

TEST REPORT

Product : Smart lock
Trade mark : ofo
Model/Type reference : TWX5G02
Serial Number : N/A
Report Number : EED32J00098303
FCC ID : 2AMBSTWX5G02-1
Date of Issue : Jun. 13, 2017
Test Standards : 47 CFR Part 2
47 CFR Part 22 subpart H
47 CFR Part 24 subpart E
Test result : PASS

Prepared for:

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Date:

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Check No.: 2447639457

2 Version

Version No.	Date	Description
00	Jun. 13, 2017	Original

3 Test Summary

GSM 850, WCDMA(Band V)			
Test Item	Test Requirement	Test method	Result
Conducted output power	Part 2.1046(a)/Part 22.913(a)	TIA-603-E-2016 &KDB 971168 D01v02r02	PASS
Effective Radiated Power of Transmitter(ERP)	Part 2.1046(a)/Part 22.913(a)	TIA-603-E-2016 &KDB 971168 D01v02r02	PASS
99%&26dB Occupied Bandwidth	Part 2.1049(h)	Part 22.917(b) &KDB 971168 D01v02r02	PASS
Band Edge at antenna terminals	Part 2.1051/Part 22.917(a)	Part 22.917(b) &KDB 971168 D01v02r02	PASS
Spurious emissions at antenna terminals	Part 2.1051/ Part 2.1057/ Part 22.917(a)(b)	TIA-603-E-2016 &KDB 971168 D01v02r02	PASS
Field strength of spurious radiation	Part 2.1053/ Part 2.1057/ Part 22.917(a)(b)	TIA-603-E-2016 &KDB 971168 D01v02r02	PASS
Frequency stability	Part 2.1055/ Part 22.355	TIA-603-E-2016 &KDB 971168 D01v02r02	PASS
GSM 1900,WCDMA(Band II)			
Test Item	Test Requirement	Test method	Result
Conducted output power	Part 2.1046(a) /Part 24.232(c)	TIA-603-E-2016&KDB 971168 D01v02r02	PASS
Effective Radiated Power of Transmitter(EIRP)	Part 2.1046(a) / Part 24.232(c)	TIA-603-E-2016 &KDB 971168 D01v02r02	PASS
peak-to-average ratio	Part 24.232(d)	KDB 971168 D01v02r02	PASS
99% &26dBOccupied Bandwidth	Part 2.1049(h)	Part 24.238(b) &KDB 971168 D01v02r02	PASS
Band Edge at antenna terminals	Part 2.1051/ Part 24.238(a)	Part 24.238(b) &KDB 971168 D01v02r02	PASS
Spurious emissions at antenna terminals	Part 2.1051/ Part 2.1057/ Part 24.238(a)(b)	TIA-603-E-2016 &KDB 971168 D01v02r02	PASS
Field strength of spurious radiation	Part 2.1053 /Part 2.1057 / Part 24.238(a)(b)	TIA-603-E-2016 &KDB 971168 D01v02r02	PASS
Frequency stability	Part 2.1055/Part 24.235	TIA-603-E-2016 &KDB 971168 D01v02r02	PASS

Remark:

The tested sample and the sample information are provided by the client.

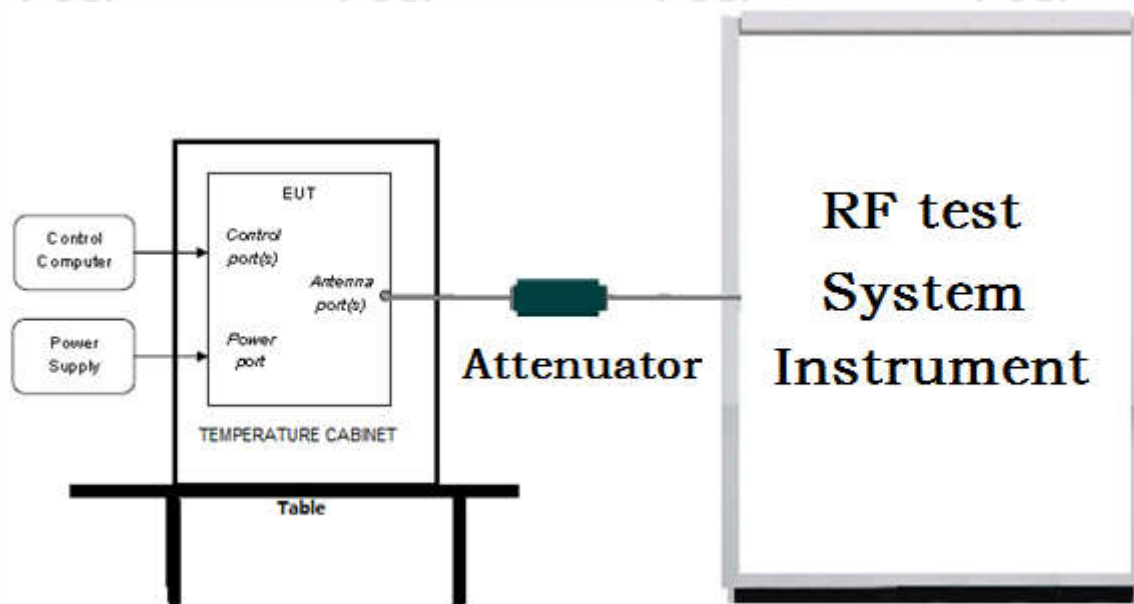
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5 Test Requirement

5.1 Test setup

5.1.1 For Conducted test setup



5.1.2 For Radiated Emissions test setup

Radiated Emissions setup:

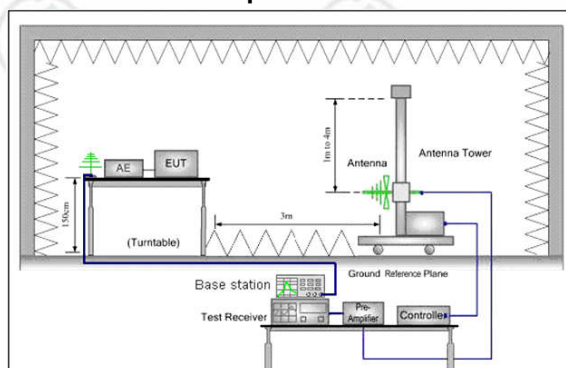


Figure 1.30MHz to 1GHz

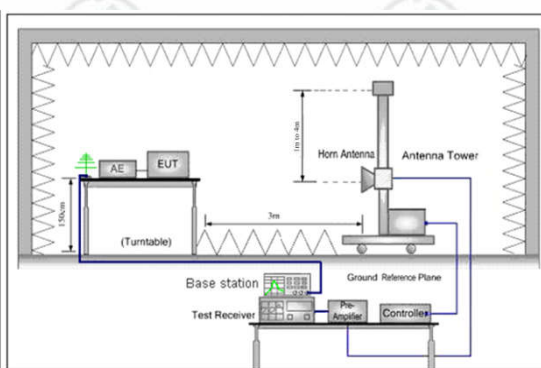


Figure 2. above 1GHz

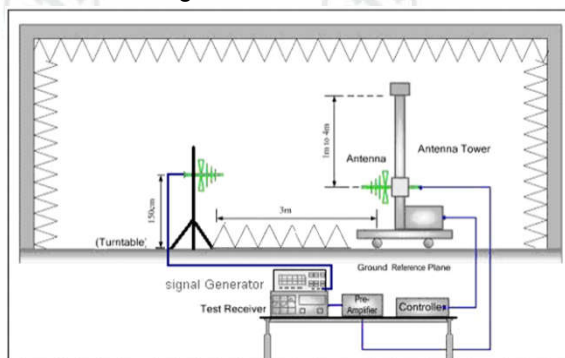


Figure 1. 30MHz to 1GHz

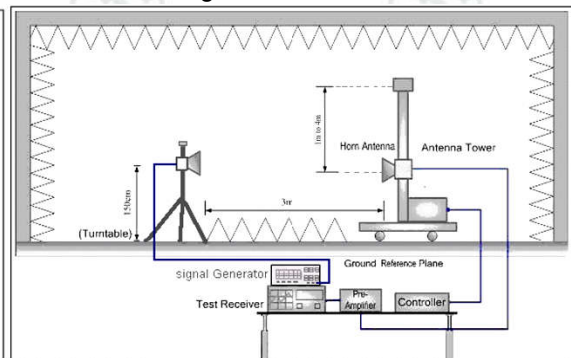


Figure 2. above 1GHz

5.2 Test Environment

Operating Environment:	
Temperature:	25°C
Humidity:	52% RH
Atmospheric Pressure:	1010mbar

5.3 Test Condition

Test channel:

Test Mode	Tx/Rx	RF Channel		
		Low(L)	Middle(M)	High(H)
GPRS/ EGPRS850	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
WCDMA/HSD PA HSUPA HSPA+(Down Link) band V	Tx (824 MHz ~849 MHz)	Channel 4132	Channel 4182	Channel 4233
		826.4 MHz	836.4 MHz	846.6 MHz
	Rx (869 MHz ~894 MHz)	Channel 4357	Channel 4407	Channel 4458
		871.4 MHz	881.4 MHz	891.6 MHz
GPRS/ EGPRS1900	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
WCDMA/HSD PA HSUPA HSPA+(Down Link) Band II	Tx (1850 MHz ~1910 MHz)	Channel 9262	Channel 9400	Channel 9538
		1852.4 MHz	1880.0 MHz	1907.6 MHz
	Rx (1930 MHz ~1990 MHz)	Channel 9662	Channel 9800	Channel 9938
		1932.4 MHz	1960.0 MHz	1987.6 MHz

Pre-scan all mode and data rates and positions,find worse case mode of SIM1 card are chosen to the report ,the worse case mode as below:

band	Radiated	Conducted
GPRS/EGPRS 850	2)GPRS 8 Link 3)EGPRS 8 Link	2)GPRS 8 Link 3)EGPRS 8 Link
GPRS/EGPRS 1900	2)GPRS 8 Link 3)EGPRS 8 Link	2)GPRS 8 Link 3)EGPRS 8 Link
WCDMA Band V	1)RMC 12.2Kbps Link 2)HSDPA 3)HSUPA	1)RMC 12.2Kbps Link 1)HSDPA 3)HSUPA
WCDMA Band II	1)RMC 12.2Kbps Link 2)HSDPA 3)HSUPA	1)RMC 12.2Kbps Link 2)HSDPA 3)HSUPA

Test mode:

Test Mode	Test Modes description
GSM/TM2	GSM system, GPRS, GMSK modulation
GSM/TM3	GSM system, EGPRS, 8PSK modulation
Test Mode	Test Modes description
UMTS/TM1	WCDMA system, QPSK modulation
UMTS/TM2	HSDPA system, QPSK modulation
UMTS/TM2	HSDPA system, QPSK modulation

6 General Information

6.1 Client Information

Applicant:	Dongxia Datong(Beijing) Management and Consulting Co.,Ltd
Address of Applicant:	11th Floor, Ideal Plaza, No.58, North 4th Ring Road West, Haidian District, Beijing, P.R. China
Manufacturer:	Dongxia Datong(Beijing) Management and Consulting Co.,Ltd.
Address of Manufacturer:	11th Floor, Ideal Plaza, No.58, North 4th Ring Road West, Haidian District, Beijing, P.R. China
Factory 1:	Hi-P(Shanghai)Housing APPLIANCE Co.,Ltd.
Address of Factory 1:	Factory buildings 4#, No.79 Jinwen road, Zhuqiao Airport Industrial ZONE, Pudong New Area Shanghai China 201323
Factory 2:	Flextronics Computing (SuZhou) Co.,Ltd
Address of Factory 2:	No. 1 Guanpu Road, Guoxiang Street, Wuzhong District Suzhou, Jiangsu, China, 215124

6.2 General Description of EUT

Product Name:	Smart lock
Mode No.(EUT):	TWX5G02
Trade Mark:	ofo
EUT Supports Radios application:	GSM 850/1900 GPRS,EGPRS, WCDMA Band II(1900MHz), Band V(850MHz), BT 4.0 BLE, GPS L1:1575.42MHz
Battery	3.6V,19Ah
Sample Received Date:	May 23, 2017
Sample tested Date:	May 23, 2017 to Jun. 12, 2017

6.3 Product Specification subjective to this standard

Frequency Band:	GPRS/EGPRS 850: Tx:824.20 -848.80MHz; Rx: 869.20 – 893.80MHz GPRS/EGPRS 1900: Tx:1850.20 – 1909.80MHz; Rx:1930.20 – 1989.80MHz WCDMA/HSDPA/HSUPA Band V: Tx:826.40 -846.60MHz; Rx: 871.40 – 891.60MHz WCDMA/HSDPA/HSUPA Band II: Tx:1852.40 – 1907.60MHz; Rx:1932.40 – 1987.60MHz
Modulation Type:	GPRS Mode with GMSK Modulation EGPRS Mode with 8PSK Modulation WCDMA Mode with QPSK Modulation
Sample Type:	Fixed production
Antenna Type:	PIFA
Antenna Gain:	BT: 2.2dBi , GSM850MHz:-2.9dBi, GSM1900MHz:0.48dBi WCDMA850MHz:-2.9dBi, WCDMA1900MHz:0.48dBi
Test Voltage:	DC 3.6V

6.4 Description of Support Units

The EUT has been tested with associated equipment below.

Test Ancillary equipment	Manufacturer	Model No.	Remark
EUT A	---	---	---

6.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd.

Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China 518101

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

No tests were sub-contracted.

6.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L1910

Centre Testing International Group Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories..

A2LA-Lab Cert. No. 3061.01

Centre Testing International Group Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 886427

Centre Testing International Group Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 886427.

IC-Registration No.: 7408A-2

The 3m Alternate Test Site of Centre Testing International Group Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408A-2 .

IC-Registration No.: 7408B-1

The 10m Alternate Test Site of Centre Testing International Group Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408B-1.

NEMKO-Aut. No.: ELA503

Centre Testing International Group Co., Ltd. has been assessed the quality assurance system, the testing facilities, qualifications and testing practices of the relevant parts of the organization. The quality assurance system of the Laboratory has been validated against ISO/IEC 17025 or equivalent. The laboratory also fulfils the conditions described in Nemko Document NLA-10.

VCCI

The Radiation 3 &10 meters site of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-4096.

Main Ports Conducted Interference Measurement of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-4563.

Telecommunication Ports Conducted Disturbance Measurement of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: T-2146.

The Radiation 3 meters site of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-758

6.7 Deviation from Standards

None.

6.8 Abnormalities from Standard Conditions

None.

6.9 Other Information Requested by the Customer

None.

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

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.9×10^{-8}
2	RF power, conducted	0.31dB (30MHz-1GHz)
		0.57dB (1GHz-18GHz)
3	Radiated Spurious emission test	4.5dB (30MHz-1GHz)
		4.8dB (1GHz-12.75GHz)
4	Conduction emission	3.6dB (9kHz to 150kHz)
		3.2dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	2.8%
7	DC power voltages	0.025%

7 Equipment List

Communication RF test system					
Equipment	Manufacturer	Mode No.	Serial Number	Cal. Date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
Spectrum Analyzer	Agilent	E4440A	MY46185649	12-16-2016	12-15-2017
Signal Generator	Agilent	E4438C	MY45095744	03-14-2017	03-13-2018
Communication test set	Agilent	E5515C	GB47050534	03-14-2017	03-13-2018
Signal Generator	Keysight	E8257D	MY53401106	03-14-2017	03-13-2018
Communication test set	R&S	CMW500	152394	03-14-2017	03-13-2018
High-pass filter	Sinoscite	FL3CX03WG18 NM12-0398-002	---	01-12-2017	01-11-2018
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-12-2017	01-11-2018
band rejection filter	Sinoscite	FL5CX01CA09C L12-0395-001	---	01-12-2017	01-11-2018
band rejection filter	Sinoscite	FL5CX01CA08C L12-0393-001	---	01-12-2017	01-11-2018
band rejection filter	Sinoscite	FL5CX02CA04C L12-0396-002	---	01-12-2017	01-11-2018
band rejection filter	Sinoscite	FL5CX02CA03C L12-0394-001	---	01-12-2017	01-11-2018
DC Power	Keysight	E3642A	MY54426112	03-14-2017	03-13-2018
DC Power	Keysight	E3642A	MY54426115	03-14-2017	03-13-2018
PC-2	Lenovo	R4960d	---	04-01-2017	03-31-2018
PC-3	Lenovo	R4960d	---	04-01-2017	03-31-2018
RF control unit	JS Tonscend	JS0806-1	158060004	03-14-2017	03-13-2018
DC power Box	JS Tonscend	JS0806-4	158060007	04-01-2017	03-31-2018
LTE Automatic test software	JS Tonscend	JS1120-1	---	04-01-2017	03-31-2018
WCDMA Automatic test software	JS Tonscend	JS1120-3	---	04-01-2017	03-31-2018
GSM Automatic test software	JS Tonscend	JS1120-3	---	04-01-2017	03-31-2018

Radiated Spurious Emission & Radiated Emission					
Equipment	Manufacturer	Mode No.	Serial Number	Cal. date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
3M Chamber & Accessory Equipment	TDK	SAC-3	---	06-05-2016	06-05-2019
TRILOG Broadband Antenna	SCHWARZBECK	VULB9163	9163-484	05-23-2017	05-22-2018
Microwave Preamplifier	Agilent	8449B	3008A02425	02-16-2017	02-15-2018
Horn Antenna	ETS-LINDGREN	3117	00057407	07-20-2015	07-18-2018
Loop Antenna	ETS	6502	00071730	07-30-2015	07-28-2017
Spectrum Analyzer	R&S	FSP40	100416	06-16-2016	06-15-2017
Receiver	R&S	ESCI	100435	06-16-2016	06-15-2017
Multi device Controller	matureo	NCD/070/10711 112	---	01-12-2017	01-11-2018
LISN	schwarzbeck	NNBM8125	81251547	06-16-2016	06-15-2017
LISN	schwarzbeck	NNBM8125	81251548	06-16-2016	06-15-2017
Signal Generator	Agilent	E4438C	MY45095744	03-14-2017	03-13-2018
Signal Generator	Keysight	E8257D	MY53401106	03-14-2017	03-13-2018
Temperature/ Humidity Indicator	TAYLOR	1451	1905	05-08-2017	05-07-2018
Communication test set	Agilent	E5515C	GB47050534	03-14-2017	03-13-2018
Cable line	Fulai(7M)	SF106	5219/6A	01-12-2017	01-11-2018
Cable line	Fulai(6M)	SF106	5220/6A	01-12-2017	01-11-2018
Cable line	Fulai(3M)	SF106	5216/6A	01-12-2017	01-11-2018
Cable line	Fulai(3M)	SF106	5217/6A	01-12-2017	01-11-2018
Communication test set	R&S	CMW500	152394	03-14-2017	03-13-2018
High-pass filter(3-18GHz)	Sinoscite	FL3CX03WG18 NM12-0398-002	---	01-12-2017	01-11-2018
High-pass filter(6-18GHz)	MICRO-TRONICS	SPA-F-63029-4	---	01-12-2017	01-11-2018
band rejection filter	Sinoscite	FL5CX01CA09C L12-0395-001	---	01-12-2017	01-11-2018
band rejection filter	Sinoscite	FL5CX01CA08C L12-0393-001	---	01-12-2017	01-11-2018
band rejection filter	Sinoscite	FL5CX02CA04C L12-0396-002	---	01-12-2017	01-11-2018
band rejection filter	Sinoscite	FL5CX02CA03C L12-0394-001	---	01-12-2017	01-11-2018

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	KDB 971168 D01	KDB971168 D01 Power Meas License Digital Systems v02r02

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-D&KDB 971168 D01v02r02	Conducted output power	PASS	Appendix A)
Part 24.232(d)	KDB 971168 D01v02r02	peak-to-average ratio	PASS	Appendix B)
Part 2.1049(h)	Part 22.917(b)/ Part 24.238(b) &KDB 971168 D01v02r02	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) &KDB 971168 D01v02r02	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-D &KDB 971168 D01v02r02	Spurious emissions at antenna terminals	PASS	Appendix E)
Part 2.1055/ Part 22.355/ Part 24.235	TIA-603-D &KDB 971168 D01v02r02	Frequency stability	PASS	Appendix F)
Part 2.1046(a)/Part 22.913(a)/ Part 24.232(c)	TIA-603-D &KDB 971168 D01v02r02	Effective Radiated Power of Transmitter(ERP)	PASS	Appendix G)
Part 2.1053/ Part 2.1057/ Part 22.917(a)(b)/ Part 24.238(a)(b)	TIA-603-D &KDB 971168 D01v02r02	Field strength of spurious radiation	PASS	Appendix H)

Appendix A)RF Power Output

Test Requirement:	Part 2.1046(a)		
Test Method:	TIA-603-E-2016 Clause 2.2.1		
Test Setup:	Refer to section 5 for details		
Limit:	Mode	GSM 850/WCDMA/HSDPA /HSUPA 850 Band V	GSM 1900/WCDMA/HSDPA /HSUPA 1900 Band II
	Frequency	824 – 849MHz	1850 – 1910MHz
	Limit	38.45dBm (ERP)	33.01dBm (EIRP)
Measurement Procedure:	The transmitter output was connected to a calibrated coaxial cable, attenuator and power meter, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The power output at the transmitter antenna port was determined by adding the value of the cable insertion loss to the power reading. The tests were performed at three frequencies (low channel, middle channel and high channel) and on the highest power levels, which can be setup on the transmitters.		
Instruments Used:	Refer to section 7 for details		
Test Results:	Pass		

Test Band	Test Mode	Test Channel	Measured(dbm)	Limit (dbm)	Verdict
GSM850	GSM/TM2	LCH	34.39	38.5	PASS
		MCH	35.18	38.5	PASS
		HCH	34.44	38.5	PASS
	GSM/TM3	LCH	28.98	38.5	PASS
		MCH	29.91	38.5	PASS
		HCH	29.15	38.5	PASS
Test Band	Test Mode	Test Channel	Measured(dbm)	Limit (dbm)	Verdict
GSM1900	GSM/TM2	LCH	32.25	33	PASS
		MCH	31.77	33	PASS
		HCH	31.63	33	PASS
	GSM/TM3	LCH	28.68	33	PASS
		MCH	27.98	33	PASS
		HCH	27.97	33	PASS

Test Band	Test Mode	Test Channel	Measured(dbm)	Limit (dbm)	Verdict
WCDMA850	UMTS/TM1	LCH	22.45	38.5	PASS
		MCH	22.45	38.5	PASS
		HCH	22.06	38.5	PASS
Test Band	Test Mode	Test Channel	Measured(dbm)	Limit (dbm)	Verdict
WCDMA850	UMTS/TM2	LCH	22.42	38.5	PASS
		MCH	22.41	38.5	PASS
		HCH	22.19	38.5	PASS
Test Band	Test Mode	Test Channel	Measured(dbm)	Limit (dbm)	Verdict
WCDMA850	UMTS/TM3	LCH	22.94	38.5	PASS
		MCH	23.51	38.5	PASS
		HCH	22.97	38.5	PASS

Test Band	Test Mode	Test Channel	Measured(dbm)	Limit (dbm)	Verdict
WCDMA1900	UMTS/TM1	LCH	24.23	33	PASS
		MCH	23.31	33	PASS
		HCH	22.79	33	PASS
Test Band	Test Mode	Test Channel	Measured(dbm)	Limit (dbm)	Verdict
WCDMA1900	UMTS/TM2	LCH	23.14	33	PASS
		MCH	22.43	33	PASS
		HCH	22.23	33	PASS
Test Band	Test Mode	Test Channel	Measured(dbm)	Limit (dbm)	Verdict
WCDMA1900	UMTS/TM3	LCH	23.66	33	PASS
		MCH	22.65	33	PASS
		HCH	22.19	33	PASS

Appendix B) Peak-to-Average Ratio

Test Requirement:	Part 24.232(d)
Test Method:	KDB 971168 D01
Test Setup:	Refer to section 5 for details
Limit:	13dBm
Measurement Procedure:	Use one of the procedures to measure the total peak power and record as PPK. Use one of the applicable procedures to measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from: $PAPR (dB) = PPK (dBm) - PAvg (dBm)$.
Instruments Used:	Refer to section 7 for details
Test Results:	Pass

Test Data:

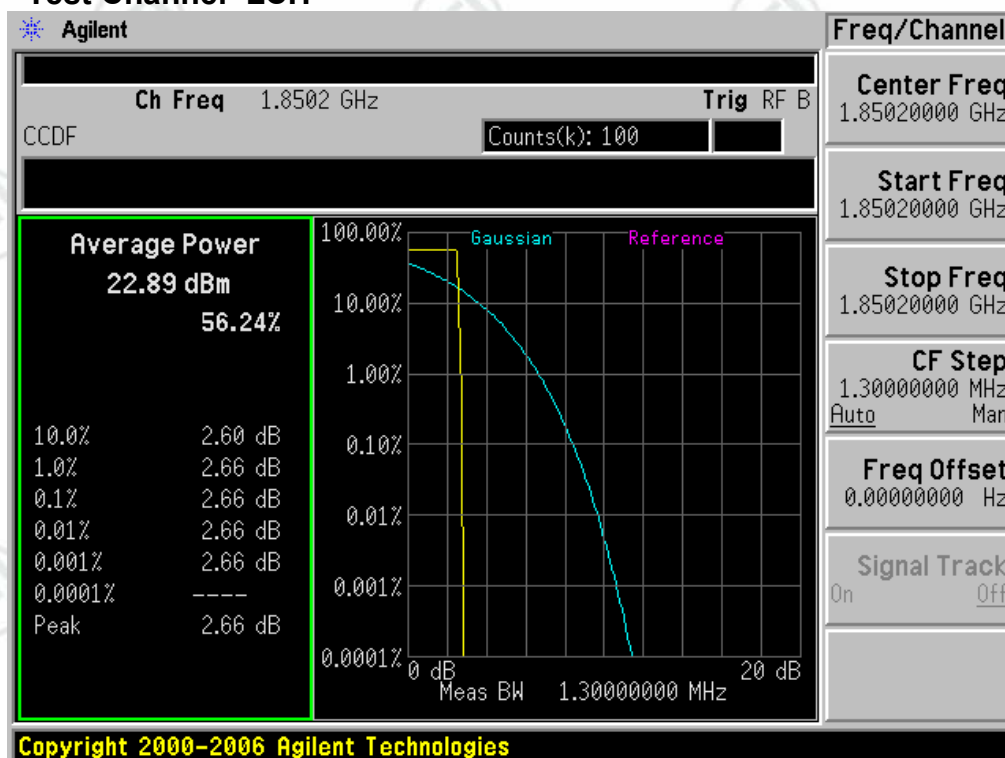
Test Band	Test Mode	Test Channel	Measured (dbm)	Limit (dbm)	Verdict
GSM1900	GSM/TM2	LCH	0.11	13	PASS
		MCH	0.14	13	PASS
		HCH	0.14	13	PASS
	GSM/TM3	LCH	3.02	13	PASS
		MCH	3.04	13	PASS
		HCH	2.94	13	PASS

Test Band	Test Mode	Test Channel	Measured (db)	Limit(db)	Verdict
WCDMA1900	UMTS/TM1	LCH	2.79	13	PASS
		MCH	2.78	13	PASS
		HCH	2.77	13	PASS
Test Band	Test Mode	Test Channel	Measured(db)	Limit(db)	Verdict
WCDMA1900	UMTS/TM2	LCH	3.17	13	PASS
		MCH	3.16	13	PASS
		HCH	3.19	13	PASS
Test Band	Test Mode	Test Channel	Measured(db)	Limit(db)	Verdict
WCDMA1900	UMTS/TM3	LCH	3.33	13	PASS
		MCH	4.38	13	PASS
		HCH	4.38	13	PASS

