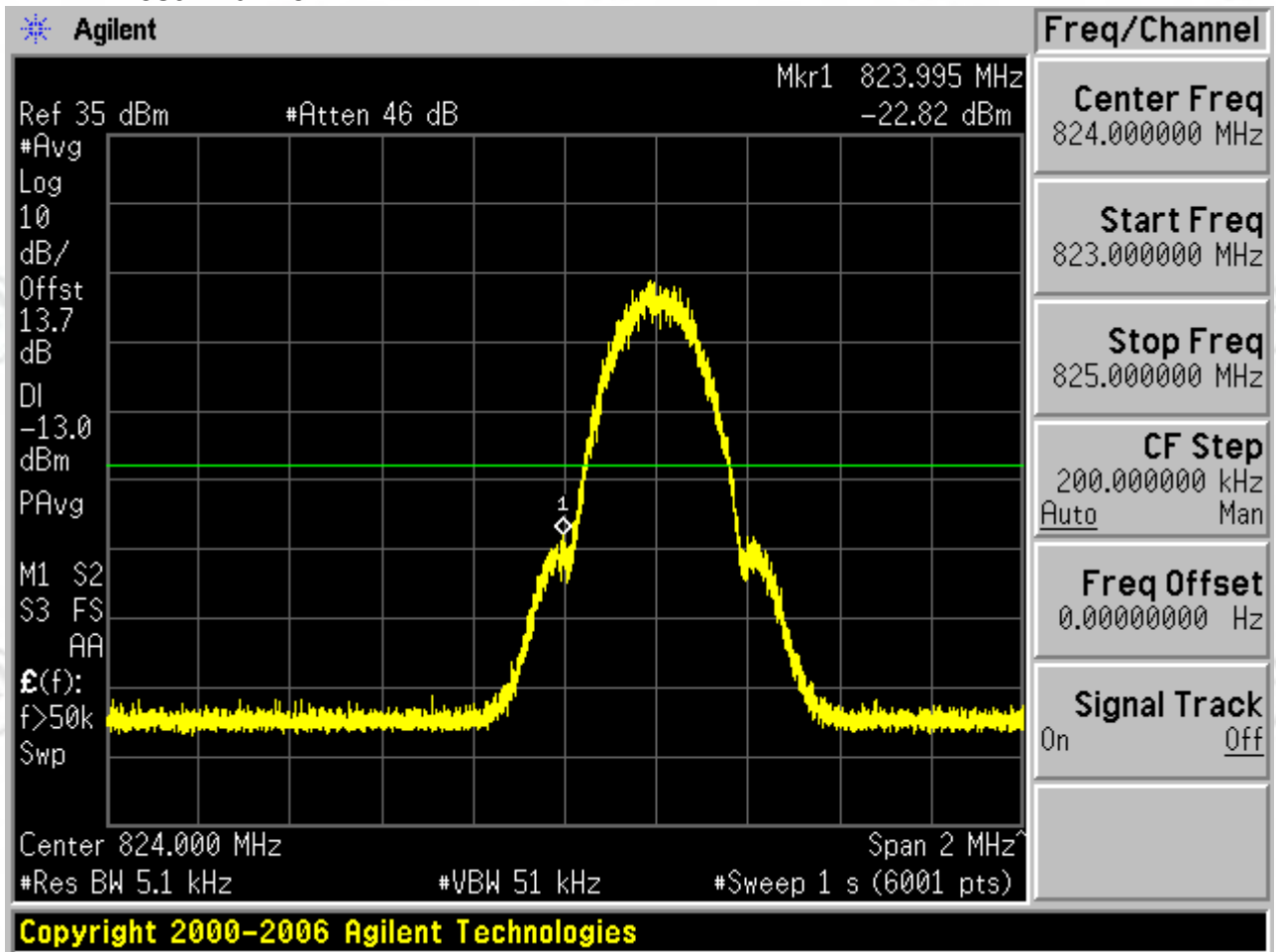
## Appendix D) Band Edges Compliance

### 1 For GSM

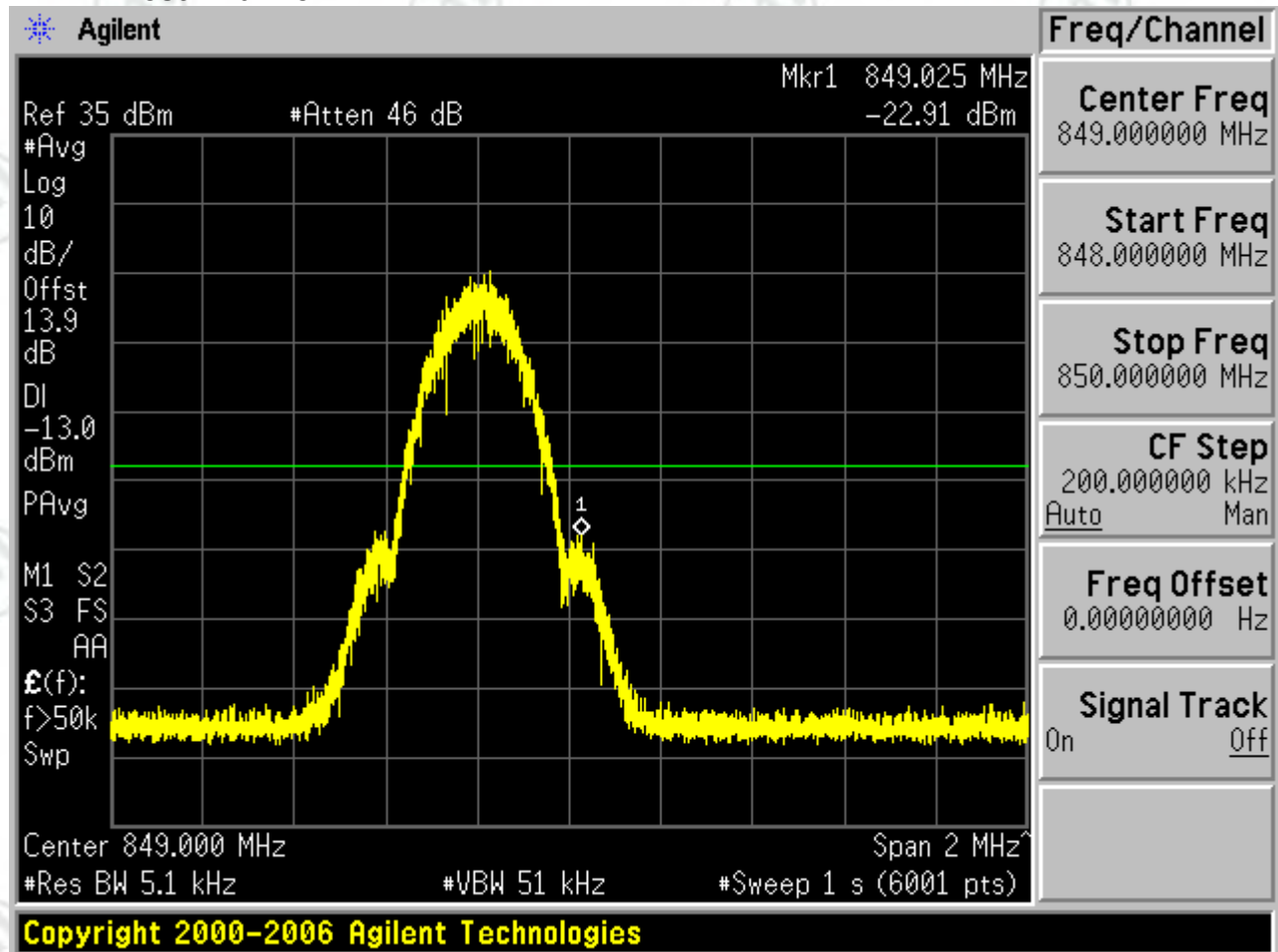
#### 1.1 Test Band=GSM850

##### 1.1.1 Test Mode=GSM/TM2

##### 1.1.1.1 Test Channel=LCH

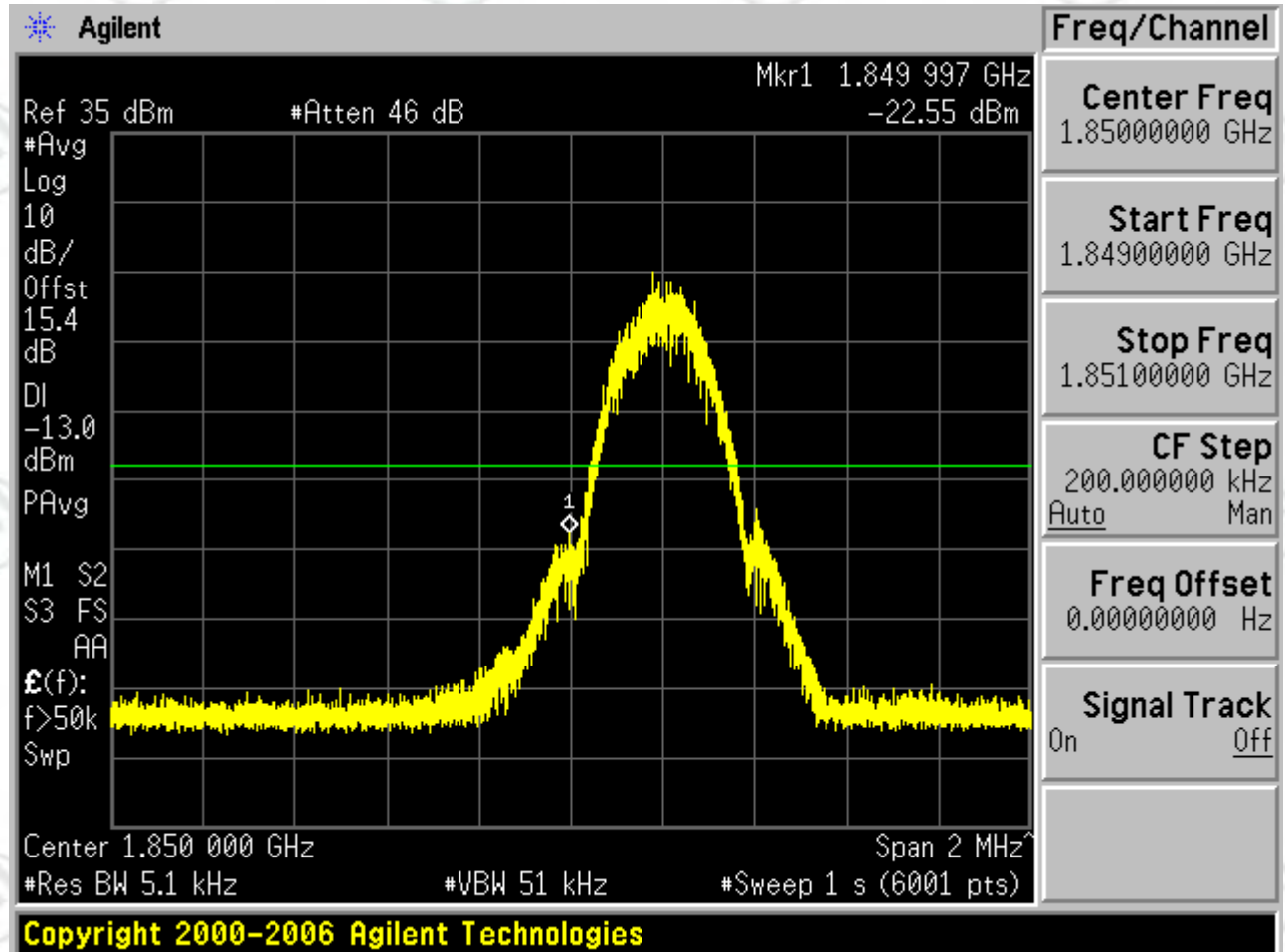


1.1.1.2 Test Channel=HCH



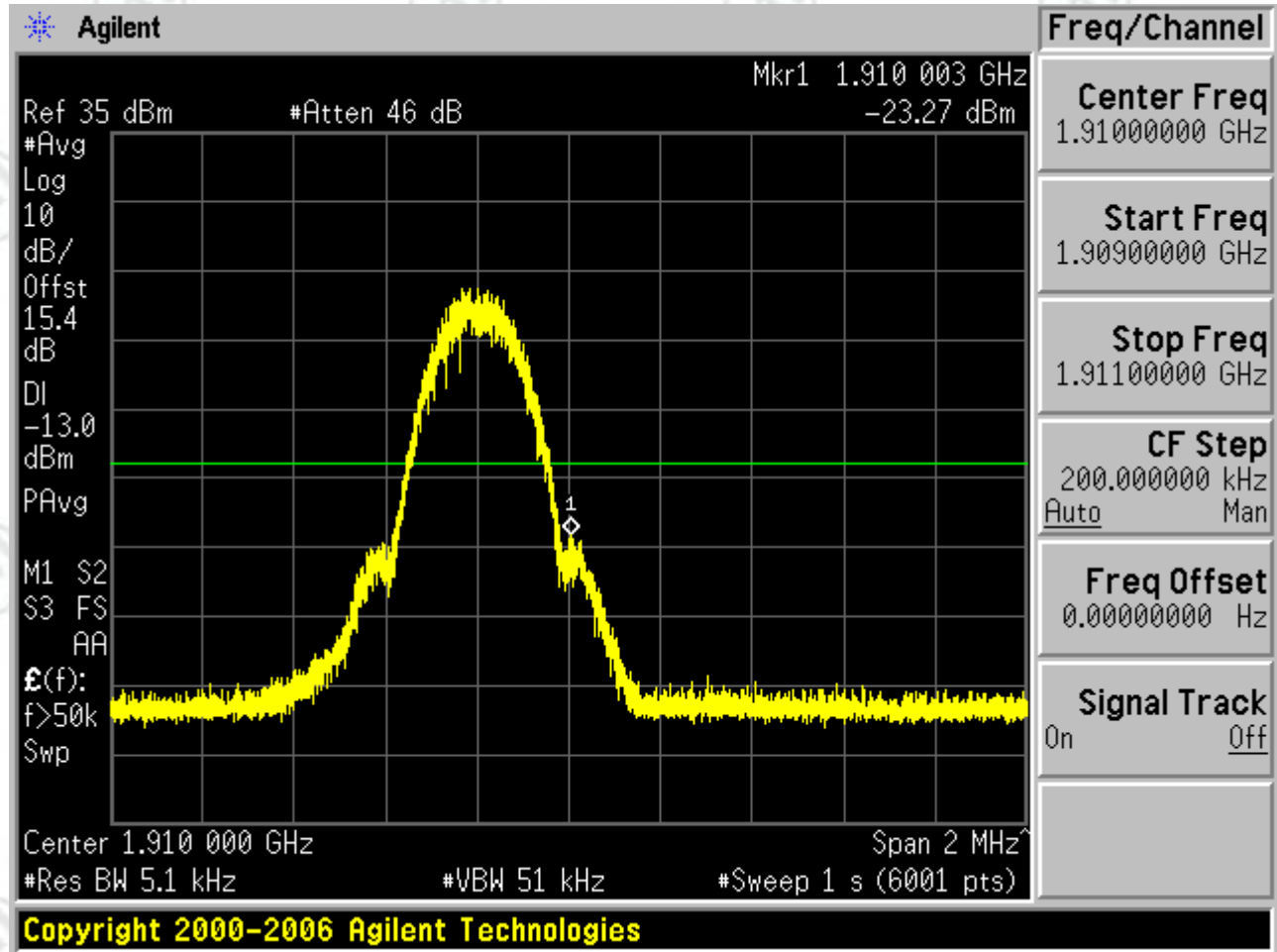
1.1.2 Test Mode=GSM/TM2

1.1.2.1 Test Channel=LCH





1.1.2.2 Test Channel=HCH



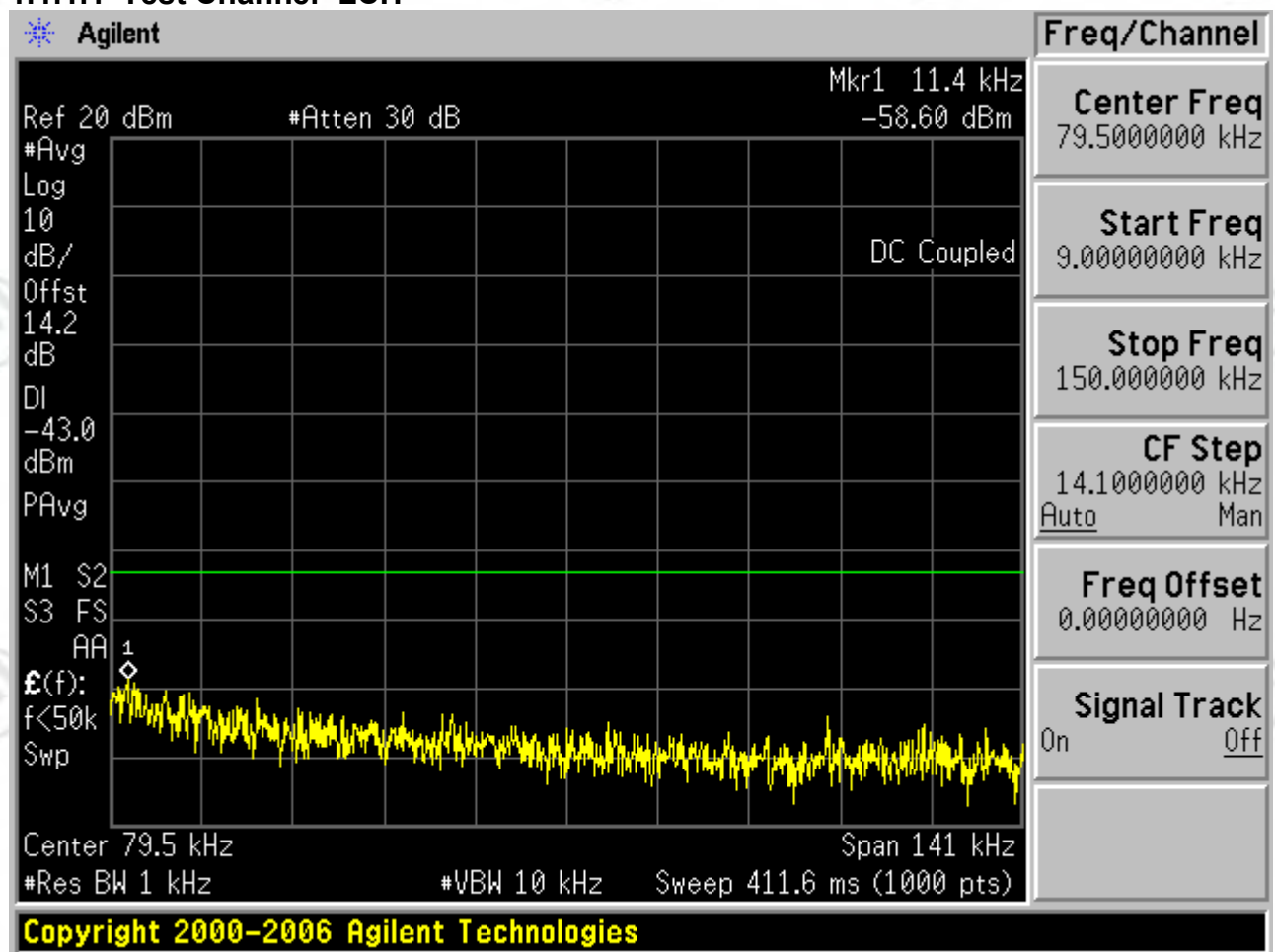
## Appendix E) Spurious Emission at Antenna Terminal