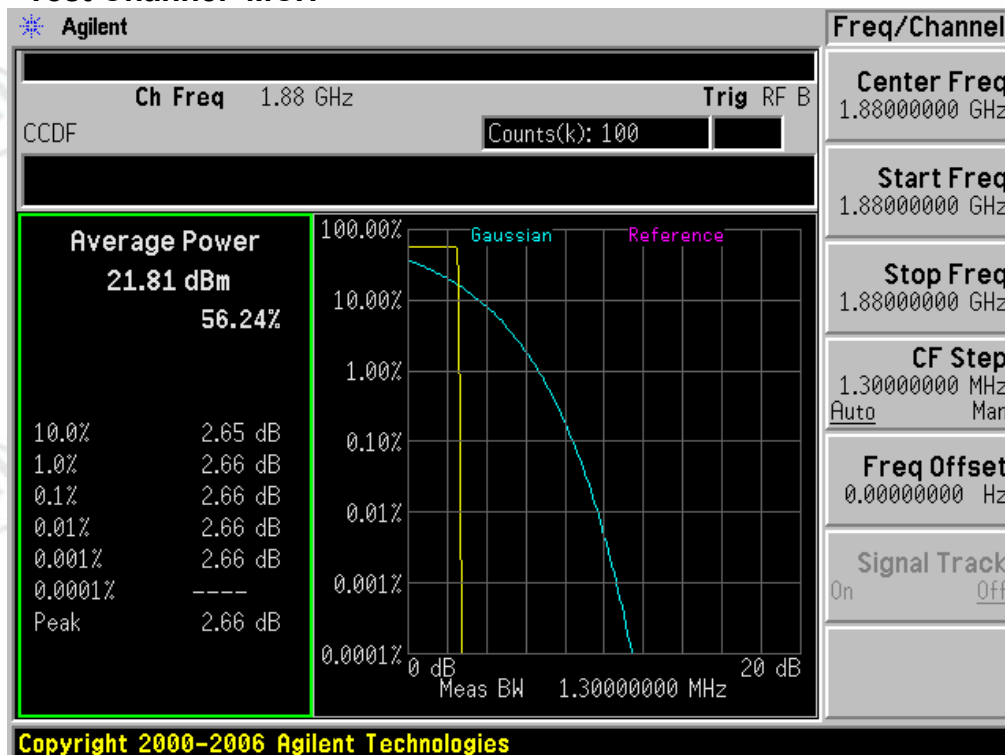
Test Band=GSM1900

Test Mode=GSM/TM2

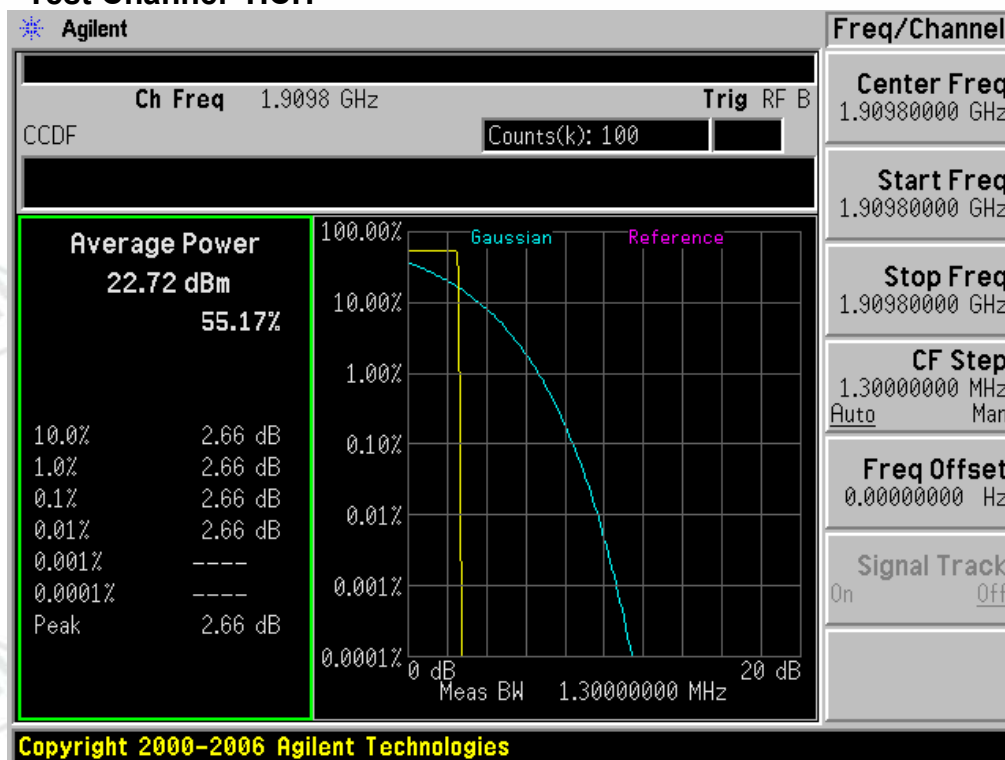
Test Channel=LCH



Test Channel=MCH

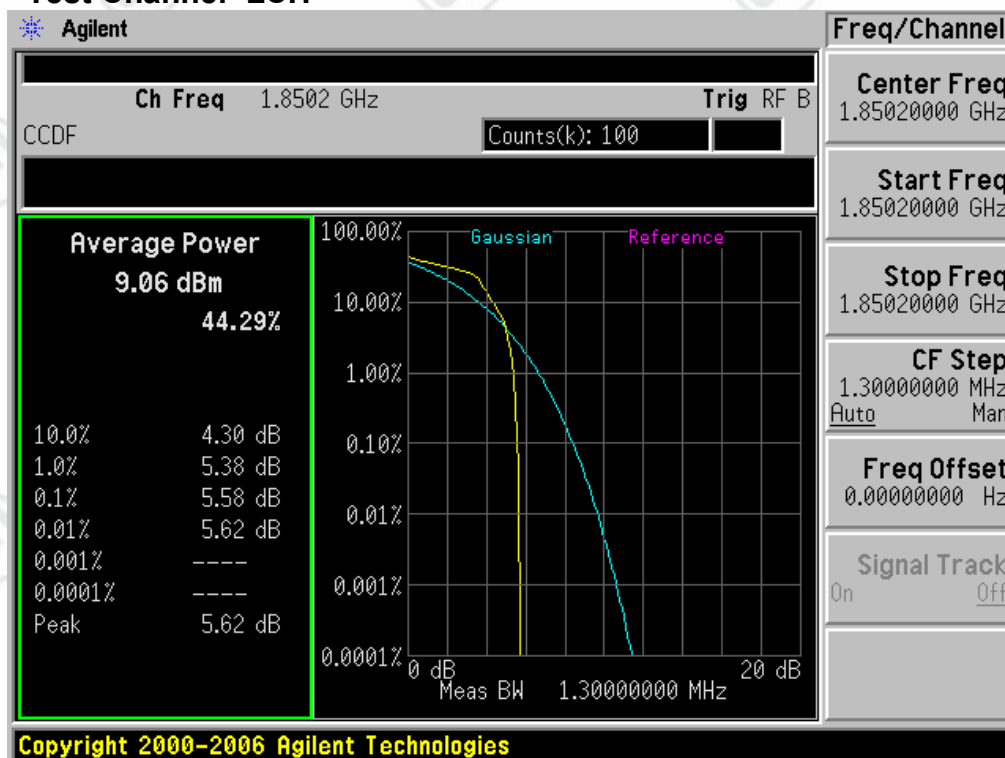


Test Channel=HCH

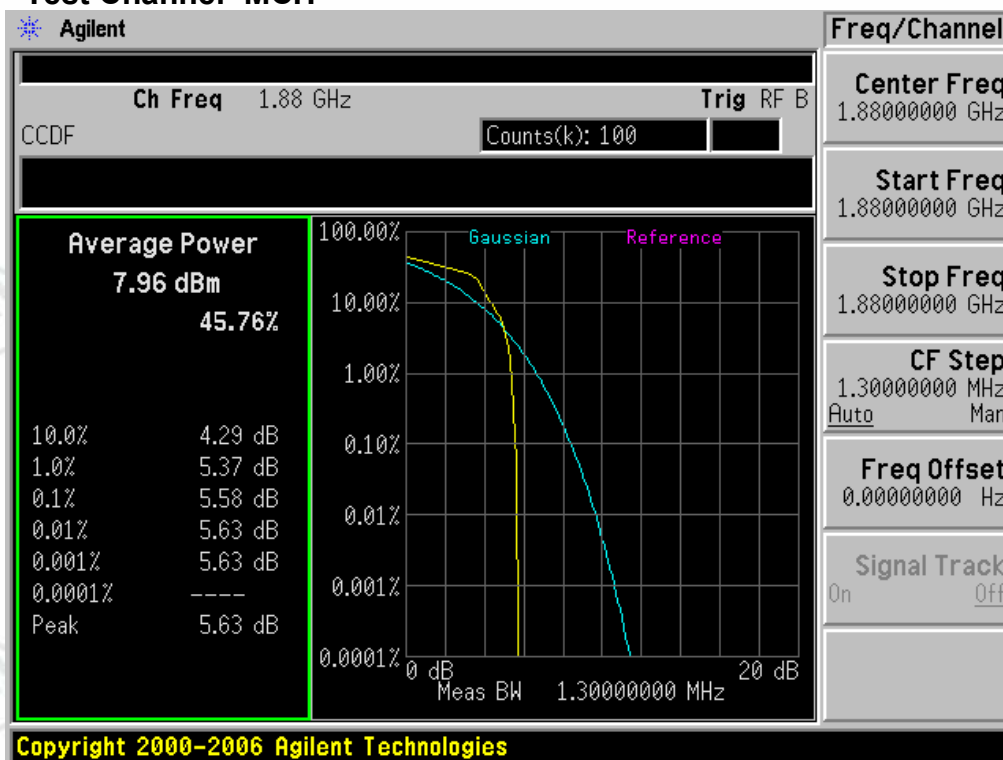


Test Mode=GSM/TM3

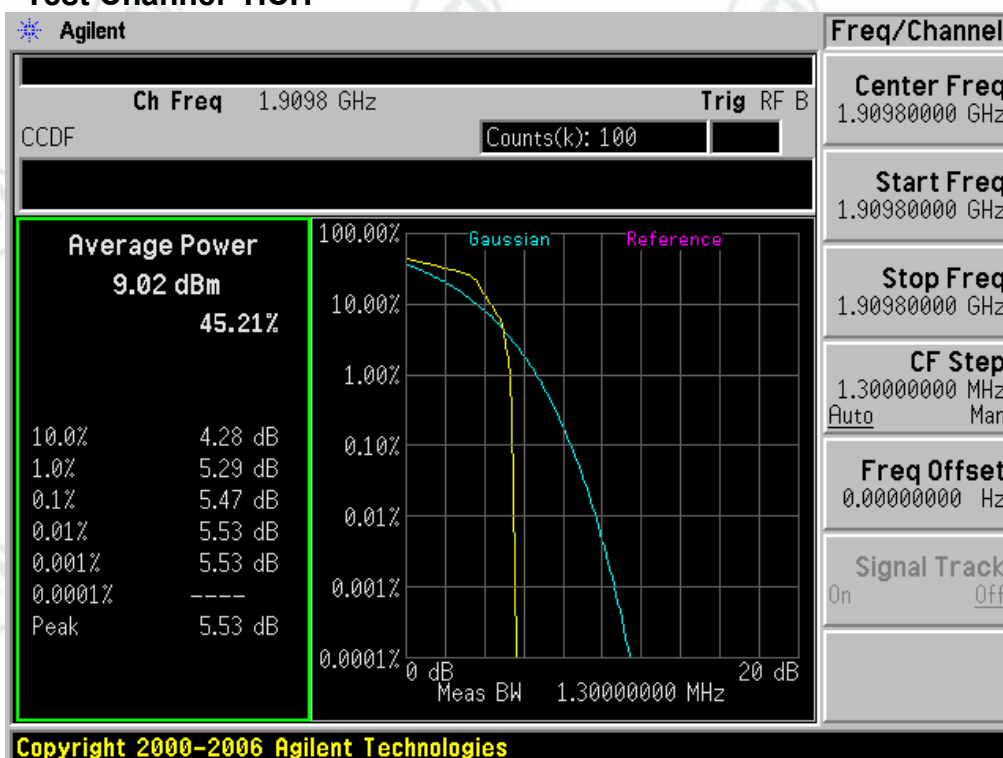
Test Channel=LCH



Test Channel=MCH



Test Channel=HCH

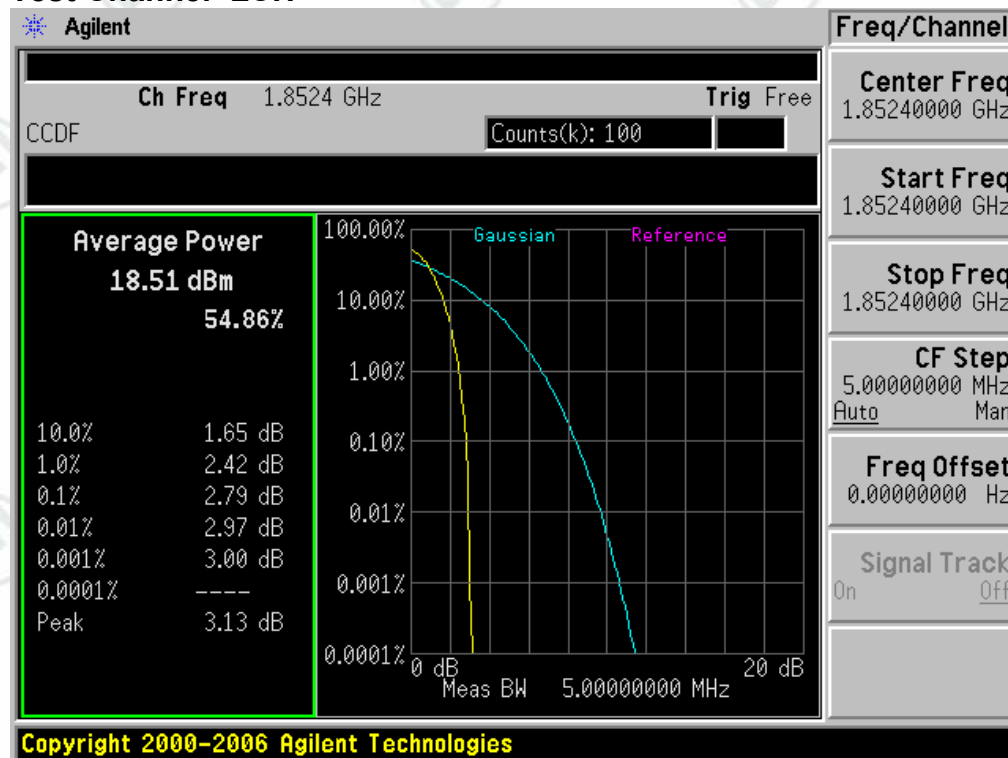


For WCDMA

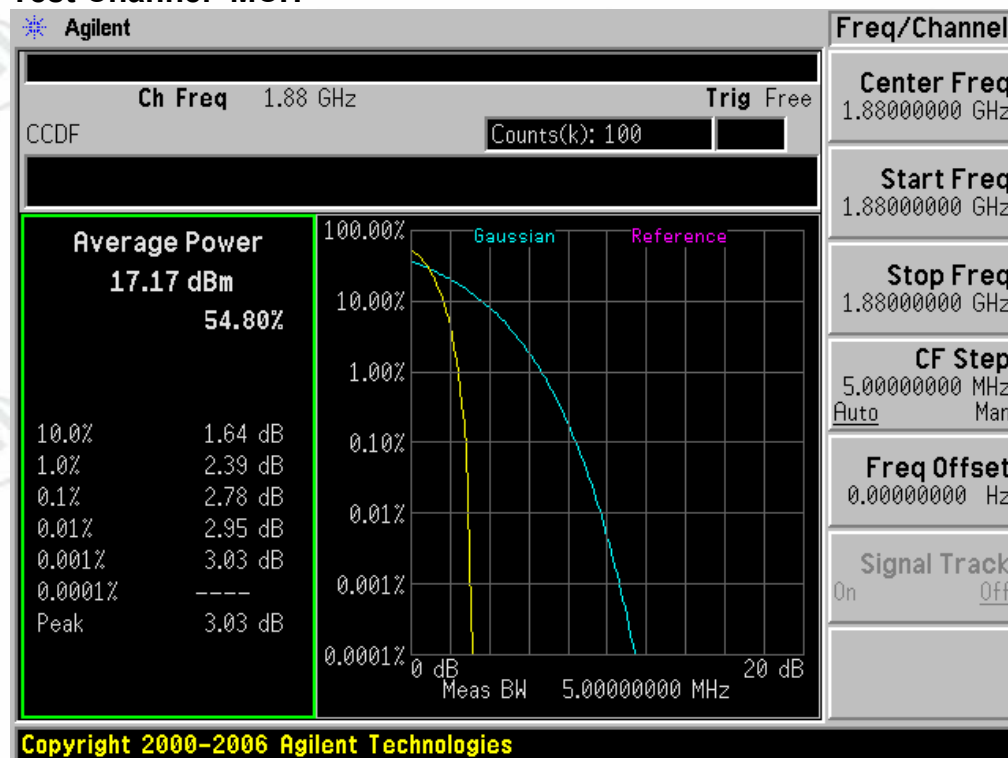
Test Band=WCDMA1900

Test Mode=UMTS/TM1

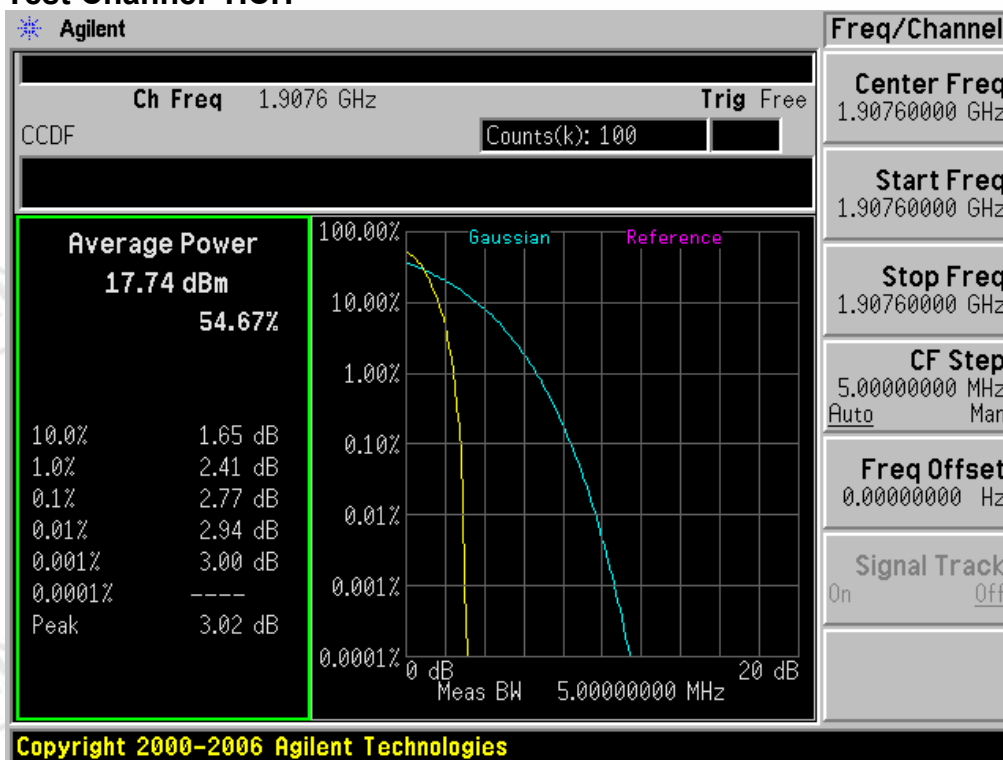
Test Channel=LCH



Test Channel=MCH

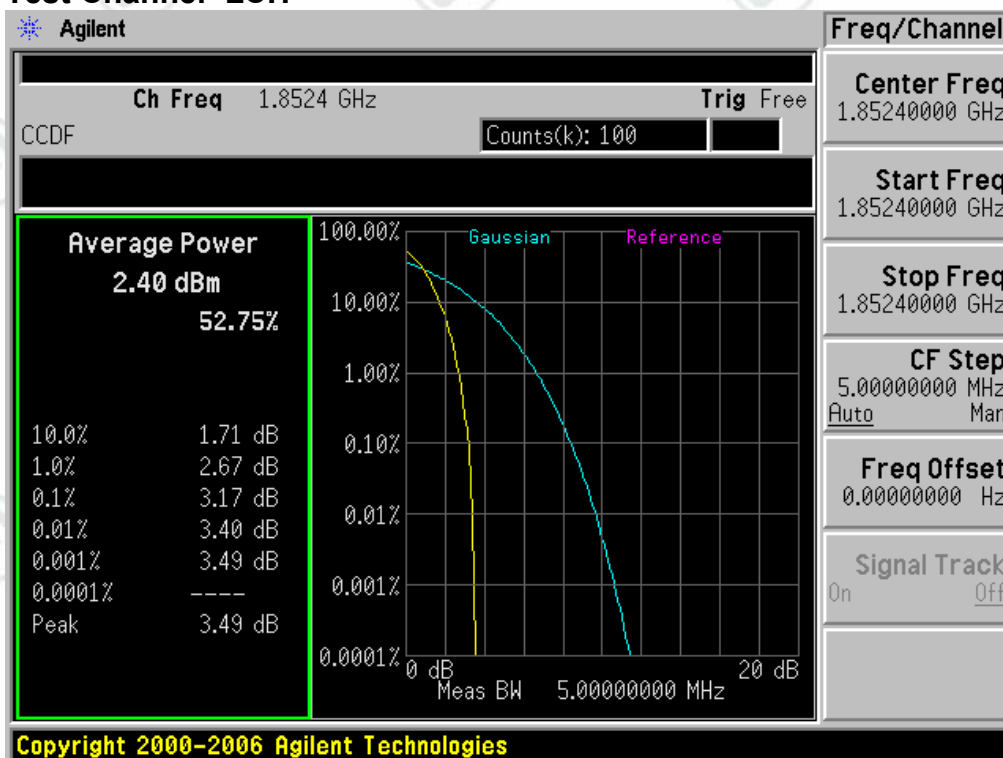


Test Channel=HCH

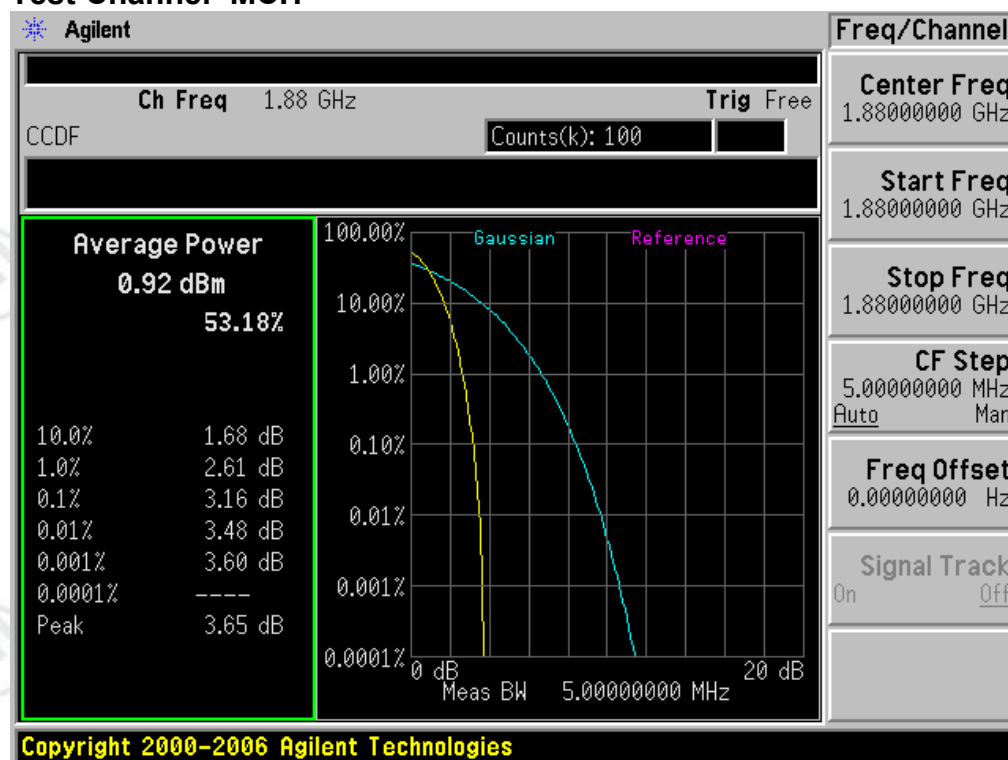


Test Mode=UMTS/TM2

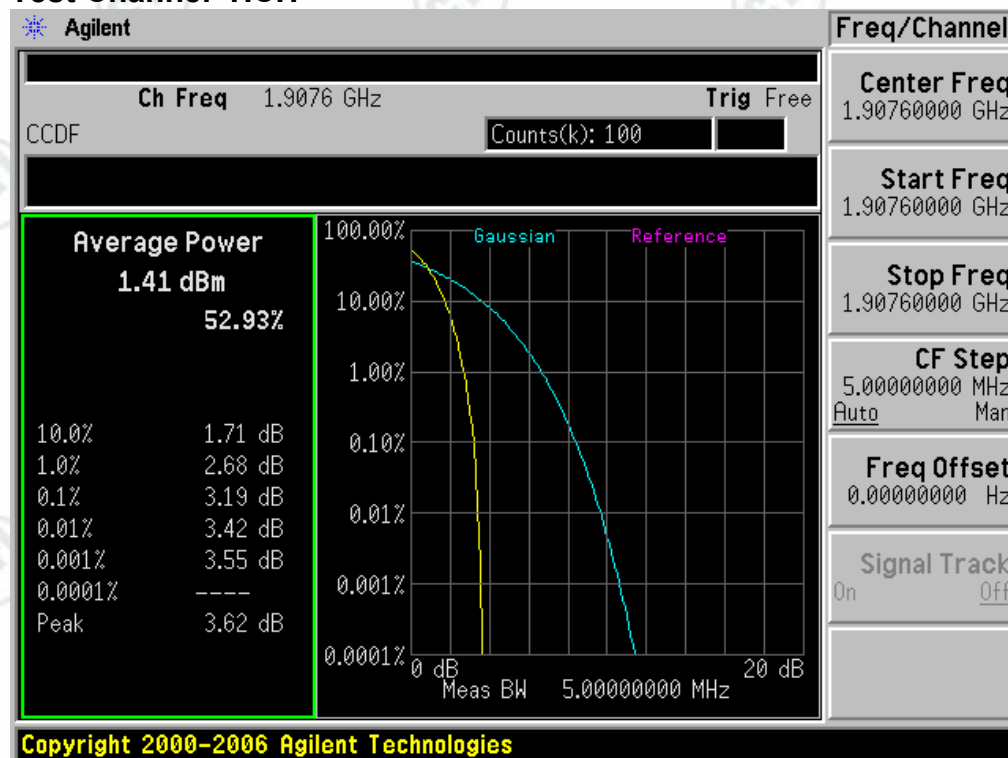
Test Channel=LCH



Test Channel=MCH

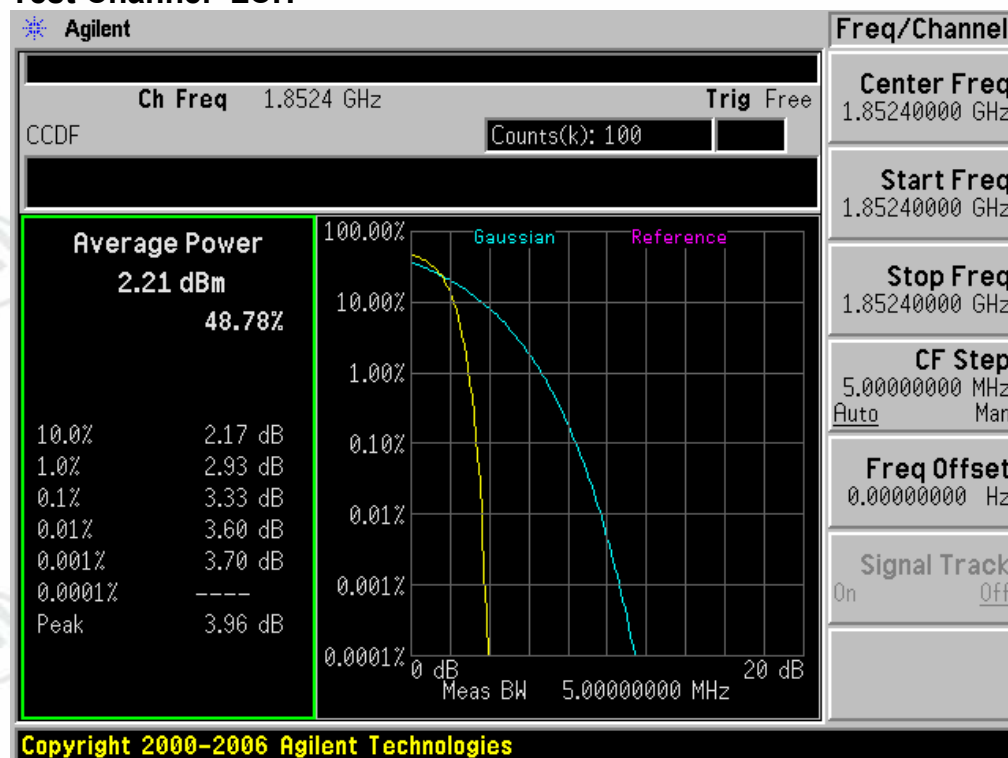


Test Channel=HCH

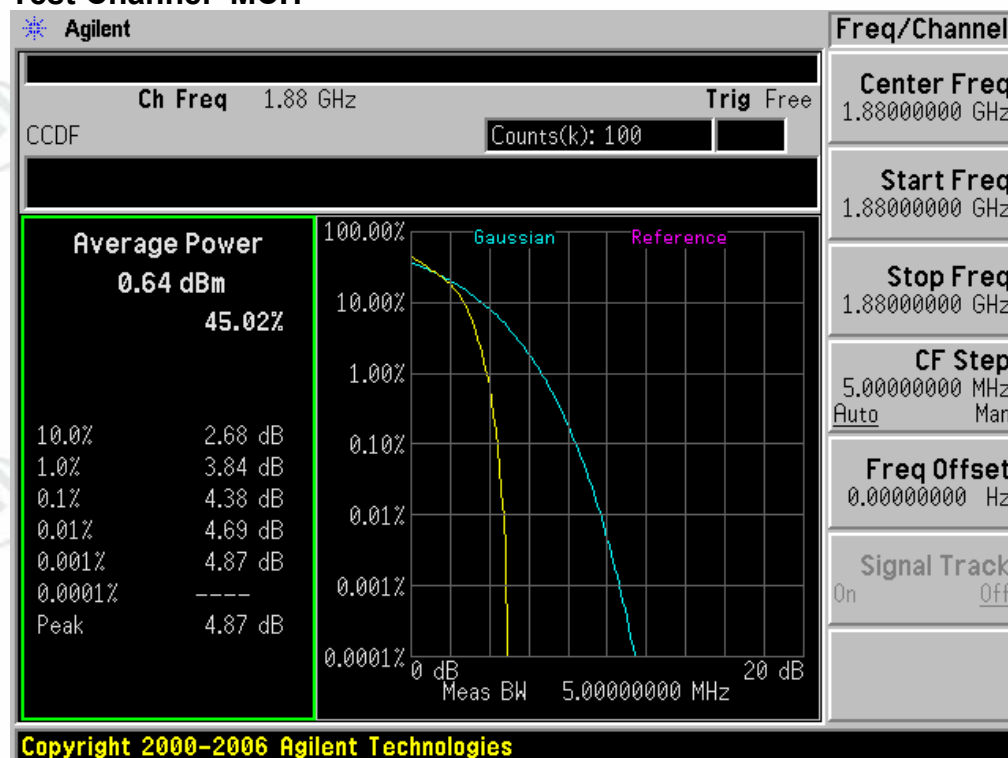


Test Mode=UMTS/TM3

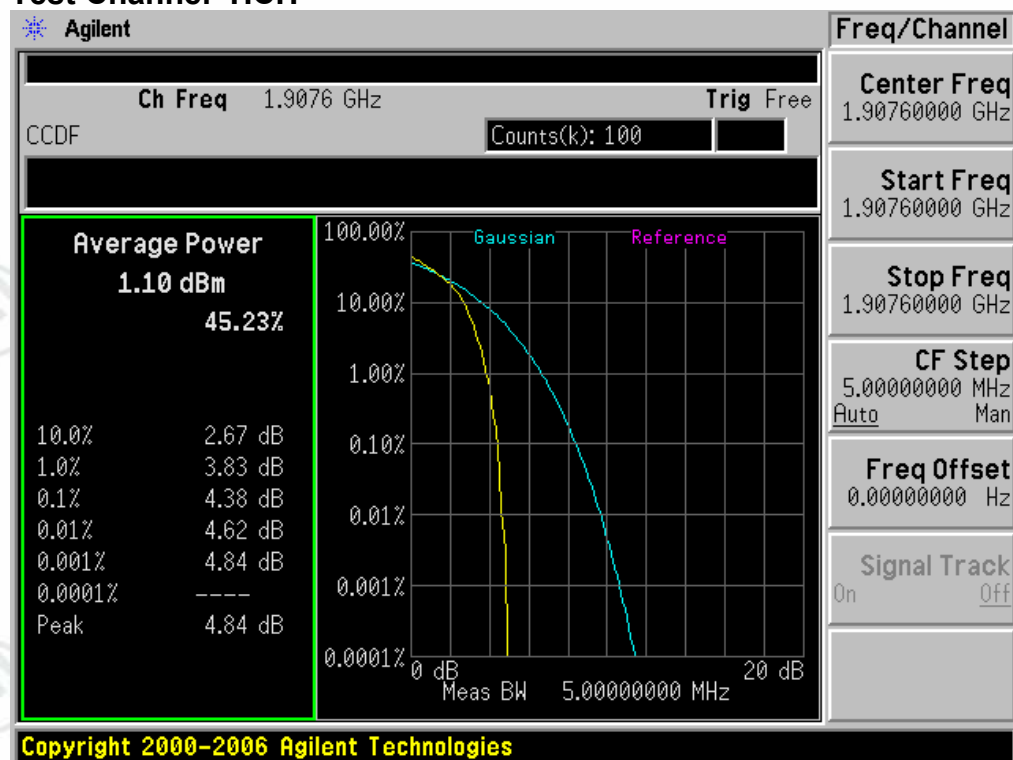
Test Channel=LCH



Test Channel=MCH



Test Channel=HCH



Appendix C)BandWidth

Test Requirement:	Part 2.1049(h)
Test Method:	Part 22.917(b)/Part 24.238(b)
Test Setup:	Refer to section 5 for details
Limit:	N/A
Measurement Procedure:	The transmitter output was connected to a calibrated coaxial cable, attenuator and Spectrum analyser, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel, middle channel and high channel).the resolution bandwidth of the analyser is set to 100kHz or 1% of the emission bandwidth, the EUT emission bandwidth is measured as the width of the signal between two points, outside of which all emission are attenuated at least 26dB below the transmitter power. The video bandwidth of the spectrum analyzer was set at thrice the resolution bandwidth. Detector Mode was set to peak or peak hold power.
Instruments Used:	Refer to section 7 for details
Test Results:	Pass

Test Band	Test Mode	Test Channel	Occupied Bandwidth (KHZ)	Emission Bandwidth (KHZ)	Verdict
GSM850	GSM/TM2	LCH	242.36	311.73	PASS
		MCH	242.72	307.36	PASS
		HCH	243.56	313.92	PASS
	GSM/TM3	LCH	250.96	323.32	PASS
		MCH	250.42	323.10	PASS
		HCH	252.52	320.93	PASS

Test Band	Test Mode	Test Channel	Occupied Bandwidth (KHZ)	Emission Bandwidth (KHZ)	Verdict
GSM1900	GSM/TM2	LCH	244.36	314.34	PASS
		MCH	243.68	313.96	PASS
		HCH	244.30	315.22	PASS
	GSM/TM3	LCH	249.65	317.87	PASS
		MCH	250.08	318.93	PASS
		HCH	249.94	318.37	PASS

Test Band	Test Mode	Test Channel	Occupied Bandwidth (KHZ)	Emission Bandwidth (KHZ)	Verdict
WCDMA 850	UMTS/TM1	LCH	4084.7	4695	PASS
		MCH	4083.2	4696	PASS
		HCH	4068.9	4638	PASS
WCDMA 850	UMTS/TM2	LCH	4091.1	4649	PASS
		MCH	4073.8	4655	PASS
		HCH	4068.2	4658	PASS
WCDMA 850	UMTS/TM3	LCH	4059.0	4594	PASS
		MCH	4049.4	4620	PASS
		HCH	4051.1	4619	PASS

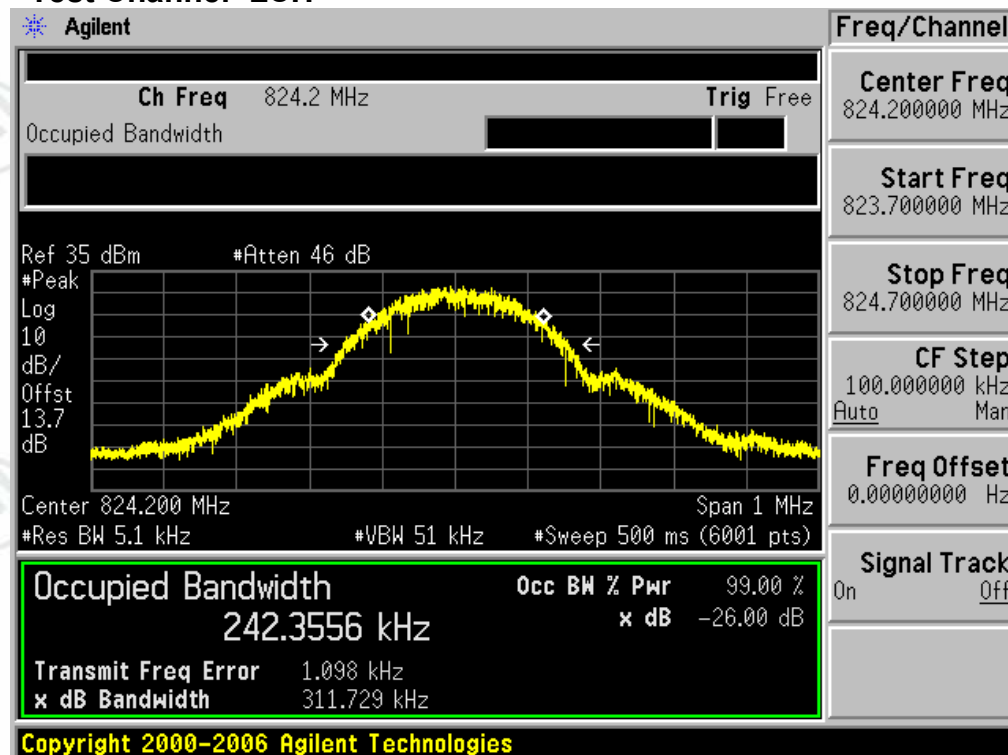
Test Band	Test Mode	Test Channel	Occupied Bandwidth (KHZ)	Emission Bandwidth (KHZ)	Verdict
WCDMA 1900	UMTS/TM1	LCH	4086.0	4629	PASS
		MCH	4077.9	4655	PASS
		HCH	4068.5	4655	PASS
WCDMA 1900	UMTS/TM2	LCH	4091.6	4638	PASS
		MCH	4083.0	4629	PASS
		HCH	4084.3	4645	PASS
WCDMA 1900	UMTS/TM3	LCH	4052.9	4630	PASS
		MCH	4052.5	4612	PASS
		HCH	4072.8	4654	PASS

For GSM

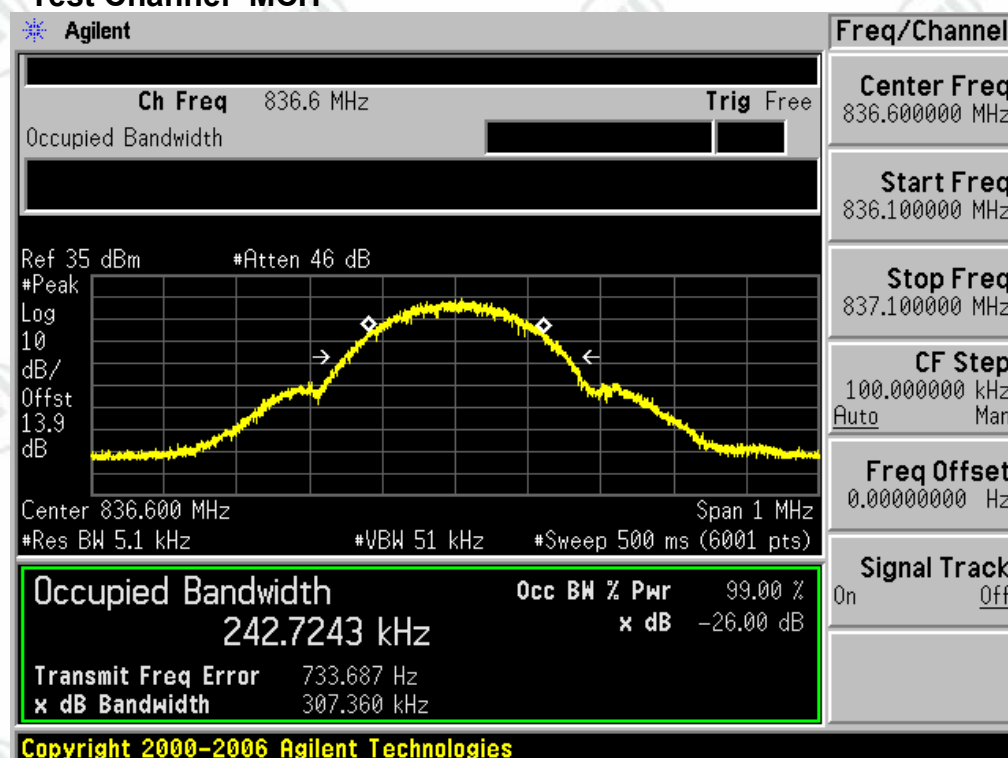
Test Band=GSM850

Test Mode=GSM/TM2

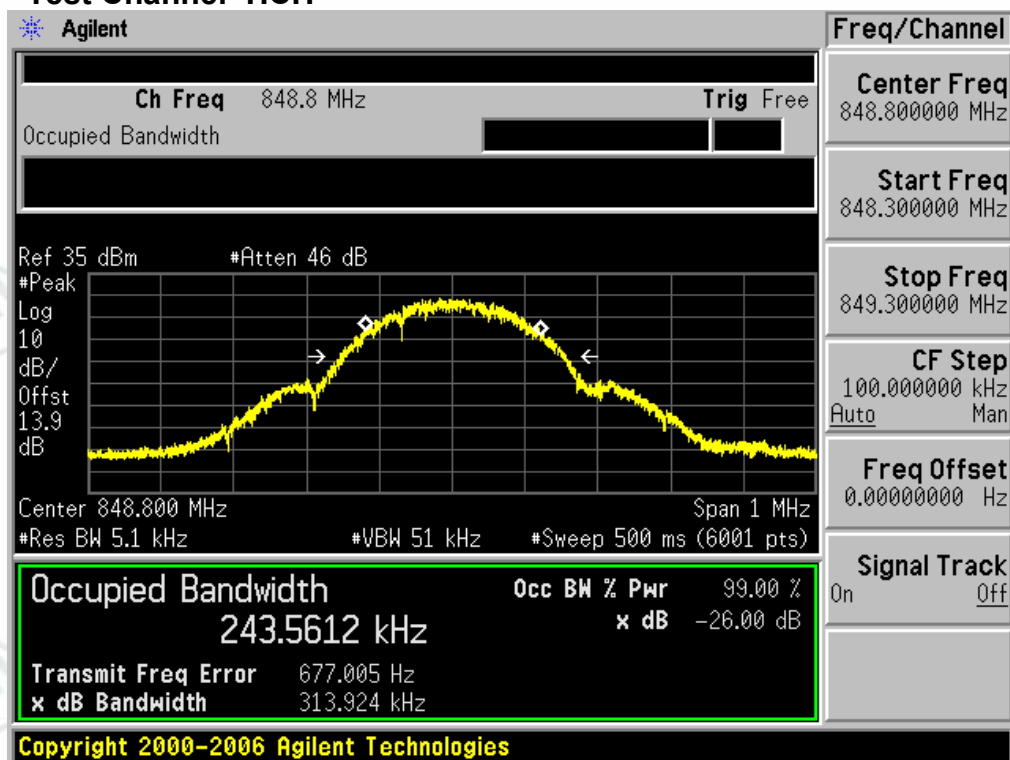
Test Channel=LCH



Test Channel=MCH

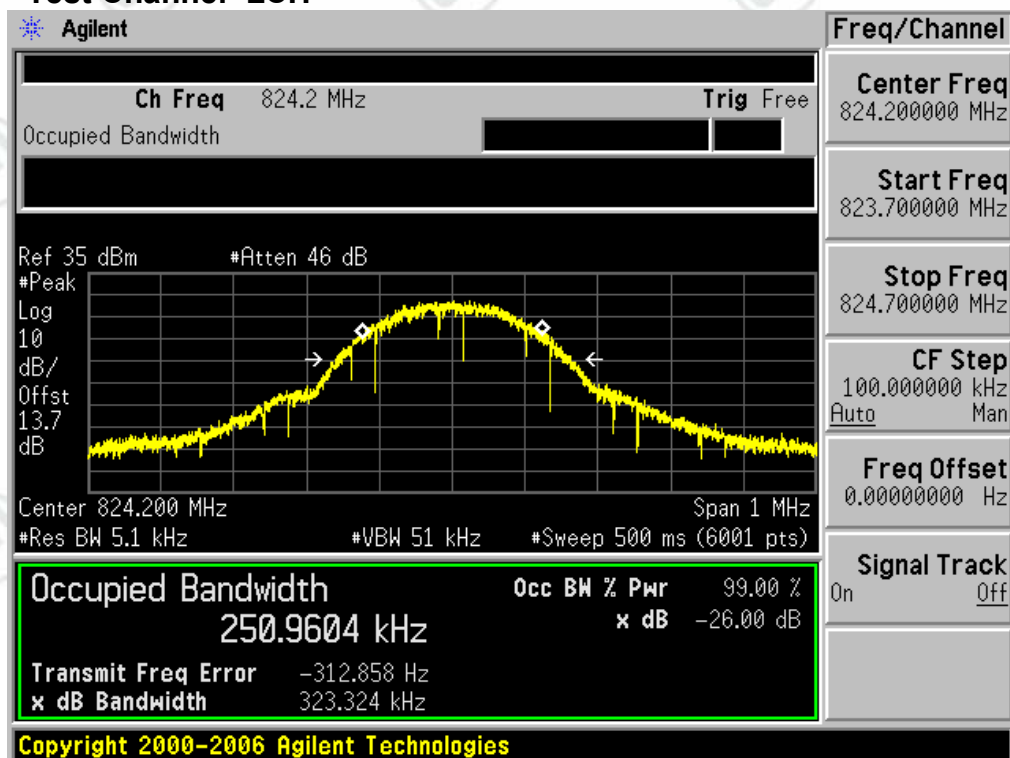


Test Channel=HCH

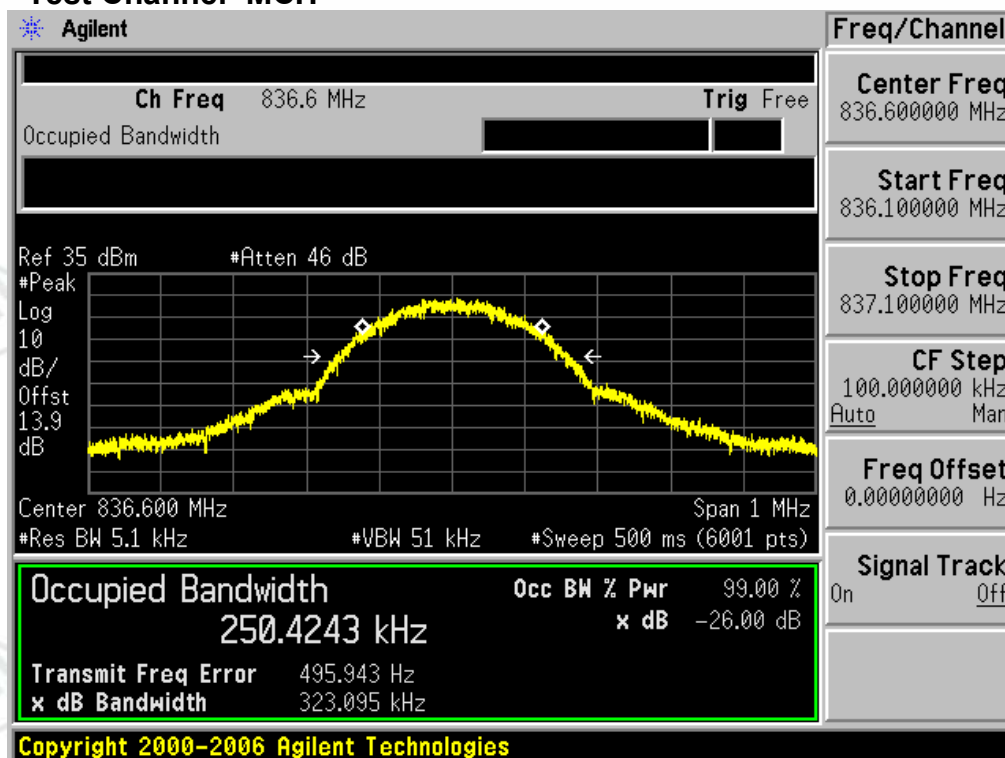


Test Mode=GSM/TM3

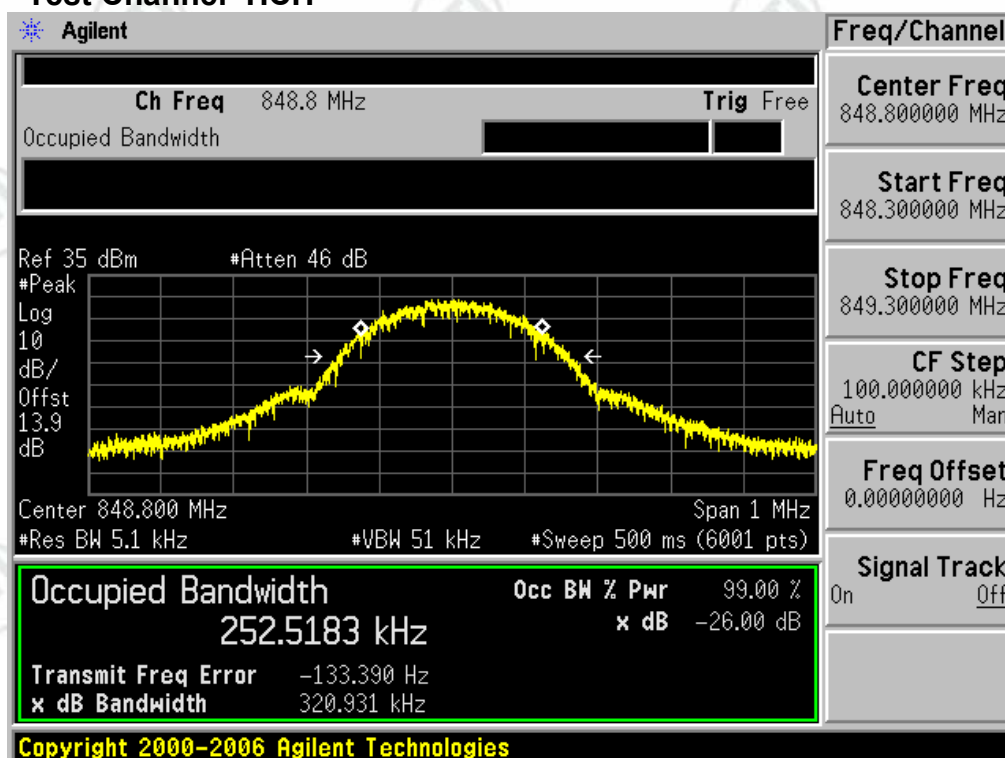
Test Channel=LCH



Test Channel=MCH



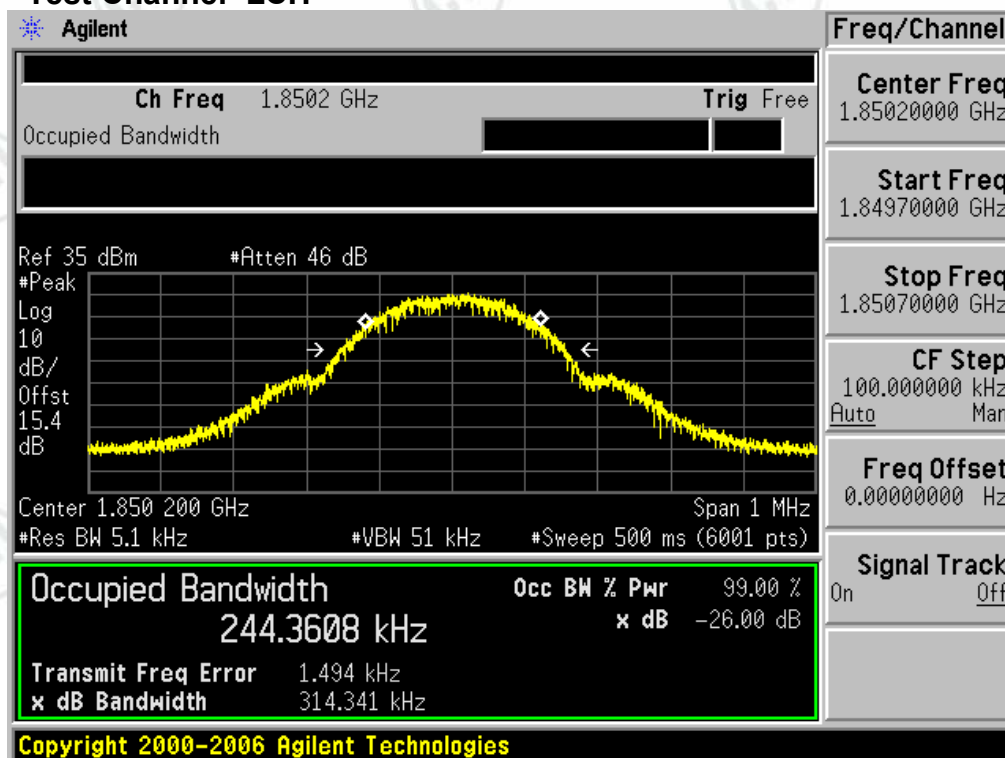
Test Channel=HCH



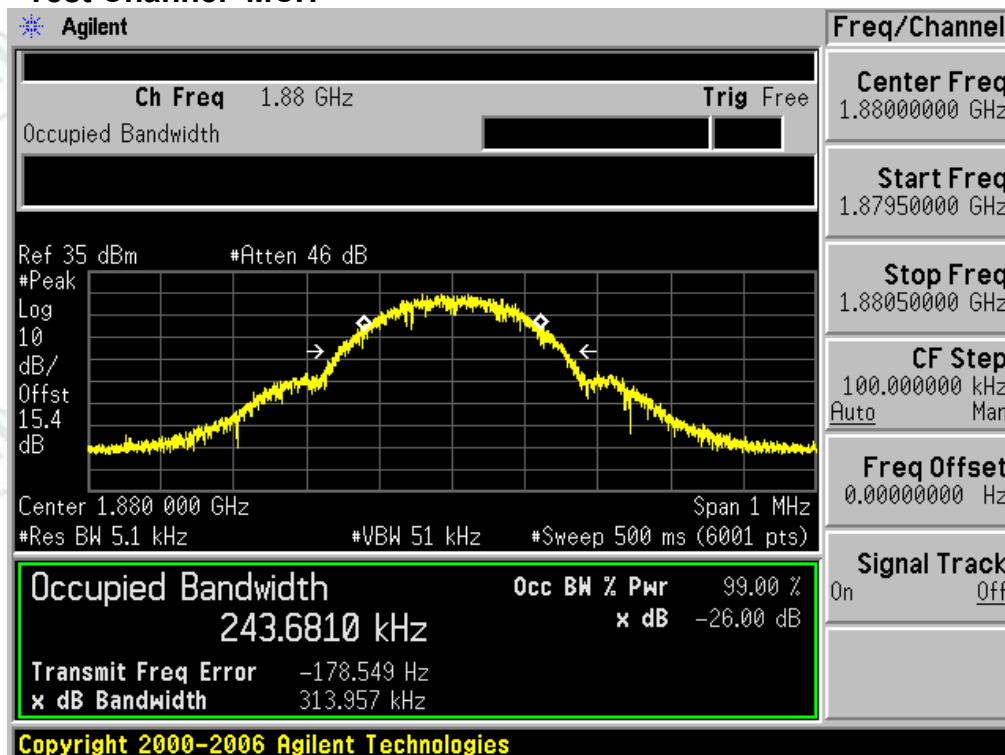
Test Band=GSM1900

Test Mode=GSM/TM2

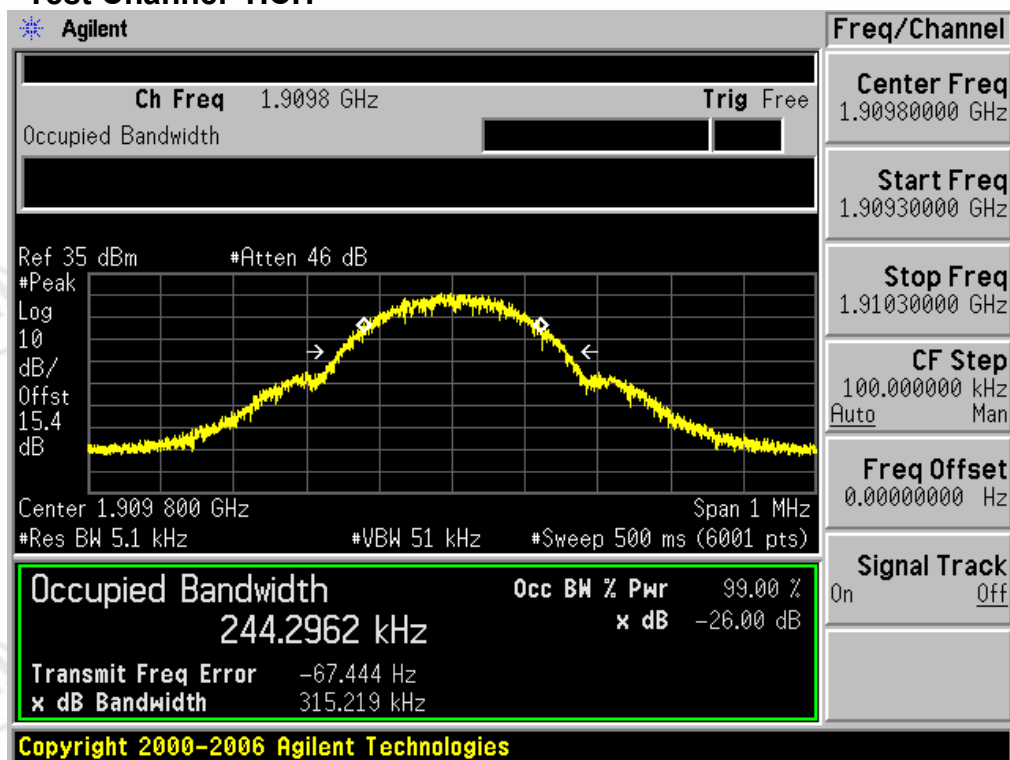
Test Channel=LCH



Test Channel=MCH

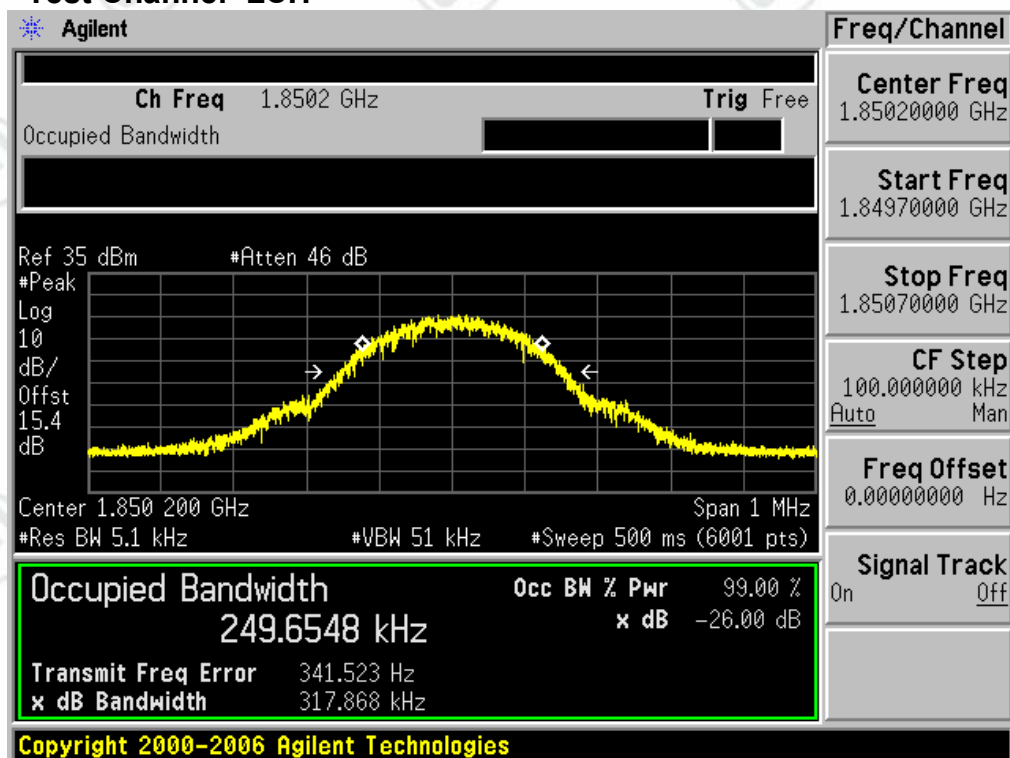


Test Channel=HCH

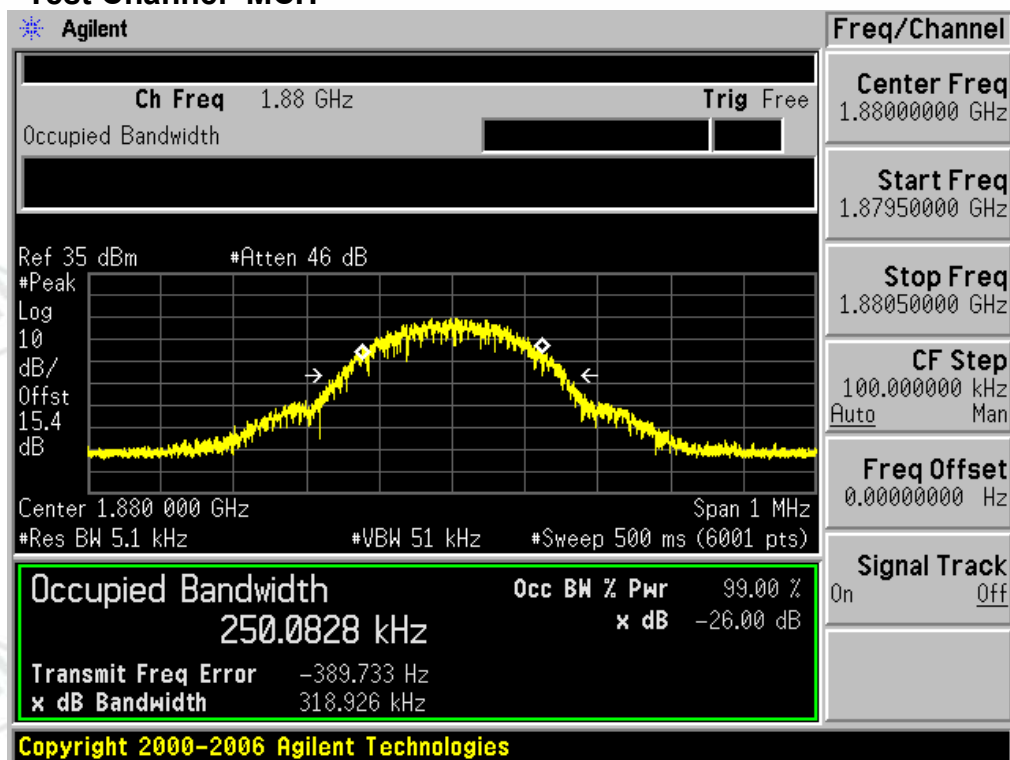


Test Mode=GSM/TM3

Test Channel=LCH



Test Channel=MCH



Test Channel=HCH

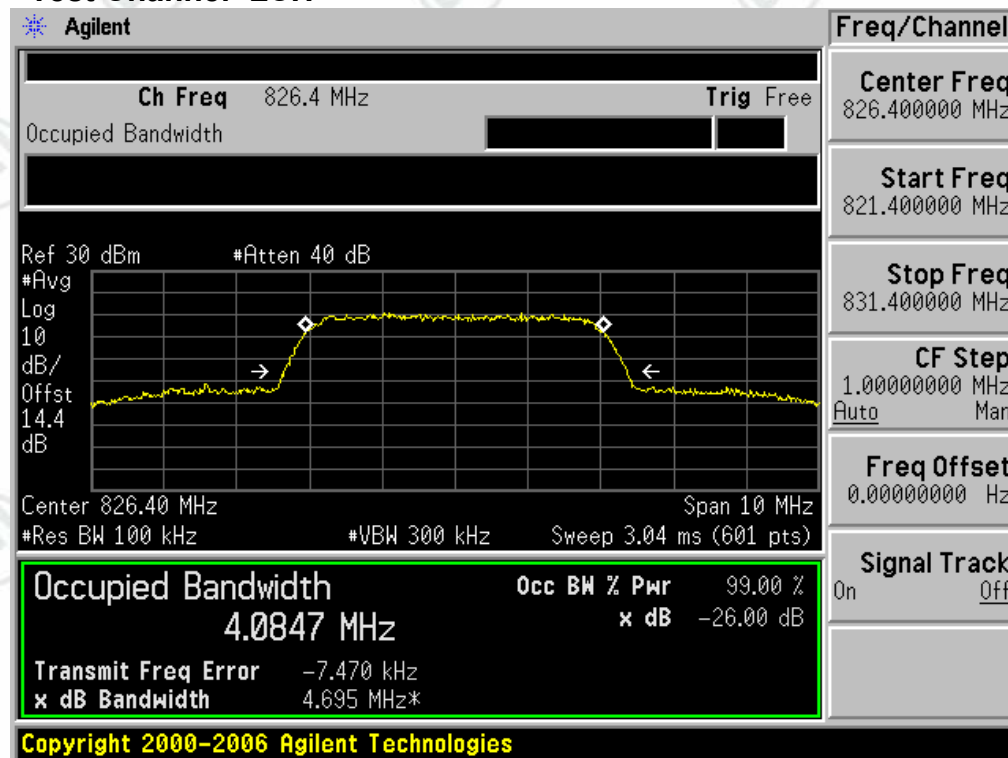


For WCDMA

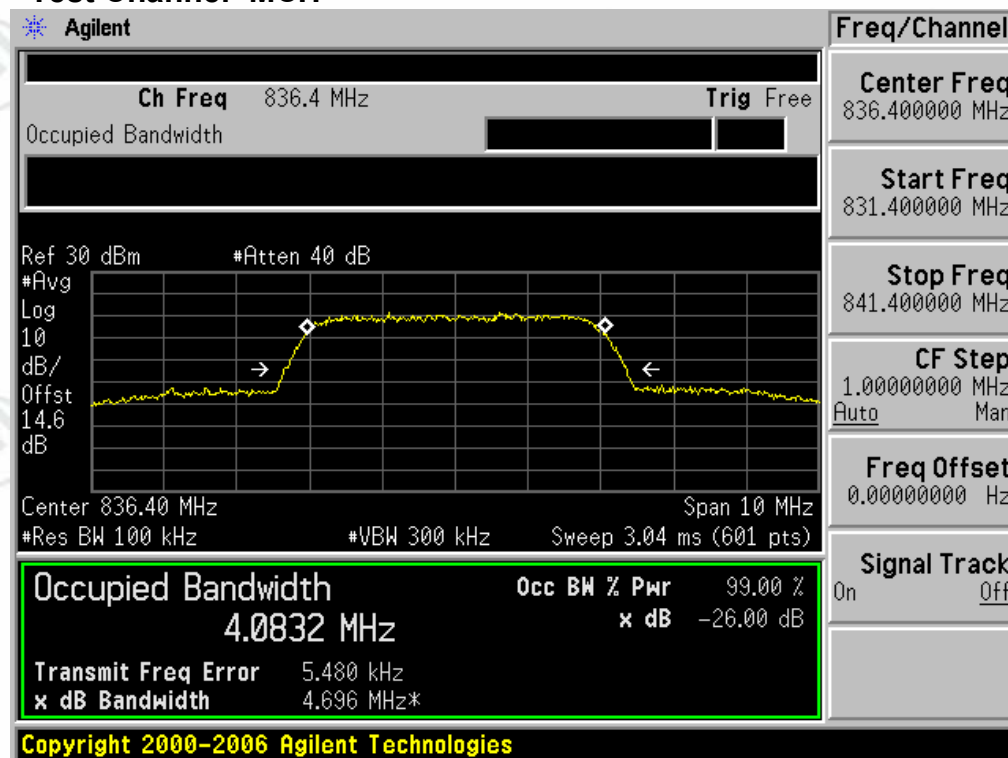
Test Band=WCDMA850

Test Mode=UMTS/TM1

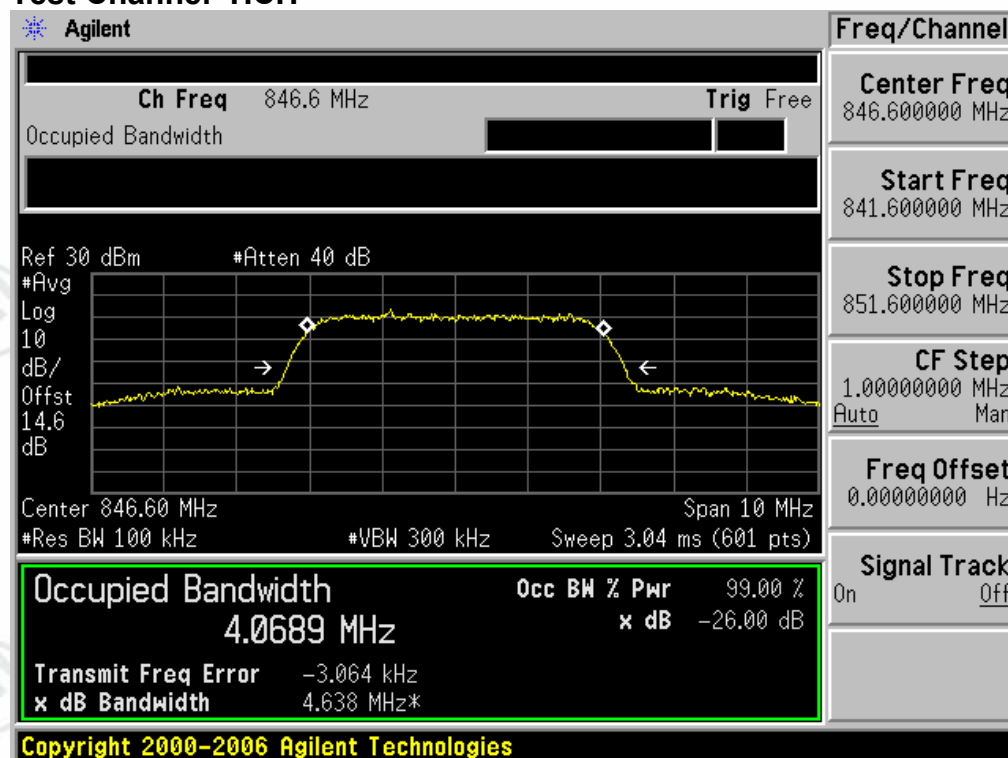
Test Channel=LCH



Test Channel=MCH

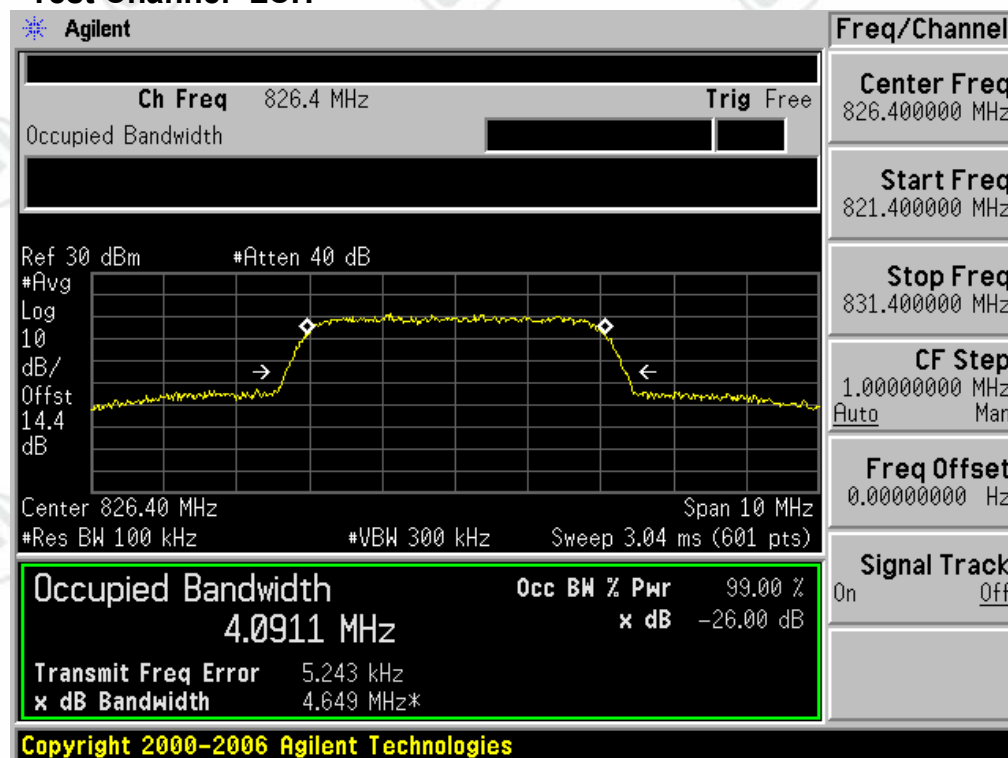


Test Channel=HCH

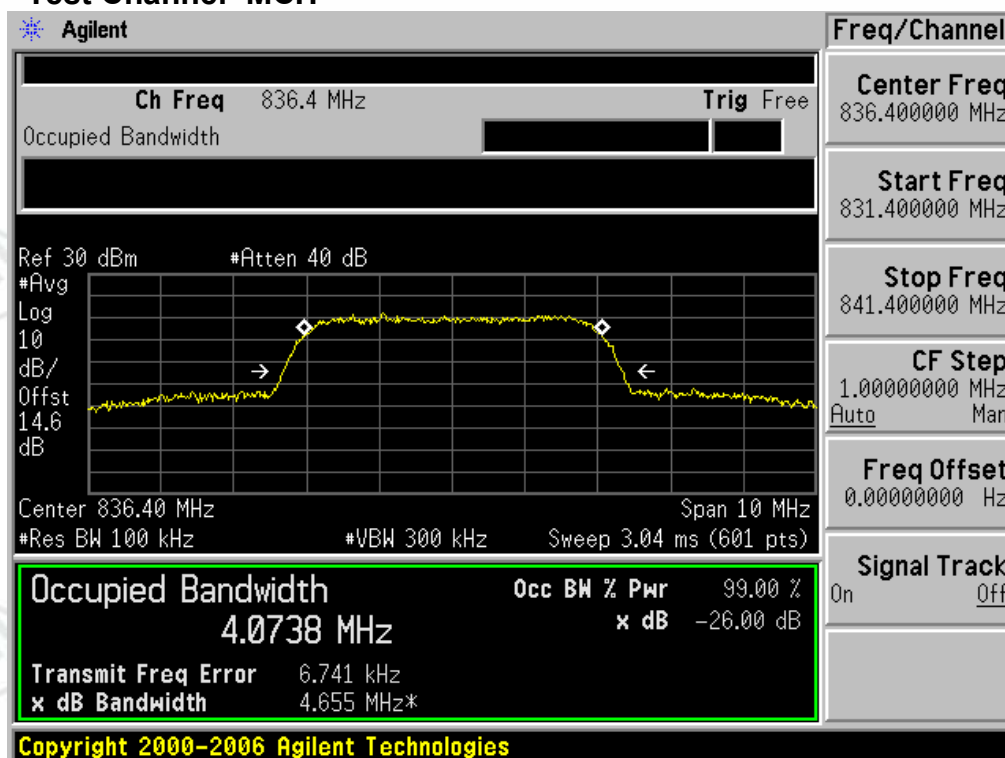


Test Mode=UMTS/TM2

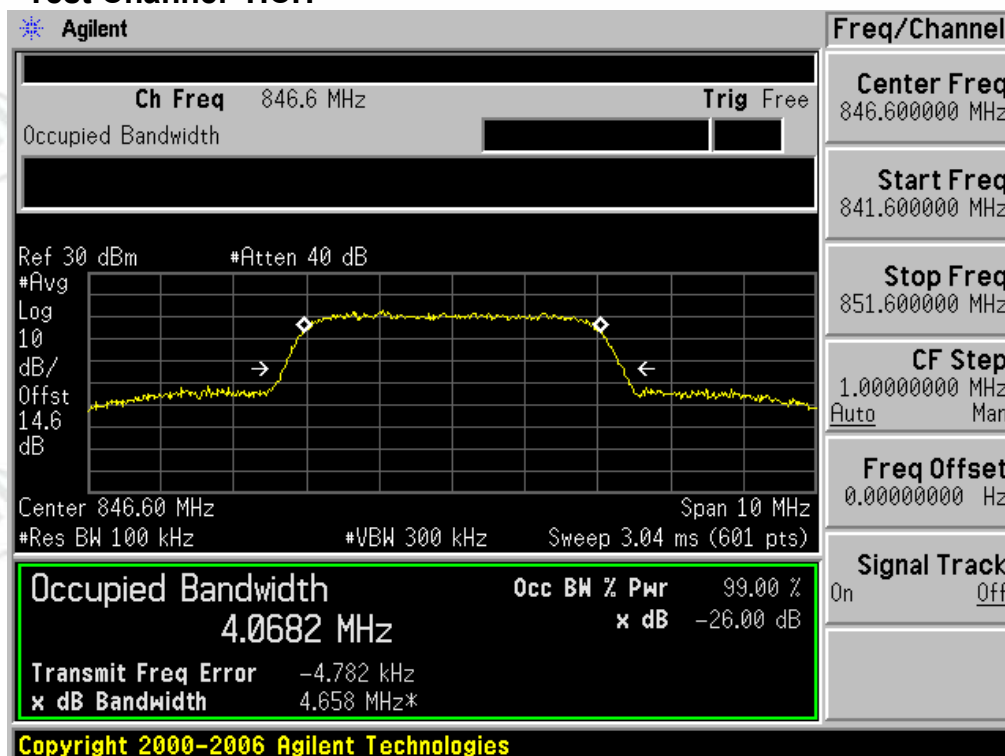
Test Channel=LCH



Test Channel=MCH

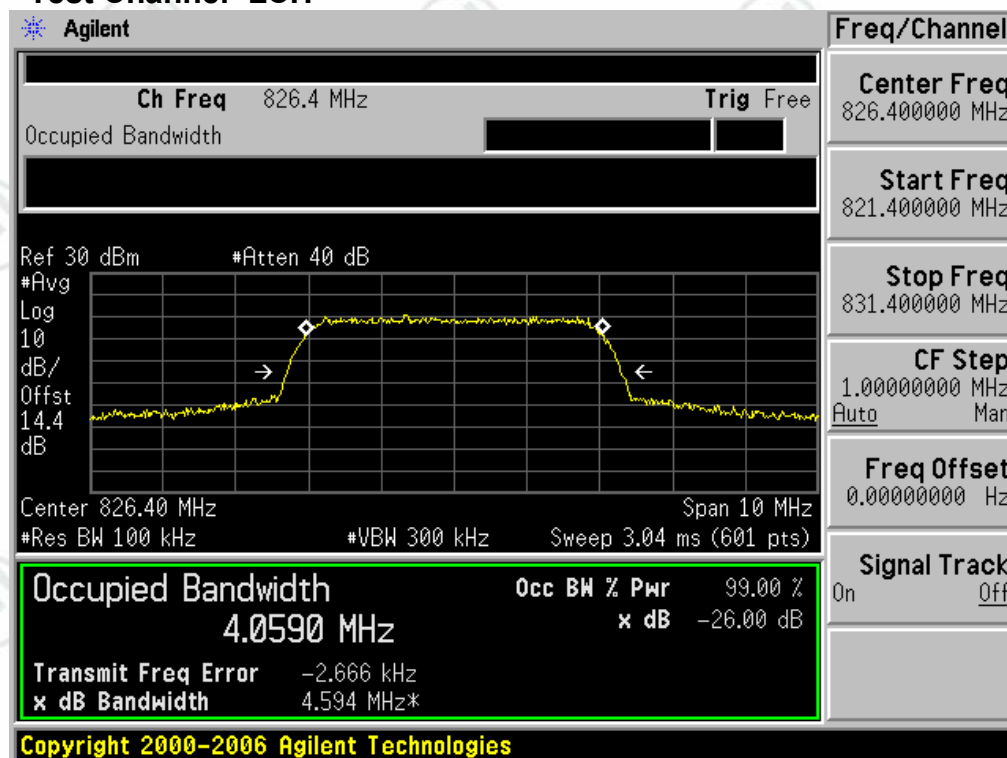


Test Channel=HCH

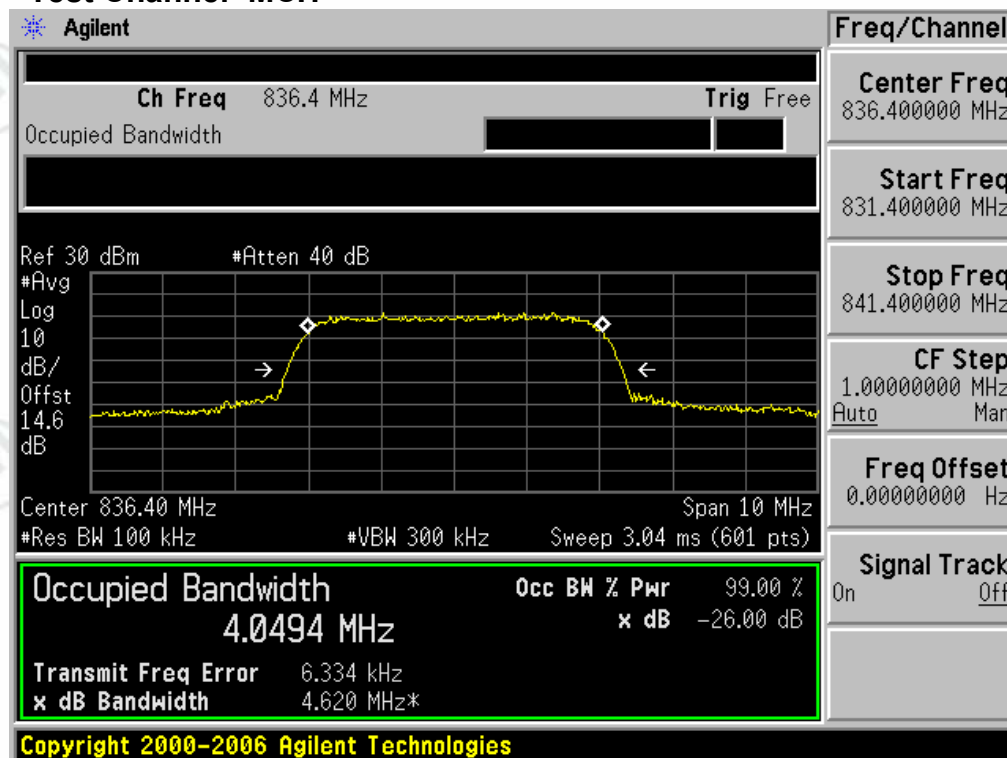


Test Mode=UMTS/TM3

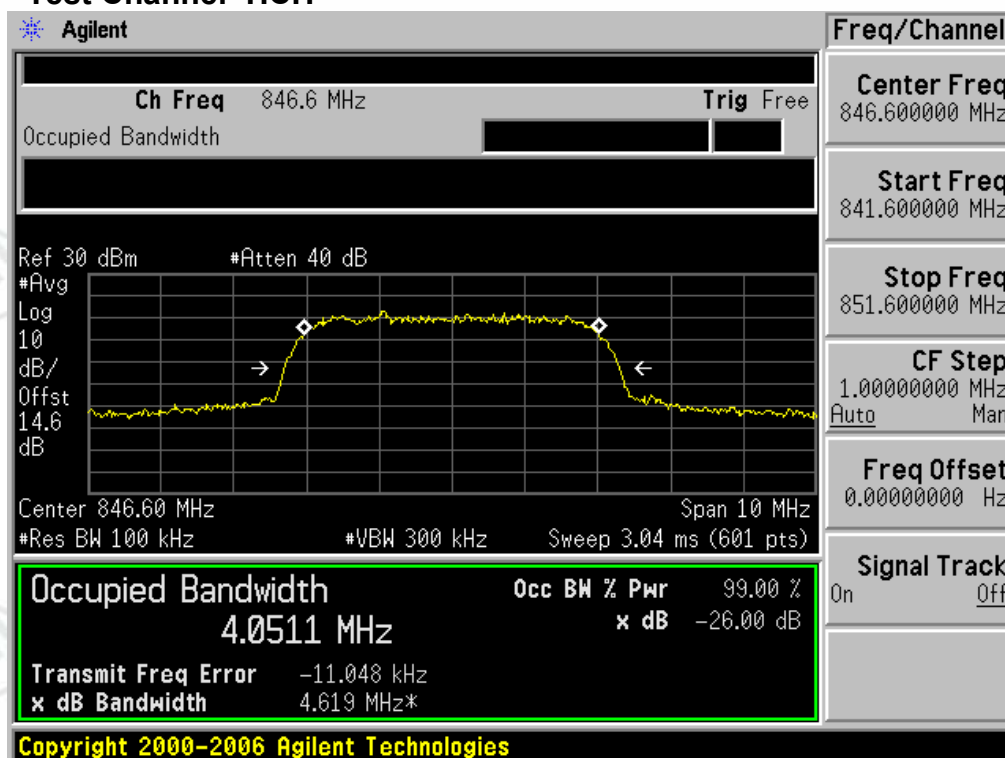
Test Channel=LCH



Test Channel=MCH



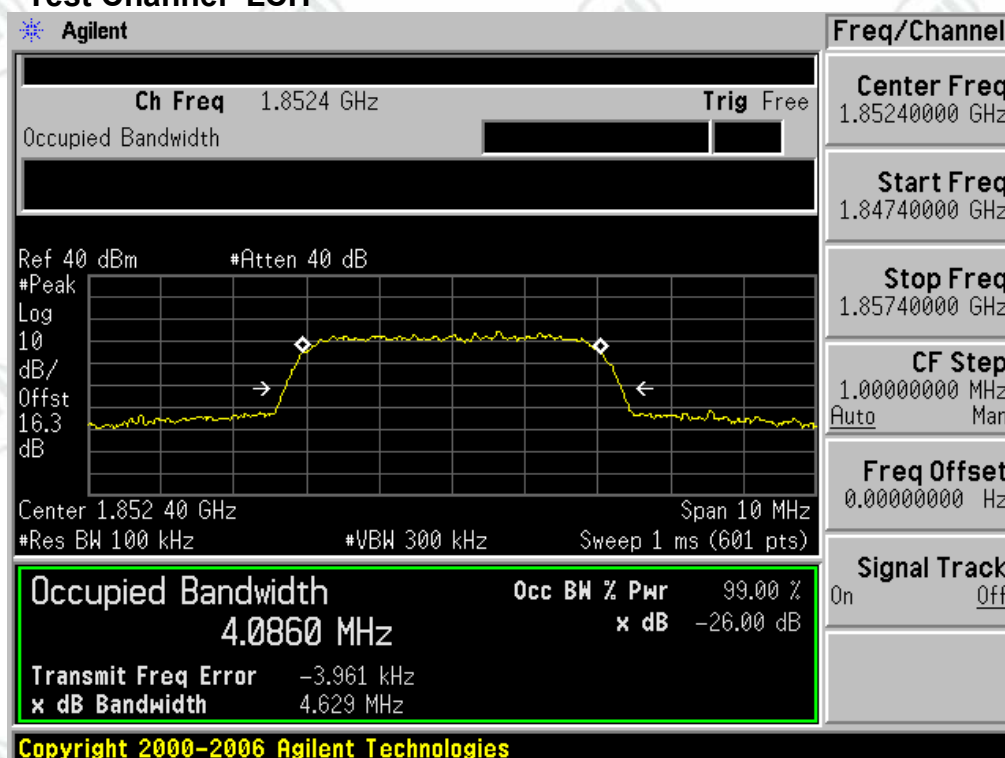
Test Channel=HCH



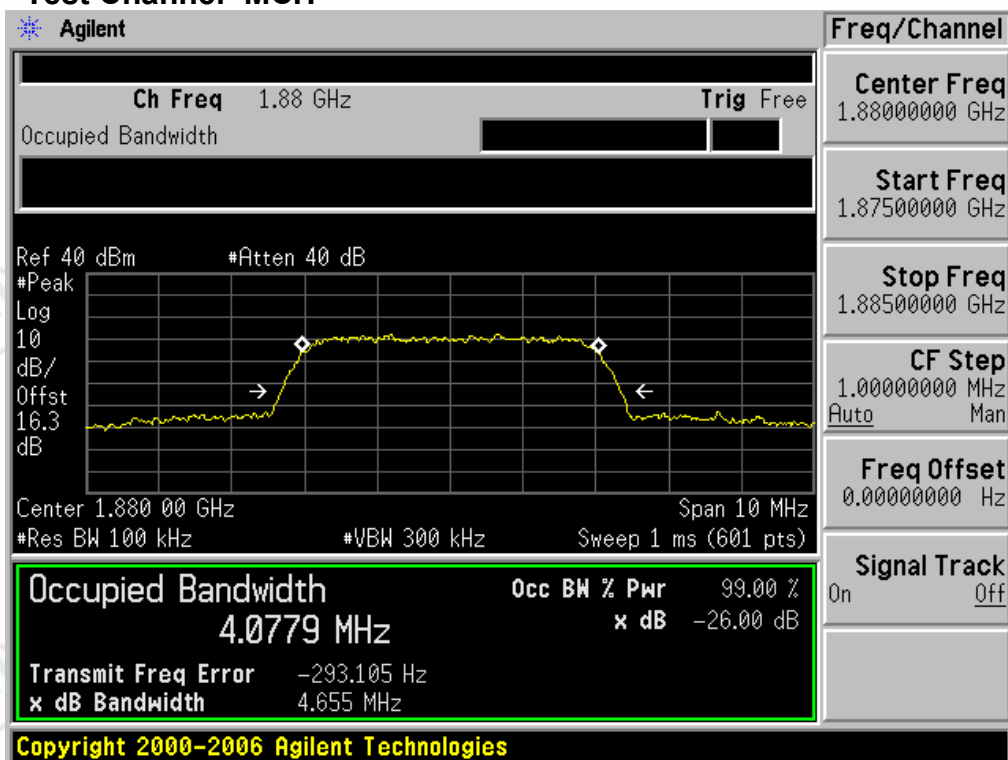
Test Band=WCDMA1900

Test Mode=UMTS/TM1

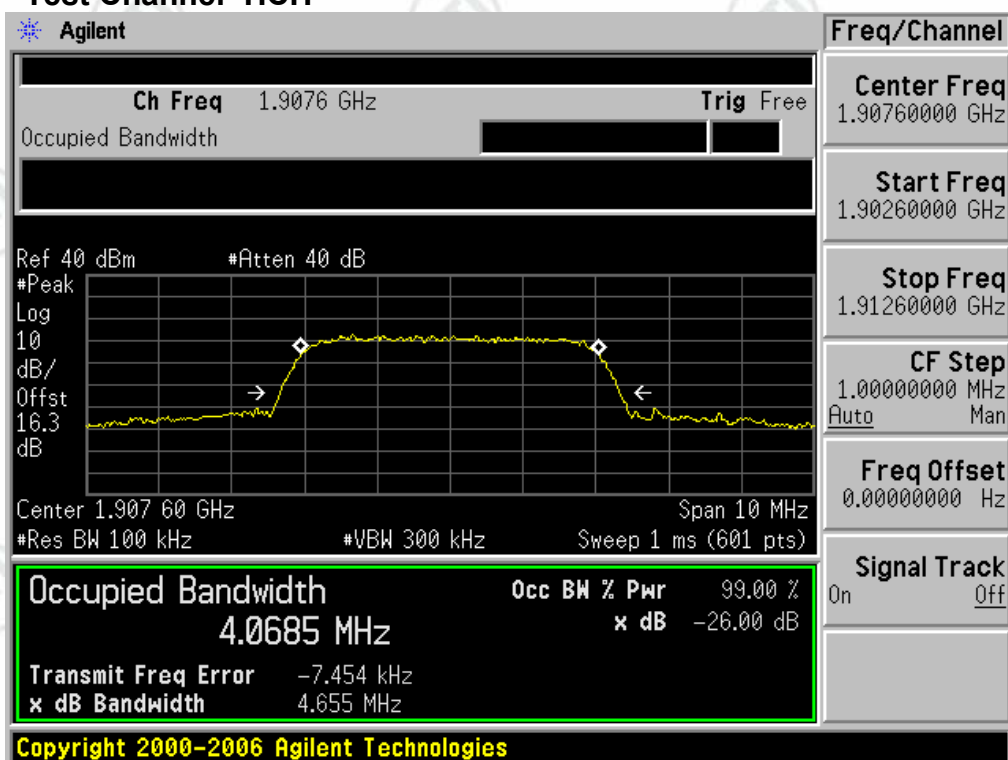