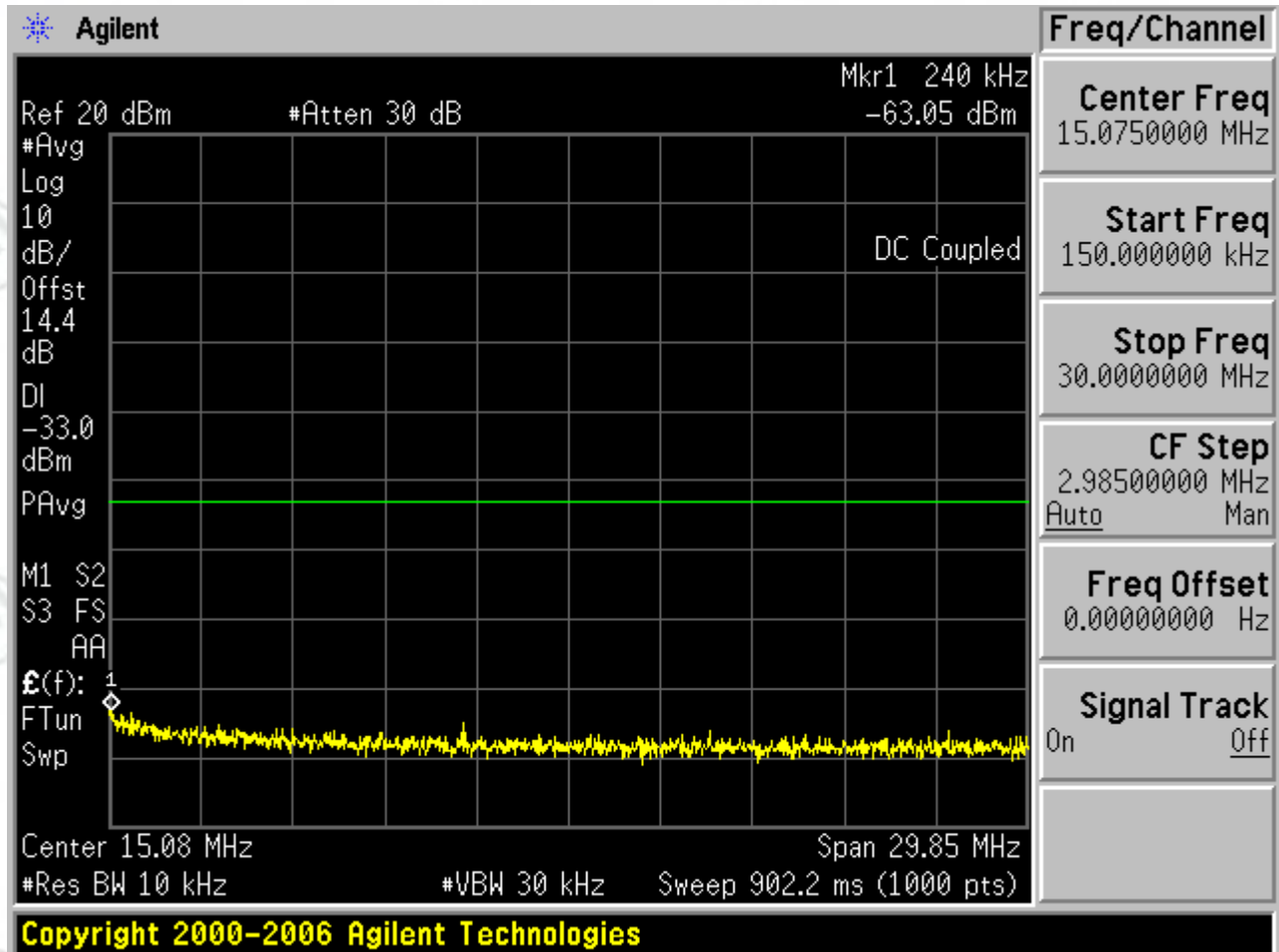
### 1 For GSM

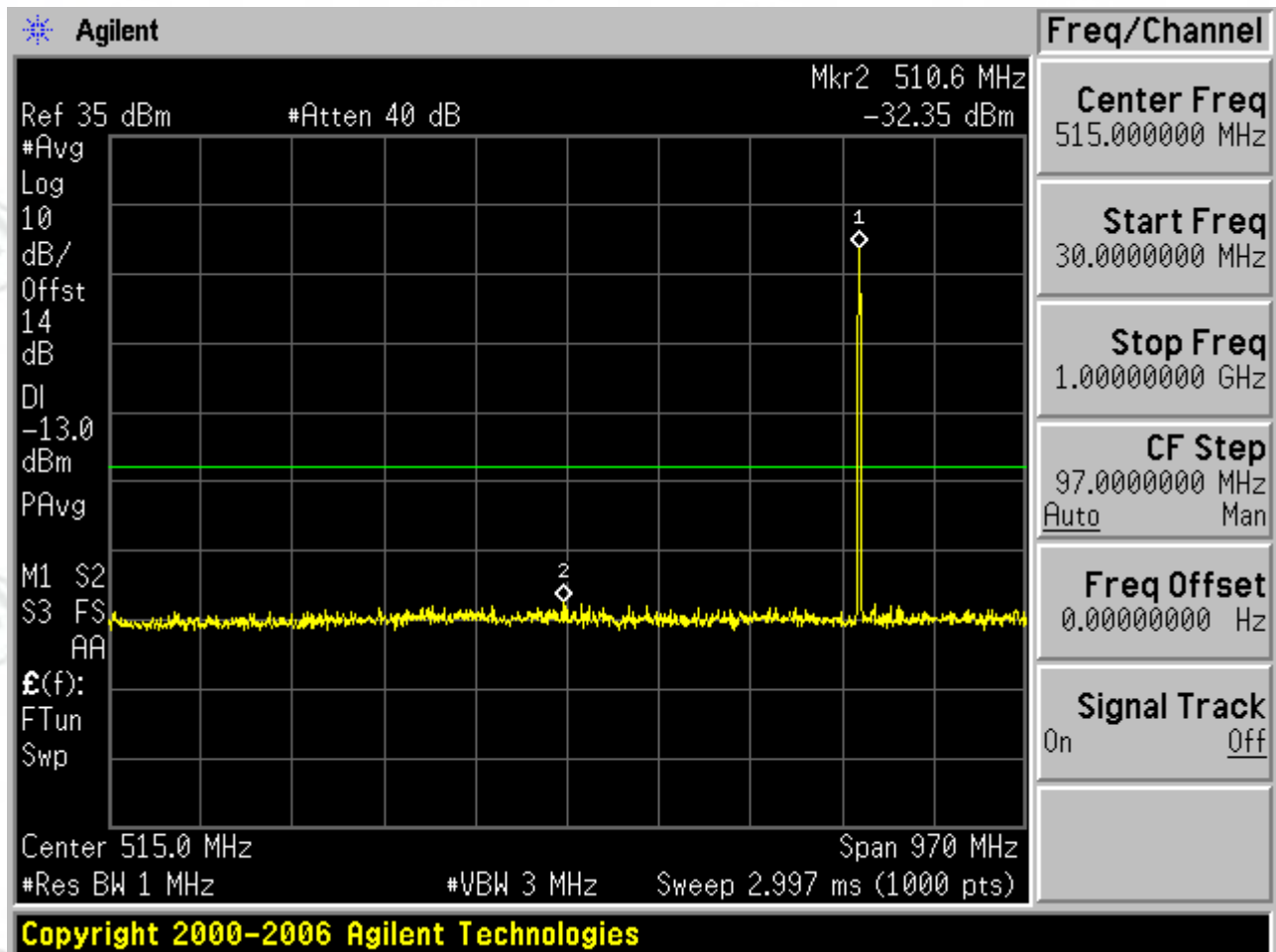
#### 1.1 Test Band=GSM850

##### 1.1.1 Test Mode=GSM/TM2

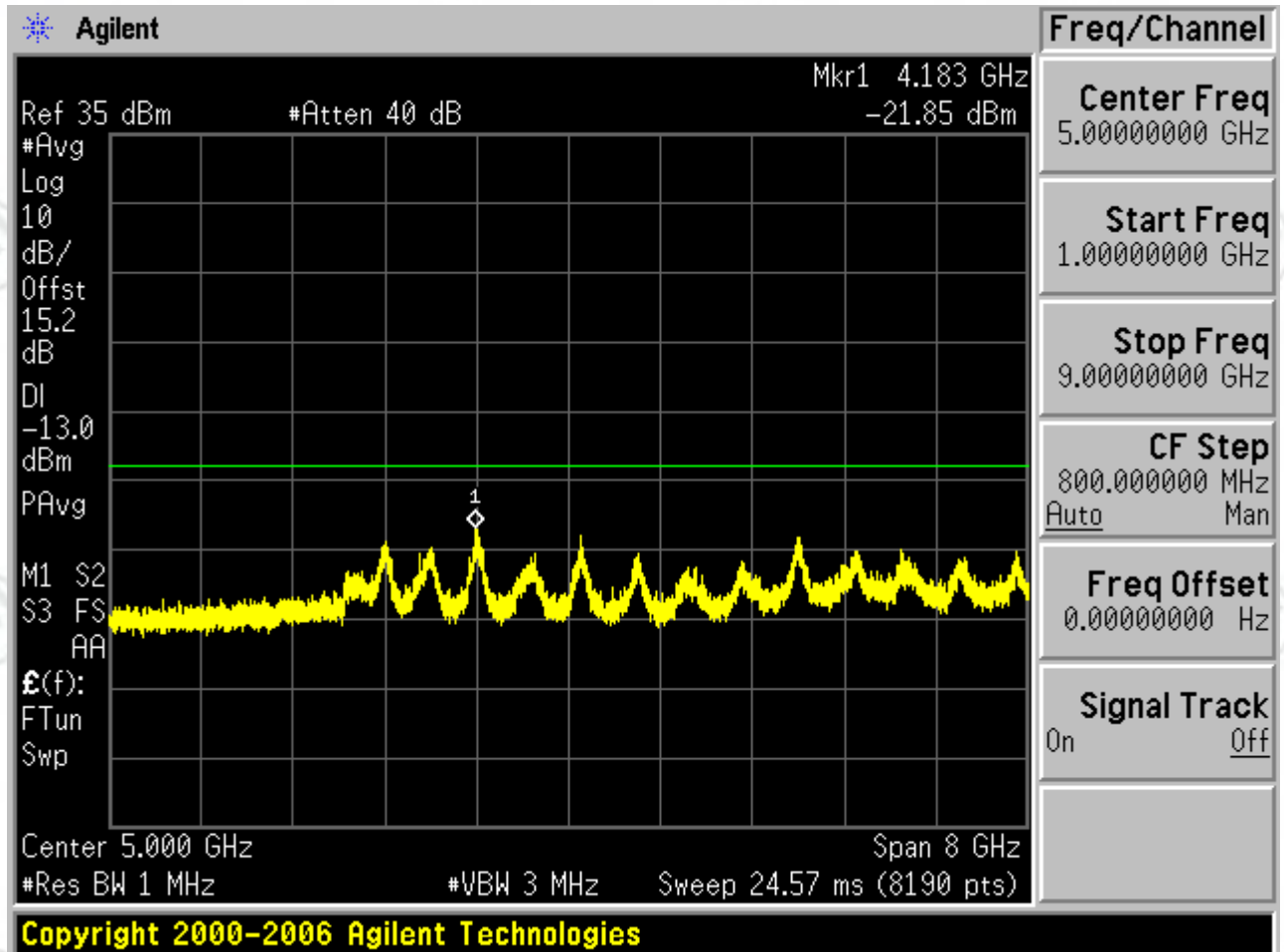
##### 1.1.1.1 Test Channel=LCH



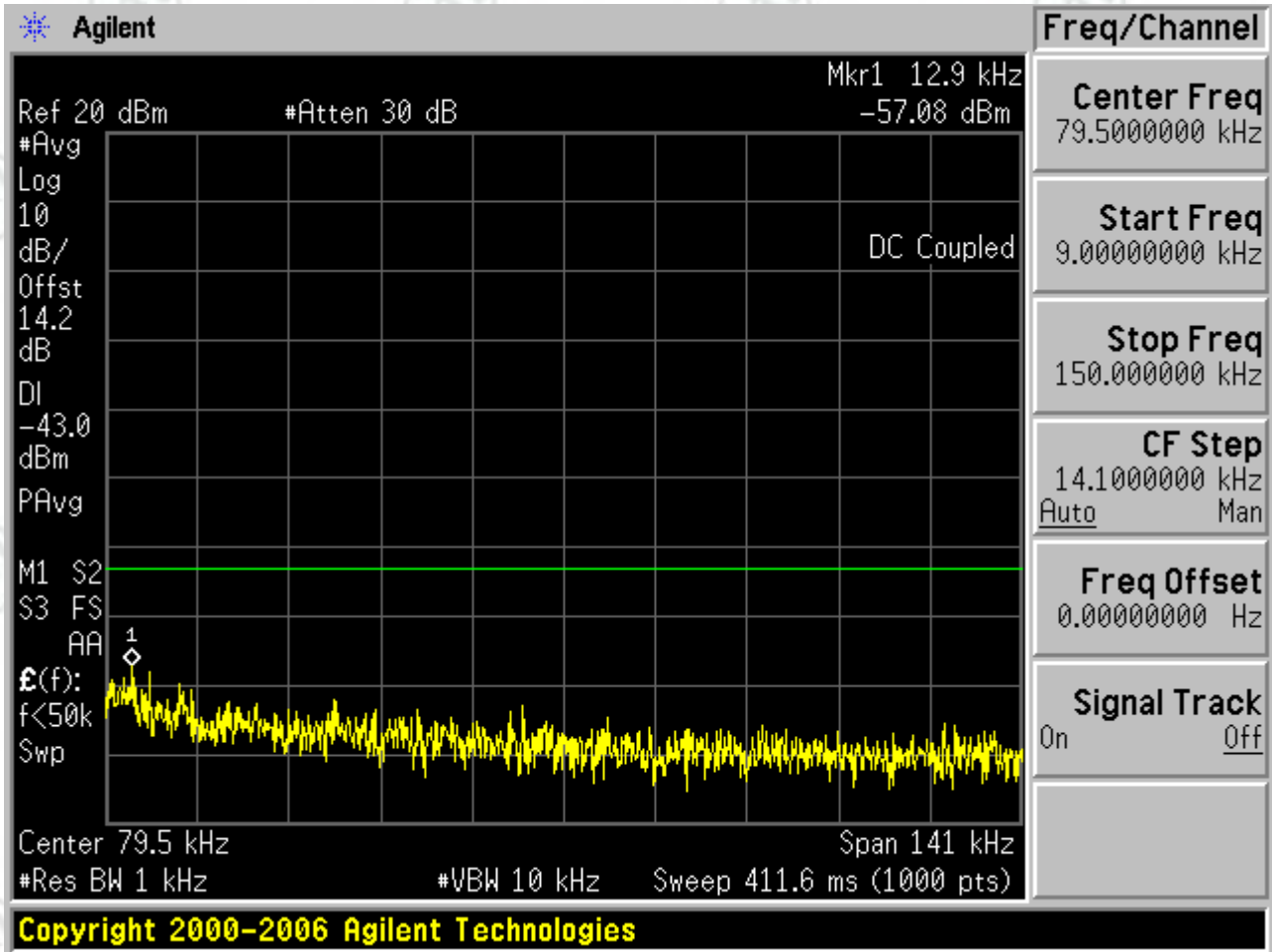


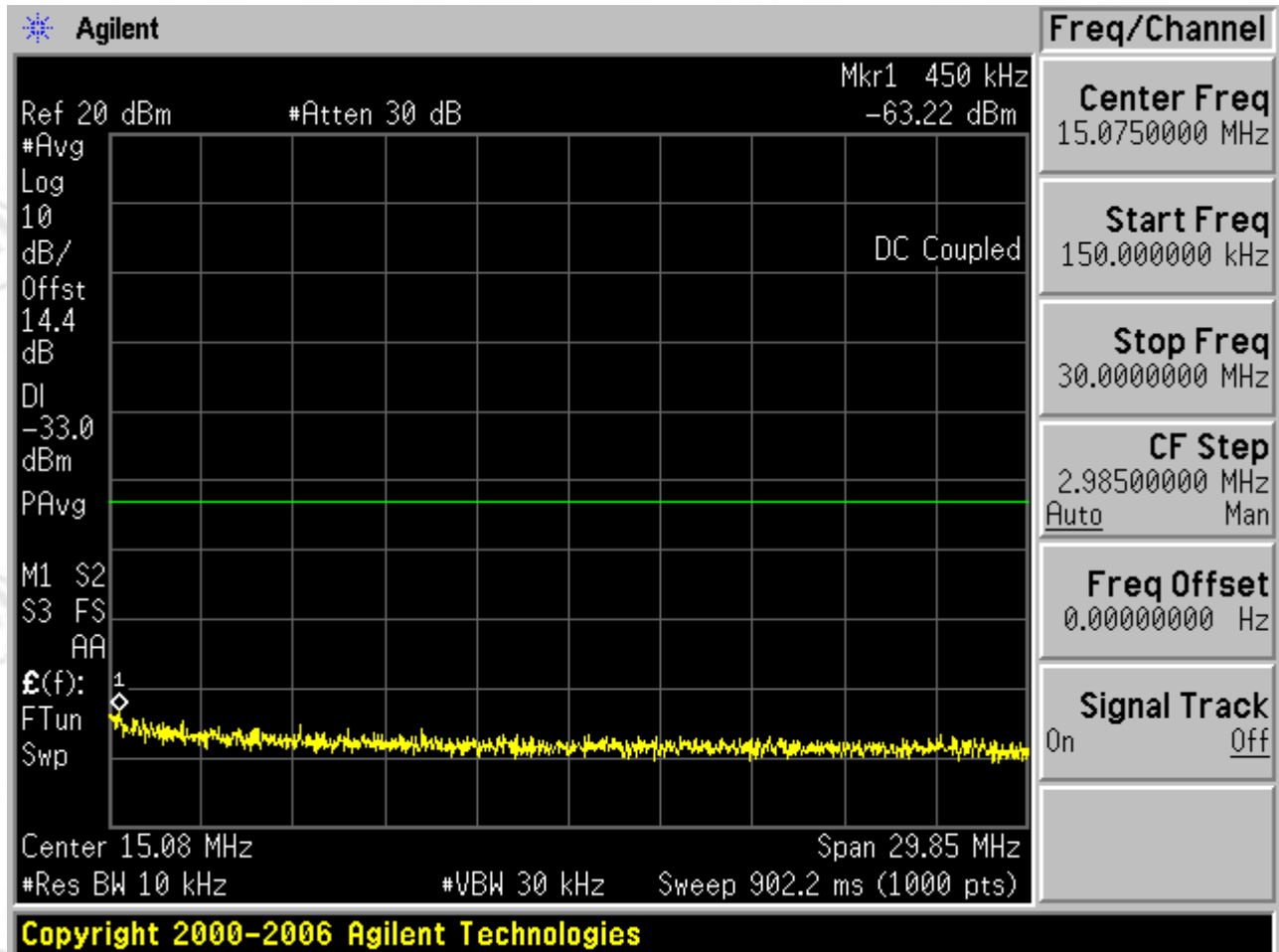


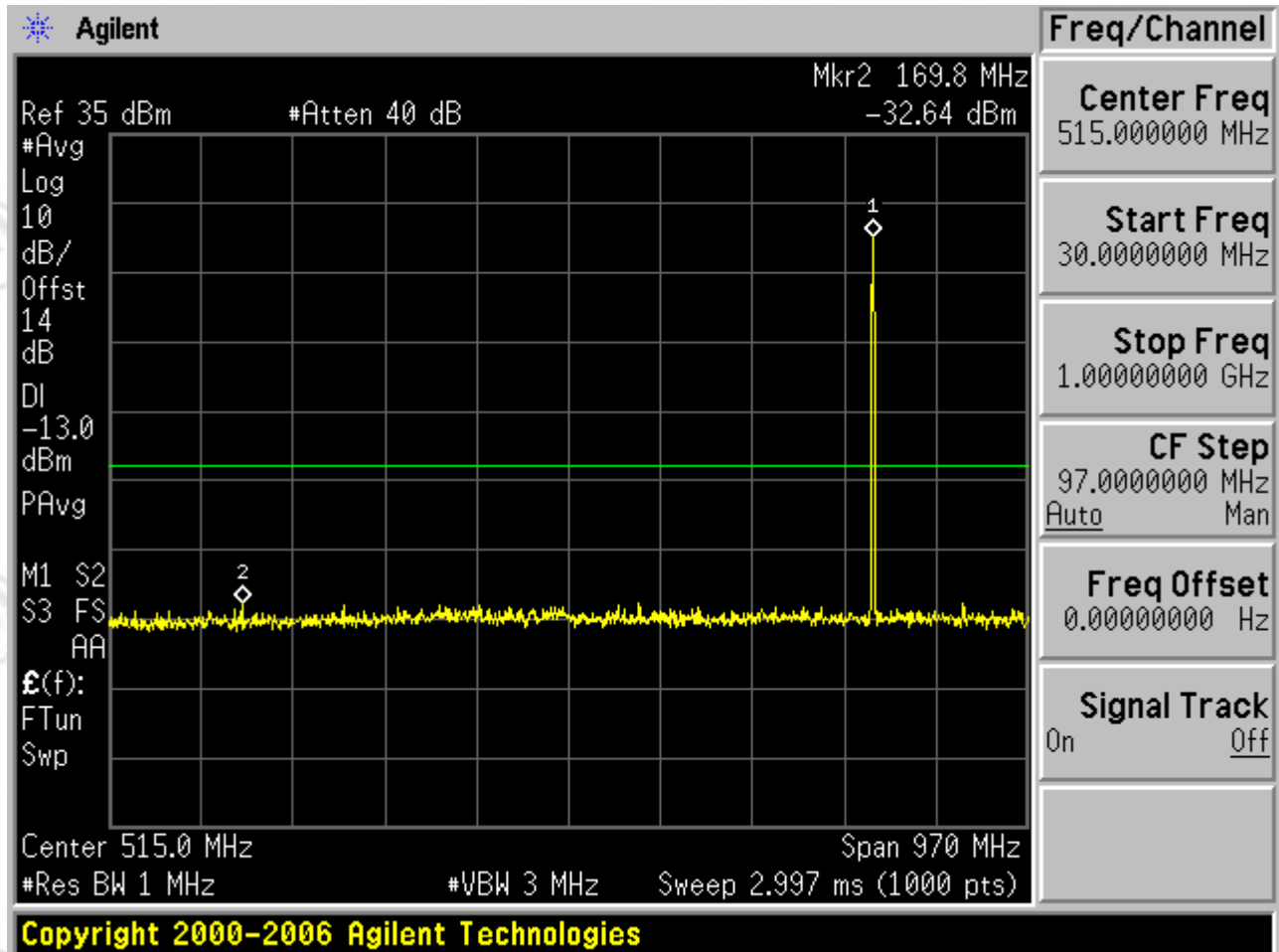




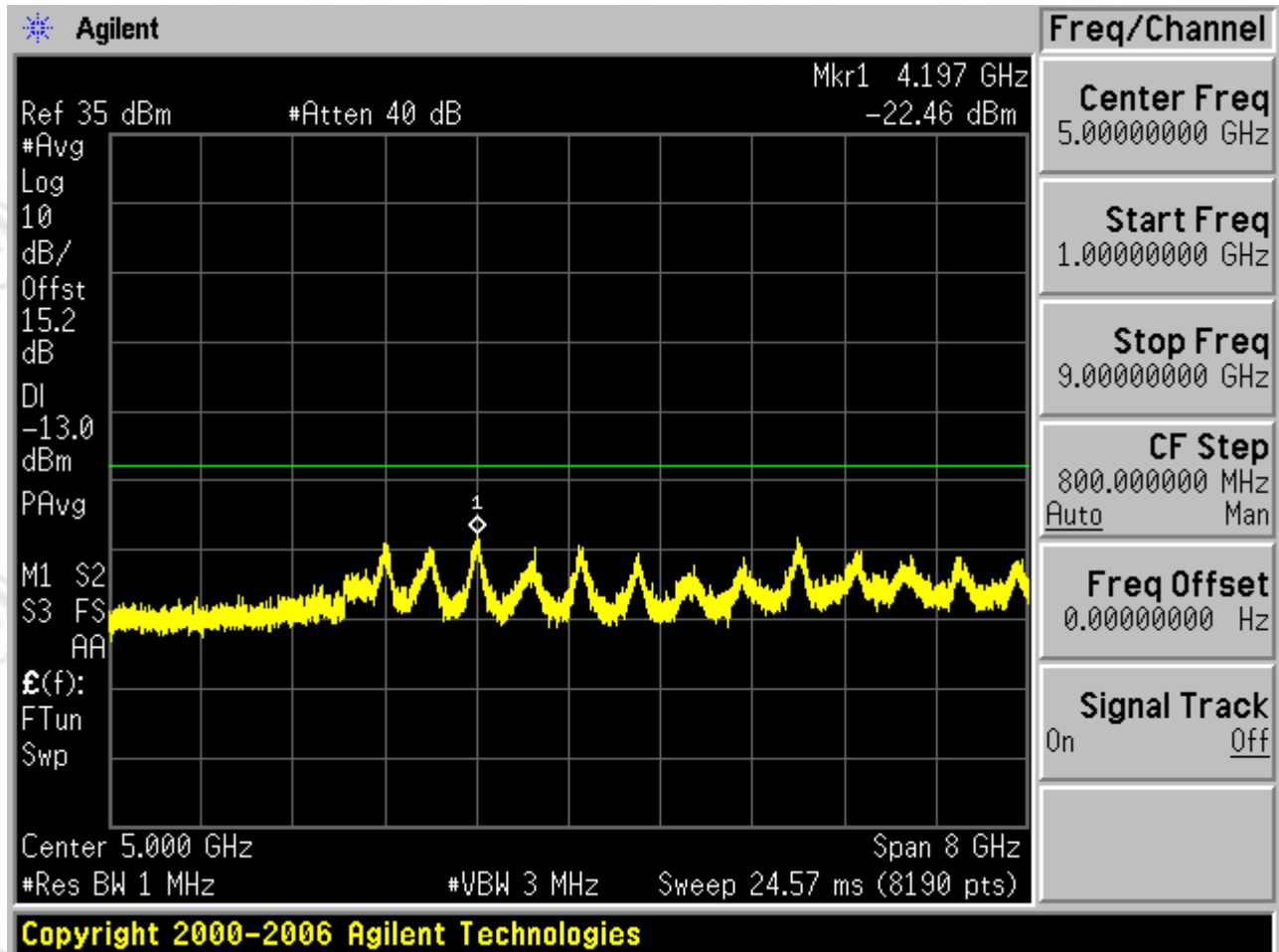
1.1.1.2 Test Channel=MCH



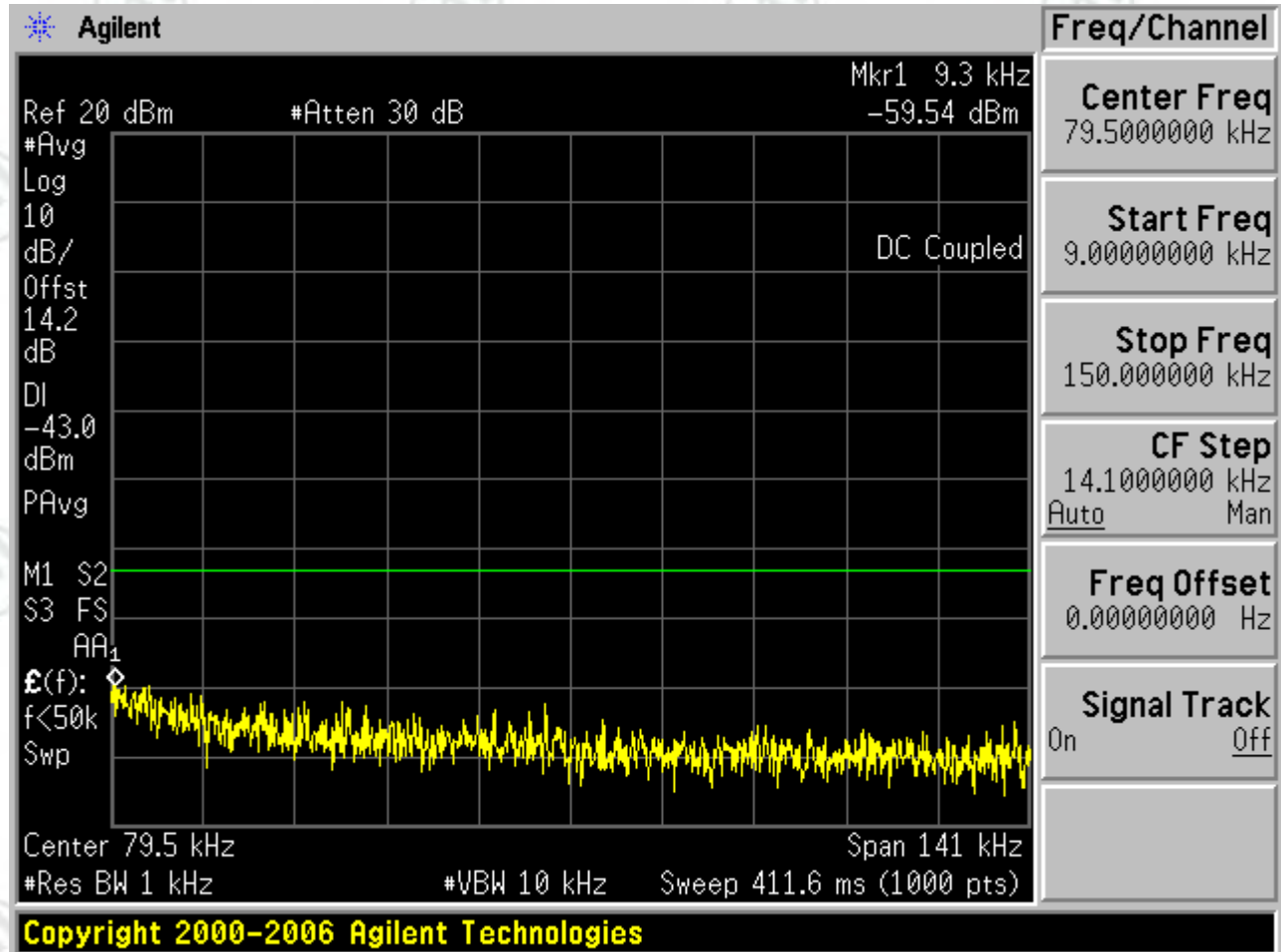


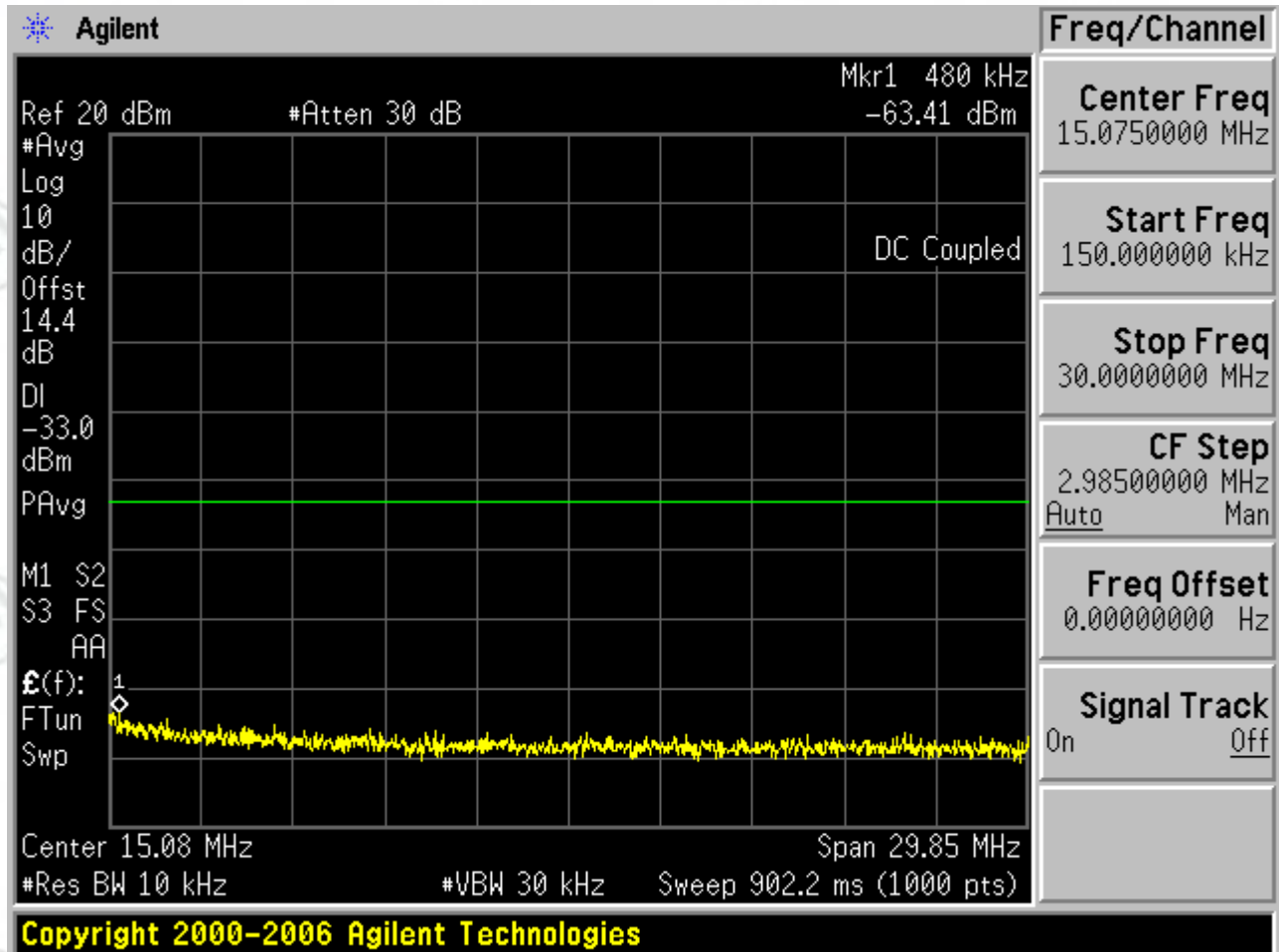


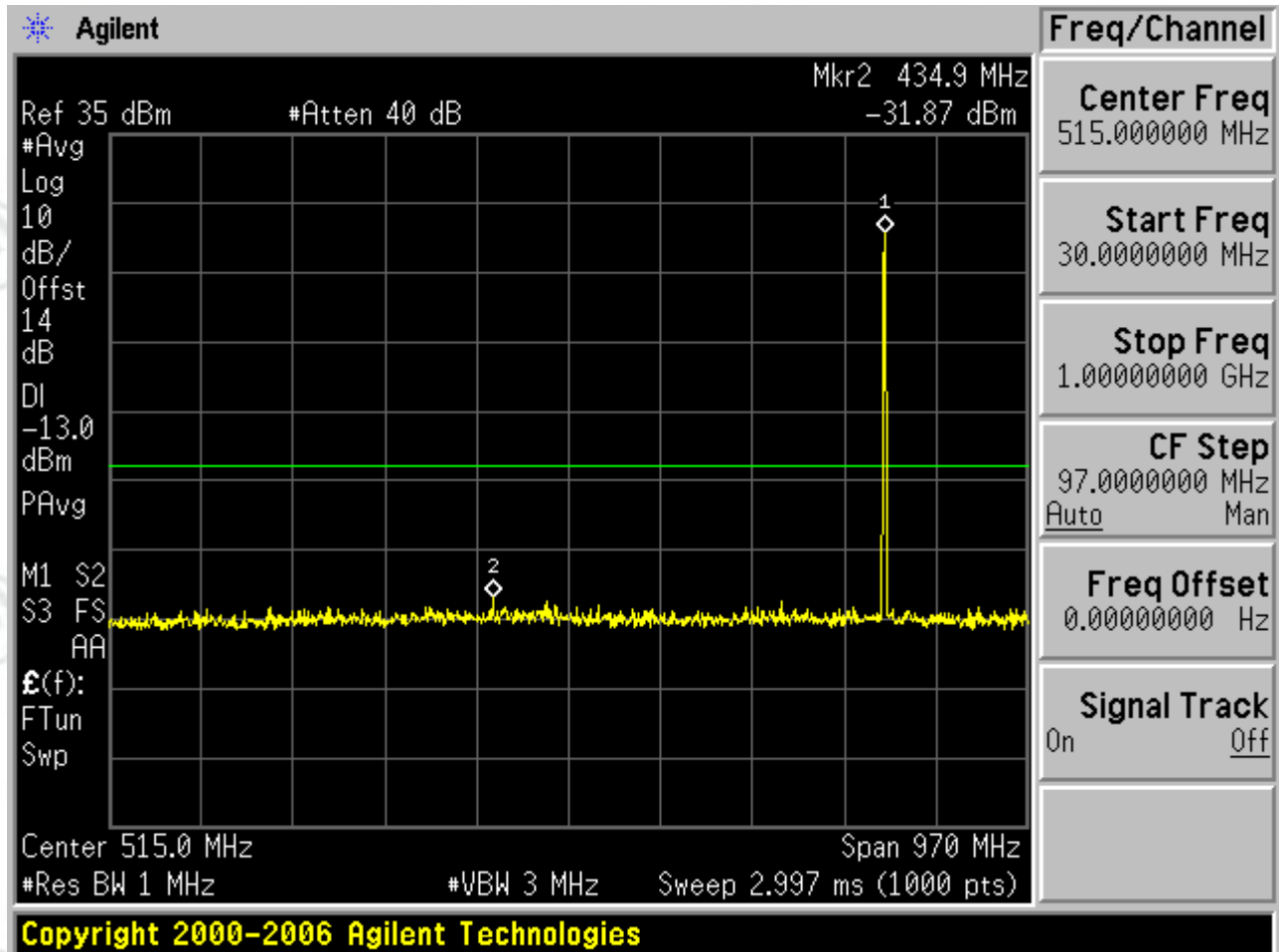




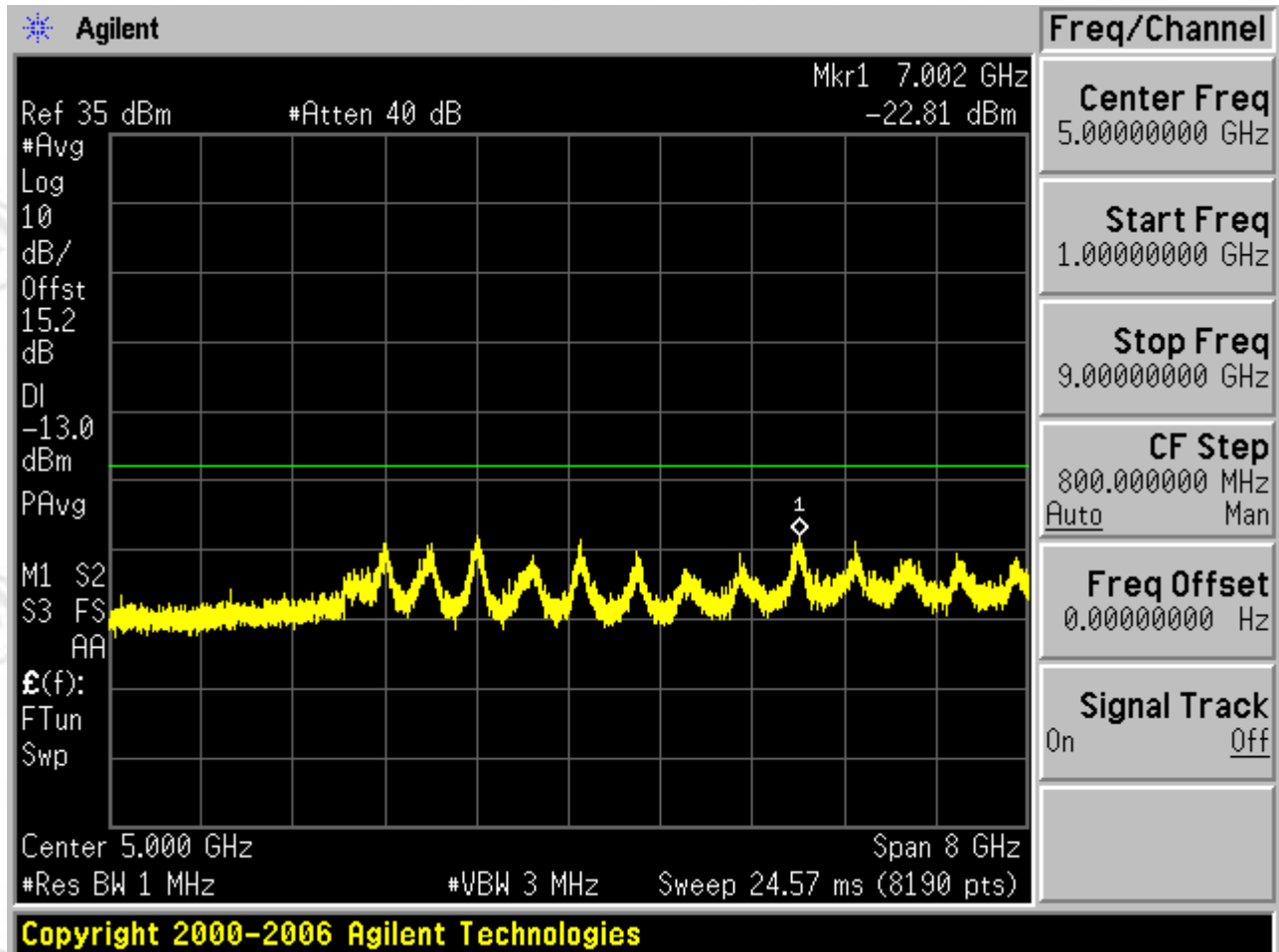
1.1.1.3 Test Channel=HCH





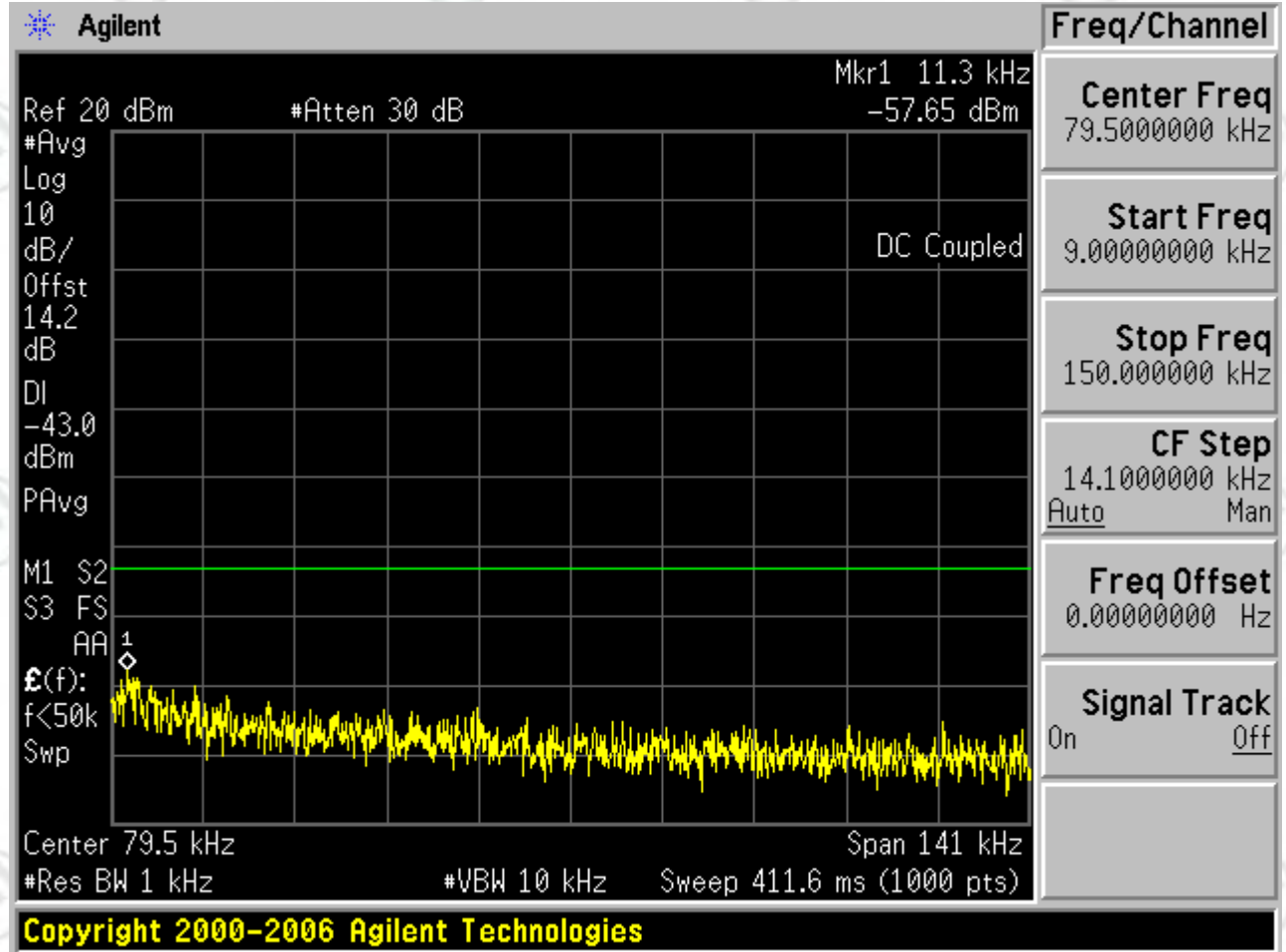


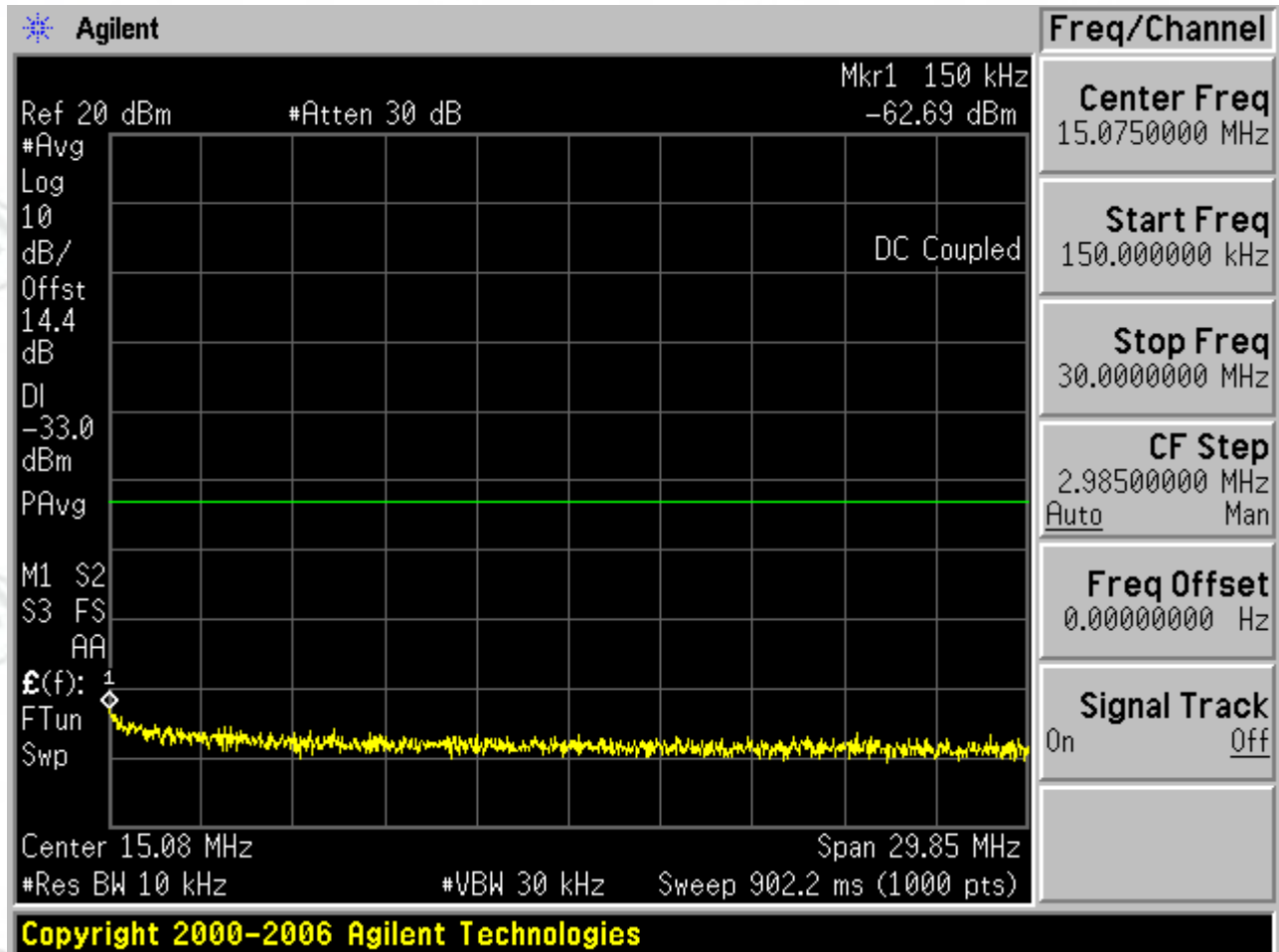


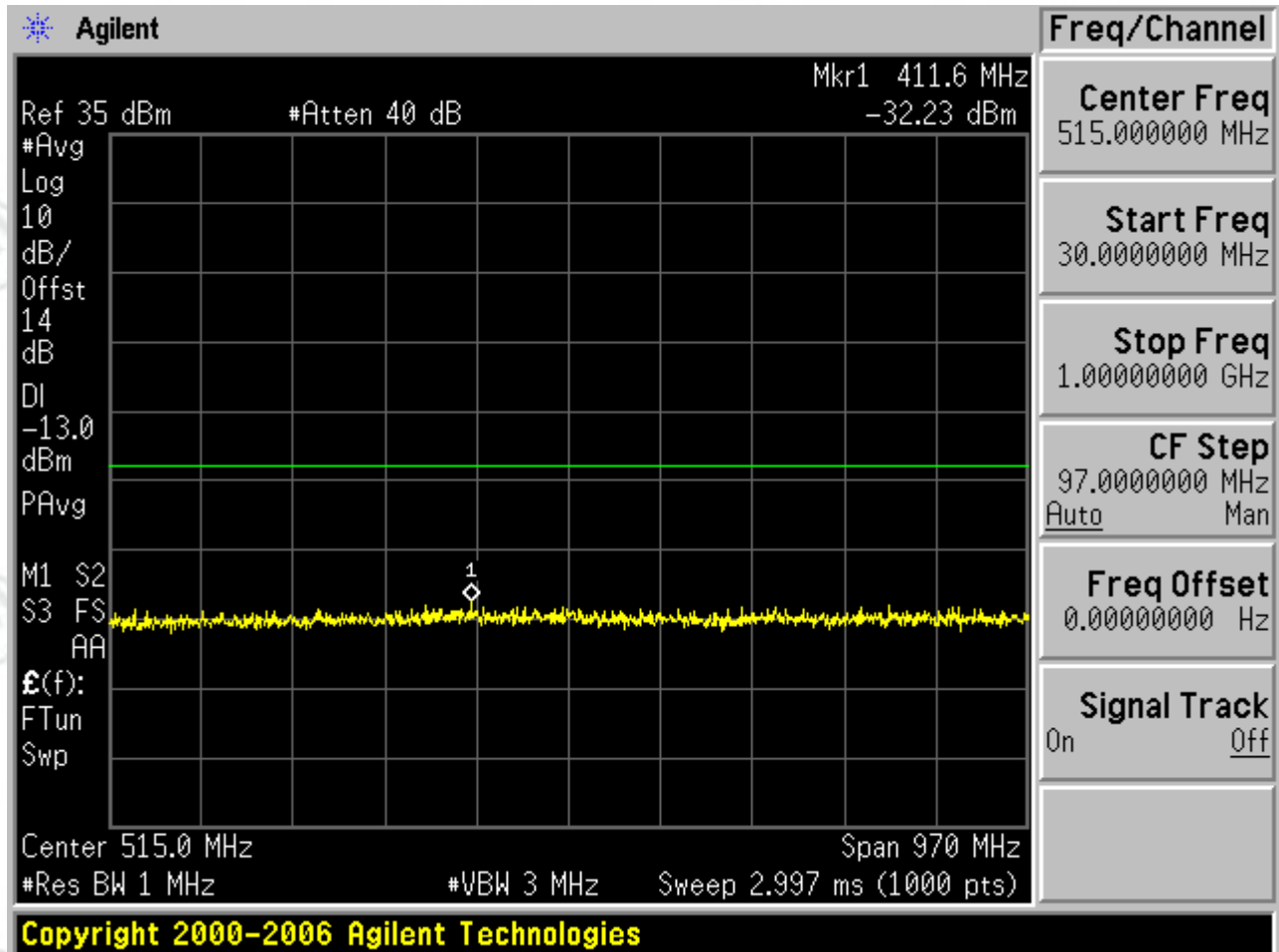


**1.1.2 Test Mode=GSM/TM2**

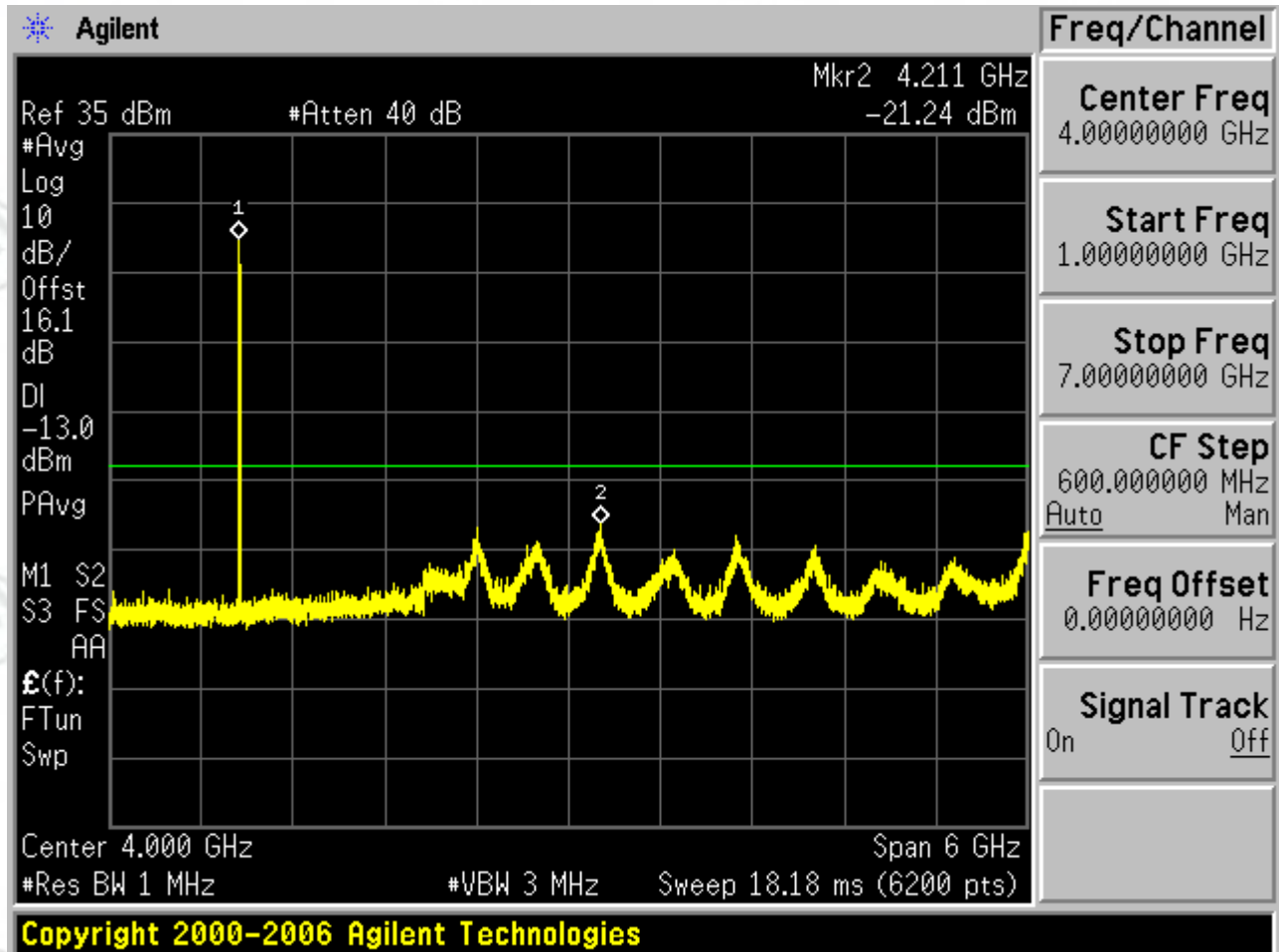
**1.1.2.1 Test Channel=LCH**

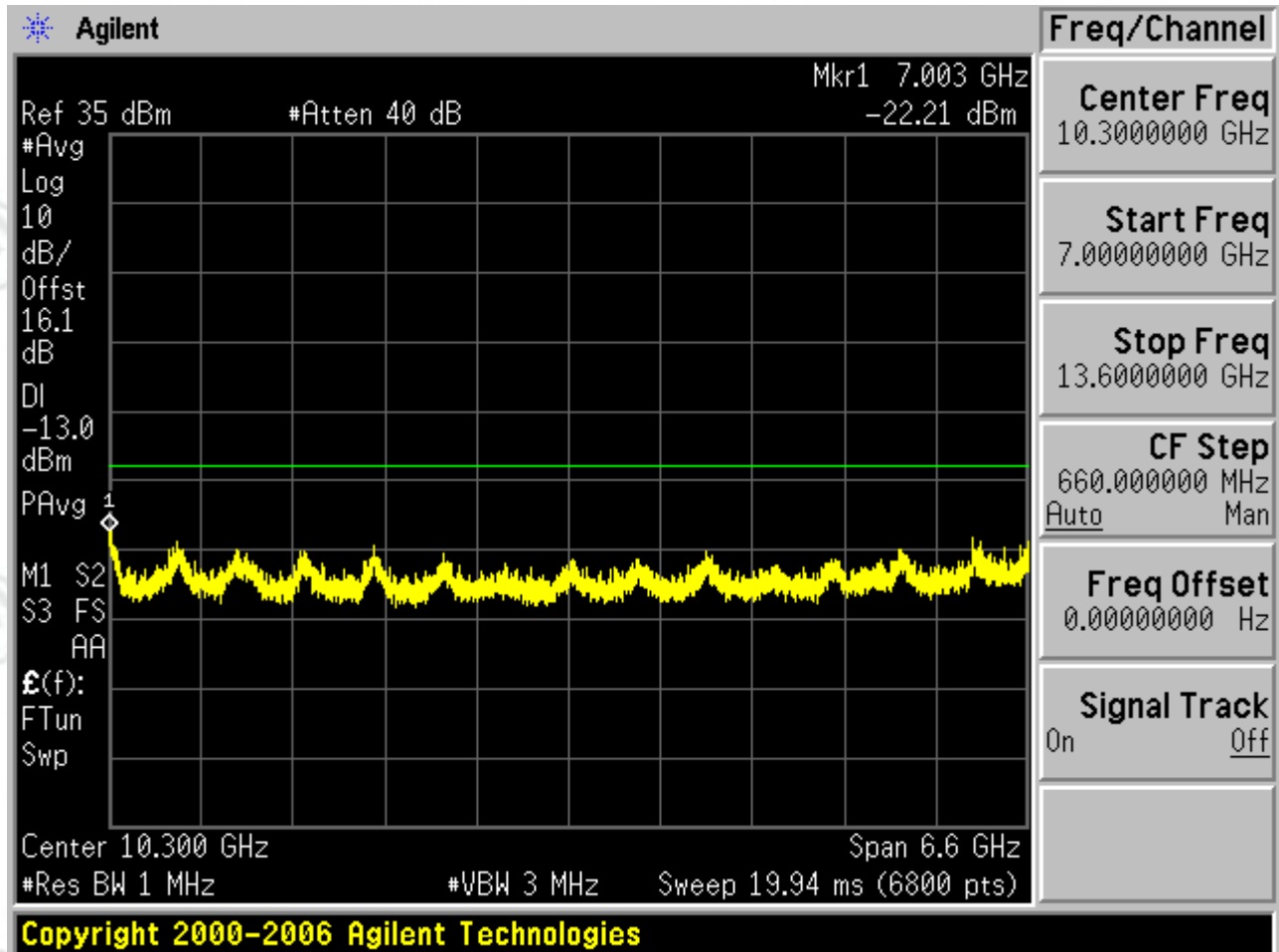