Test Channel=LCH



Test Channel=MCH

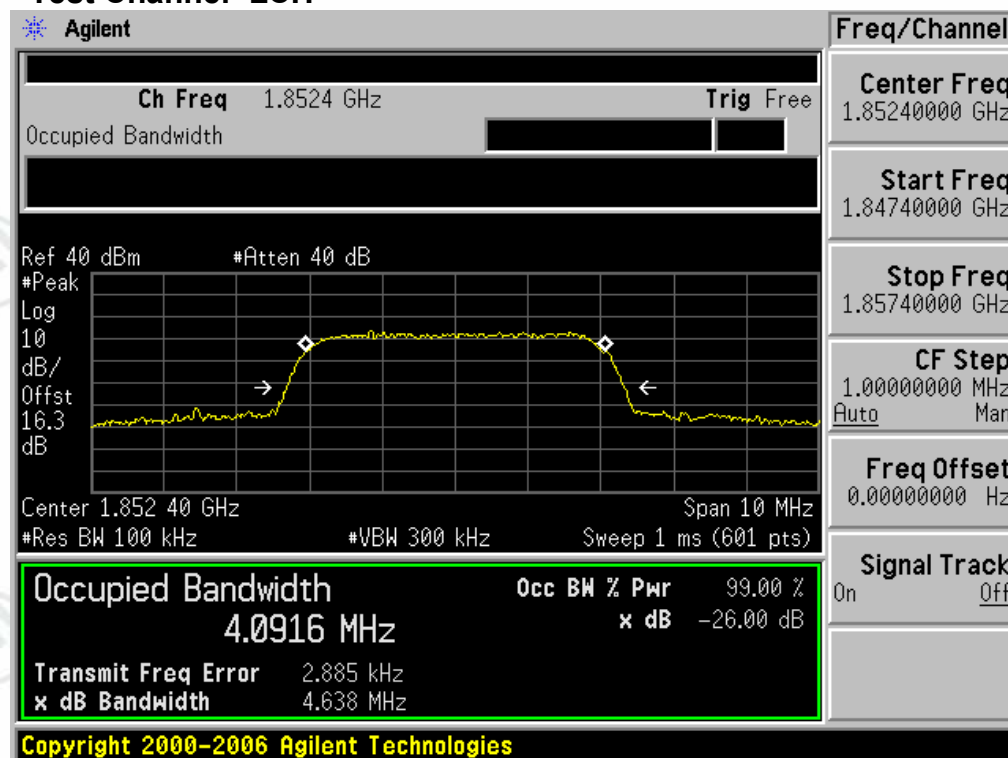


Test Channel=HCH

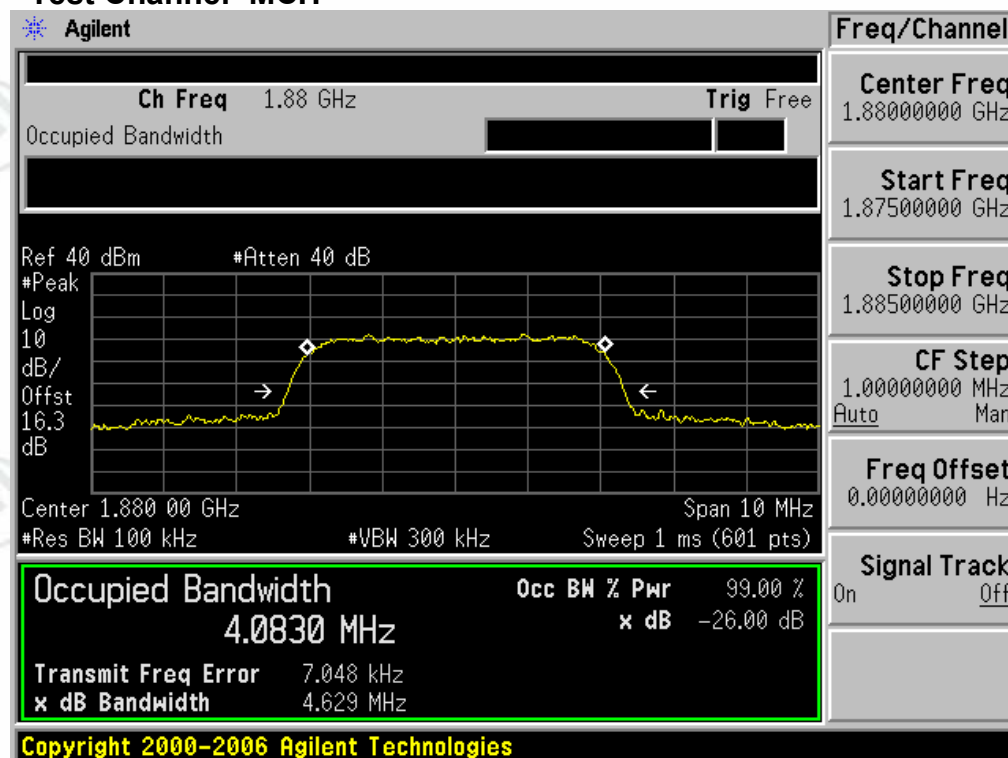


Test Mode=UMTS/TM2

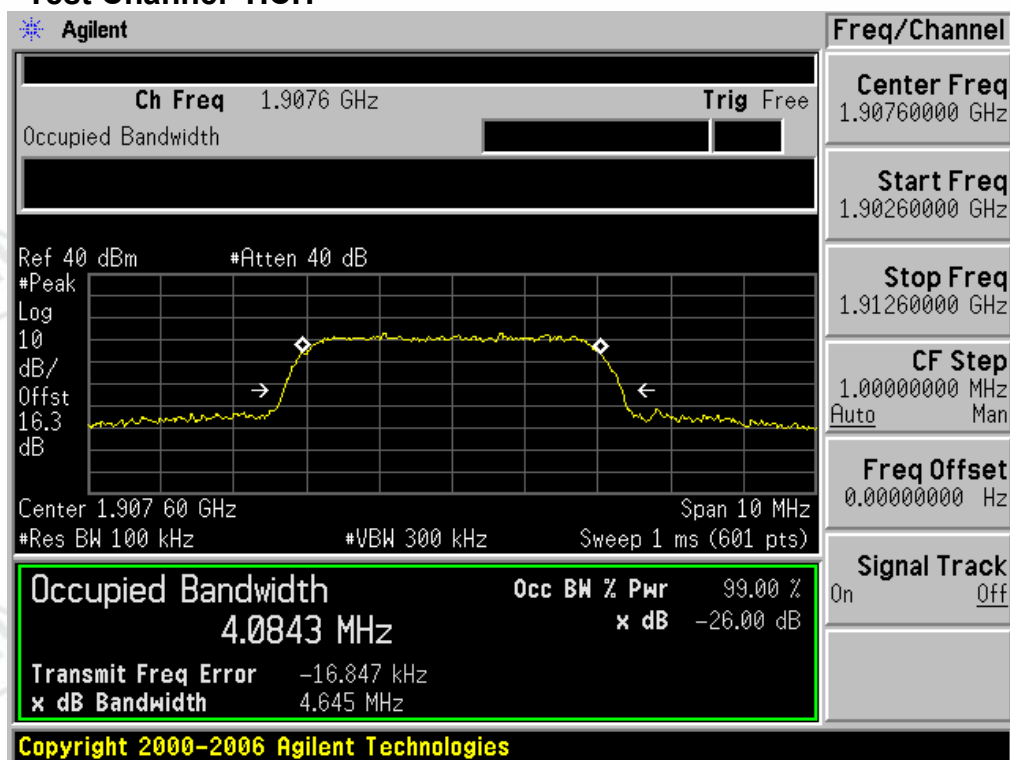
Test Channel=LCH



Test Channel=MCH

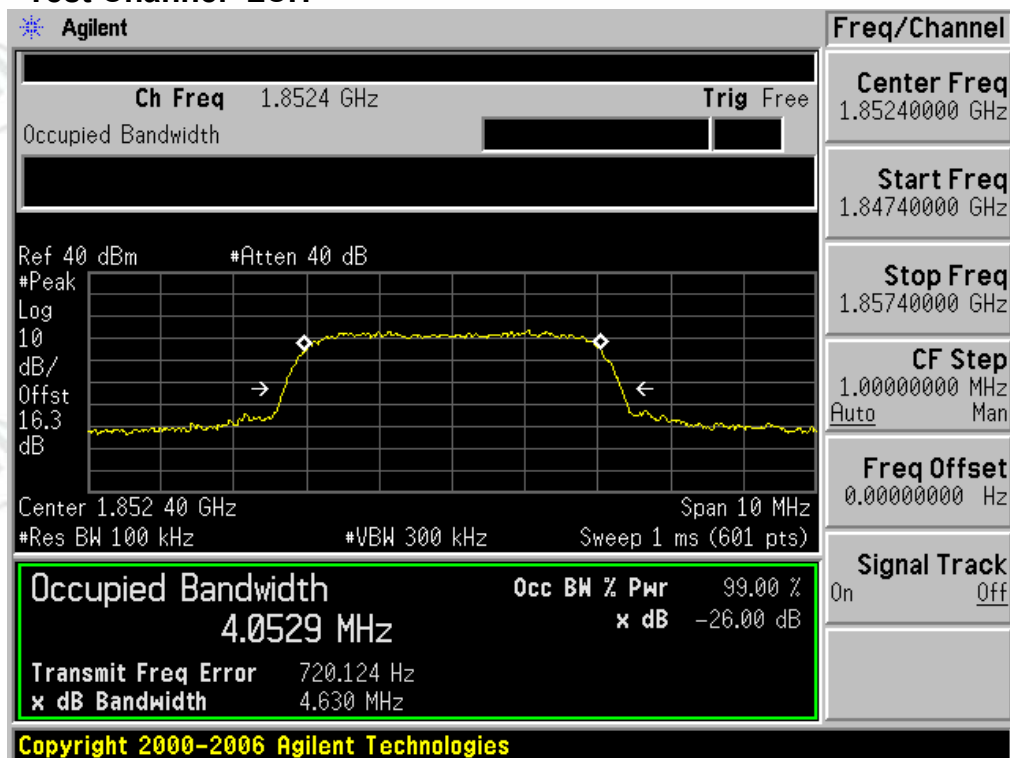


Test Channel=HCH

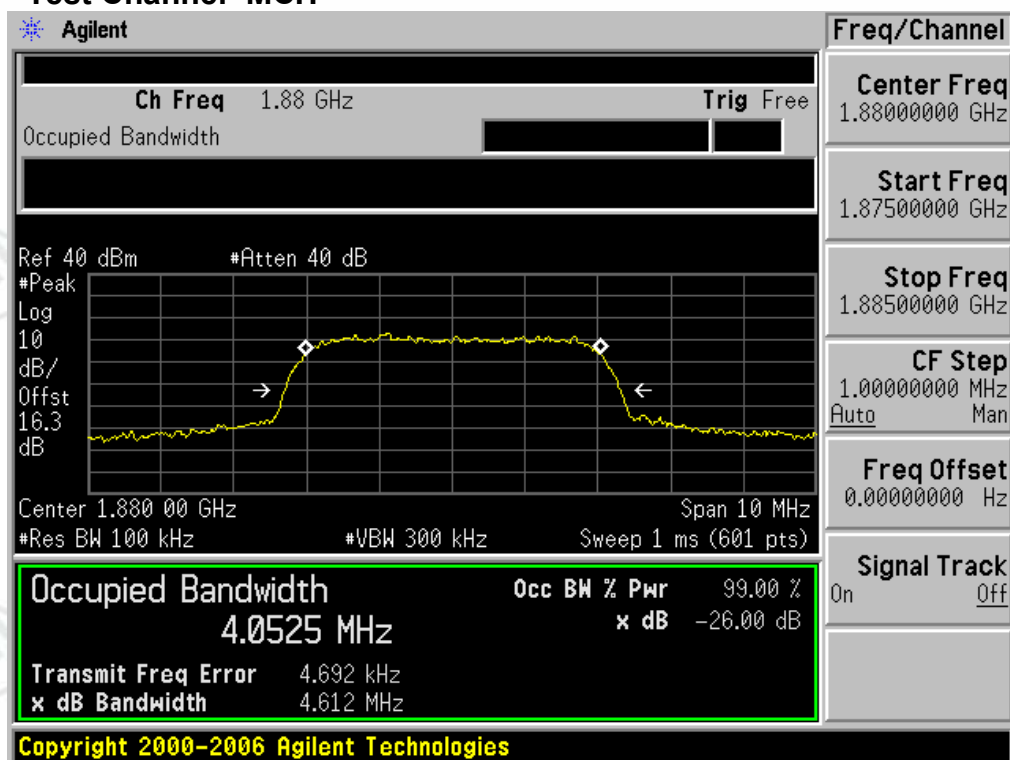


Test Mode=UMTS/TM3

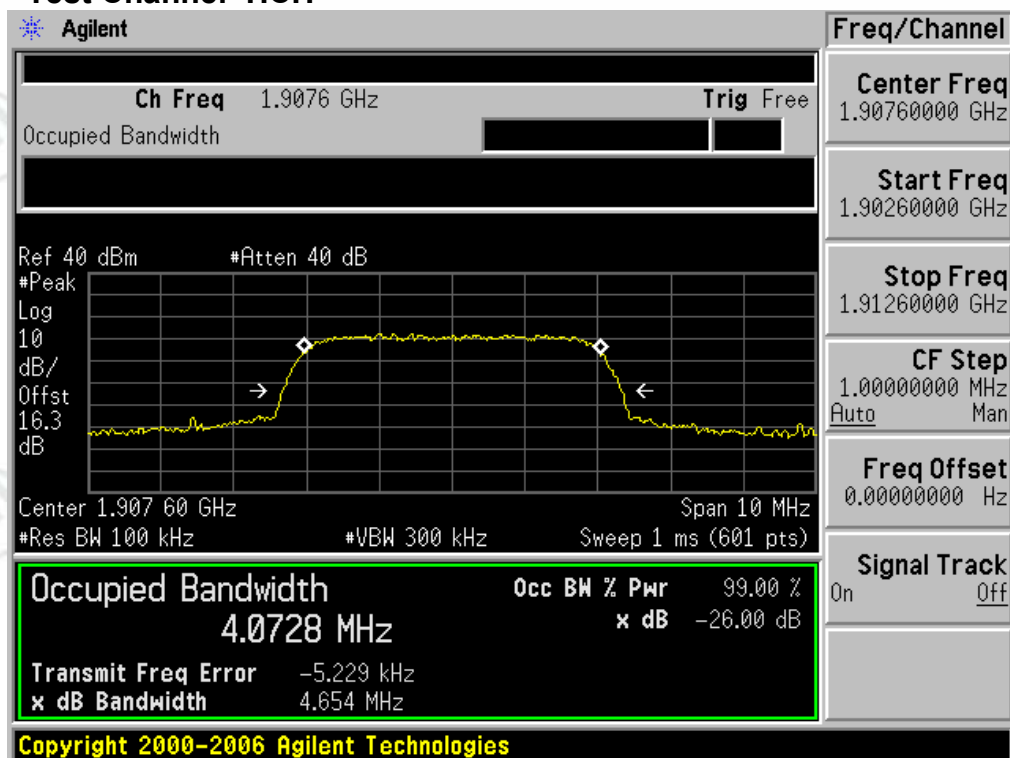
Test Channel=LCH



Test Channel=MCH



Test Channel=HCH



Appendix D)Band Edges Compliance

Test Requirement:	Part 2.1051		
Test Method:	Part 22.917(b)/Part 24.238(b)		
Test Setup:	Refer to section 5 for details		
Measurement Procedure:	The transmitter output was connected to a calibrated coaxial cable, attenuator and Spectrum analyser, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel and high channel).in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of 100kHz or 1% of the emission bandwidth of the fundamental emission of the transmitter may be employed. The EUT emission bandwidth is measured as the width of the signal between two points, outside of which all emission are attenuated at least 26dB below the transmitter power. The video bandwidth of the spectrum analyzer was set at thrice the resolution bandwidth. Detector Mode was set to peak or peak hold power.		
Limit:	Operation Band	Frequency Range (MHz)	Limit
	GSM/GPRS/EDGE/WCDMA 850	Below 824 and above 849	Attenuated at least $43+10\log(P)$
	GSM/GPRS/EDGE/WCDMA 1900	Below 1850 and above 1910	Attenuated at least $43+10\log(P)$
Instruments Used:	Refer to section 7 for details		
Test Results:	Pass		