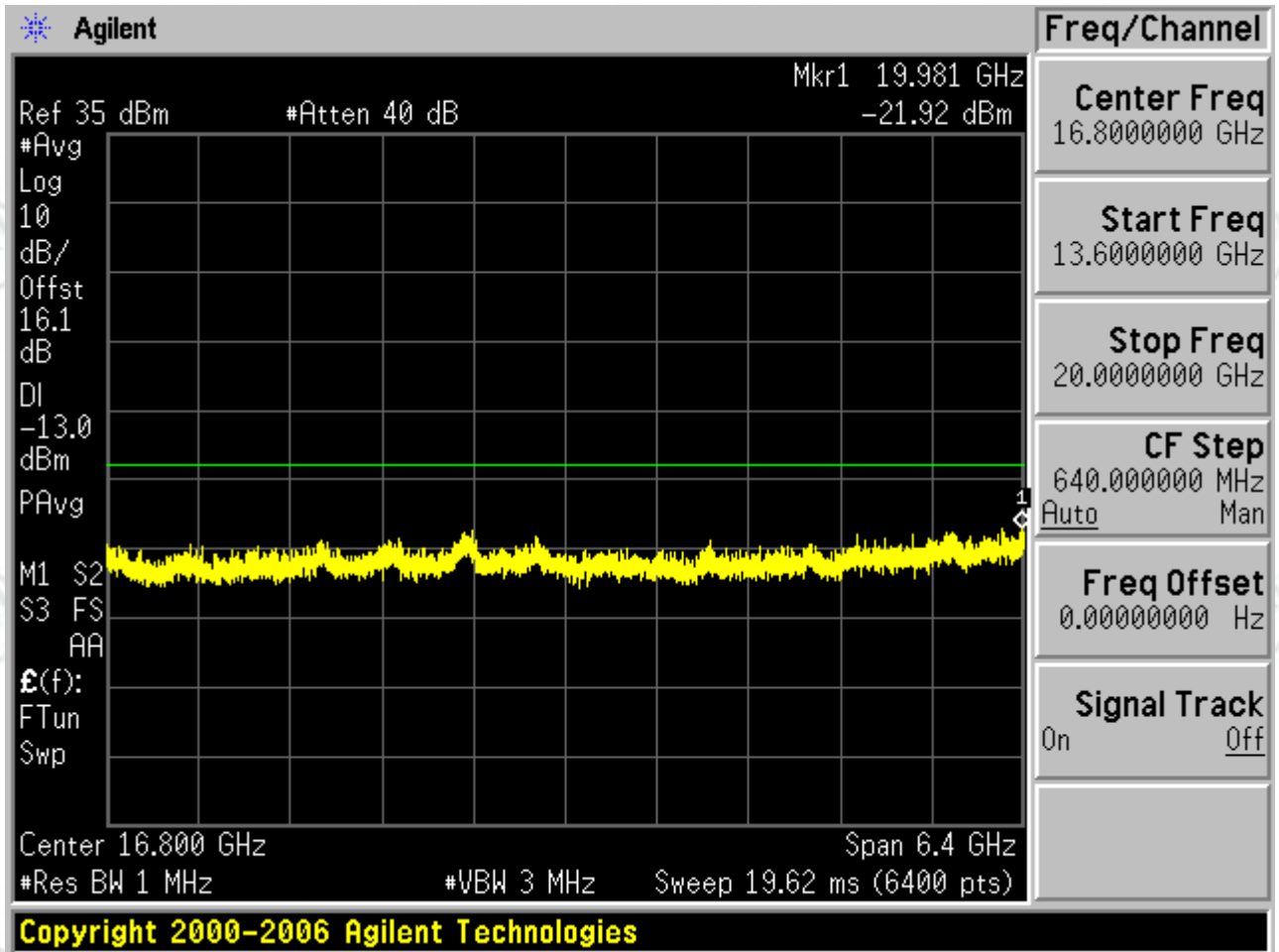




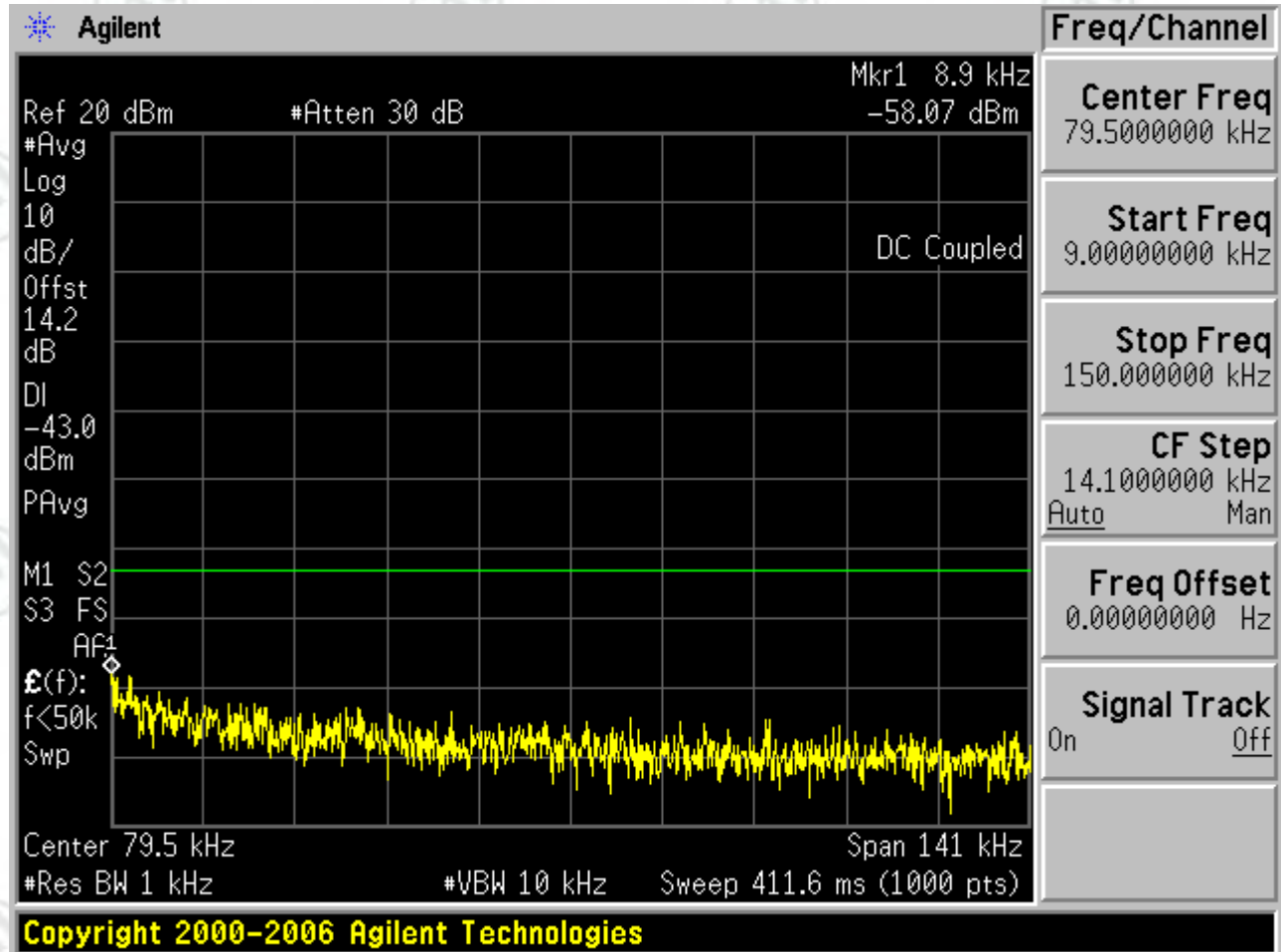




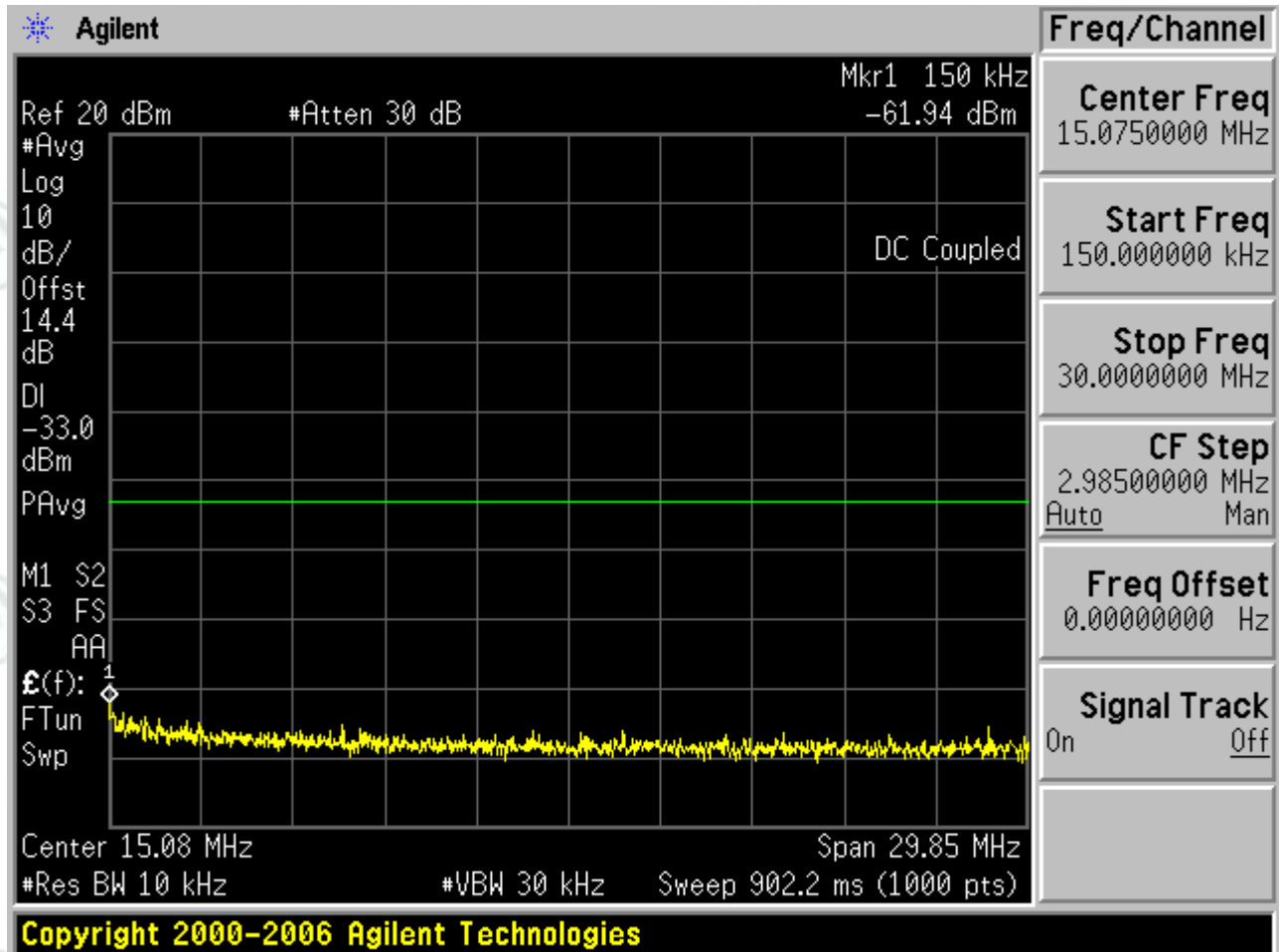


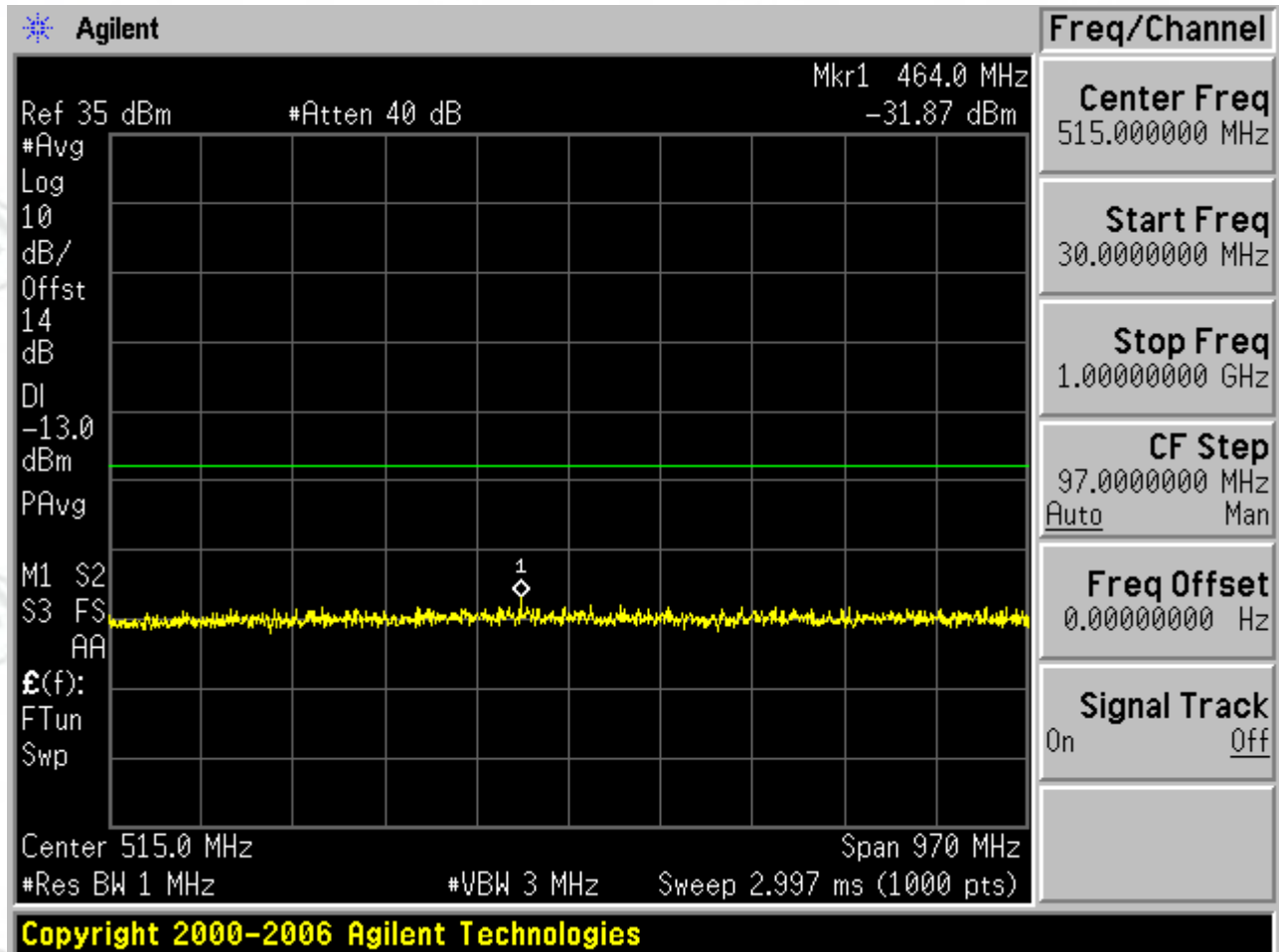


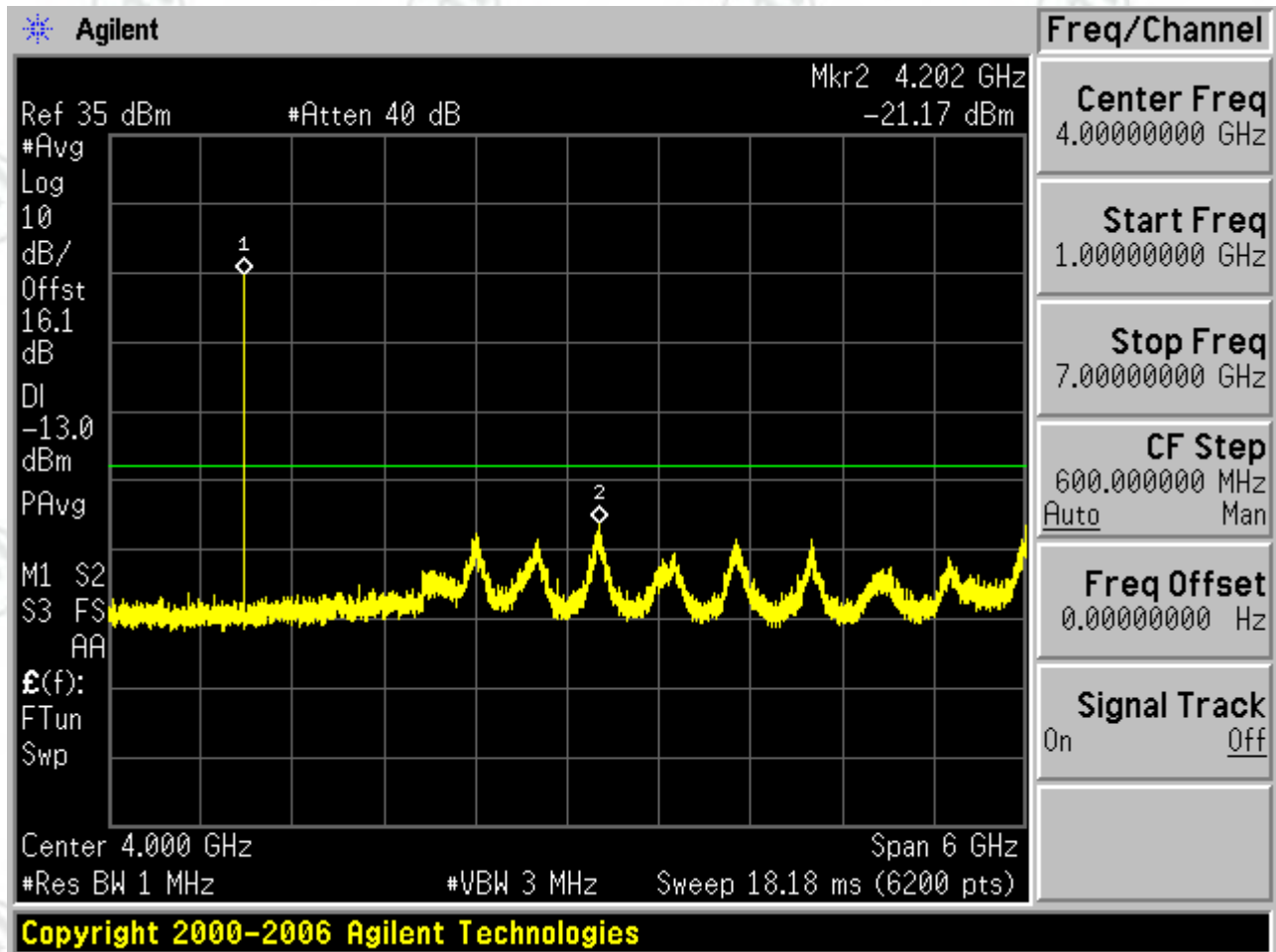
1.1.2.2 Test Channel=MCH

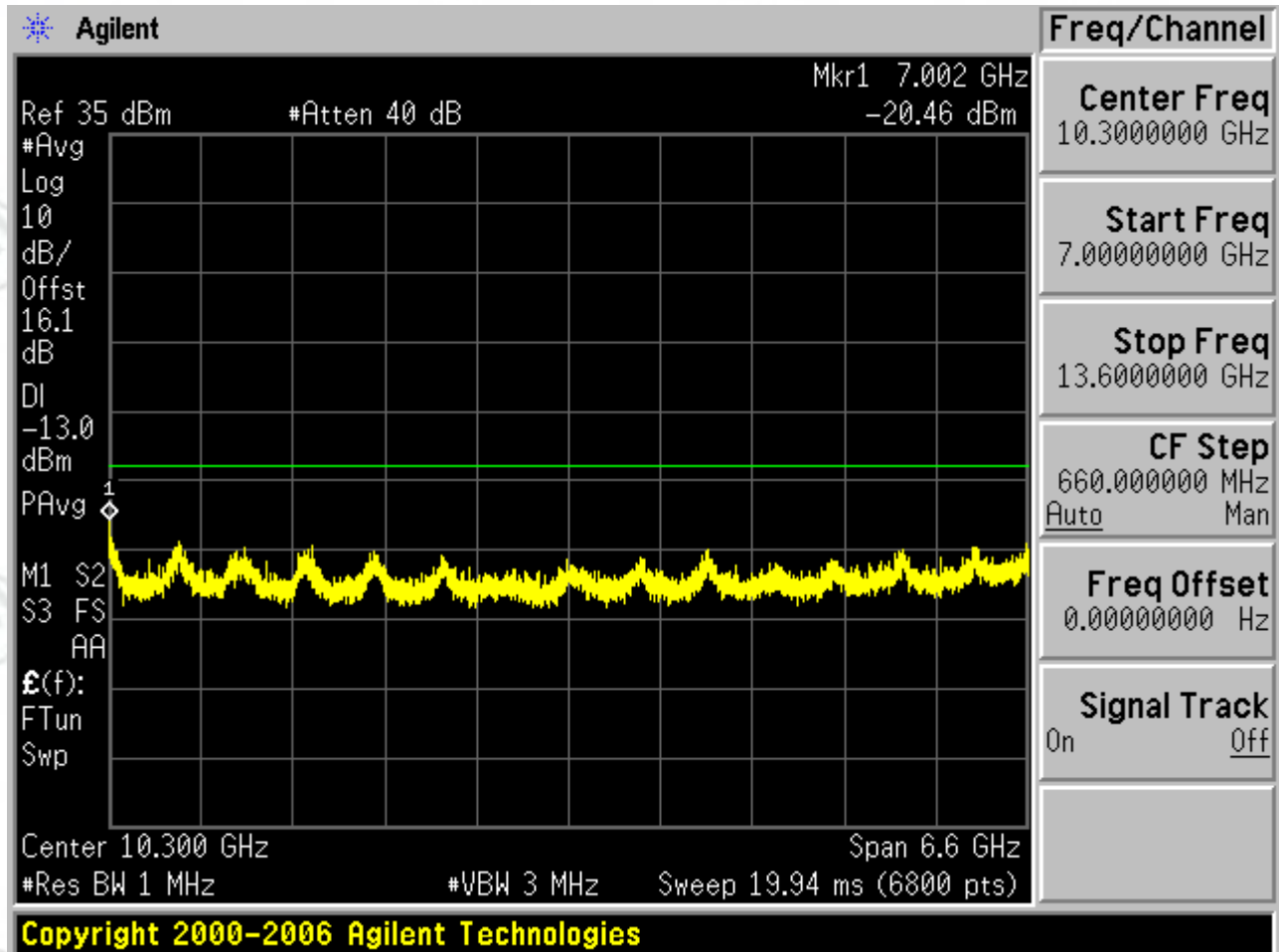




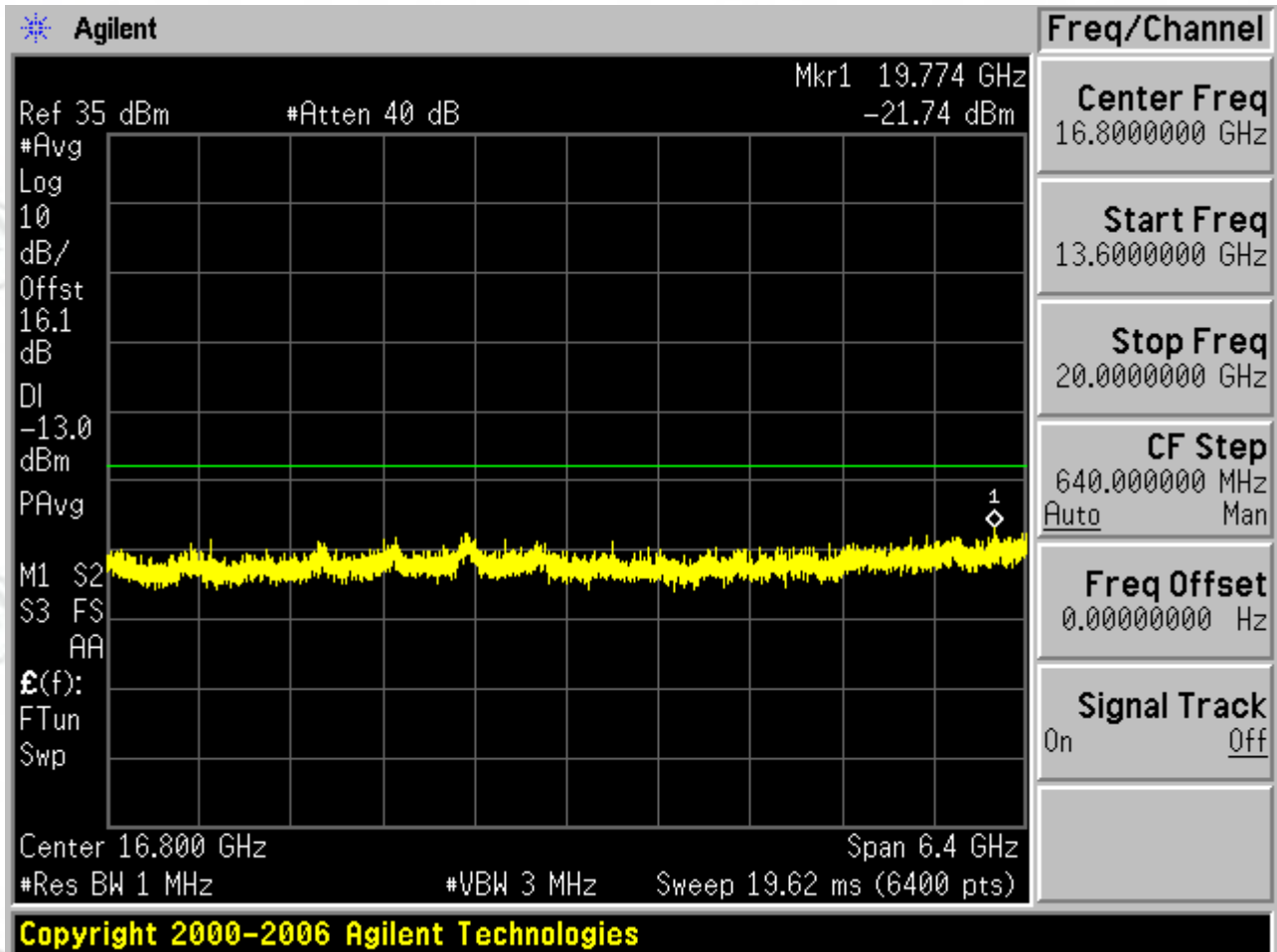




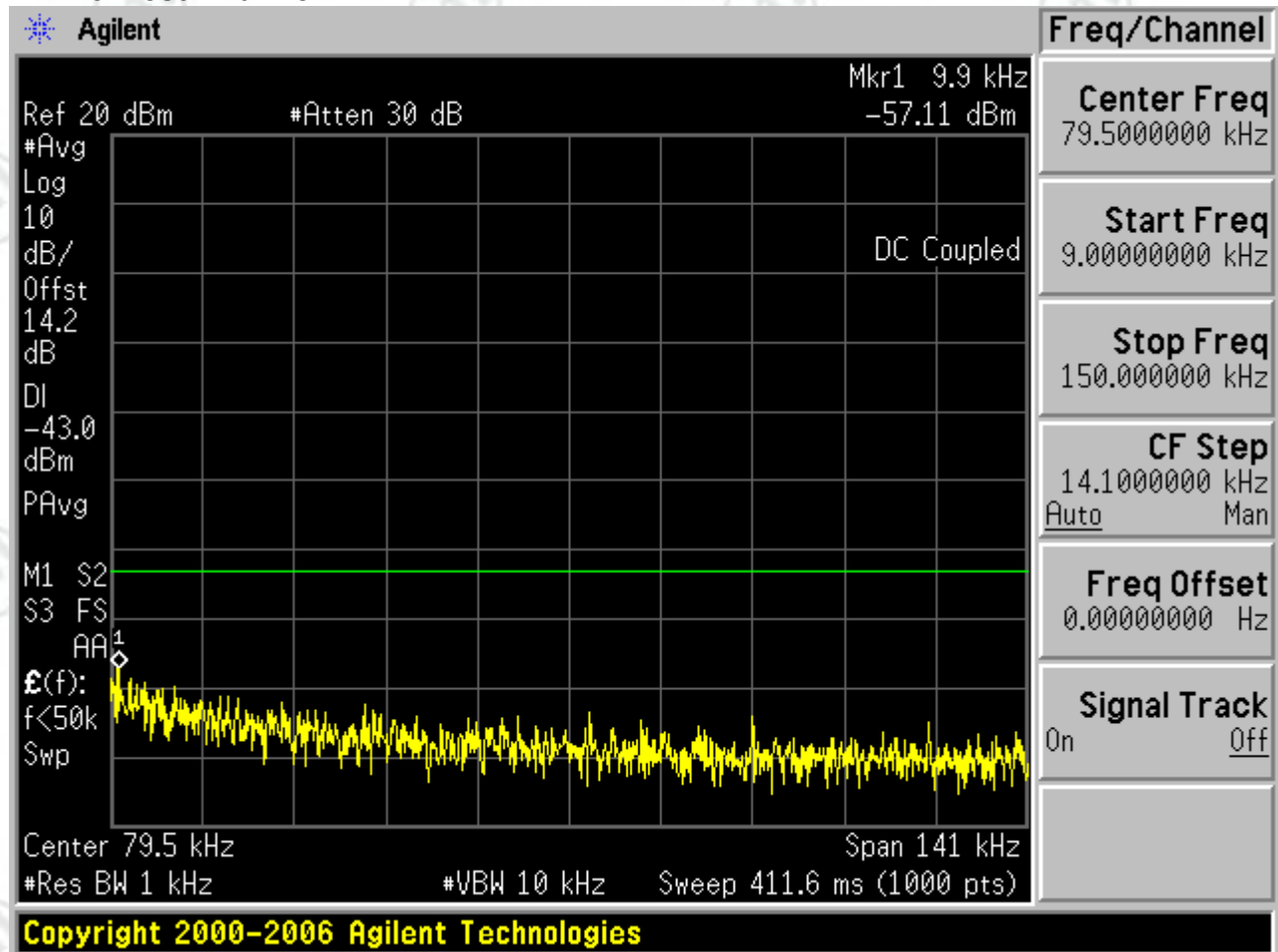


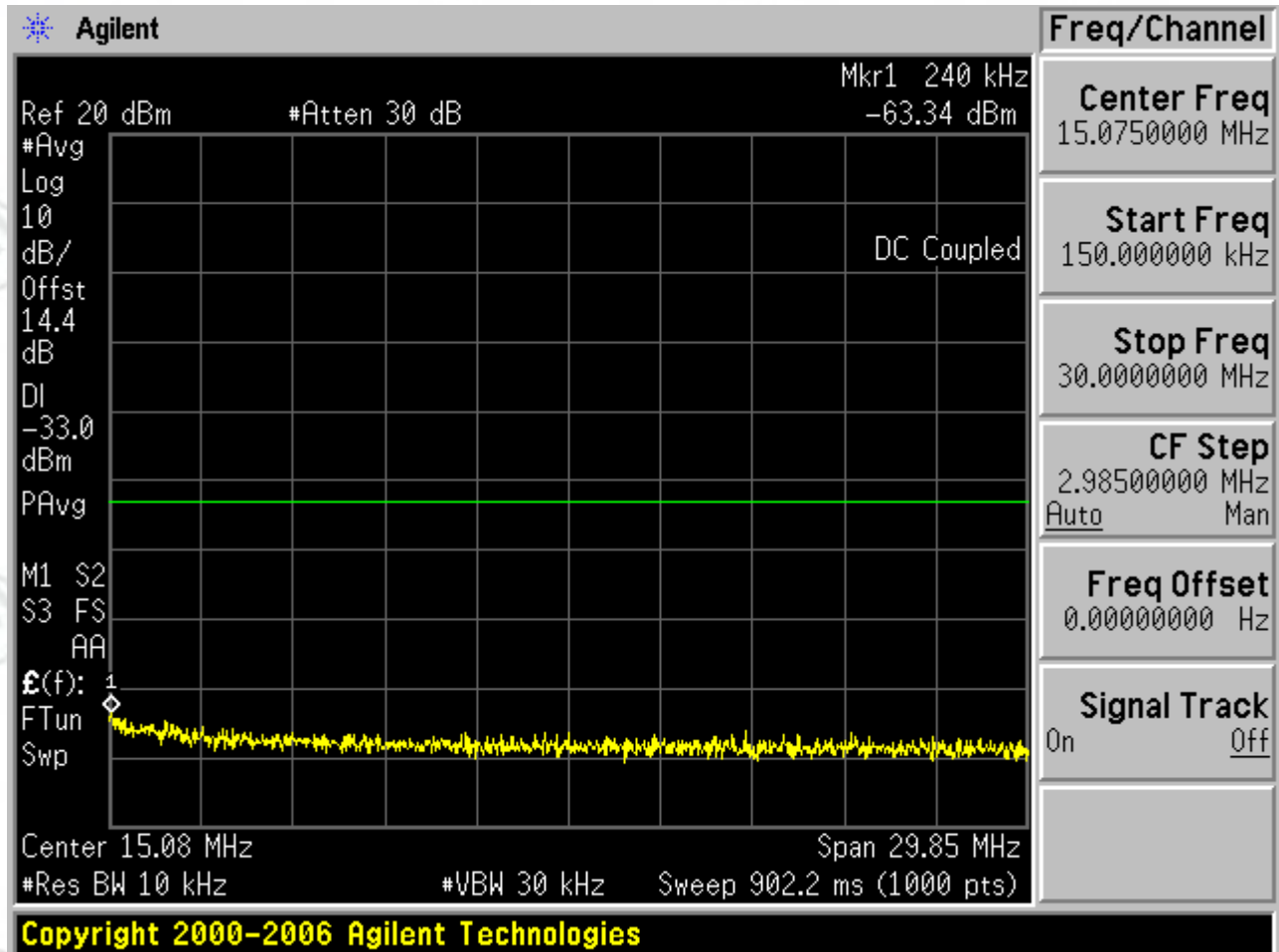


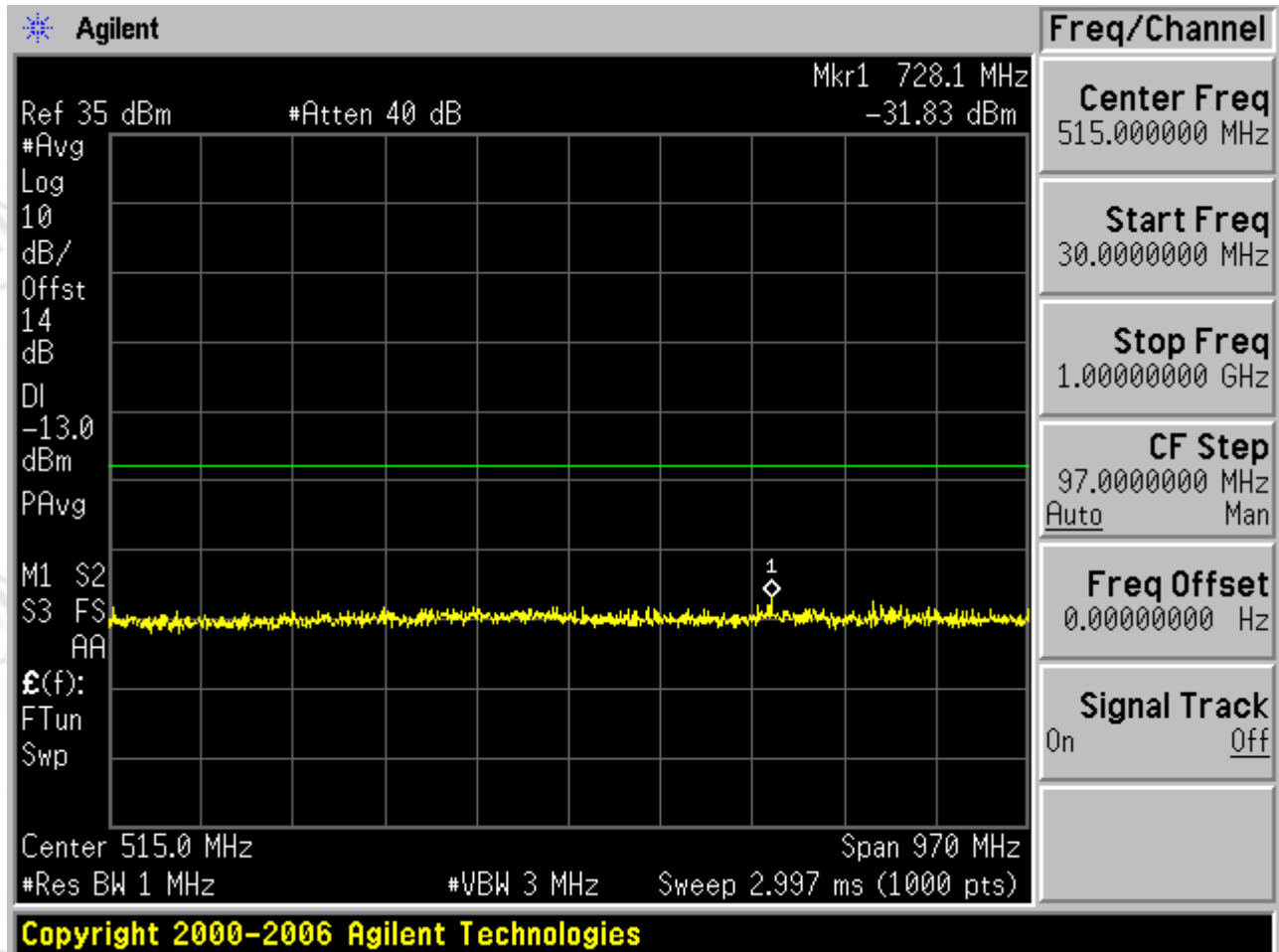


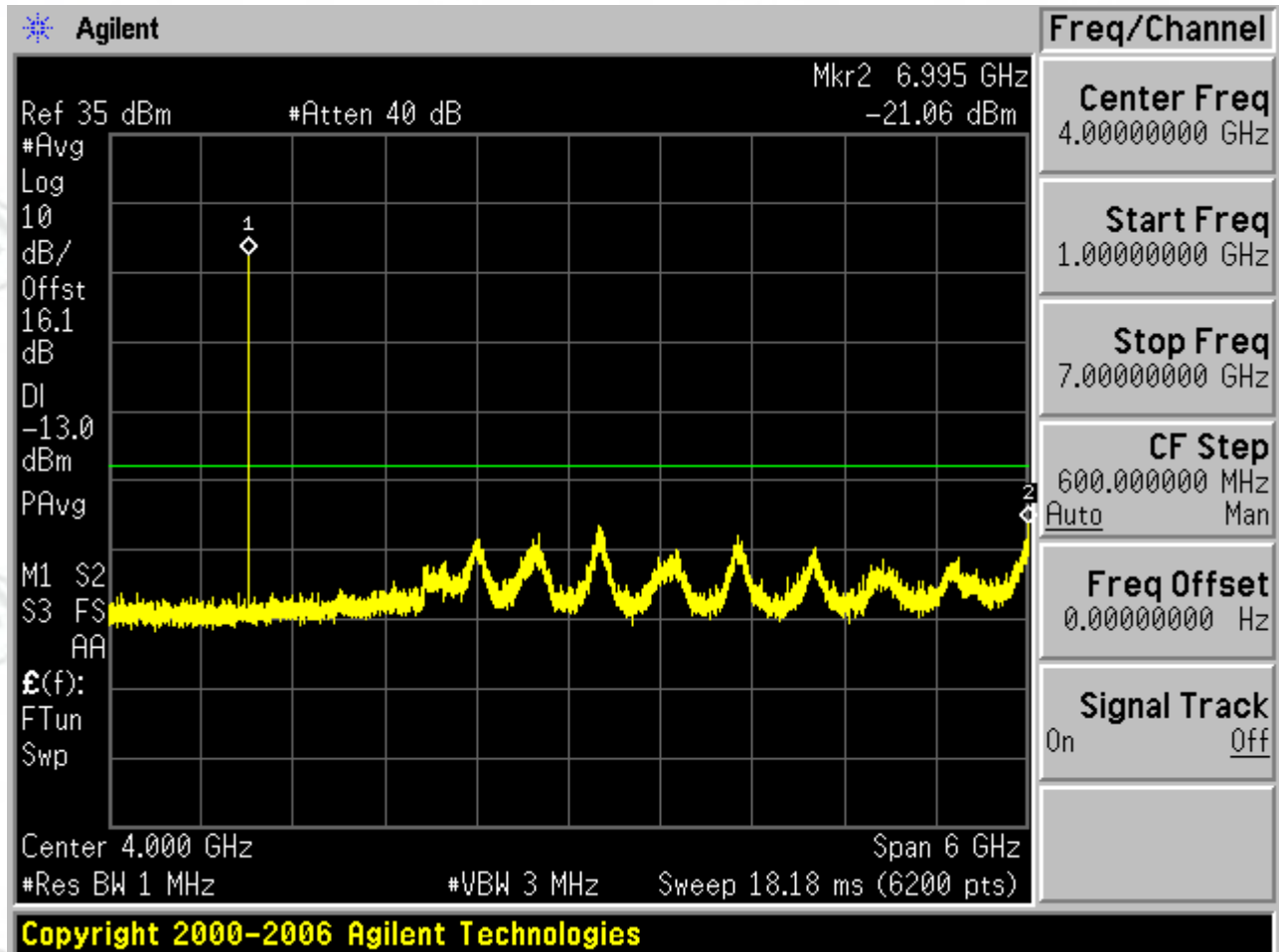


1.1.2.3 Test Channel=HCH

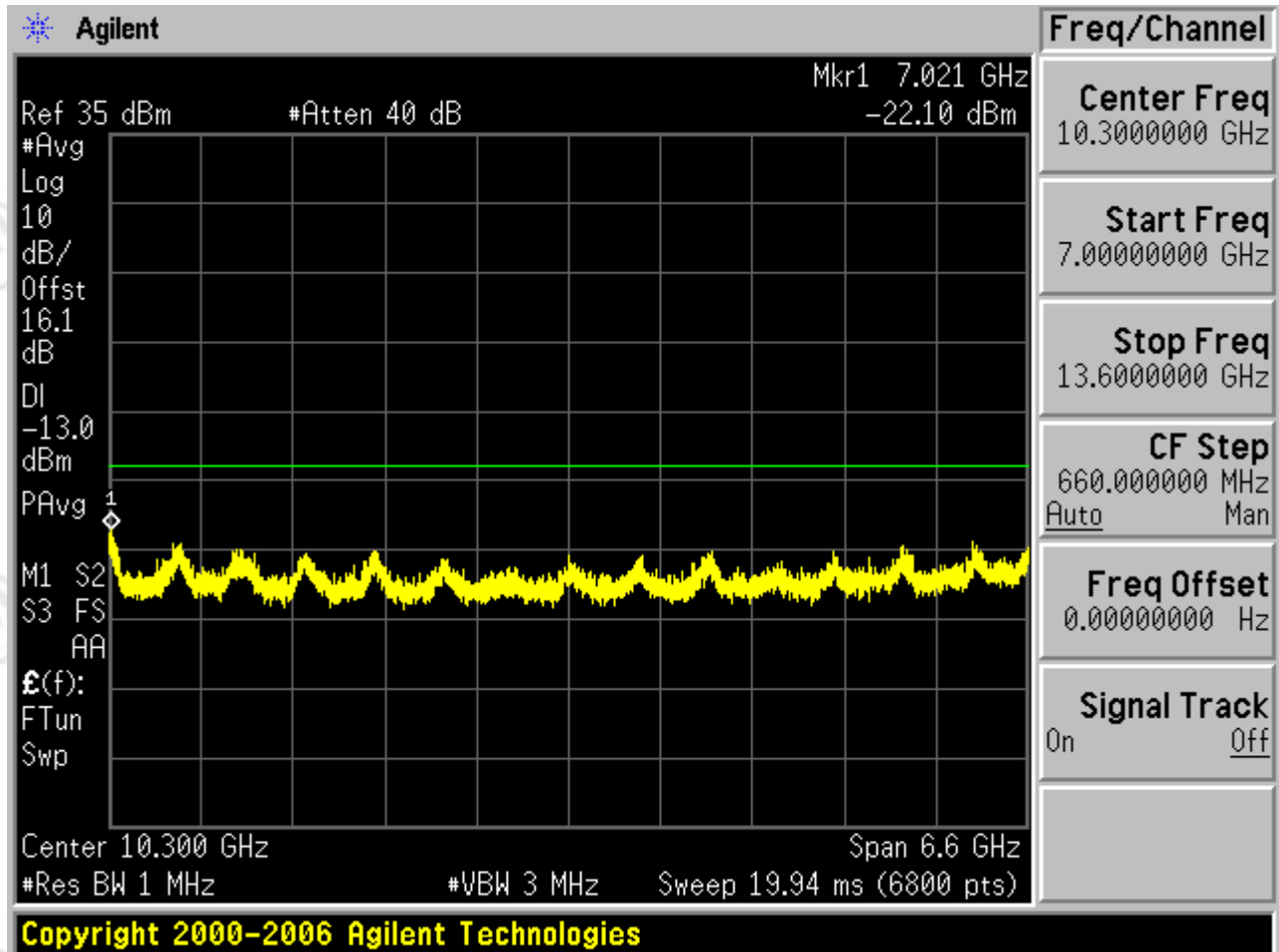


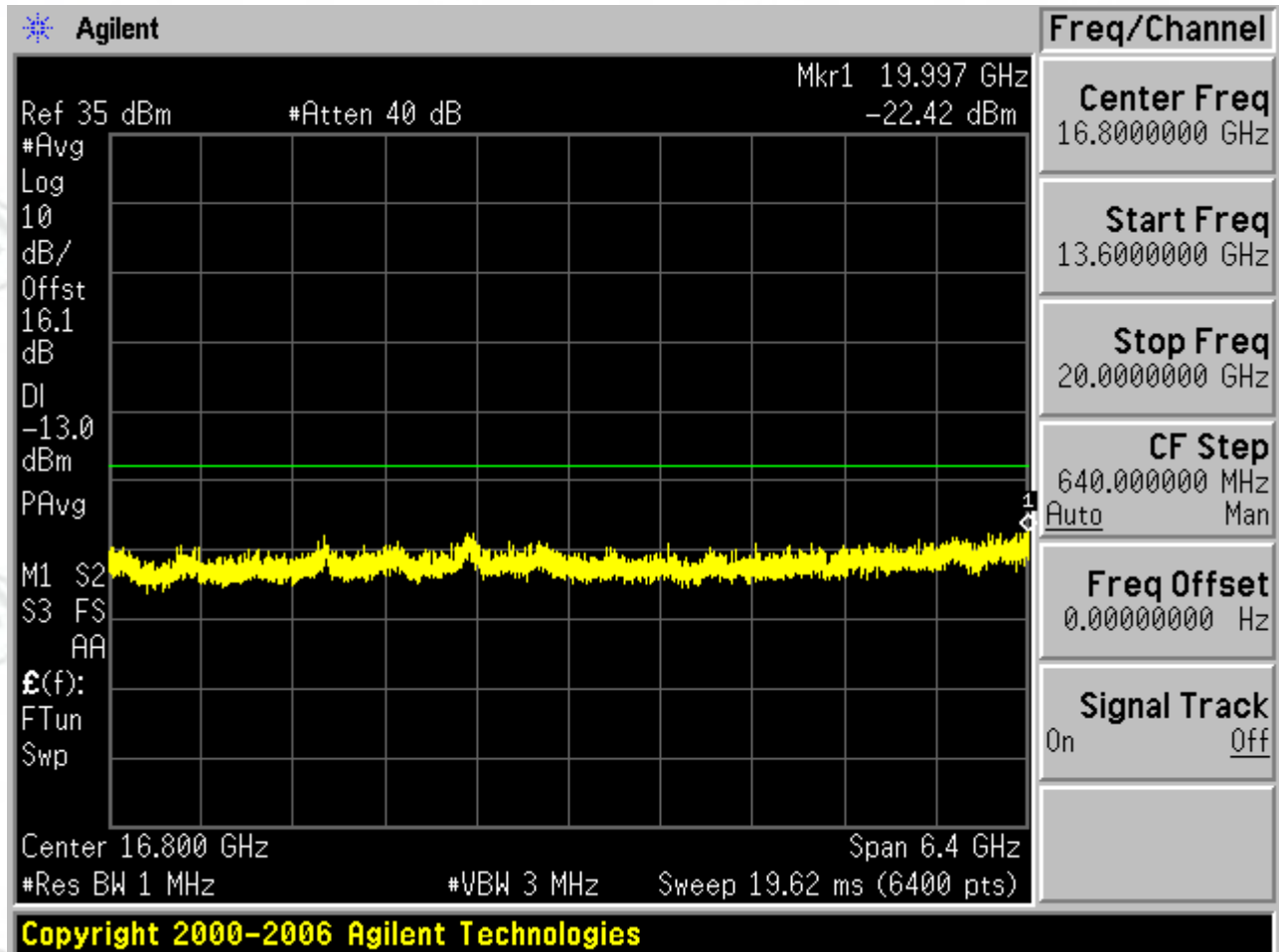












## Appendix F) Frequency Stability

### Frequency Error vs. Voltage:

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM850	TM2	LCH	TN	VN	8.01	0.009719	±2.5	PASS
			TN	End point	19.24	0.023344	±2.5	PASS
		MCH	TN	VN	19.76	0.023619	±2.5	PASS