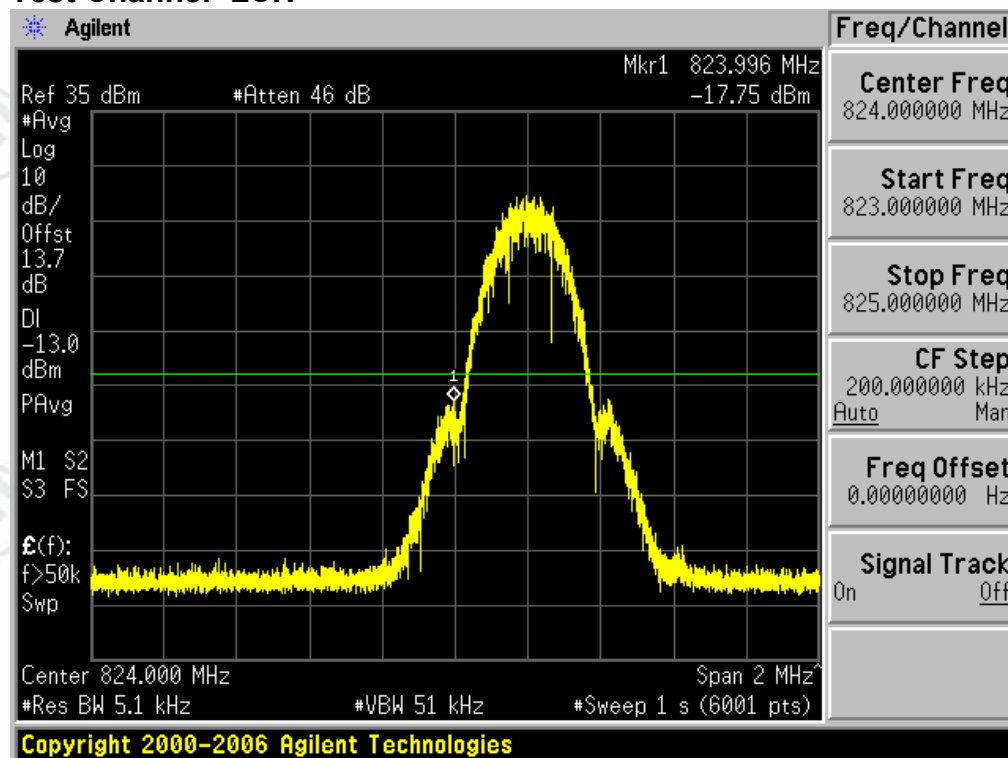
Test Graphs:

For GSM

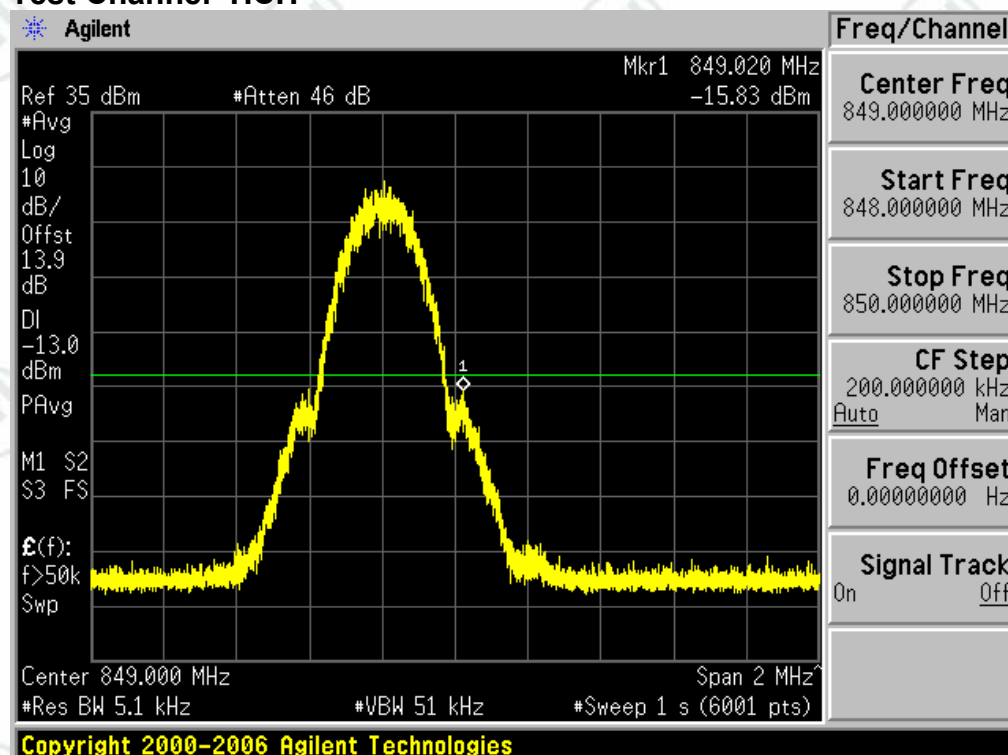
Test Band=GSM850

Test Mode=GSM/TM2

Test Channel=LCH

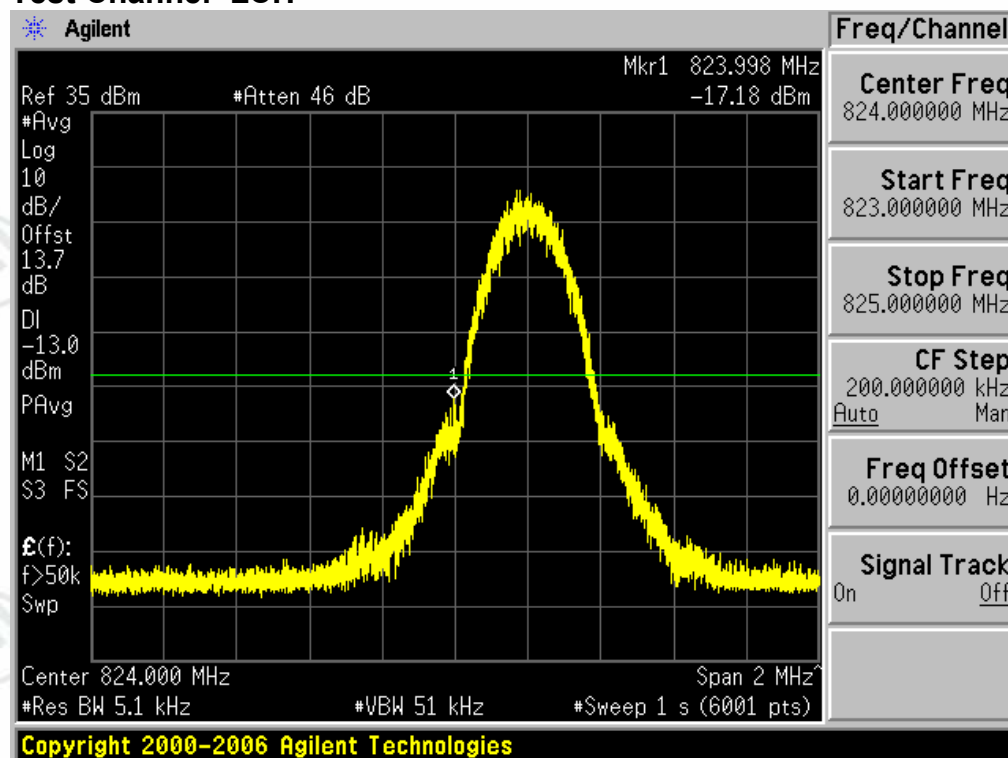


Test Channel=HCH

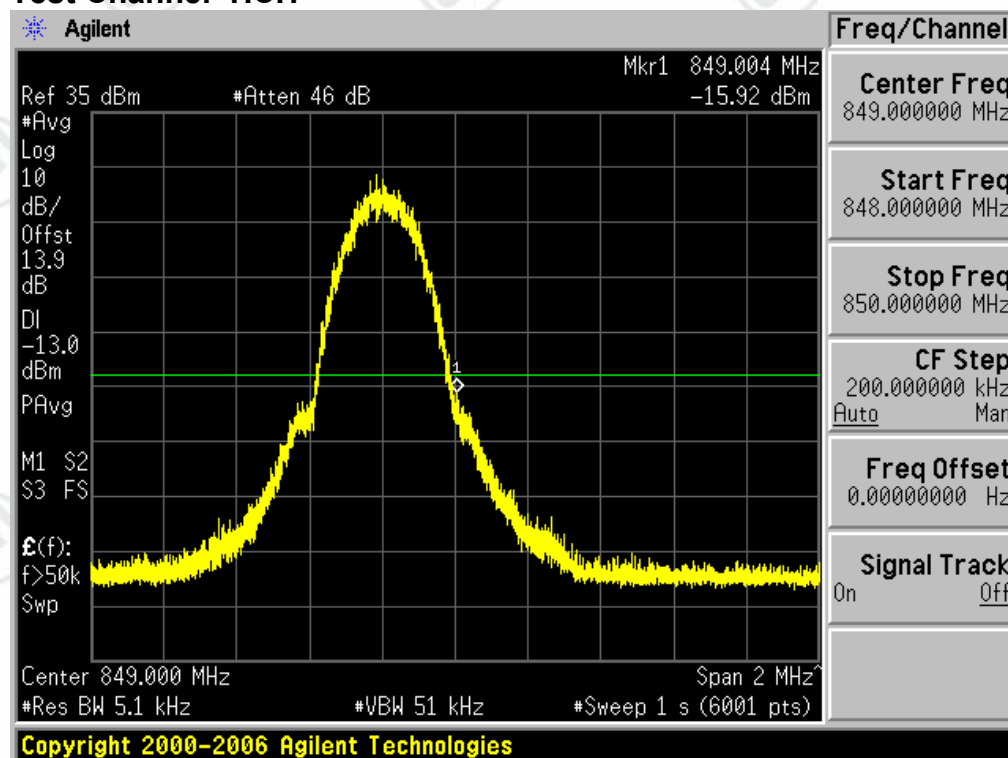


Test Mode=GSM/TM3

Test Channel=LCH



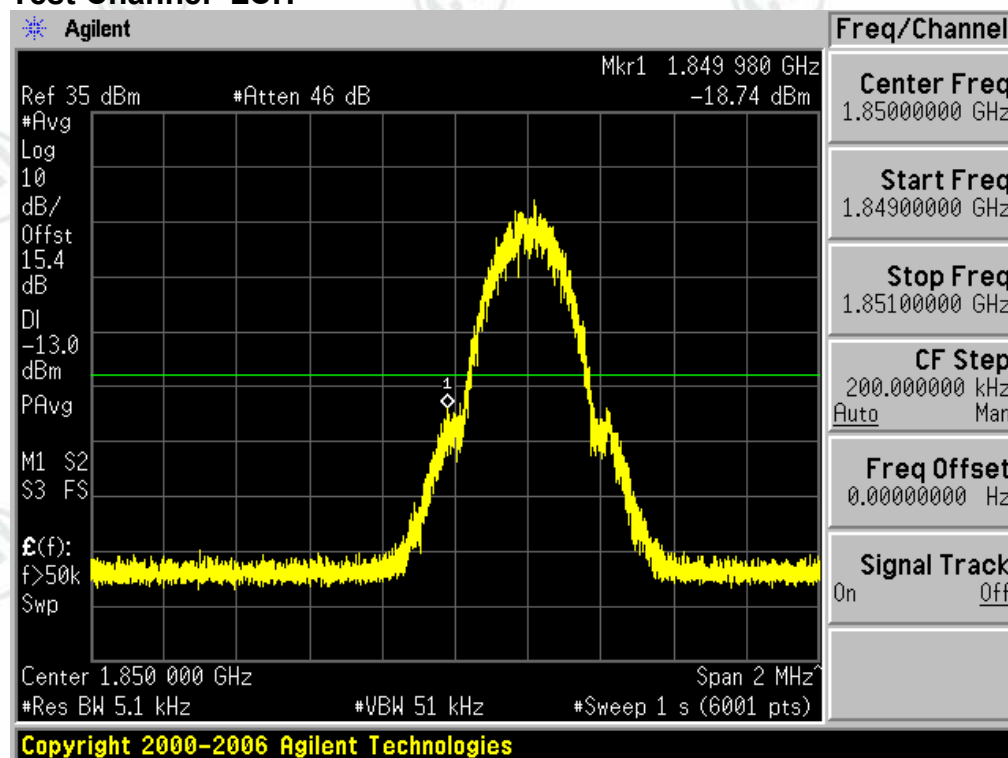
Test Channel=HCH



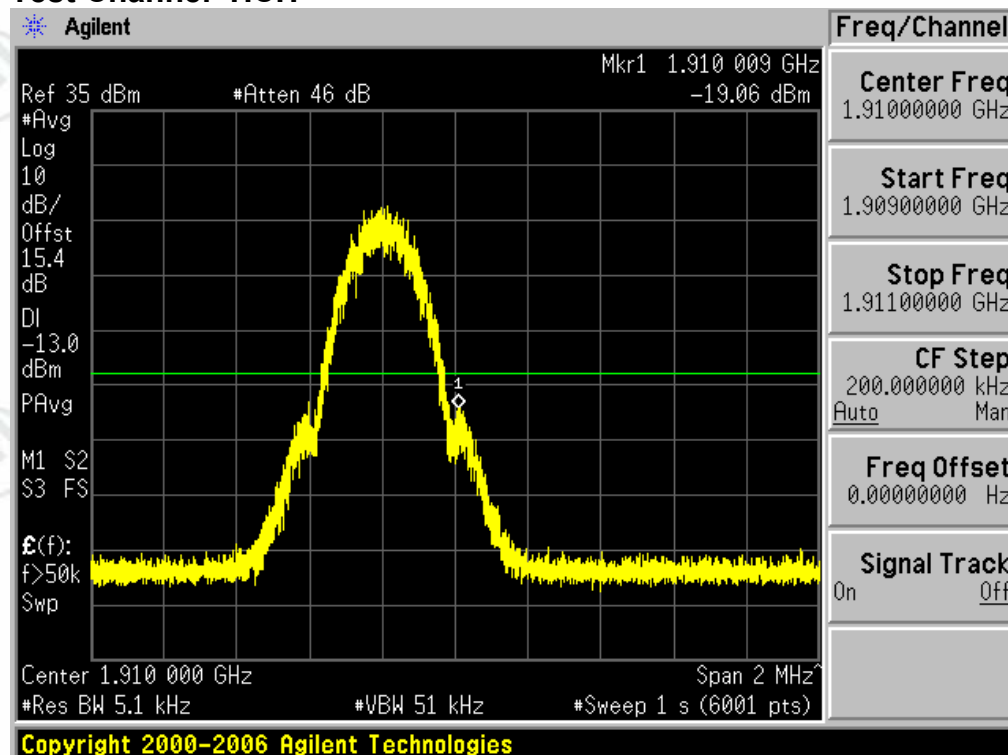
Test Band=GSM1900

Test Mode=GSM/TM2

Test Channel=LCH

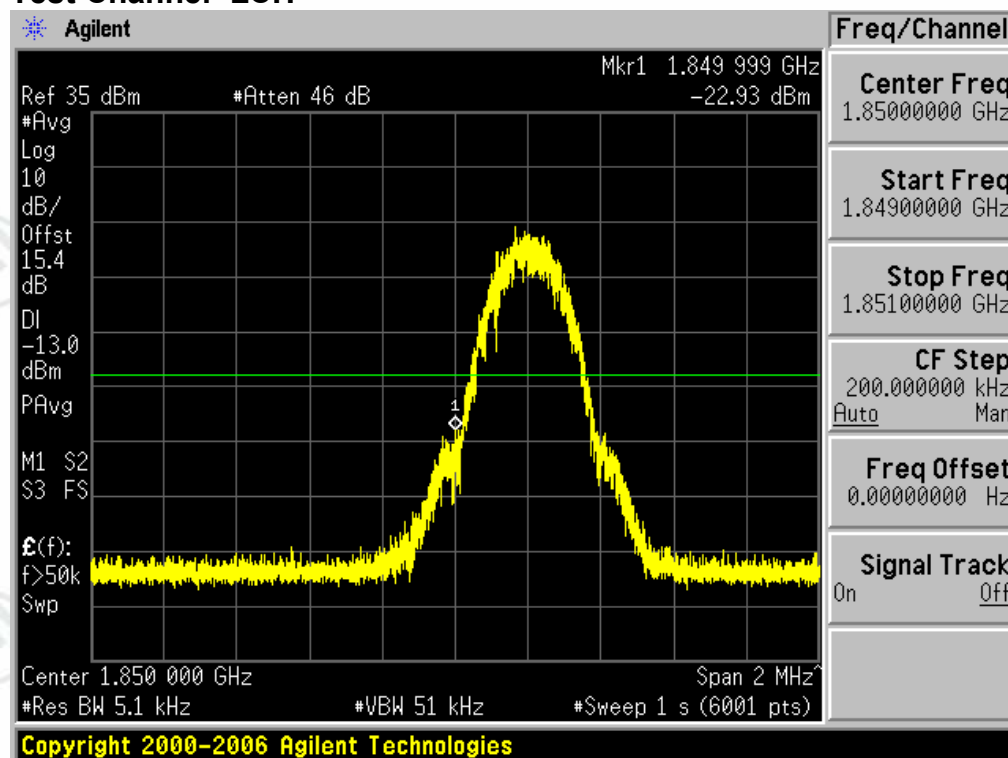


Test Channel=HCH

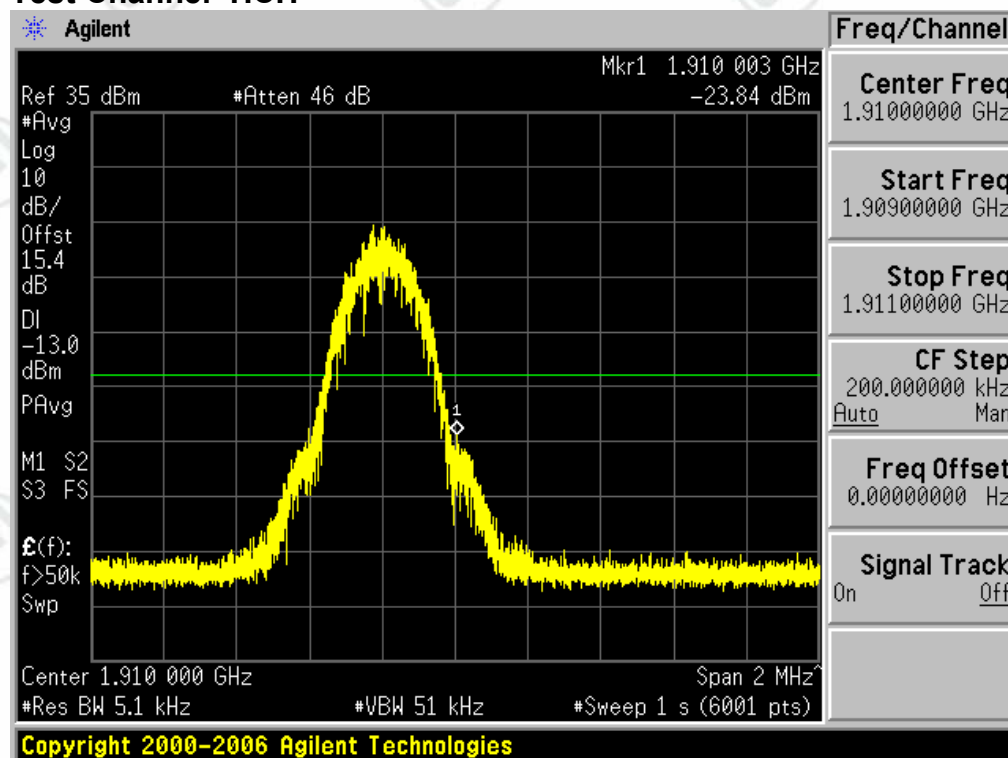


Test Mode=GSM/TM3

Test Channel=LCH



Test Channel=HCH

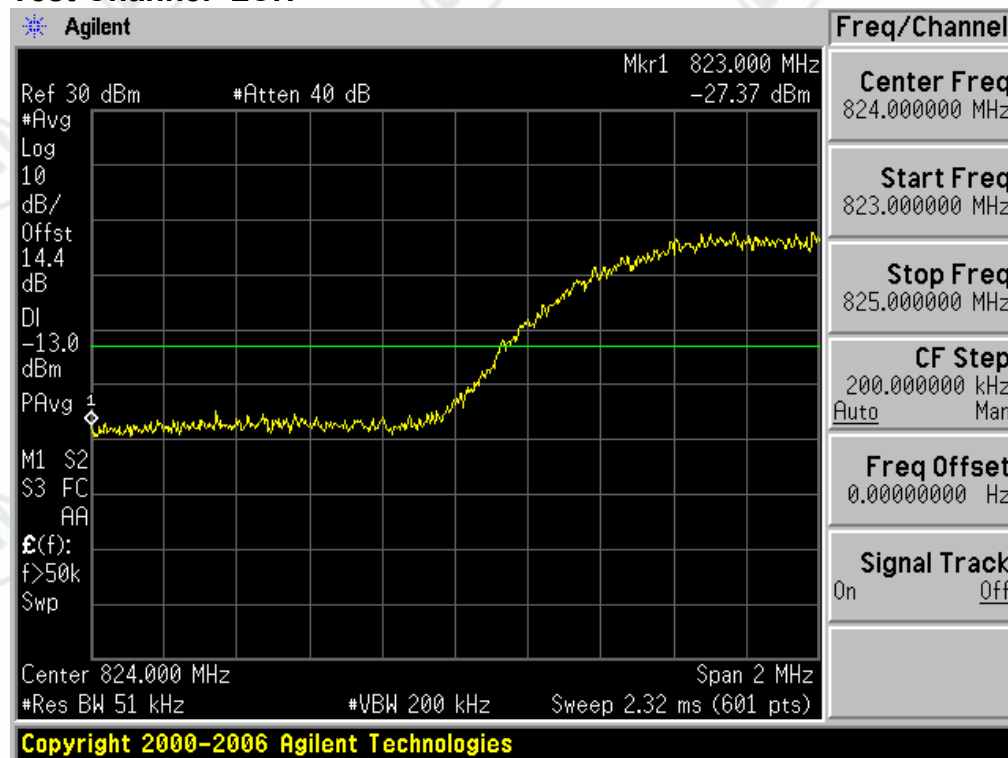


For WCDMA

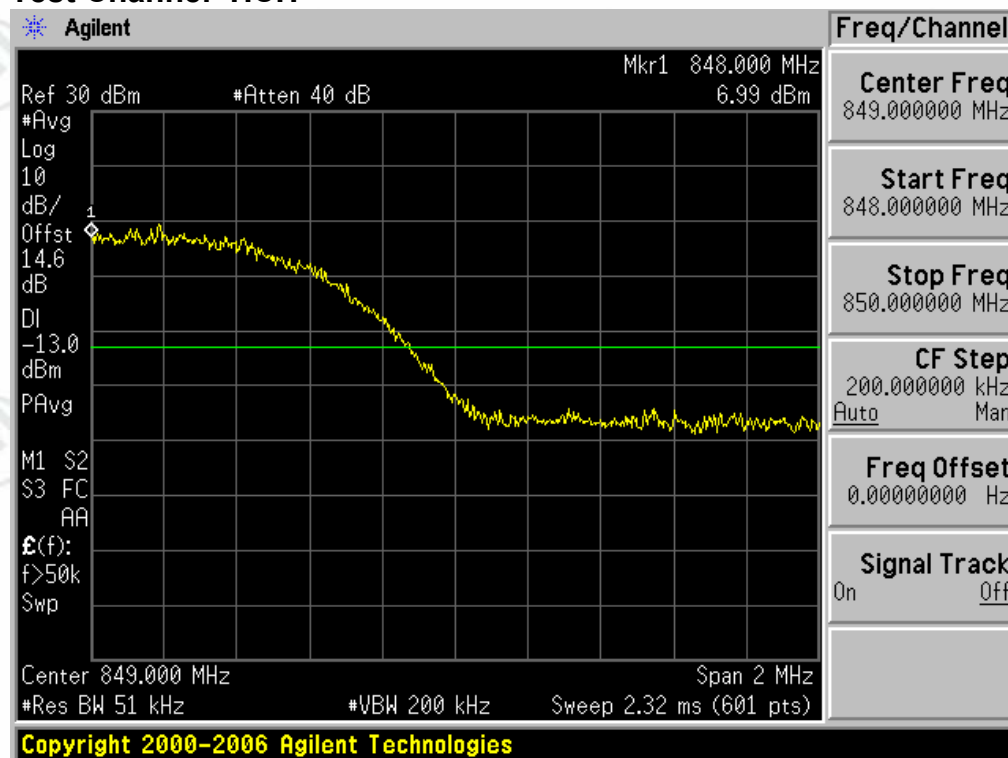
Test Band=WCDMA850

Test Mode=UMTS/TM1

Test Channel=LCH

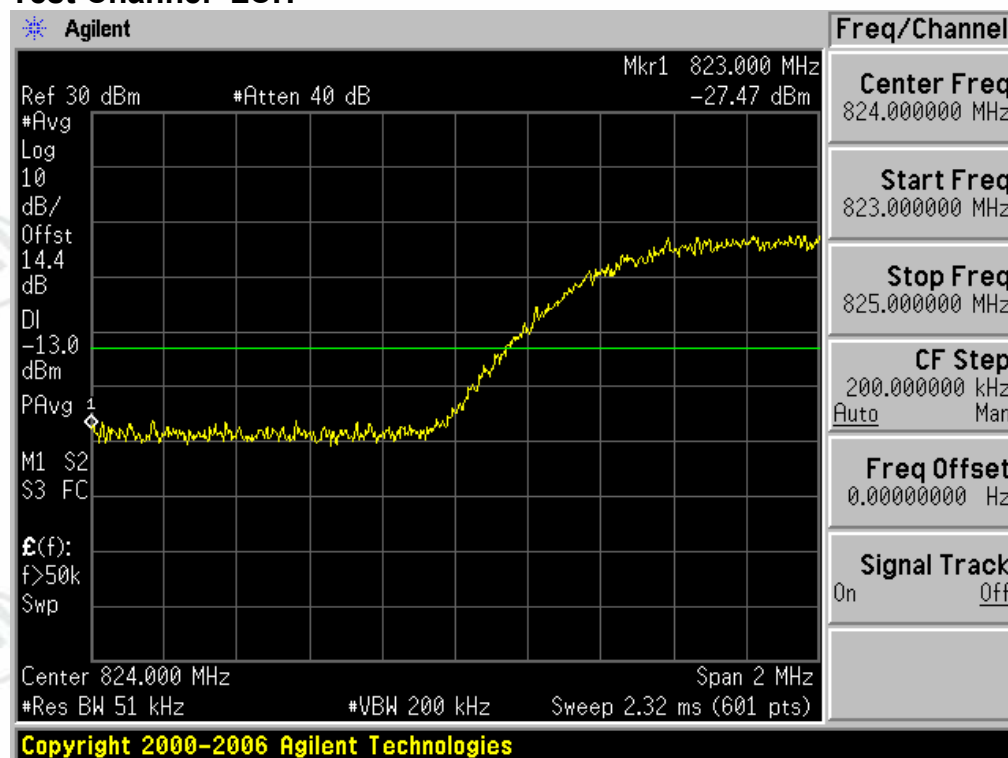


Test Channel=HCH

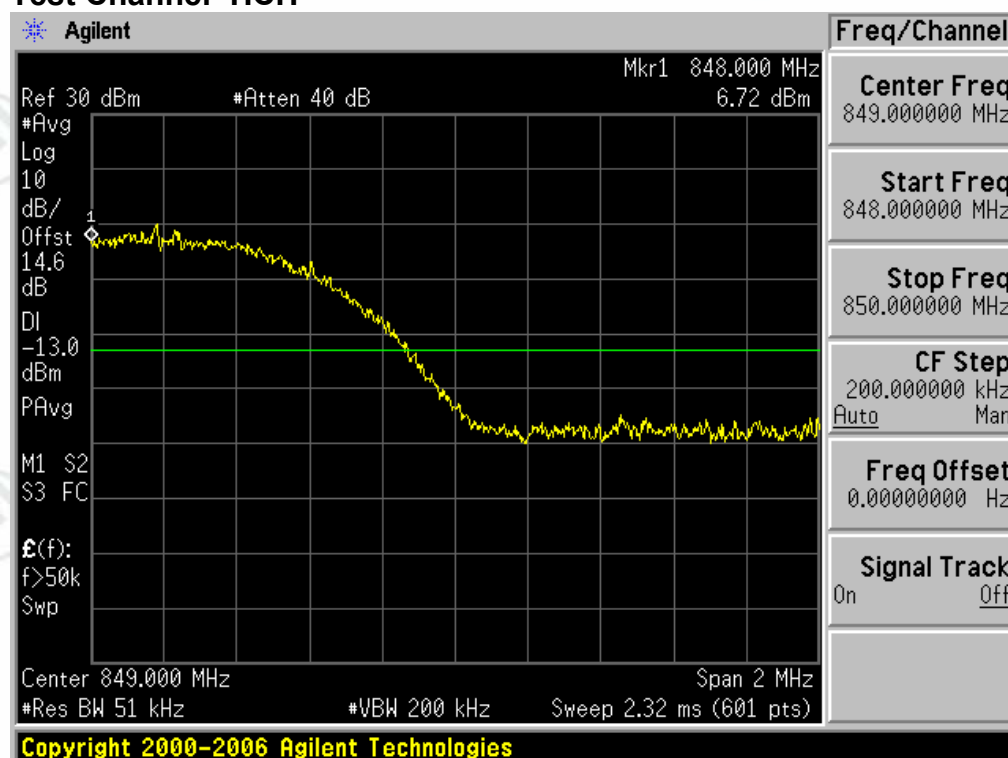


Test Mode=UMTS/TM2

Test Channel=LCH

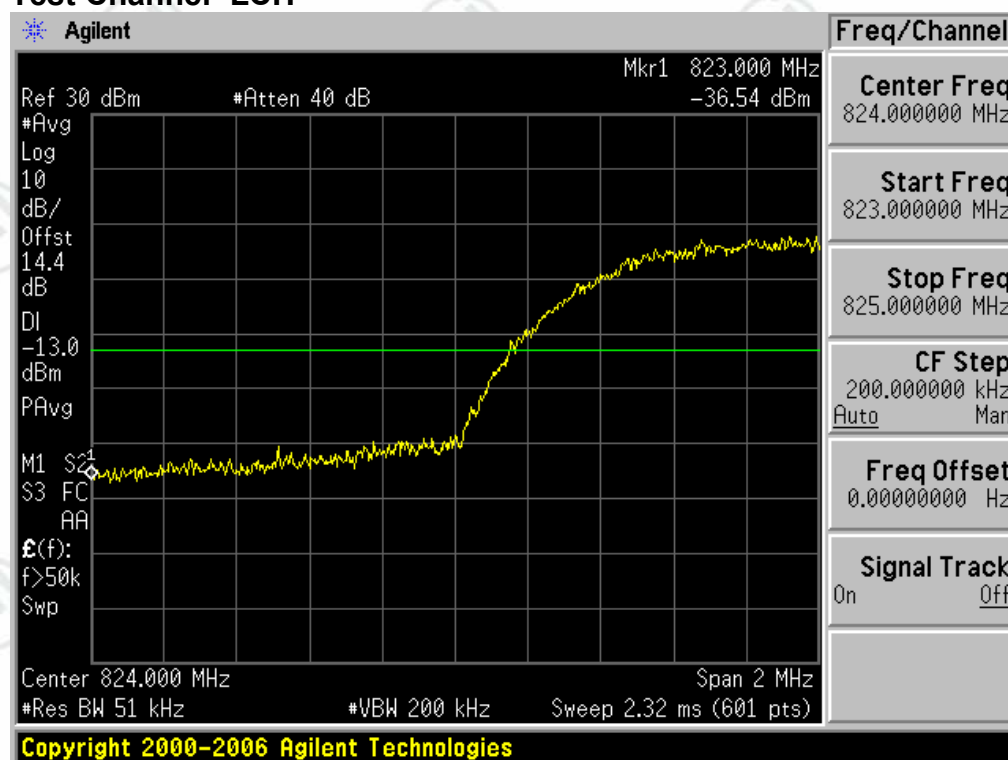


Test Channel=HCH

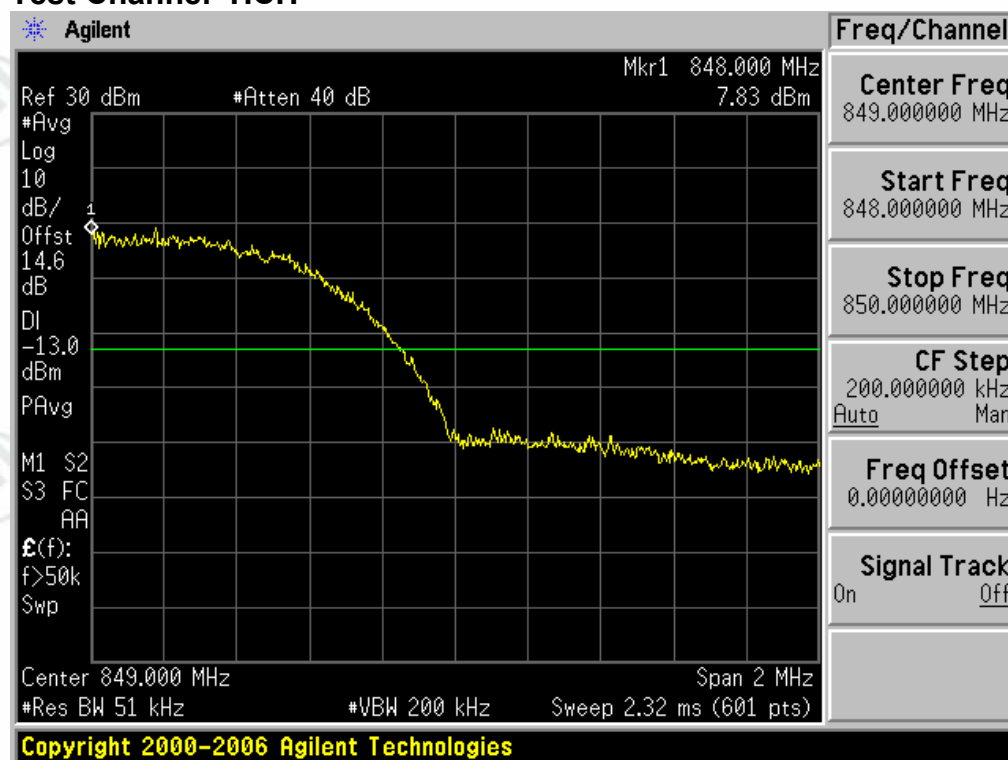


Test Mode=UMTS/TM3

Test Channel=LCH



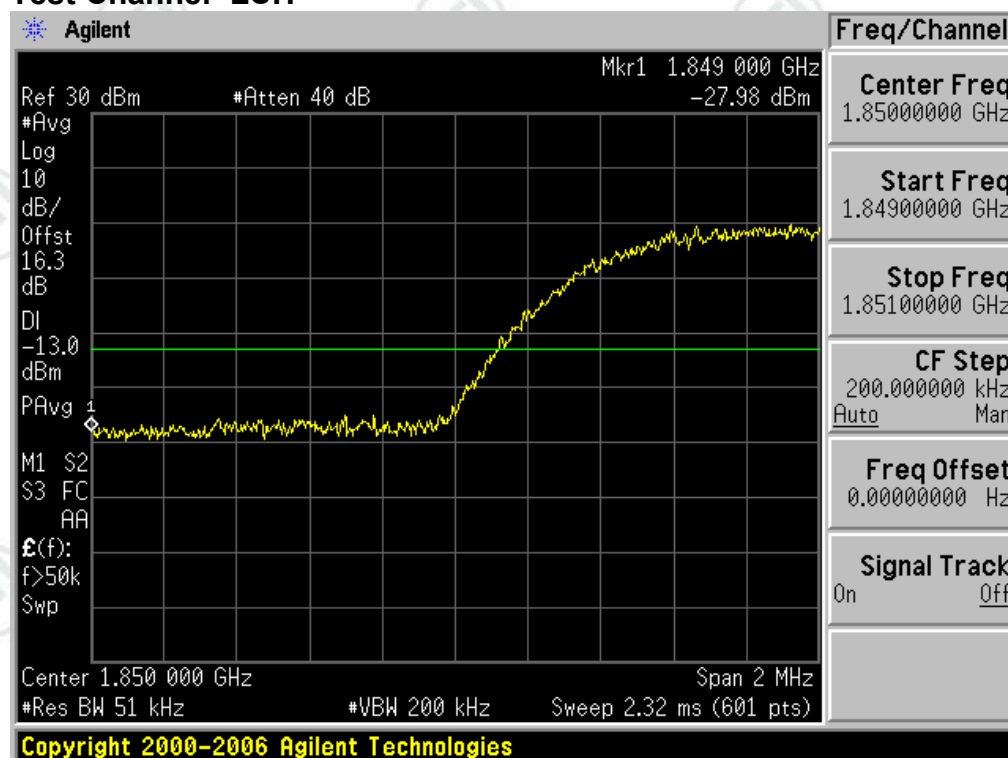
Test Channel=HCH



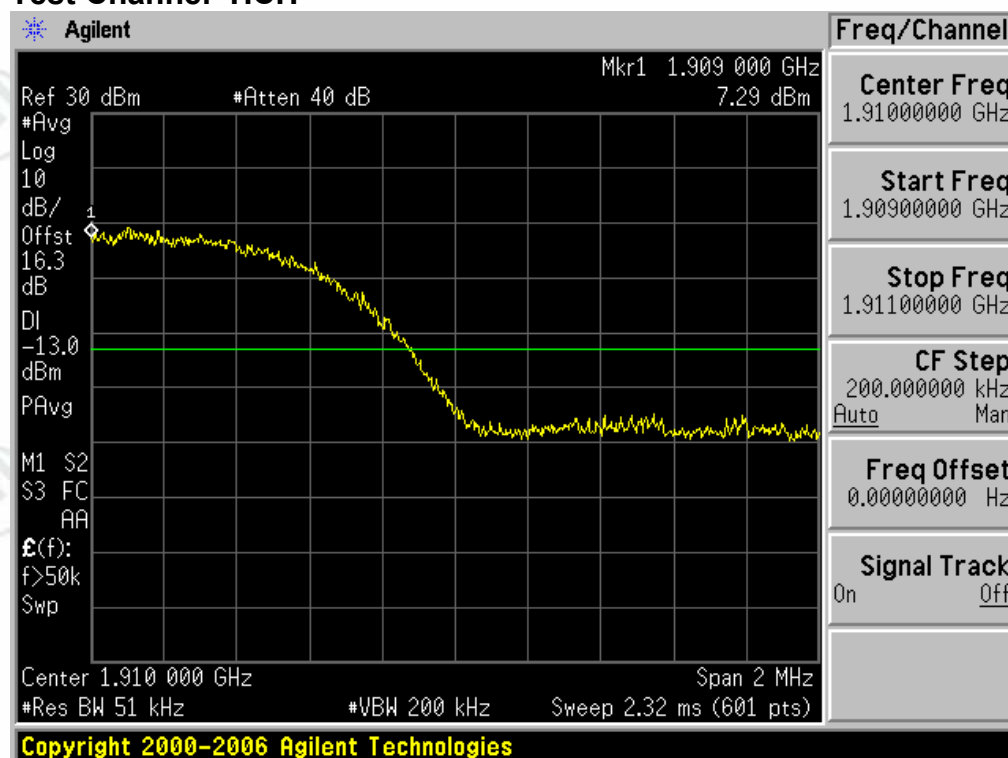
Test Band=WCDMA1900

Test Mode=UMTSTM1

Test Channel=LCH

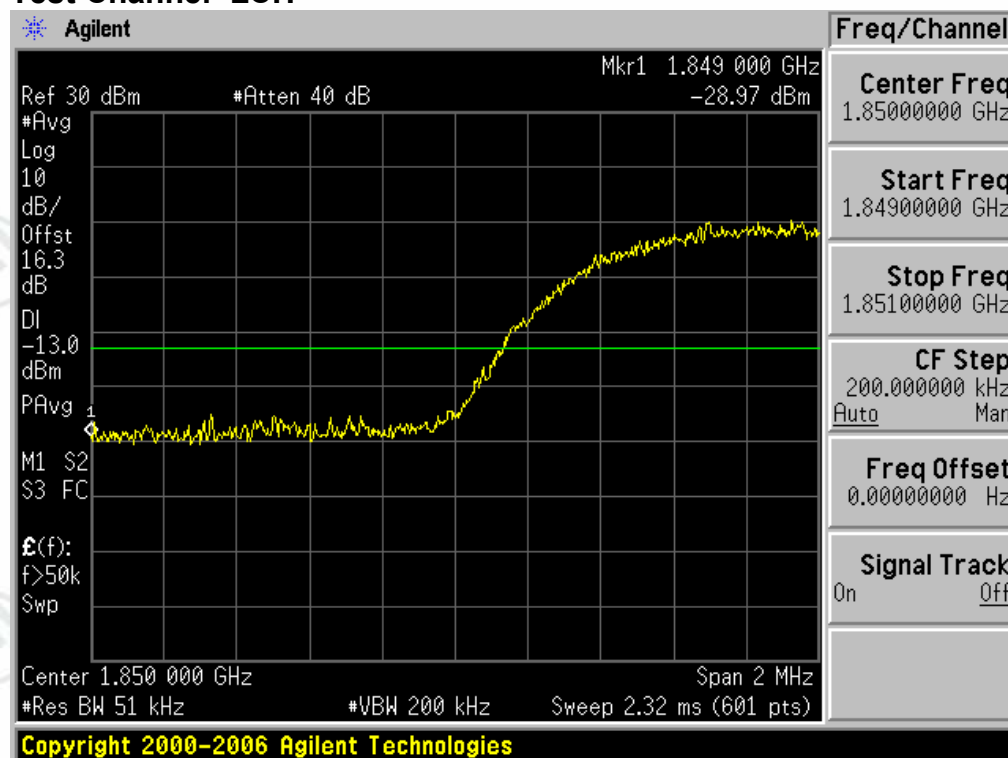


Test Channel=HCH

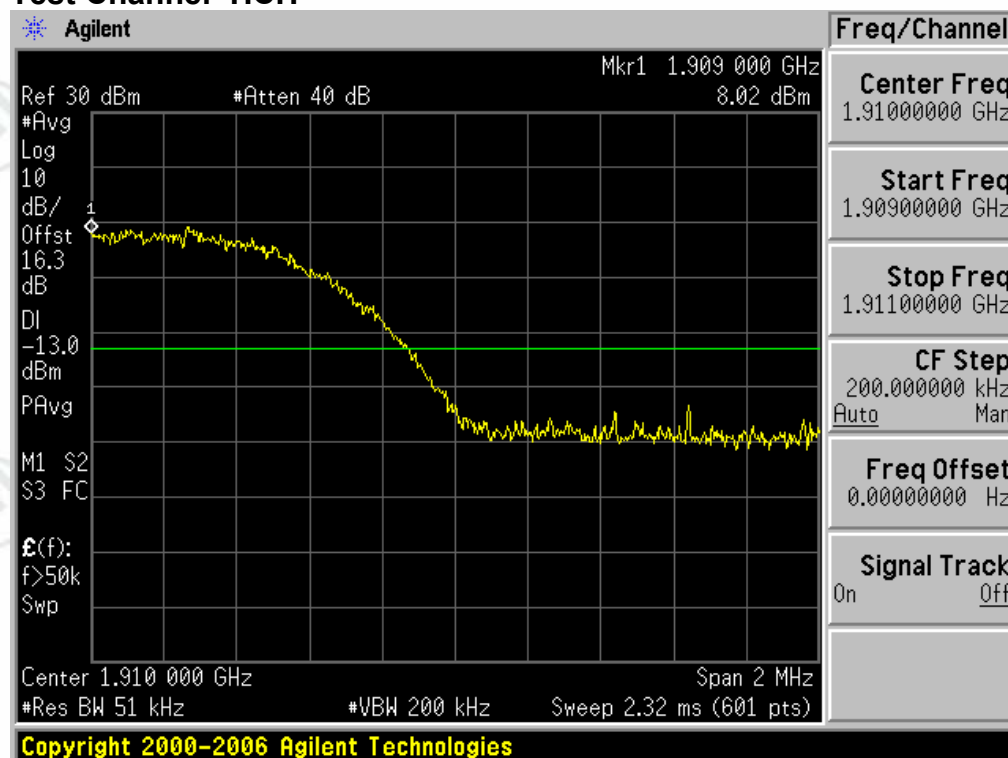


Test Mode=UMTS/TM2

Test Channel=LCH

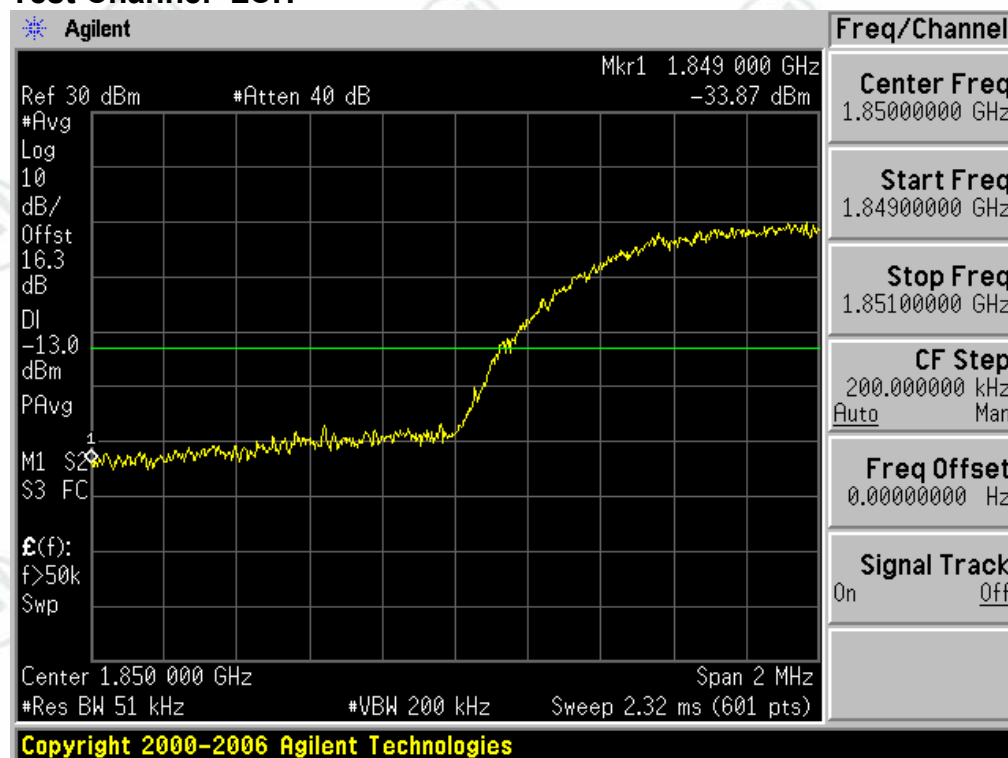


Test Channel=HCH

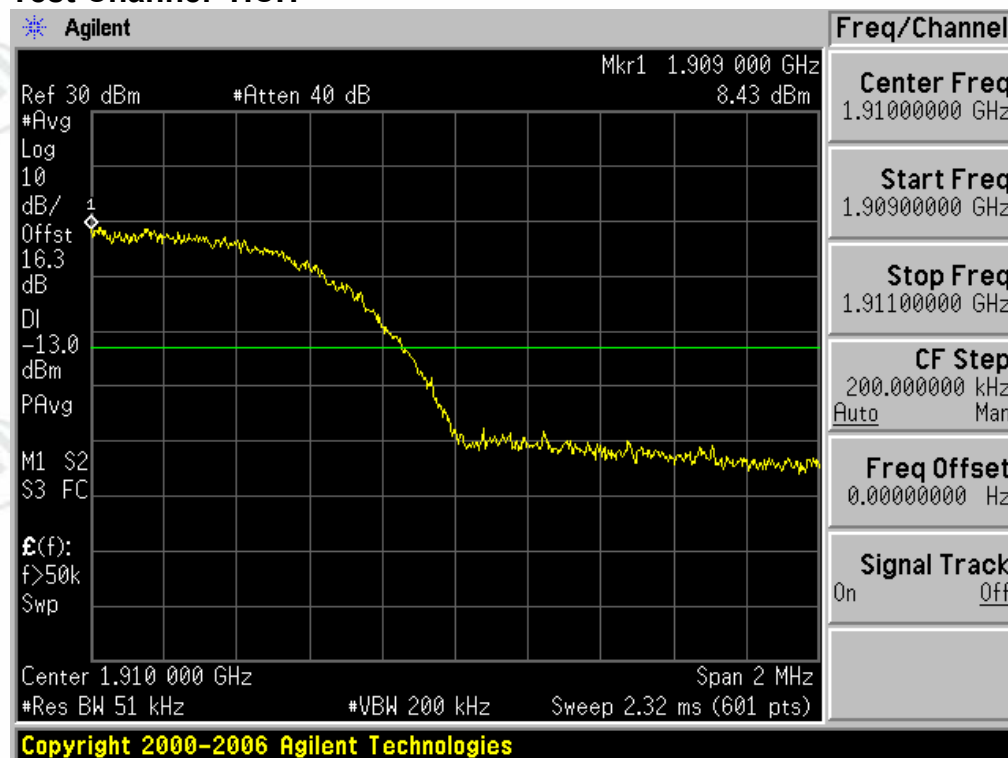


Test Mode=UMTS/TM3

Test Channel=LCH



Test Channel=HCH



Appendix E)Spurious Emission at Antenna Terminal

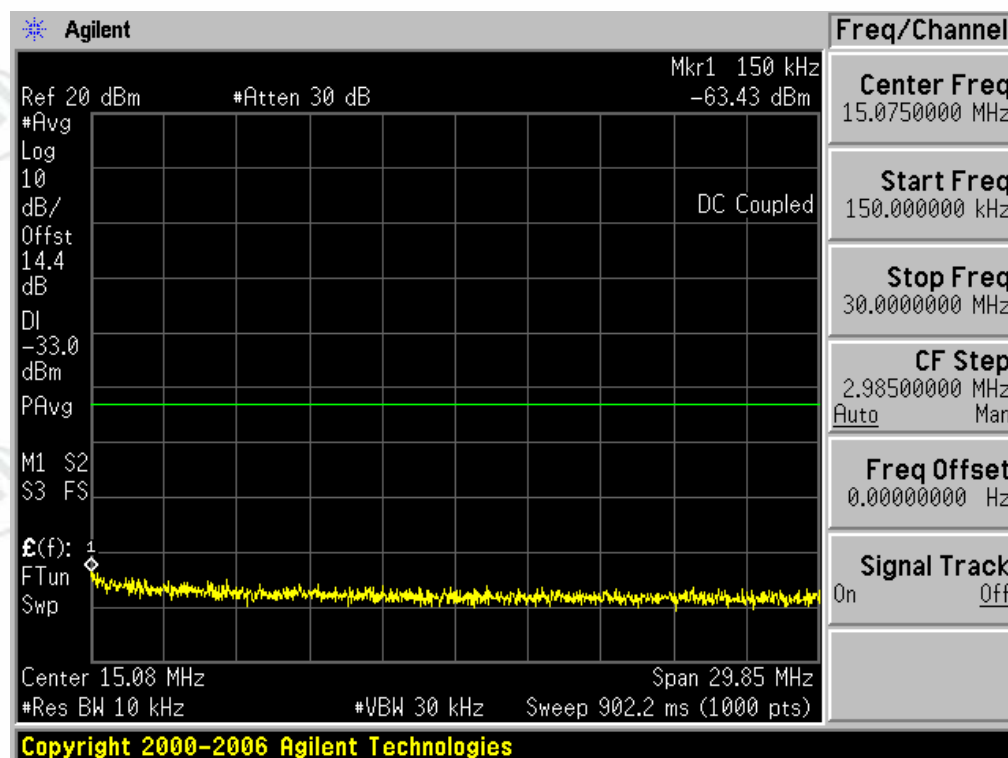
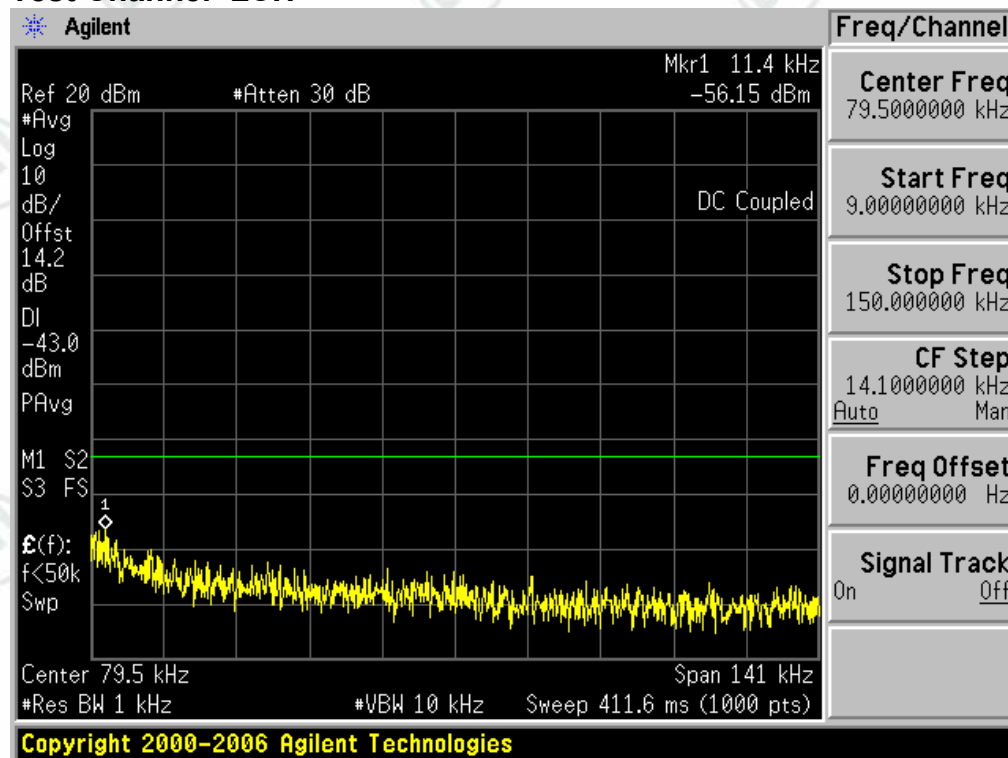
Test Requirement:	Part 2.1051/Part 2.1057
Test Method:	TIA-603-E-2016 Clause 2.2.13
Test Setup:	Refer to section 5 for details
Measurement Procedure:	The transmitter output was connected to a calibrated coaxial cable, attenuator and Spectrum analyzer, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel and high channel).the equipment operates below 10GHz: to the tenth harmonic of the highest fundamental frequency or to 40GHz.whichever is lower, the resolution bandwidth of the spectrum analyzer was set at 100kHz for spurious emissions below 1 GHz, and 1 MHz for spurious emissions above 1GHz.the video bandwidth of the spectrum analyzer was set at thrice the resolution bandwidth. Detector Mode was set to mean or average power.
Instruments Used:	Refer to section 7 for details
Limit:	Attenuated at least $43+10\log(P)$
Test Results:	Pass

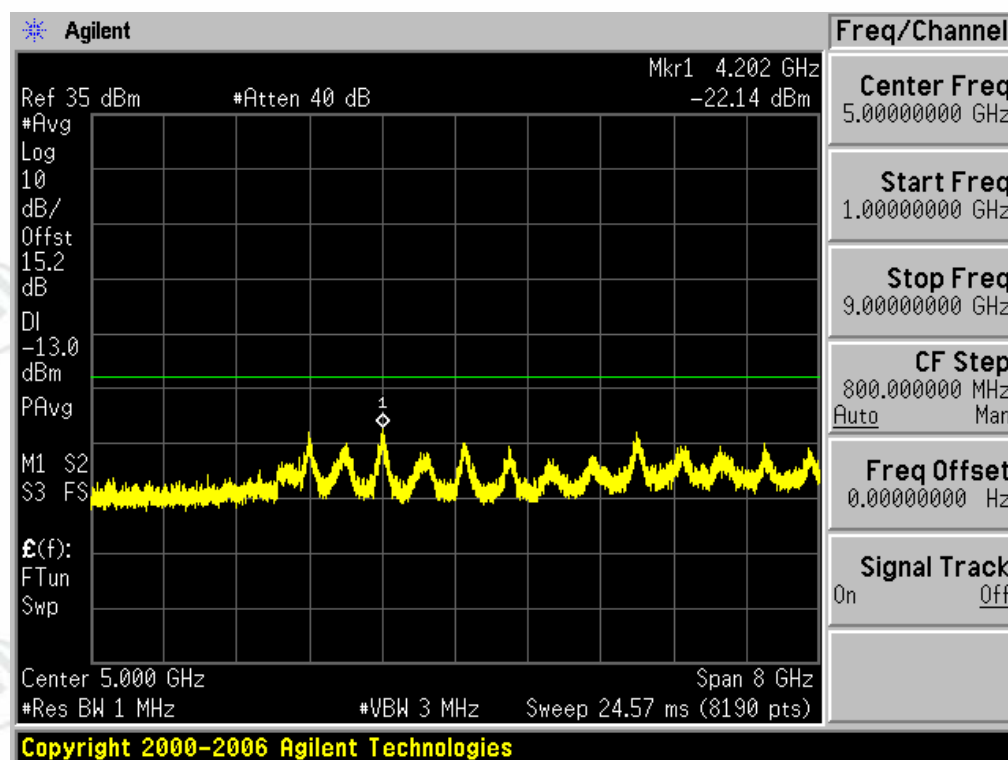
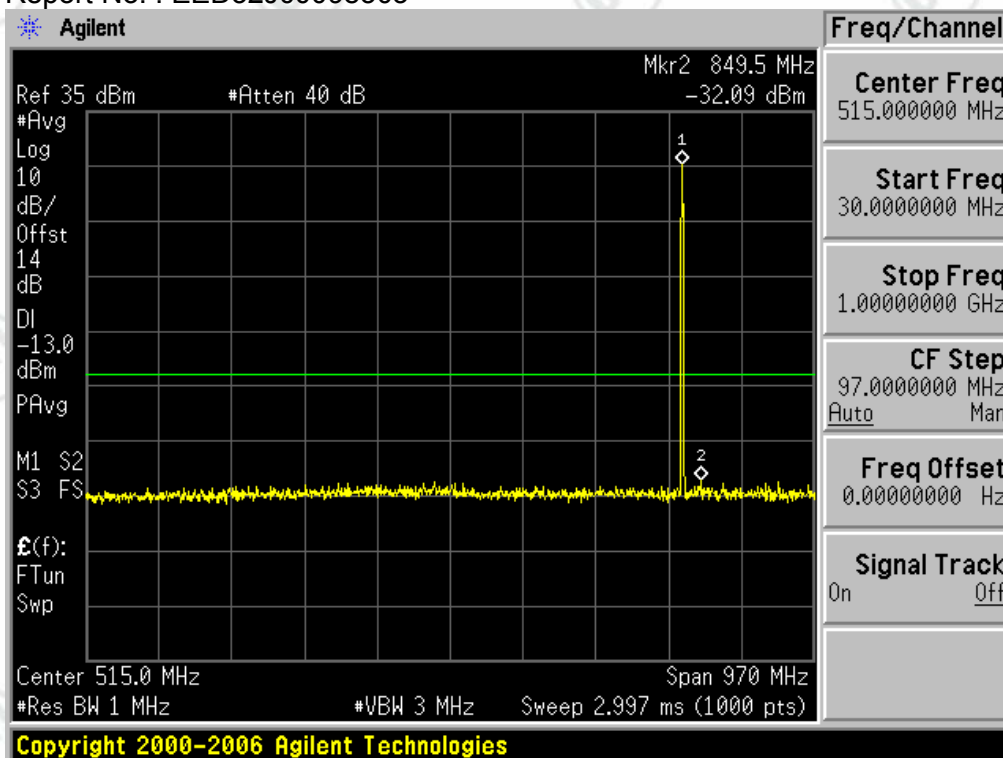
For GSM

Test Band=GSM850

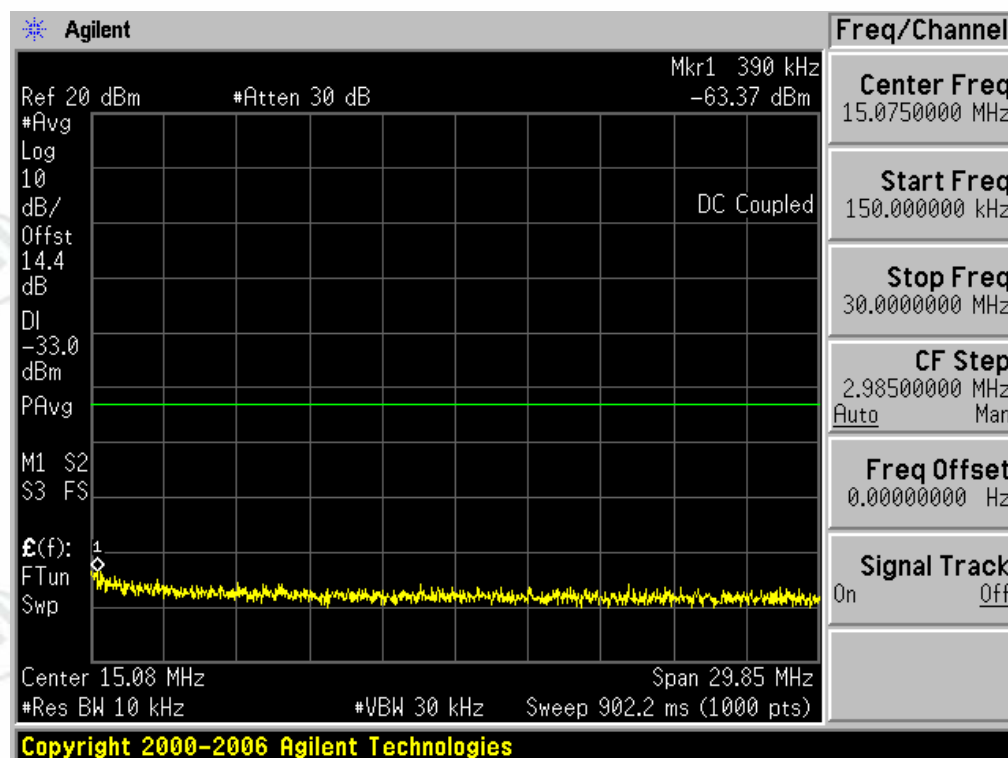
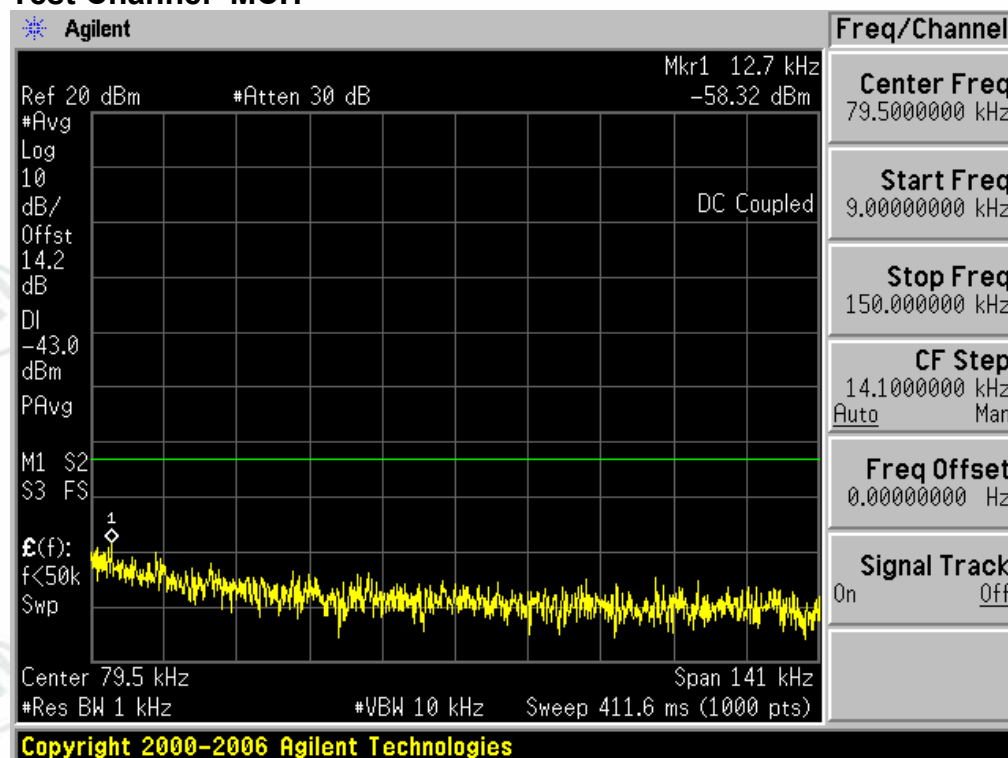
Test Mode=GSM/TM2