			TN	End point	20.02	0.023930	±2.5	PASS
		HCH	TN	VN	18.40	0.021678	±2.5	PASS
			TN	End point	19.37	0.022820	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM1900	TM2	LCH	TN	VN	10.07	0.005443	±2.5	PASS
			TN	End point	-18.57	-0.010037	±2.5	PASS
		MCH	TN	VN	12.14	0.006457	±2.5	PASS
			TN	End point	14.02	0.007457	±2.5	PASS
		HCH	TN	VN	15.11	0.007912	±2.5	PASS
			TN	End point	12.11	0.006341	±2.5	PASS

**Frequency Error vs. Temperature:**

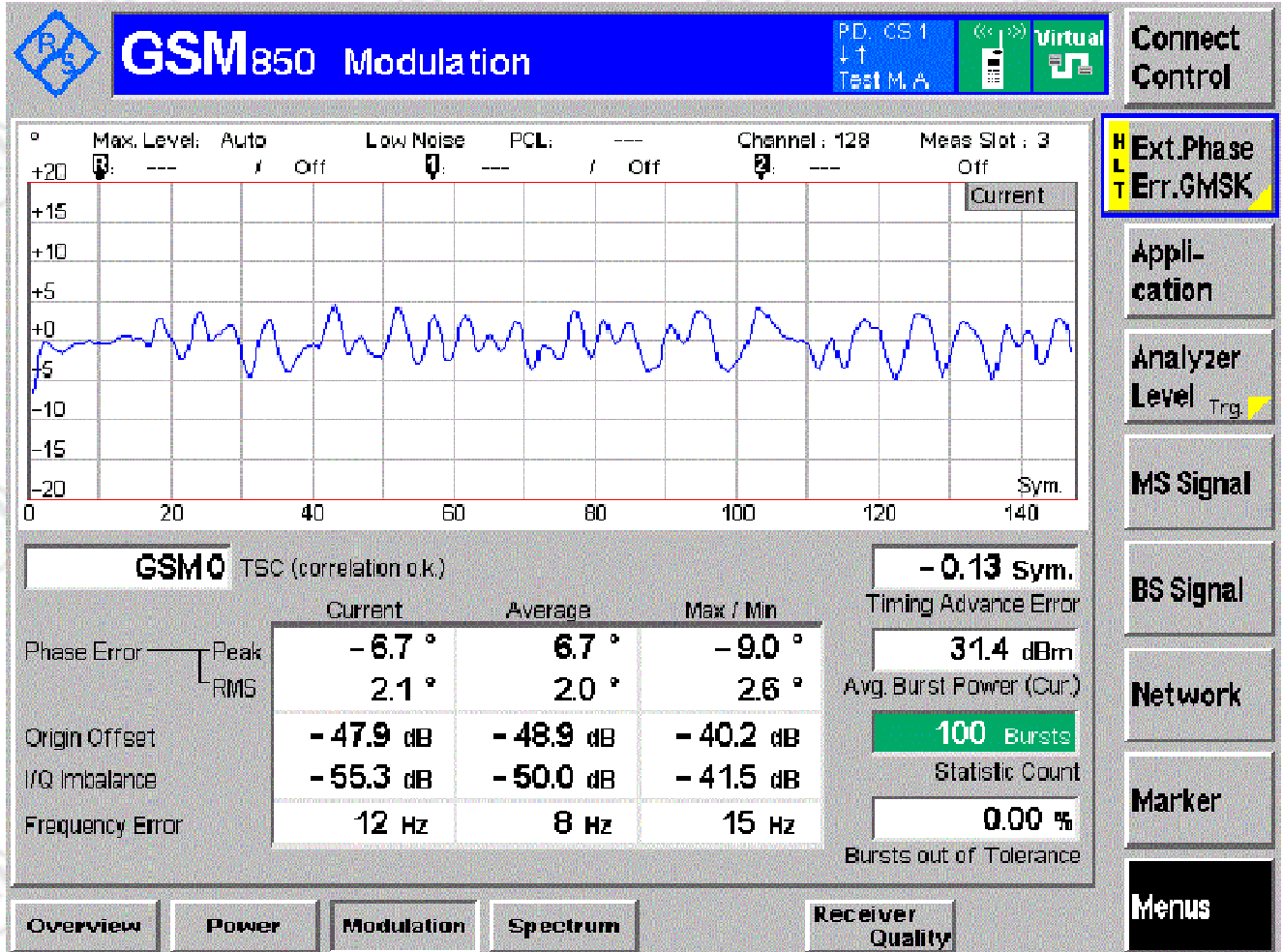
Test Band	Test Mode	Test Channel	Test Volt.	Test Temp	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM850	TM2	LCH	VN	-30	8.39	0.010180	±2.5	PASS
			VN	-20	2.71	0.003288	±2.5	PASS
			VN	-10	2.84	0.003446	±2.5	PASS
			VN	0	0.84	0.001019	±2.5	PASS
			VN	10	6.97	0.008457	±2.5	PASS
			VN	20	7.62	0.009245	±2.5	PASS
			VN	30	9.04	0.010968	±2.5	PASS
			VN	40	12.66	0.015360	±2.5	PASS
			VN	50	11.56	0.014026	±2.5	PASS
GSM850	TM2	MCH	VN	-30	17.63	0.021073	±2.5	PASS
			VN	-20	16.53	0.019759	±2.5	PASS
			VN	-10	11.36	0.013579	±2.5	PASS
			VN	0	16.40	0.019603	±2.5	PASS
			VN	10	13.95	0.016675	±2.5	PASS
			VN	20	19.31	0.023082	±2.5	PASS
			VN	30	17.37	0.020763	±2.5	PASS
			VN	40	9.43	0.011272	±2.5	PASS
			VN	50	8.39	0.010029	±2.5	PASS
GSM850	TM2	HCH	VN	-30	16.21	0.019098	±2.5	PASS
			VN	-20	15.63	0.018414	±2.5	PASS
			VN	-10	15.30	0.018025	±2.5	PASS
			VN	0	11.69	0.013772	±2.5	PASS
			VN	10	14.08	0.016588	±2.5	PASS
			VN	20	14.21	0.016741	±2.5	PASS
			VN	30	10.33	0.012170	±2.5	PASS
			VN	40	18.53	0.021831	±2.5	PASS
			VN	50	10.40	0.012253	±2.5	PASS



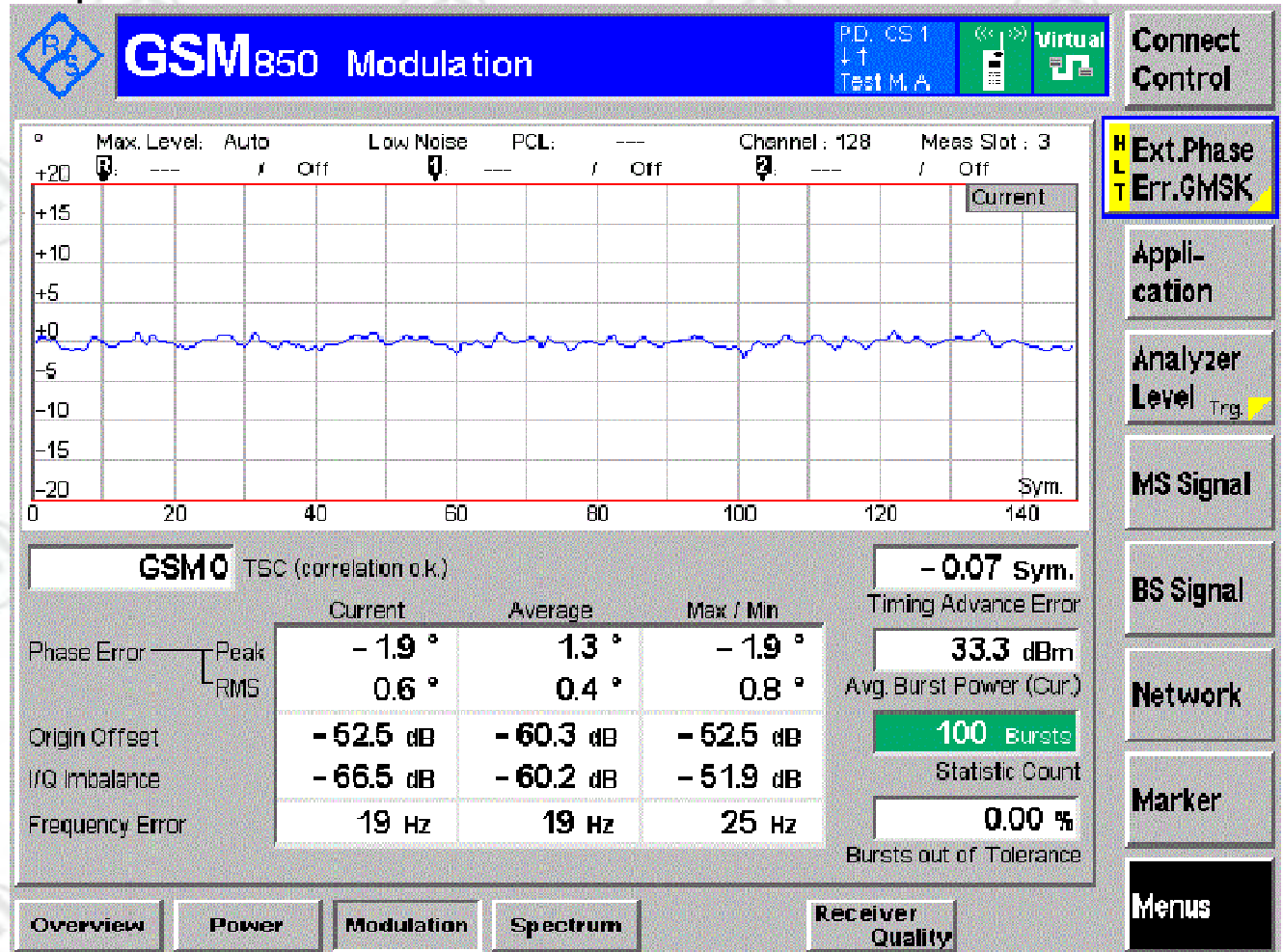
Test Band	Test Mode	Test Channel	Test Volt.	Test Temp	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM1900	TM2	LCH	VN	-30	17.05	0.009215	±2.5	PASS
			VN	-20	18.47	0.009983	±2.5	PASS