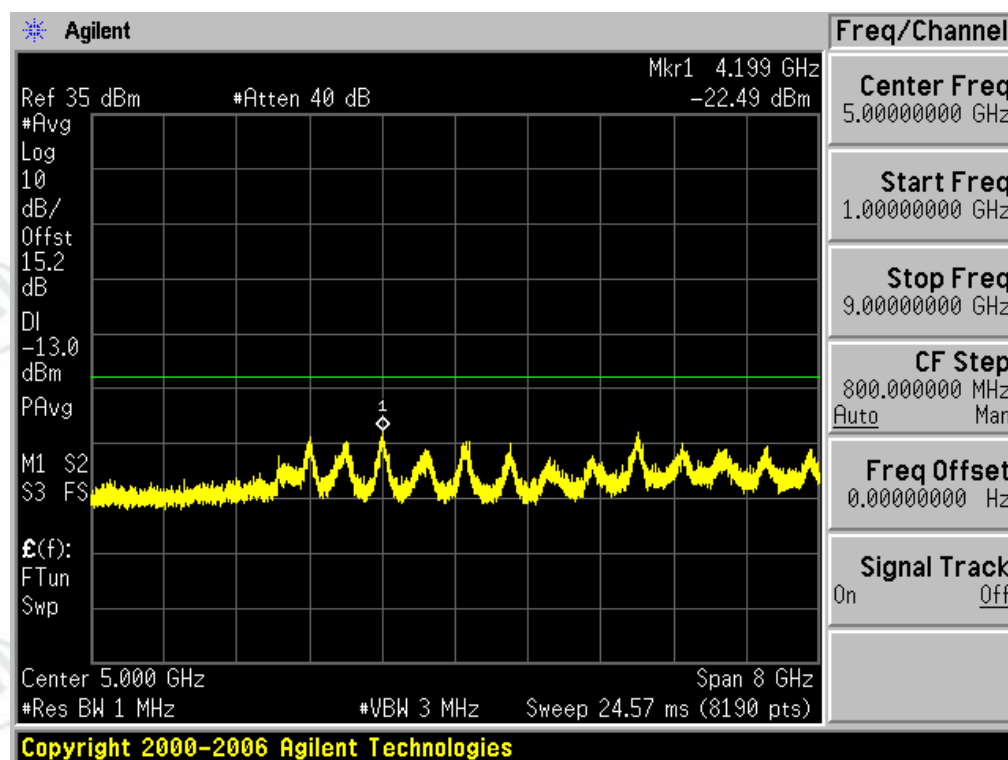
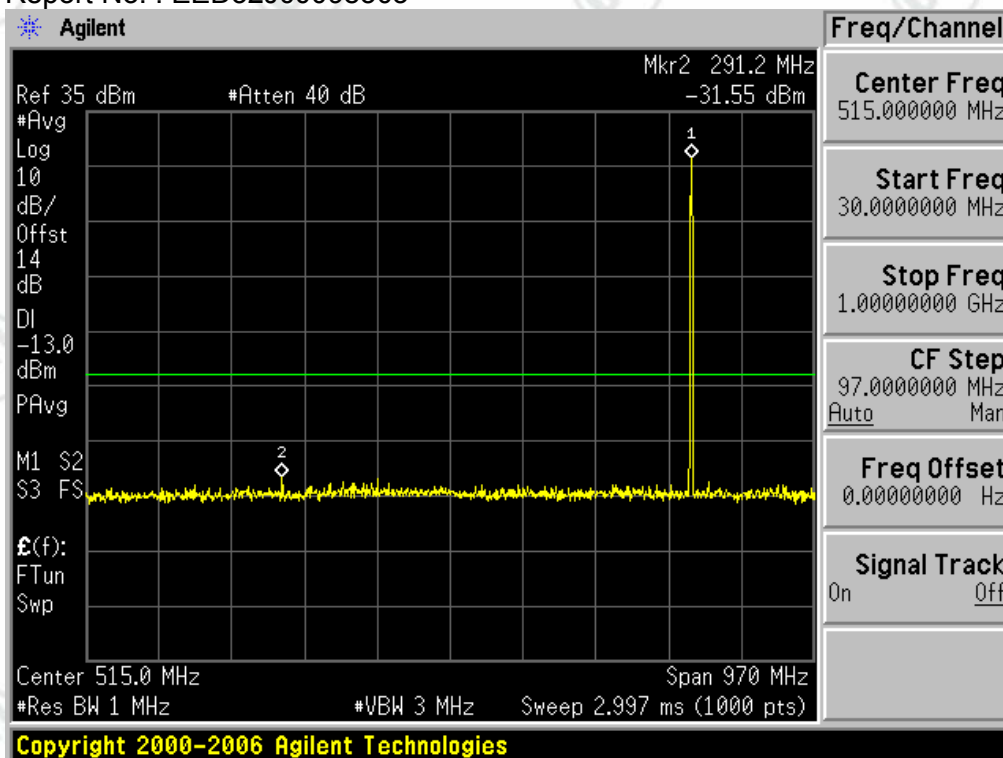
Test Channel=LCH



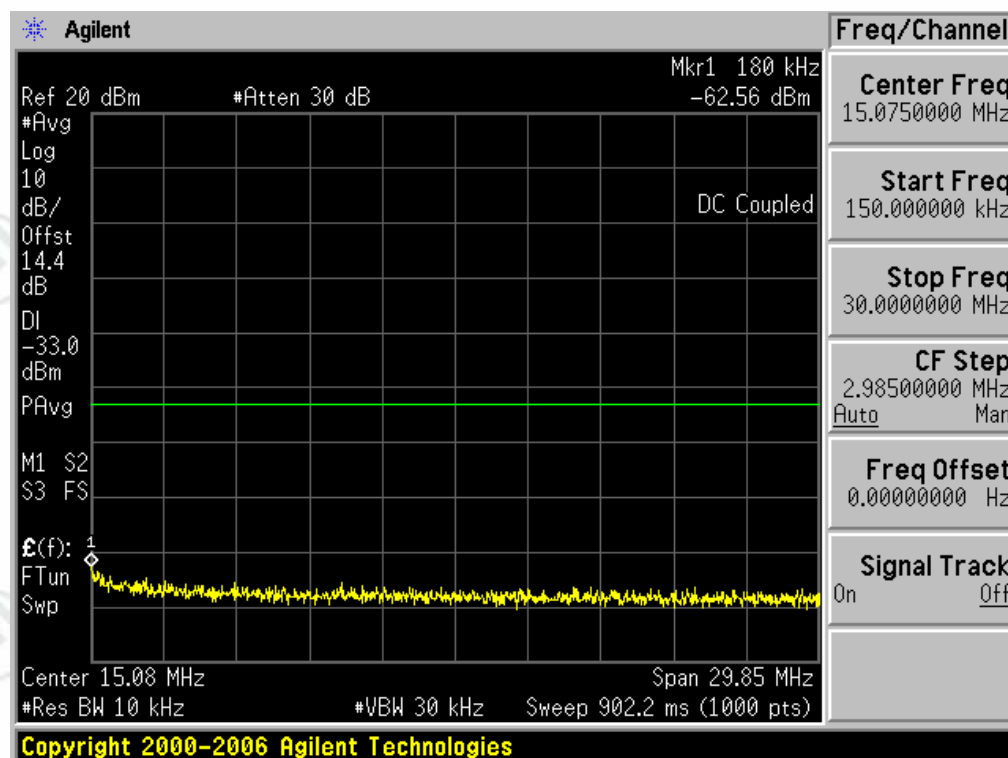
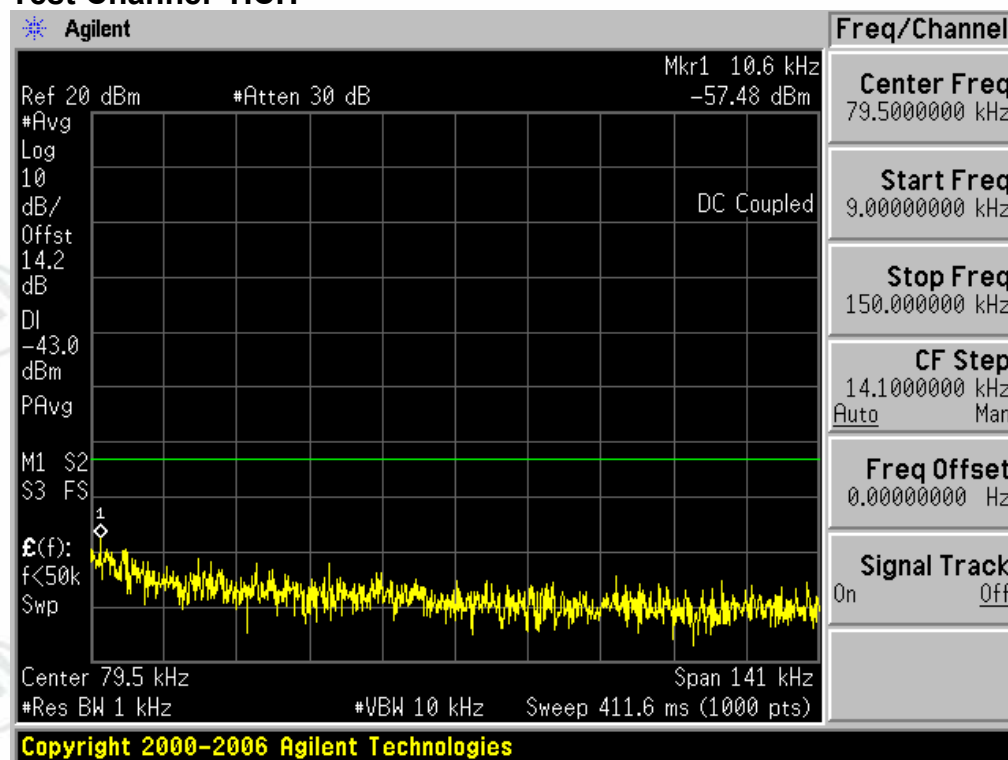


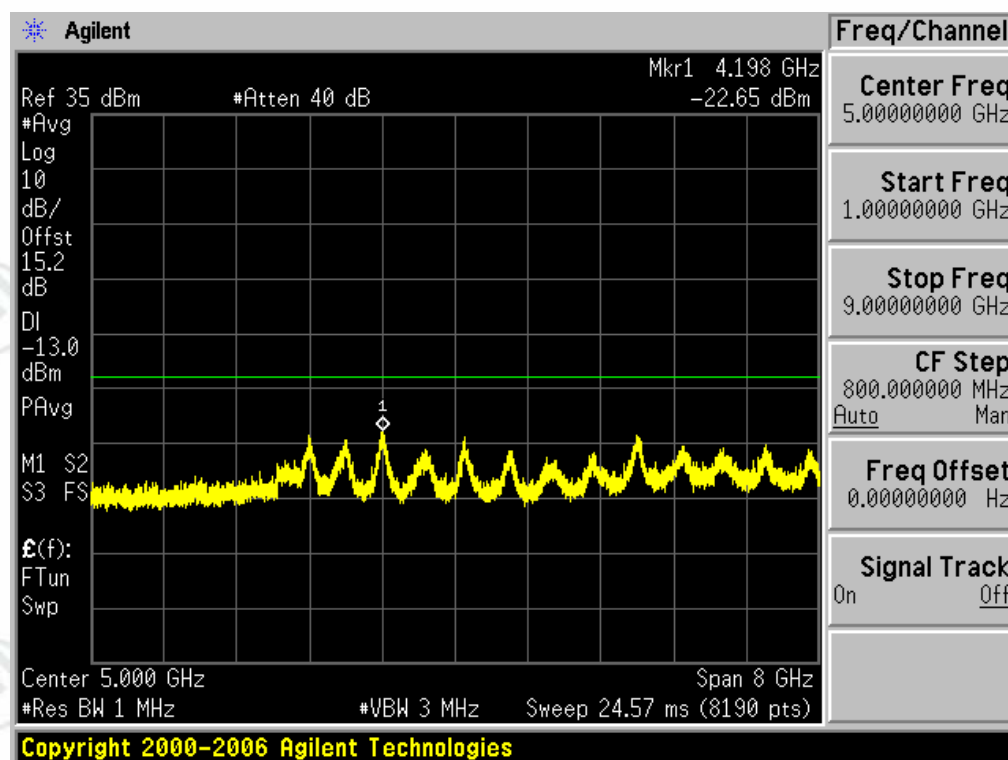
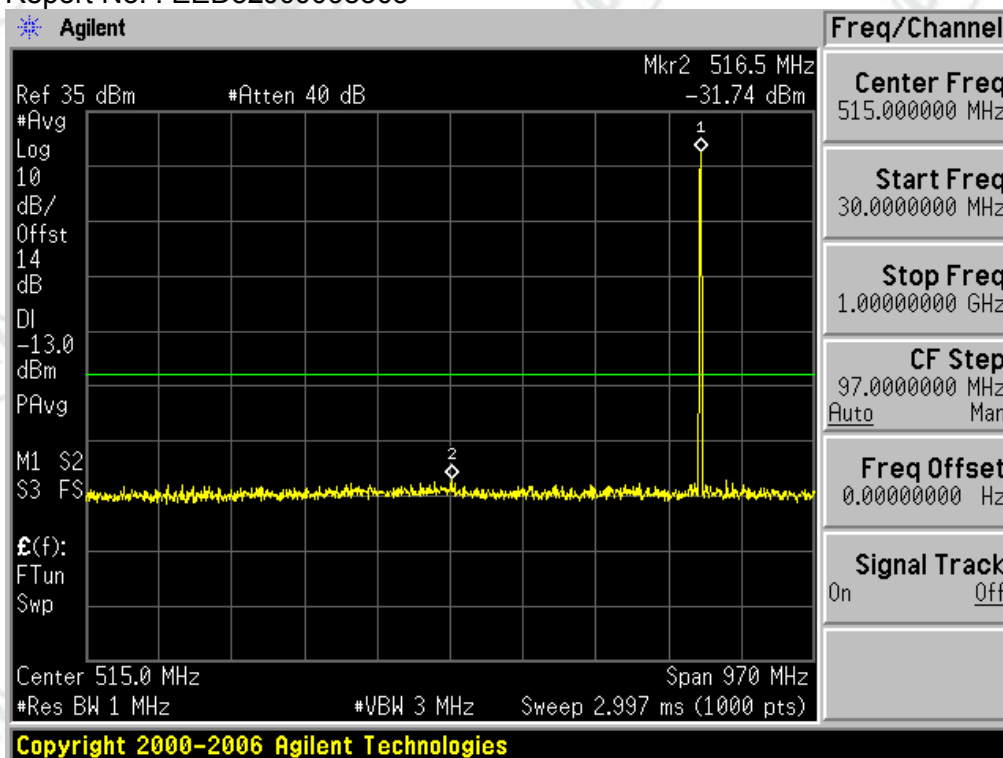
Test Channel=MCH





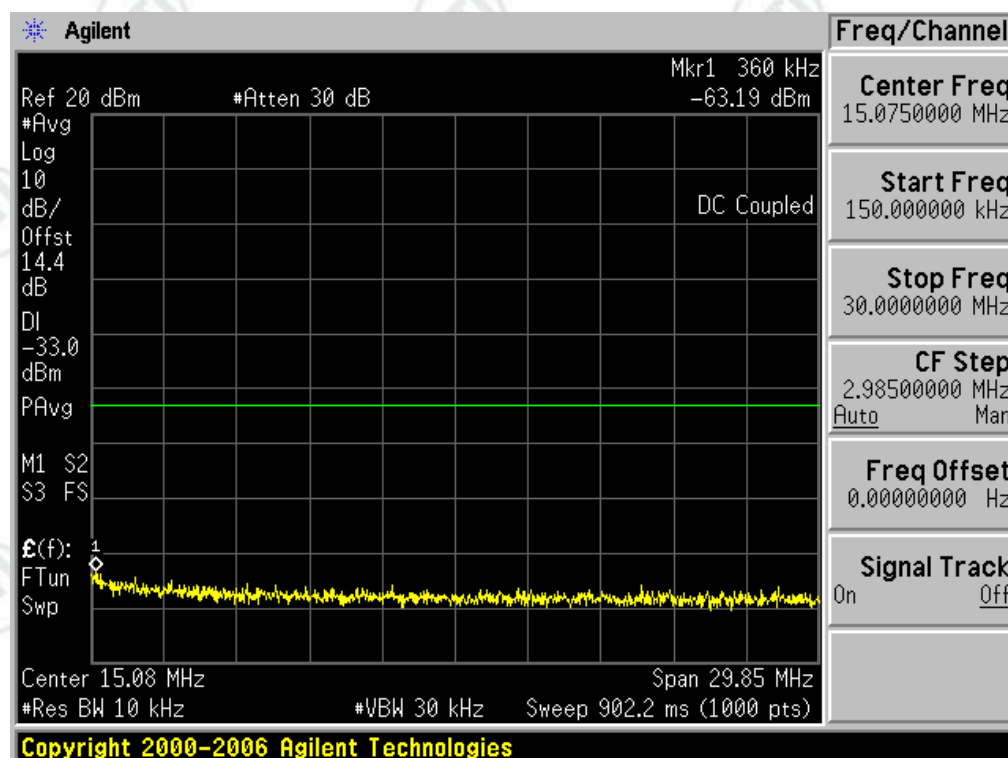
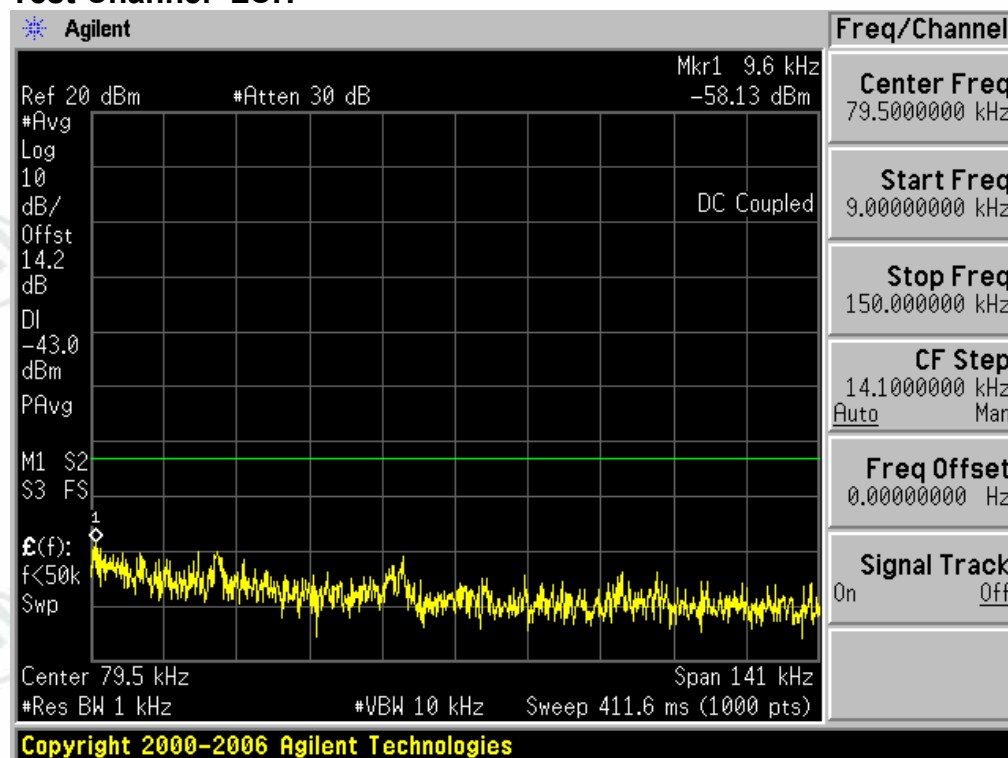
Test Channel=HCH

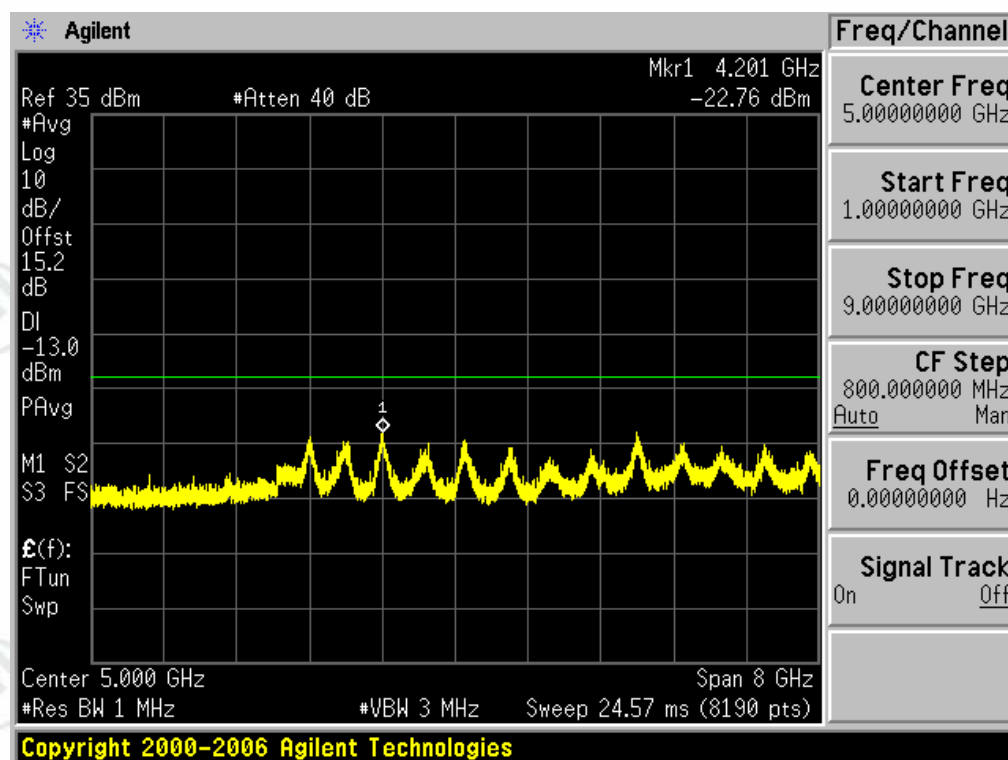
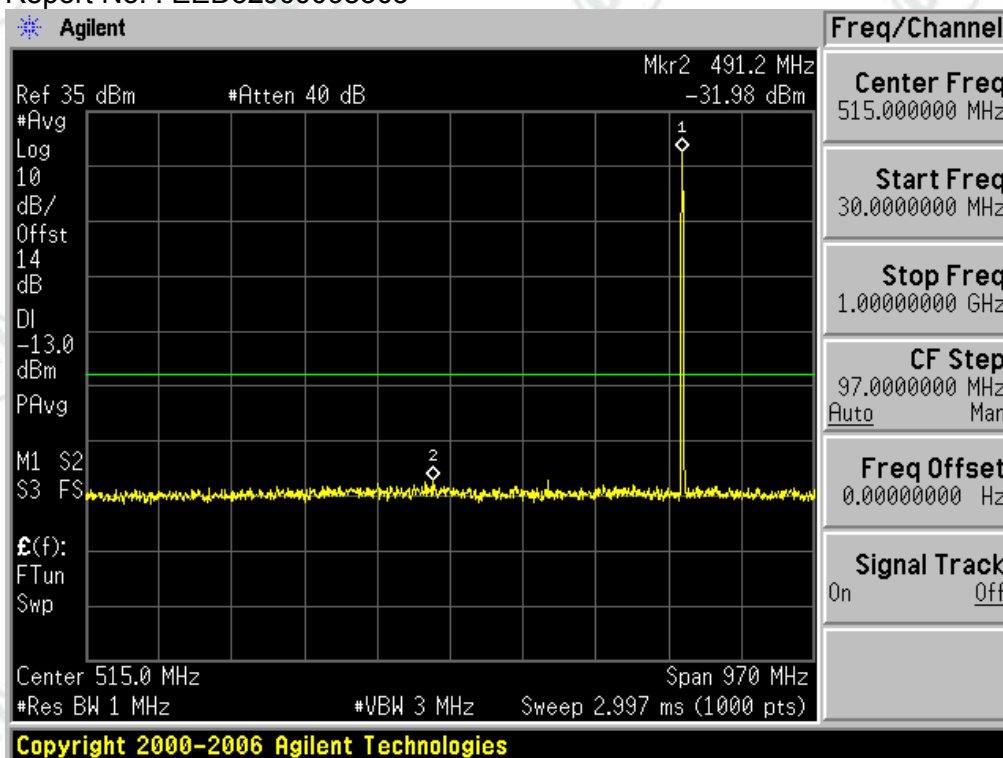




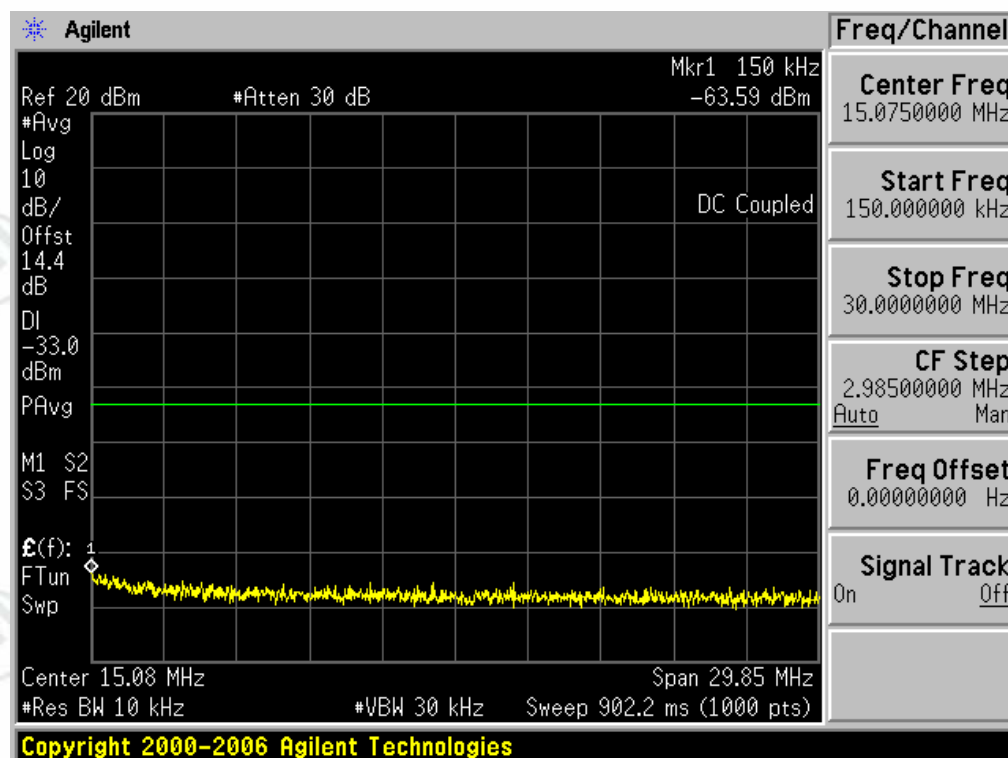
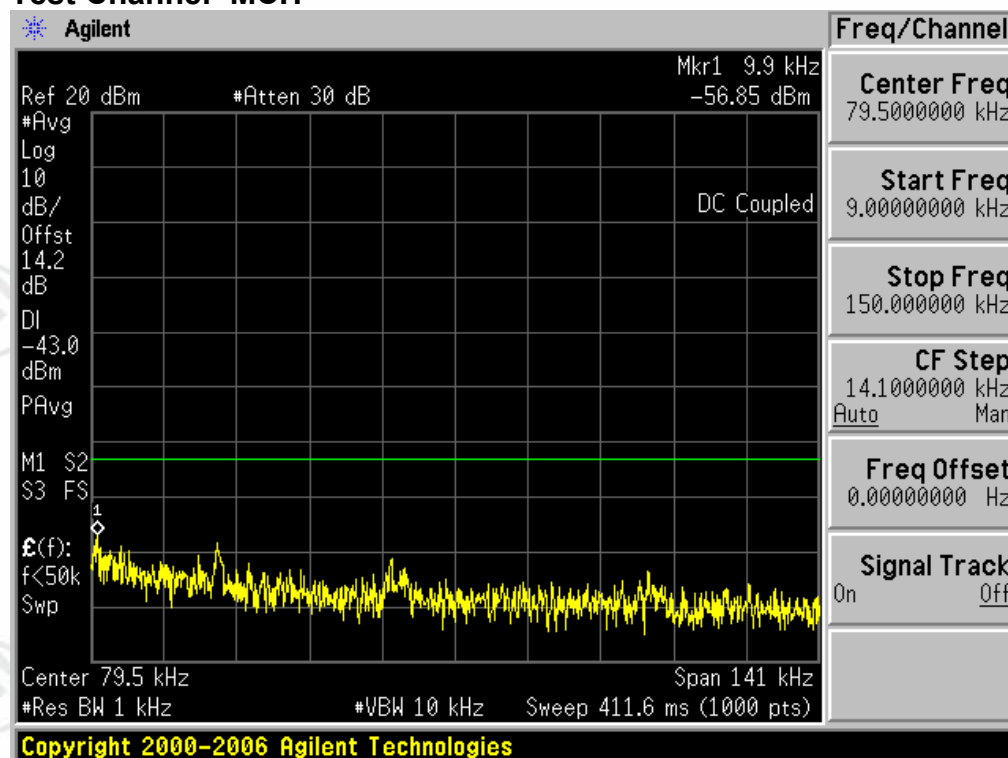
Test Mode=GSM/TM3

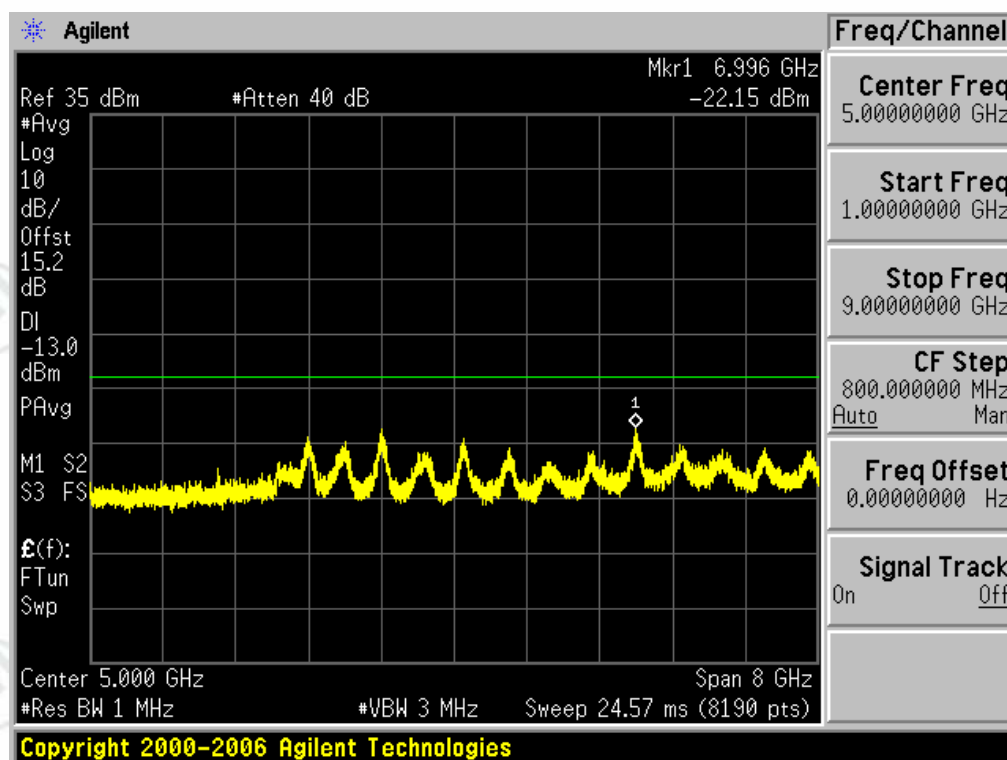
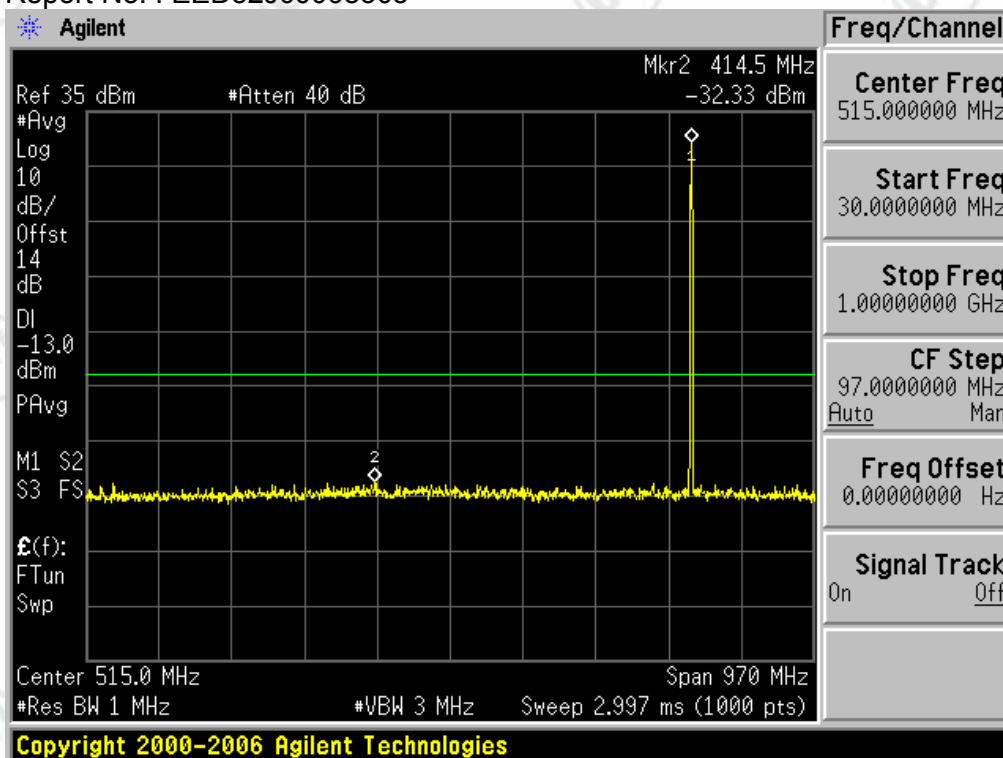
Test Channel=LCH