			VN	-10	30.99	0.016750	±2.5	PASS
			VN	0	30.67	0.016577	±2.5	PASS
			VN	10	41.65	0.022511	±2.5	PASS
			VN	20	29.83	0.016123	±2.5	PASS
			VN	30	37.77	0.020414	±2.5	PASS
			VN	40	32.09	0.017344	±2.5	PASS
			VN	50	22.60	0.012215	±2.5	PASS
GSM1900	TM2	MCH	VN	-30	10.98	0.005840	±2.5	PASS
			VN	-20	15.69	0.008346	±2.5	PASS
			VN	-10	15.88	0.008447	±2.5	PASS
			VN	0	18.02	0.009585	±2.5	PASS
			VN	10	19.24	0.010234	±2.5	PASS
			VN	20	24.28	0.012915	±2.5	PASS
			VN	30	20.79	0.011059	±2.5	PASS
			VN	40	16.47	0.008761	±2.5	PASS
			VN	50	11.95	0.006356	±2.5	PASS
GSM1900	TM2	HCH	VN	-30	13.62	0.007132	±2.5	PASS
			VN	-20	19.95	0.010446	±2.5	PASS
			VN	-10	16.14	0.008451	±2.5	PASS
			VN	0	20.53	0.010750	±2.5	PASS
			VN	10	2.58	0.001351	±2.5	PASS
			VN	20	10.07	0.005273	±2.5	PASS
			VN	30	18.73	0.009807	±2.5	PASS
			VN	40	18.02	0.009436	±2.5	PASS
			VN	50	16.53	0.008655	±2.5	PASS



**GSM850**  
**LCH**



End point



**MCH**

GSM850 Modulation

P.D. CS 1  
 ↑↓  
 Test M. A

Virtual

Connect Control

Max. Level: Auto
Low Noise
PCL: ---
Channel: 190
Meas Slot: 3

Q: --- / Off
Q: --- / Off
Q: --- / Off

**GSM0** TSC (correlation o.k.)

**0.04 sym.**  
Timing Advance Error

	Current	Average	Max / Min
Phase Error	Peak	7.1 °	-9.2 °
	RMS	1.9 °	2.3 °
Origin Offset	-44.7 dB	-48.6 dB	-41.7 dB
I/Q Imbalance	-51.5 dB	-51.2 dB	-43.9 dB
Frequency Error	19 Hz	20 Hz	25 Hz

**33.2 dBm**  
Avg. Burst Power (Cur)

**100 Bursts**  
Statistic Count

**0.00 %**  
Bursts out of Tolerance

Overview

Power

Modulation

Spectrum

Receiver Quality

Ext. Phase Err. GSMK

Application

Analyzer Level Trg

MS Signal

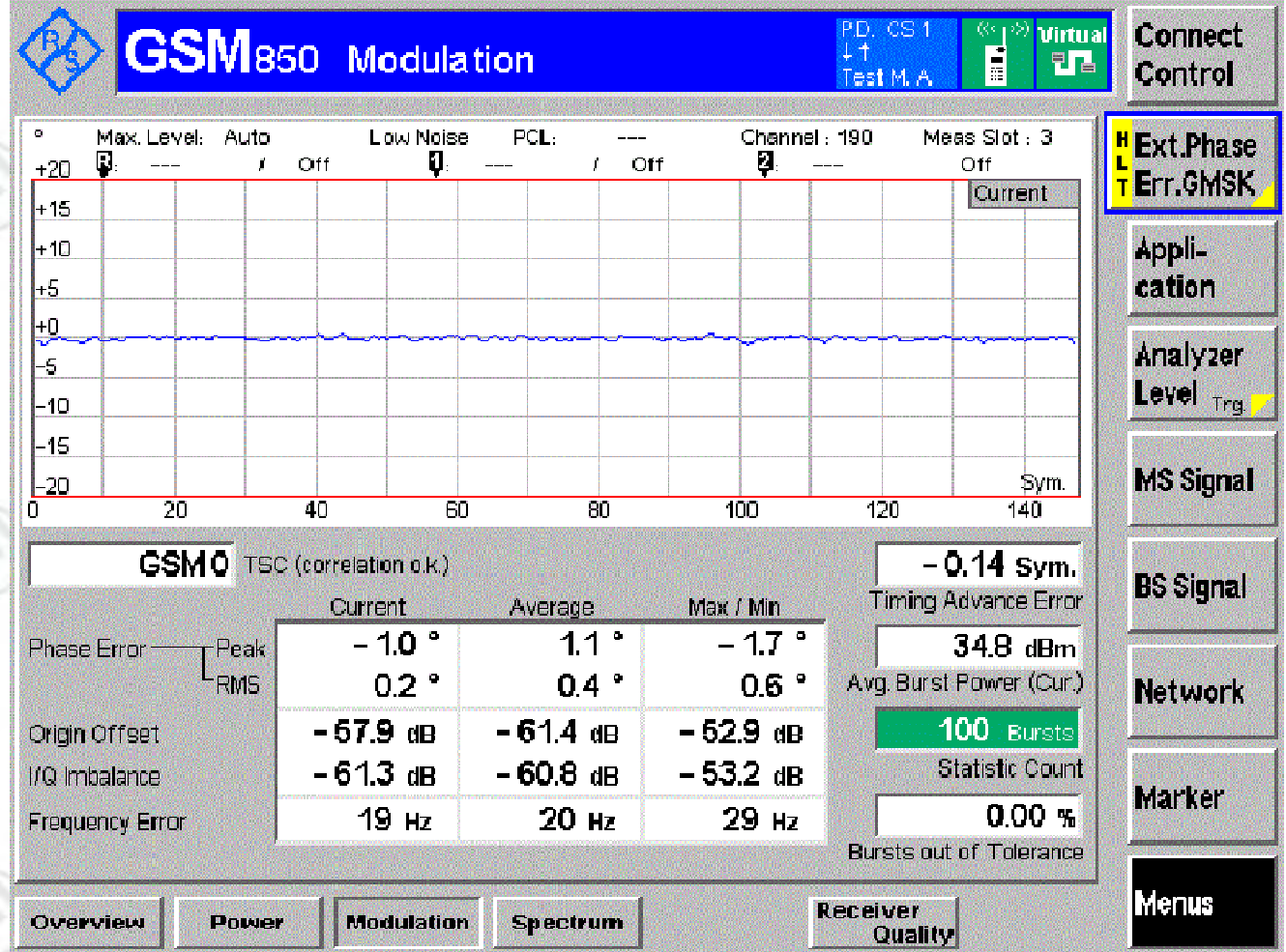
BS Signal

Network

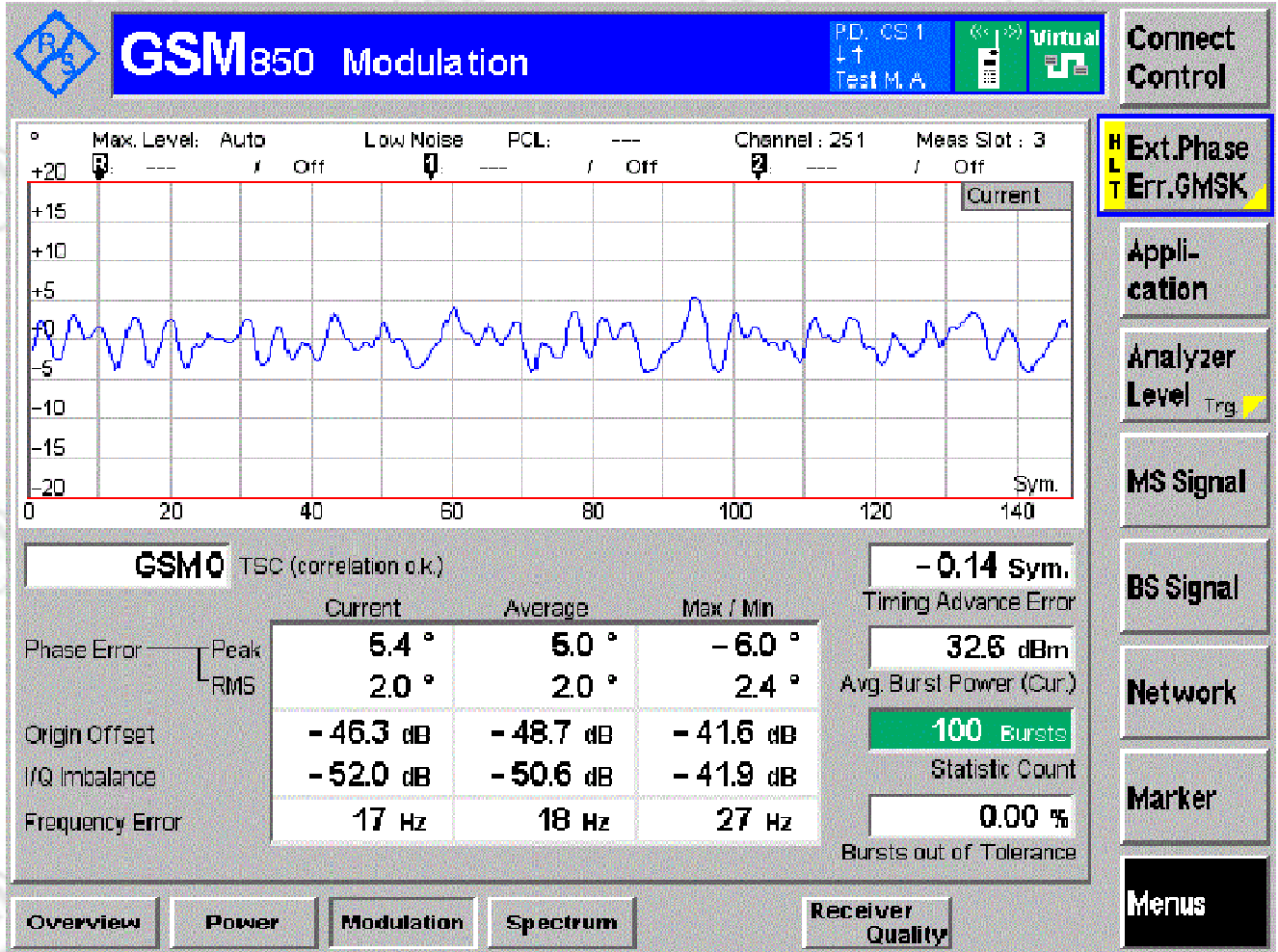
Marker

Menus

End point



HCH





End point

GSM850 Modulation

PD: CS 1  
 ↑  
 Test M. A.

Virtual

Connect Control

Max. Level: Auto
Low Noise 
PCL: ---
Channel: 251
Meas Slot: 3

Off
 Off
 Off
 Off
 Off

**GSM0** TSC (correlation o.k.)

**-0.19** Sym. Timing Advance Error

	Current	Average	Max / Min
Phase Error	1.3 °	1.0 °	- 1.7 °
Peak	0.5 °	0.4 °	0.6 °
RMS			
Origin Offset	- 60.0 dB	- 61.0 dB	- 63.6 dB
I/Q Imbalance	- 56.1 dB	- 61.1 dB	- 52.9 dB
Frequency Error	19 Hz	19 Hz	26 Hz

33.6 dBm

100 Bursts

Avg. Burst Power (Cur.)

Statistic Count

0.00 %

Bursts out of Tolerance

Overview

Power

Modulation

Spectrum

Receiver Quality

Ext.Phase

Err.GMSK

Application

Analyzer Level Trg

MS Signal

BS Signal

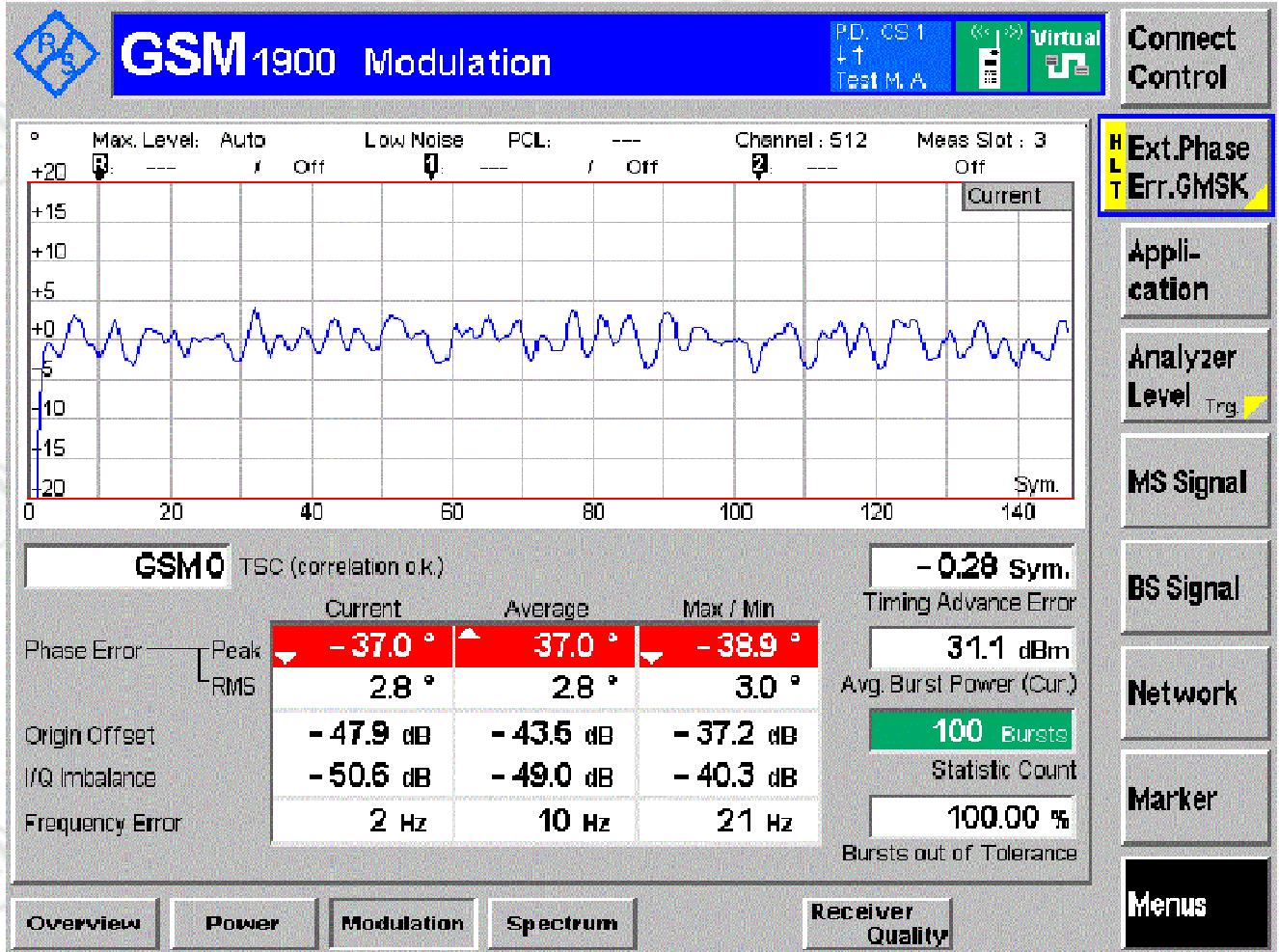
Network

Marker

Menus

**GSM1900**

**LCH**



**End Point**

GSM1900 Modulation

PD: CS 1  
 ↓ ↑  
 Test M. A.

Virtual

**Connect Control**

Max. Level: Auto

Low Noise

PCL: ---

Channel: 512

Meas Slot: 3

Off

Off

Off

Off

Off

**GSM0** TSC (correlation o.k.)

	Current	Average	Max / Min
Phase Error	-35.7 °	35.5 °	-36.9 °
Peak RMS	2.8 °	2.8 °	3.0 °
Origin Offset	-44.3 dB	-43.9 dB	-36.9 dB
I/Q Imbalance	-57.2 dB	-48.4 dB	-36.9 dB
Frequency Error	-17 Hz	-19 Hz	-30 Hz

-0.33 Sym.  
Timing Advance Error

31.0 dBm  
Avg. Burst Power (Cur)

100 Bursts  
Statistic Count

100.00 %  
Bursts out of Tolerance

Overview

Power

Modulation

Spectrum

Receiver Quality

Ext.Phase Err.GMSK

Application

Analyzer Level Trg

MS Signal

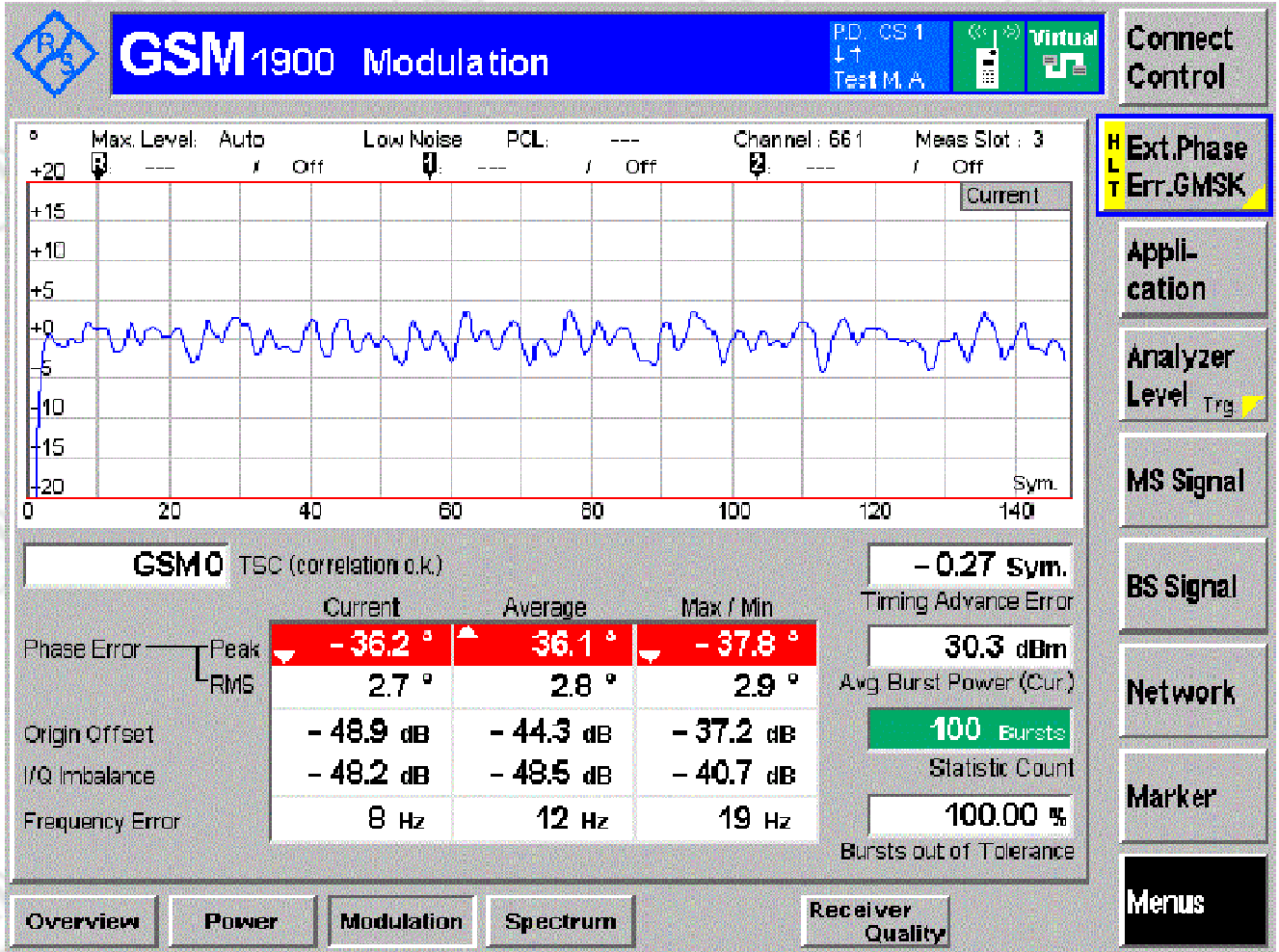
BS Signal

Network

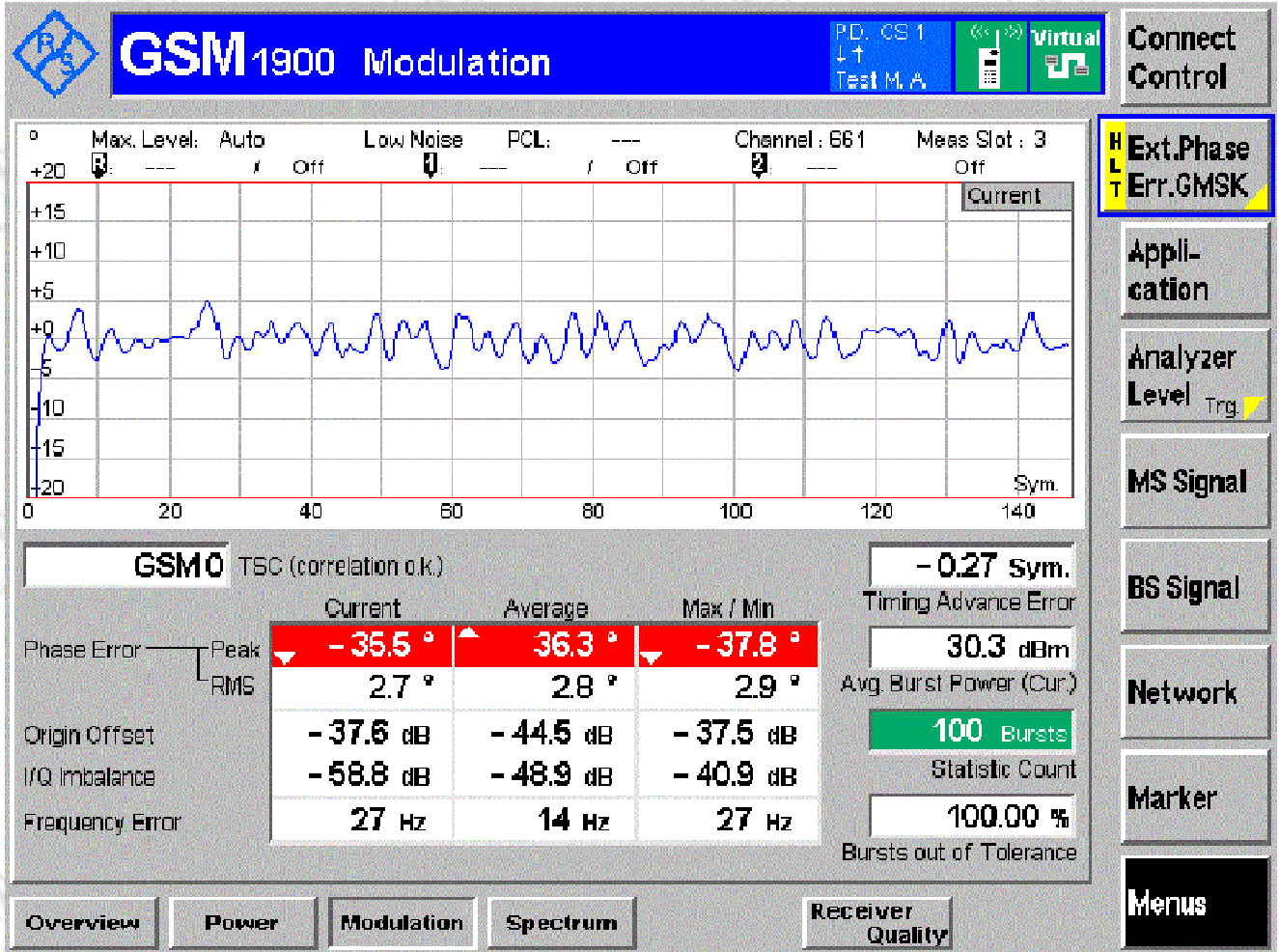
Marker

Menus

**MCH**

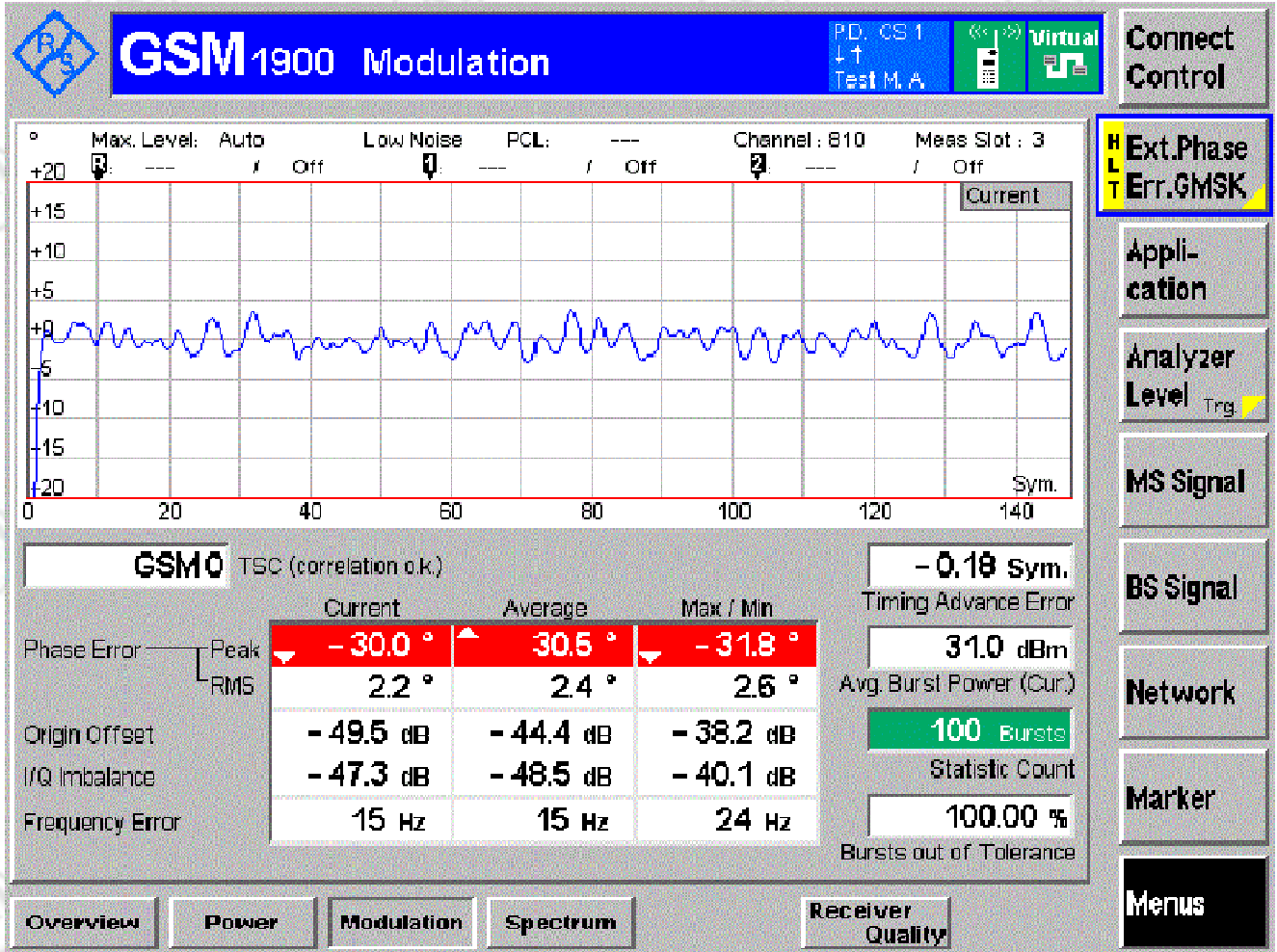


End Point





HCH



**End Point**

GSM1900 Modulation

PD: CS 1  
 ↓ ↑  
 Test M. A.

Virtual

Connect Control

Max. Level: Auto  
 Low Noise: Off  
 PCL: Off  
 Channel: 810  
 Meas Slot: 3

Ext.Phase  
 Err.GMSK

**GSM0** TSC (correlation o.k.)

	Current	Average	Max / Min
Phase Error	-31.8 °	30.5 °	-32.0 °
Peak	2.5 °	2.4 °	2.6 °
RMS	-40.0 dB	-44.3 dB	-36.7 dB
Origin Offset	-47.7 dB	-49.5 dB	-41.0 dB
I/Q Imbalance	11 Hz	12 Hz	17 Hz
Frequency Error			

-0.18 Sym.  
 Timing Advance Error

31.0 dBm  
 Avg. Burst Power (Cur)

100 Bursts  
 Statistic Count

100.00 %  
 Bursts out of Tolerance

Overview

Power

Modulation

Spectrum

Receiver Quality

Application

Analyzer Level Trg

MS Signal

BS Signal

Network

Marker

Menus

LCH