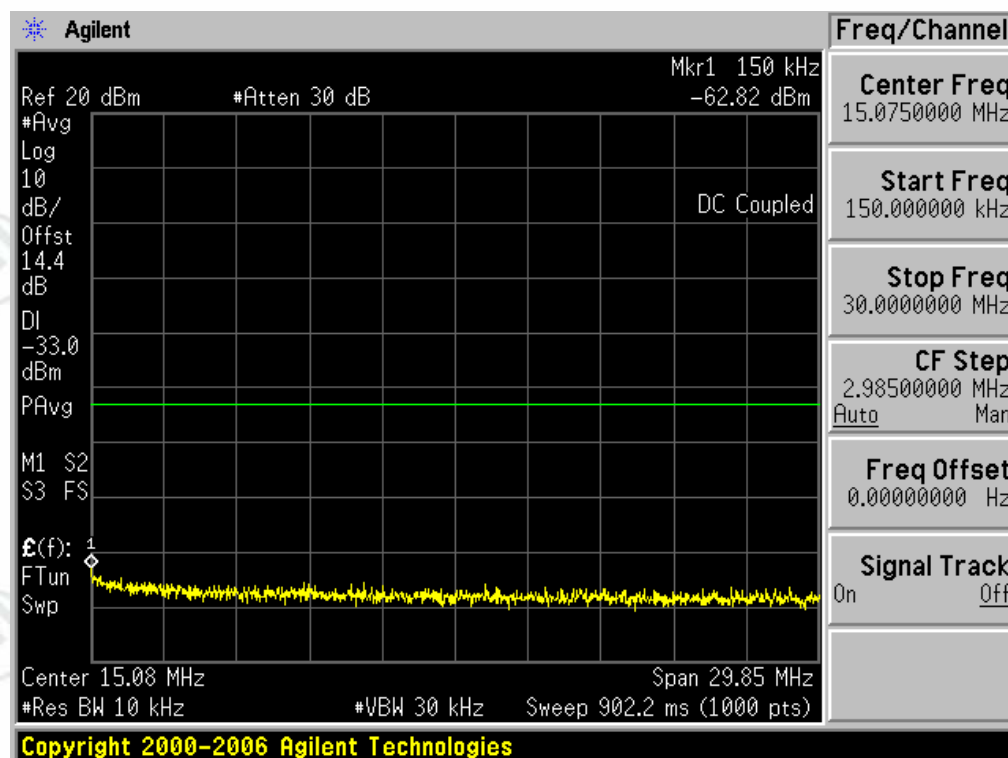
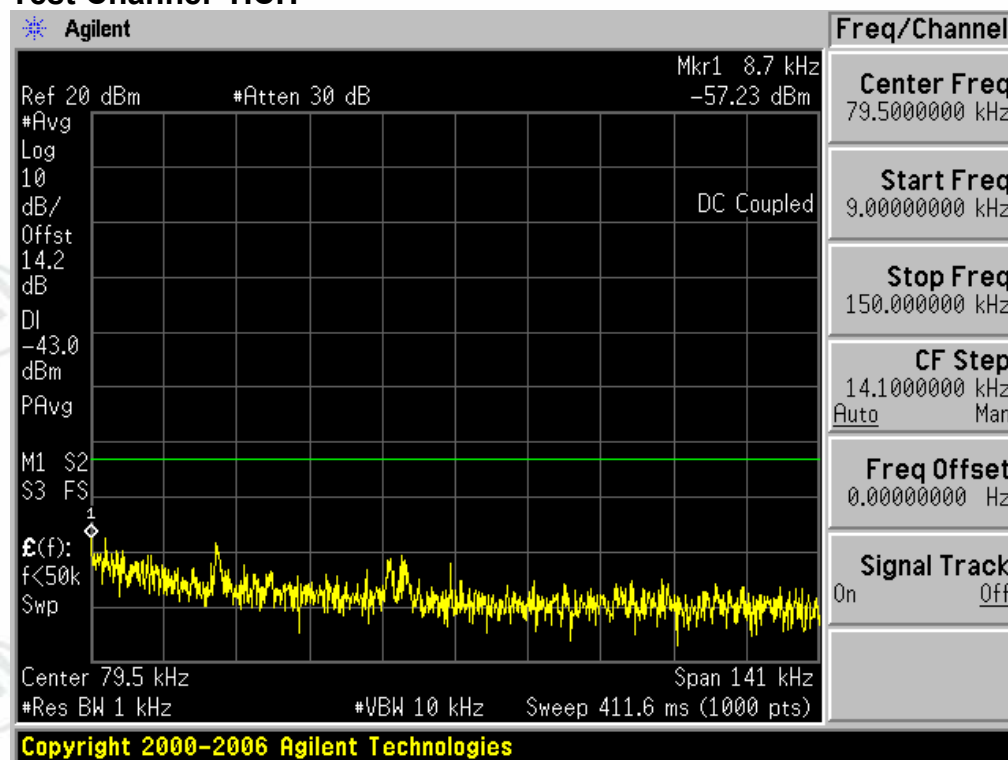


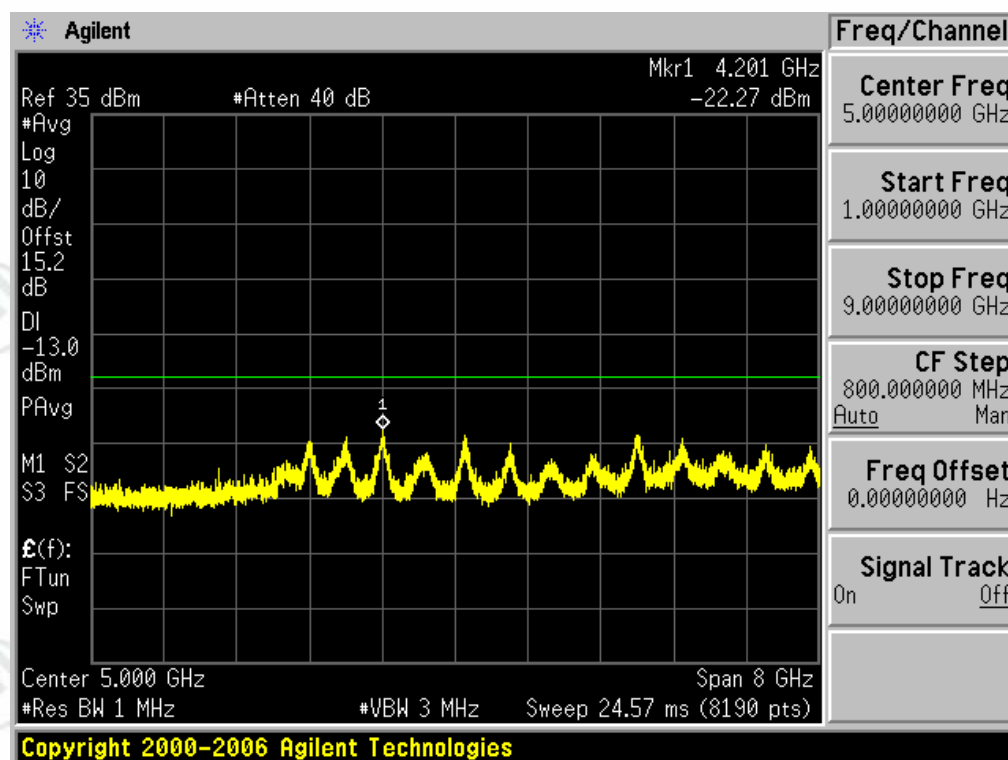
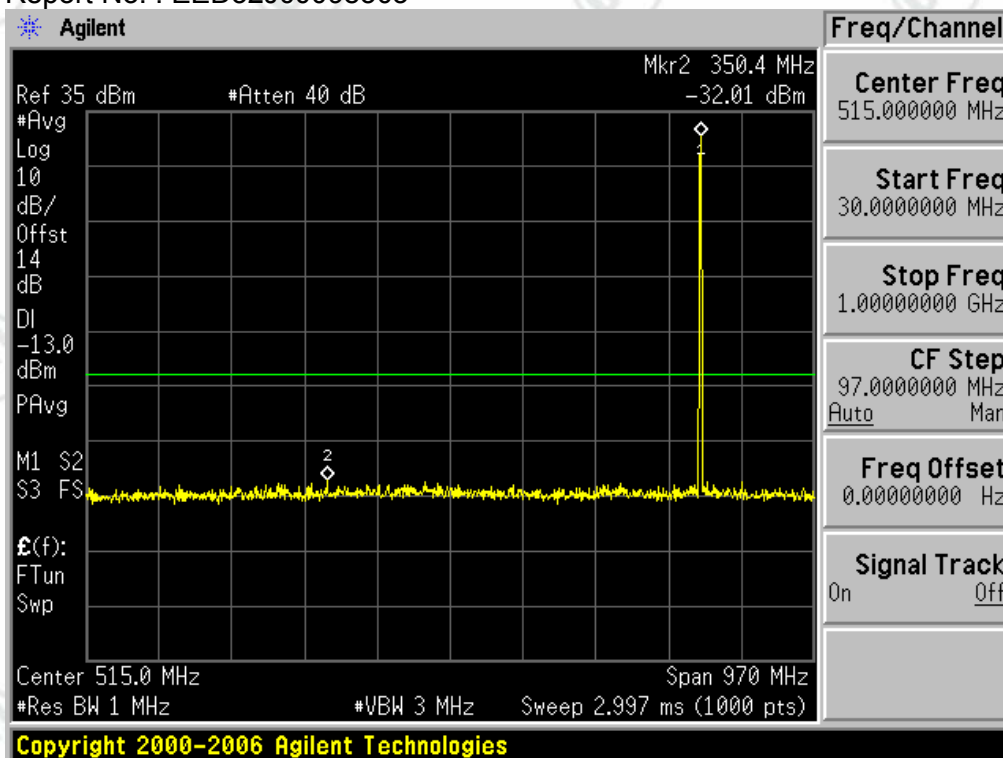
Test Channel=MCH





Test Channel=HCH

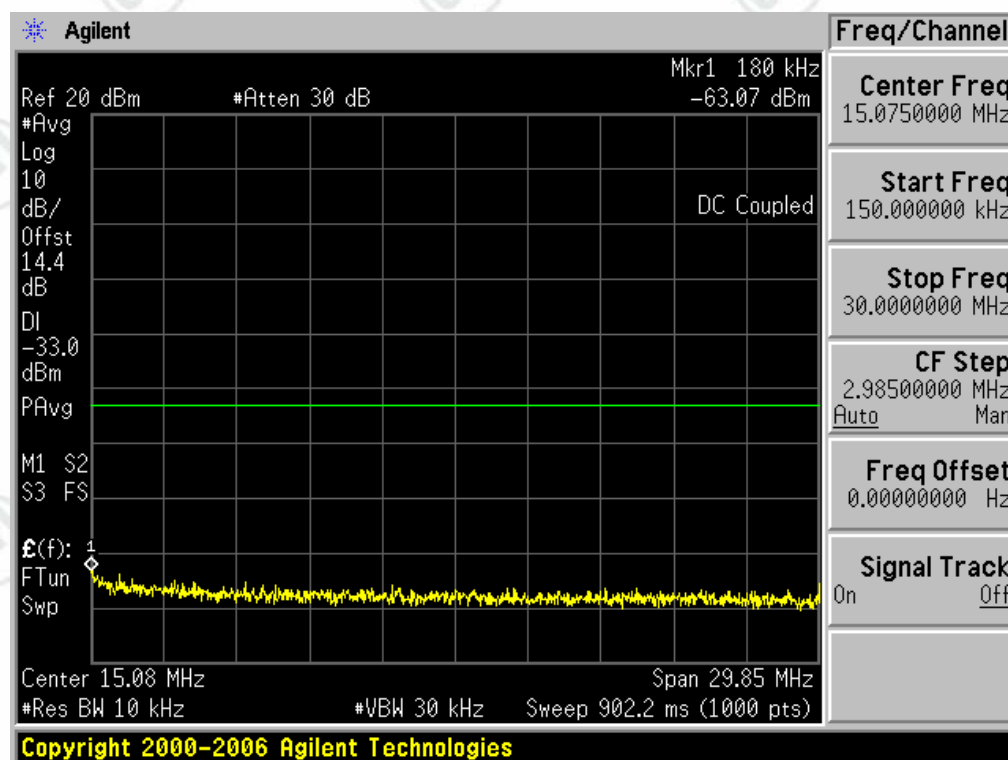
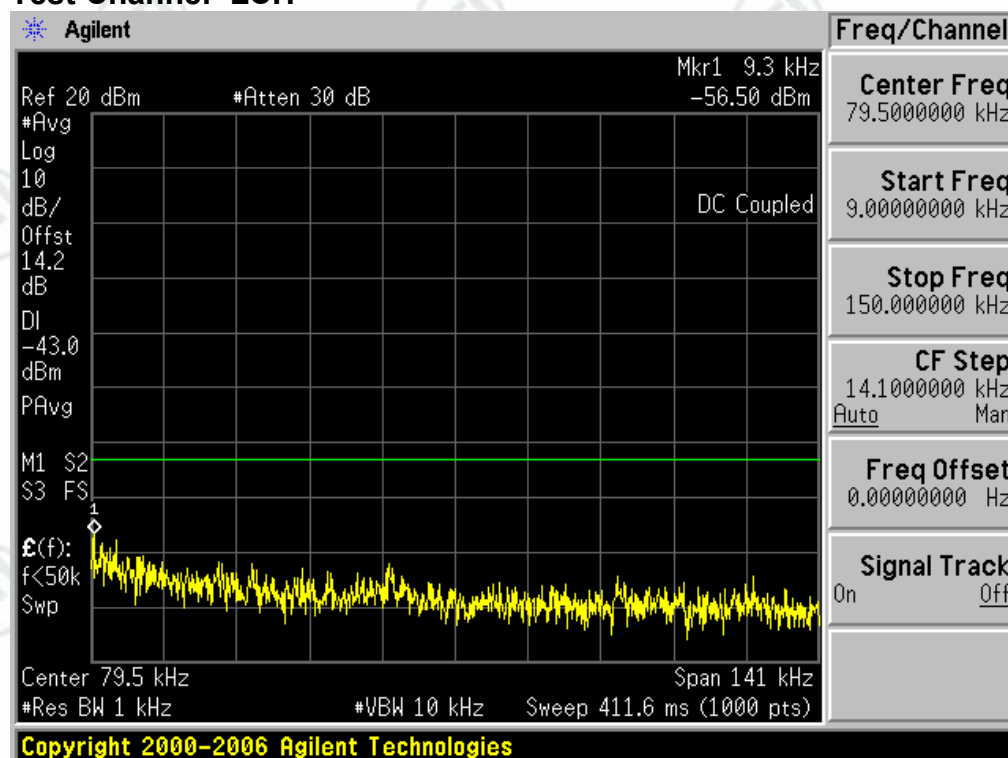


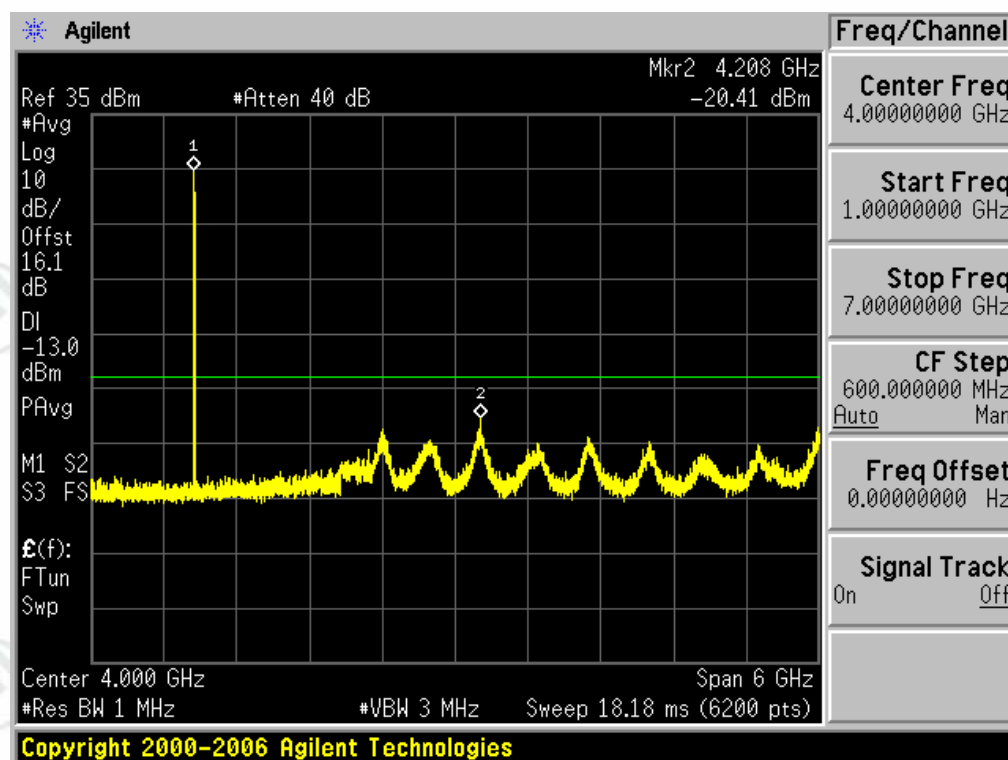
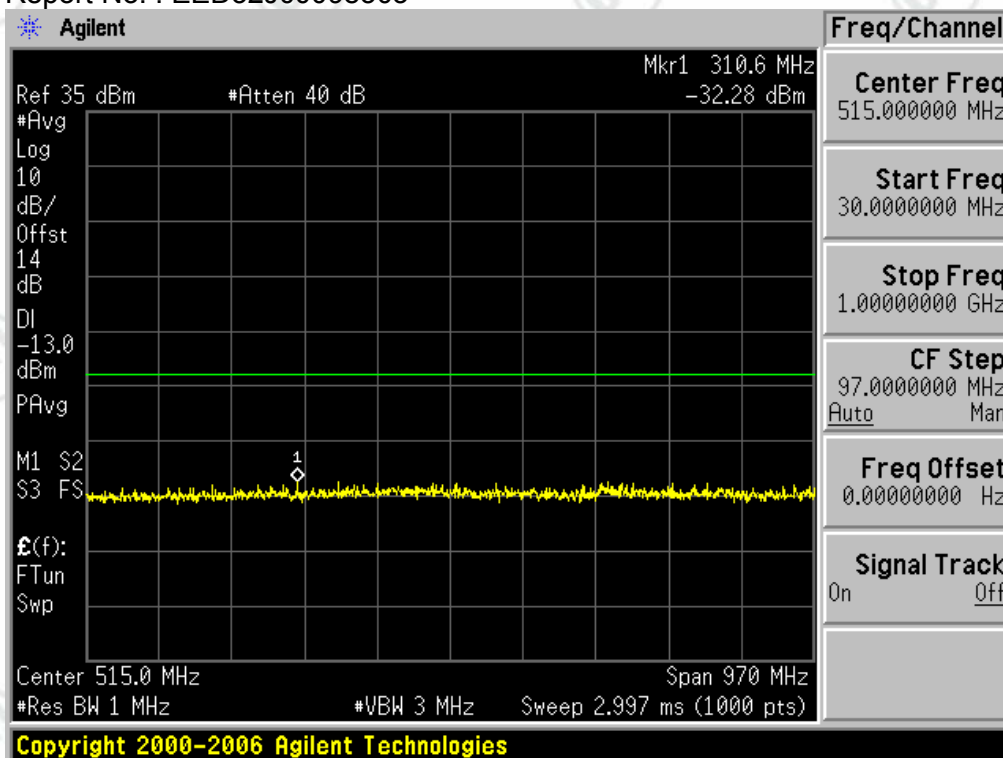


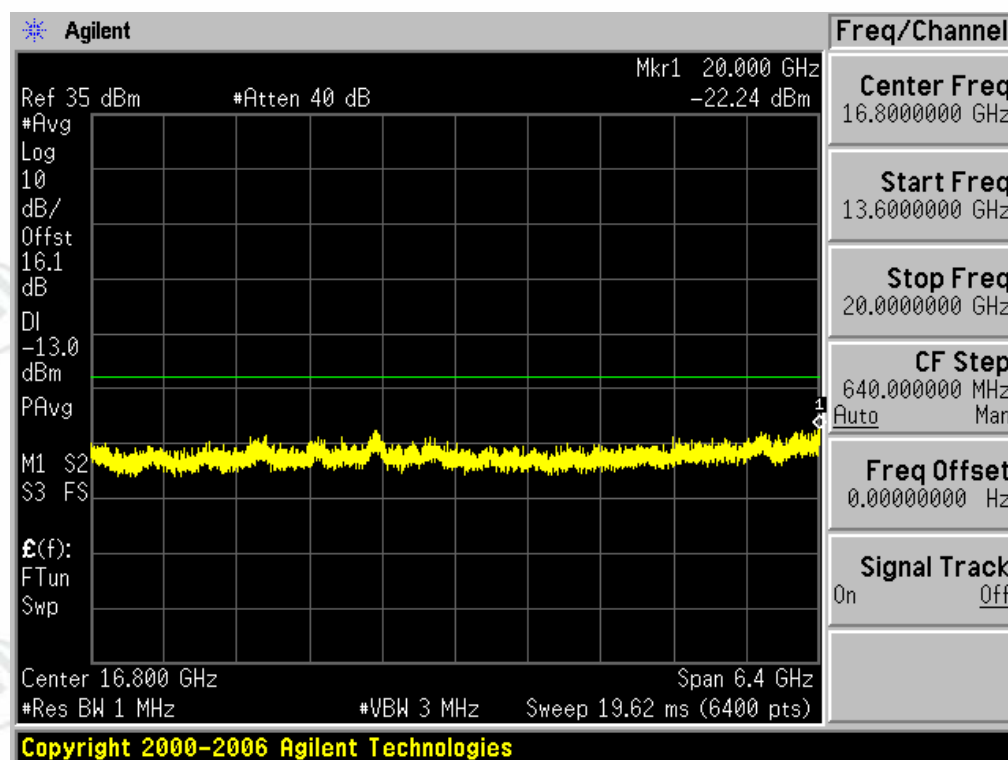
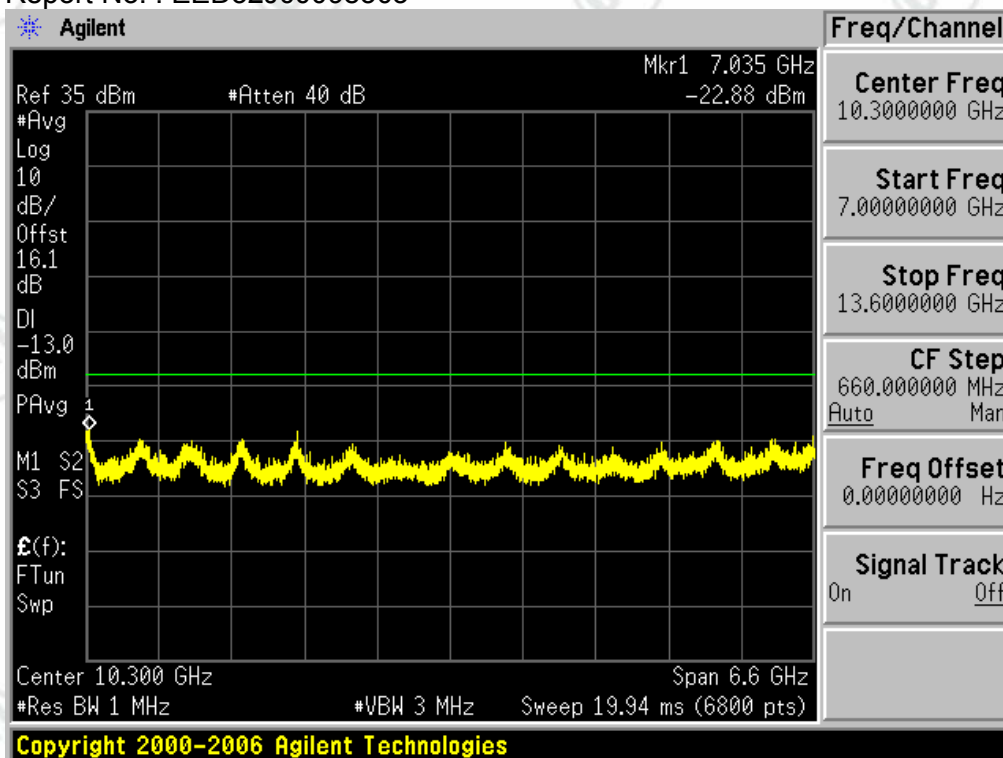
Test Band=GSM1900

Test Mode=GSM/TM2

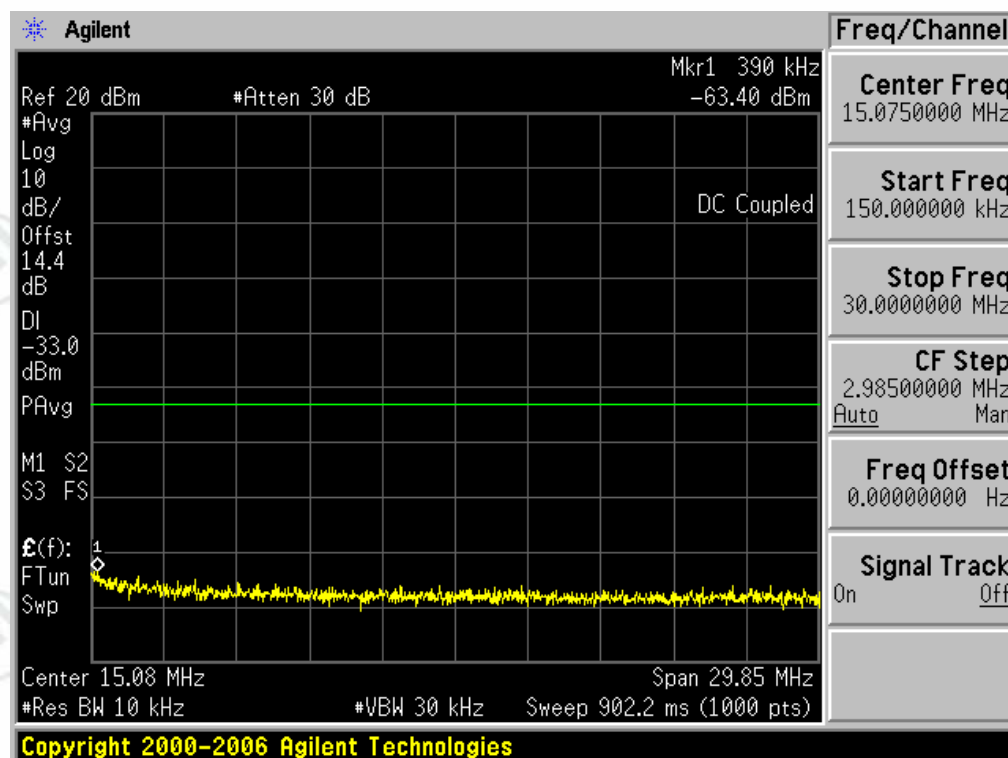
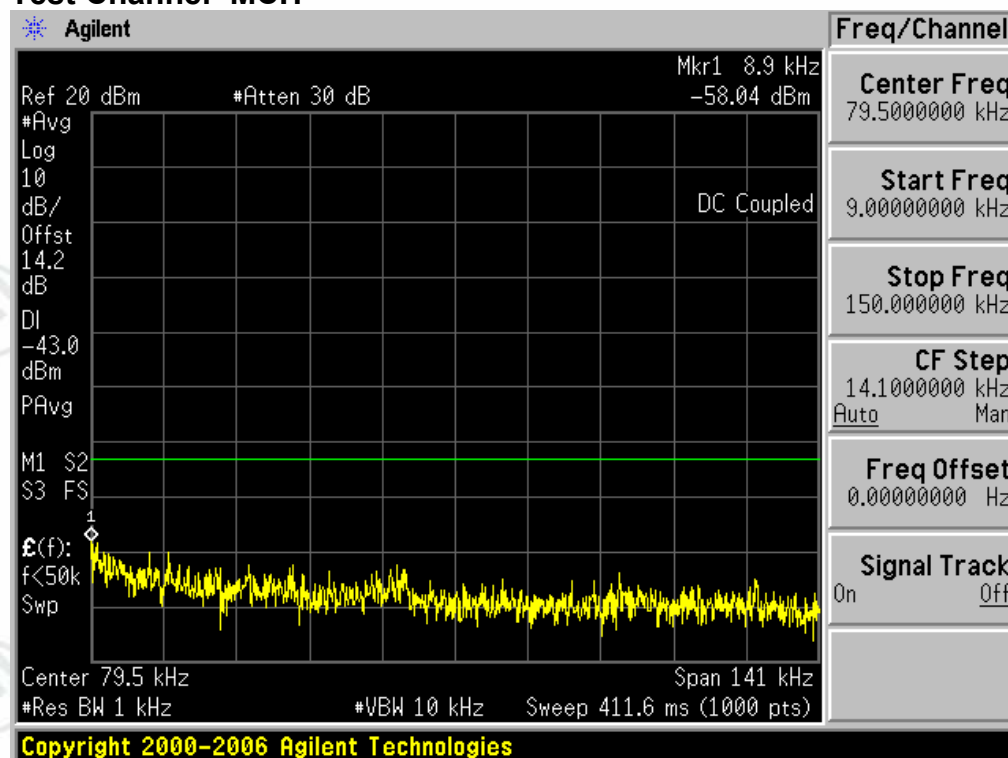
Test Channel=LCH

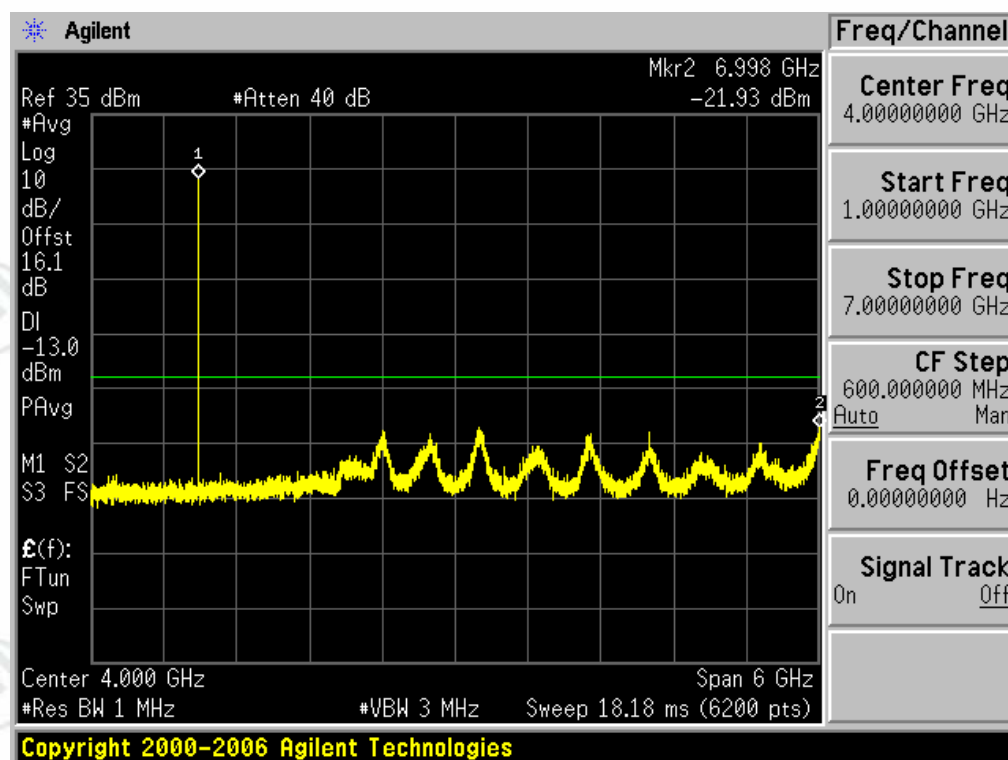
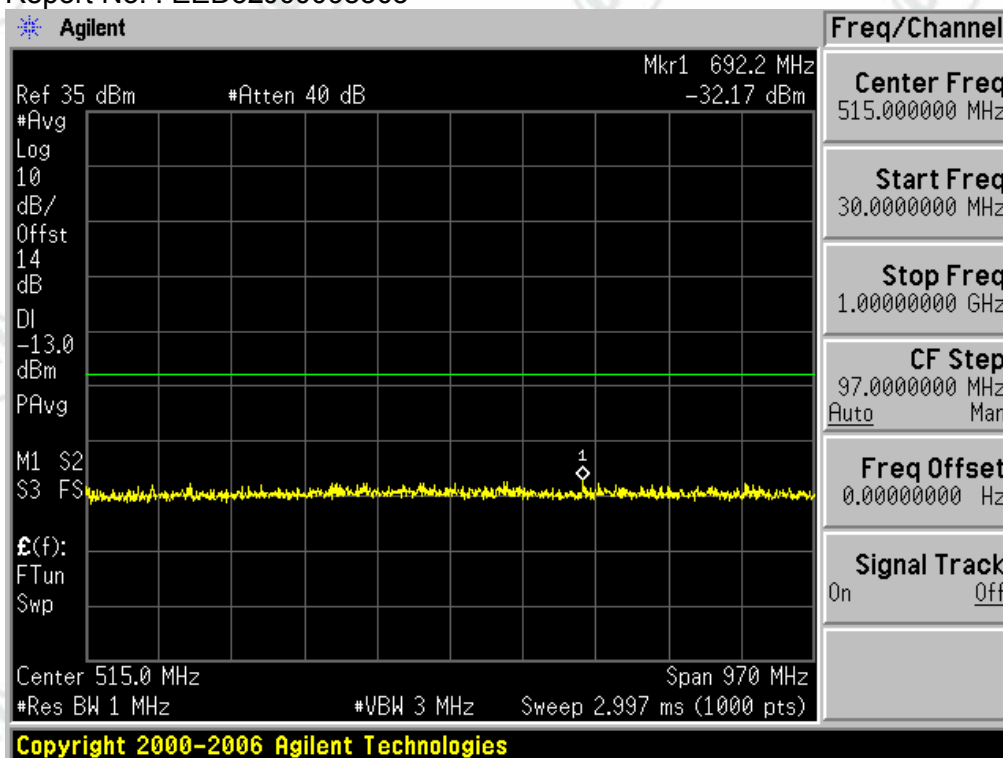


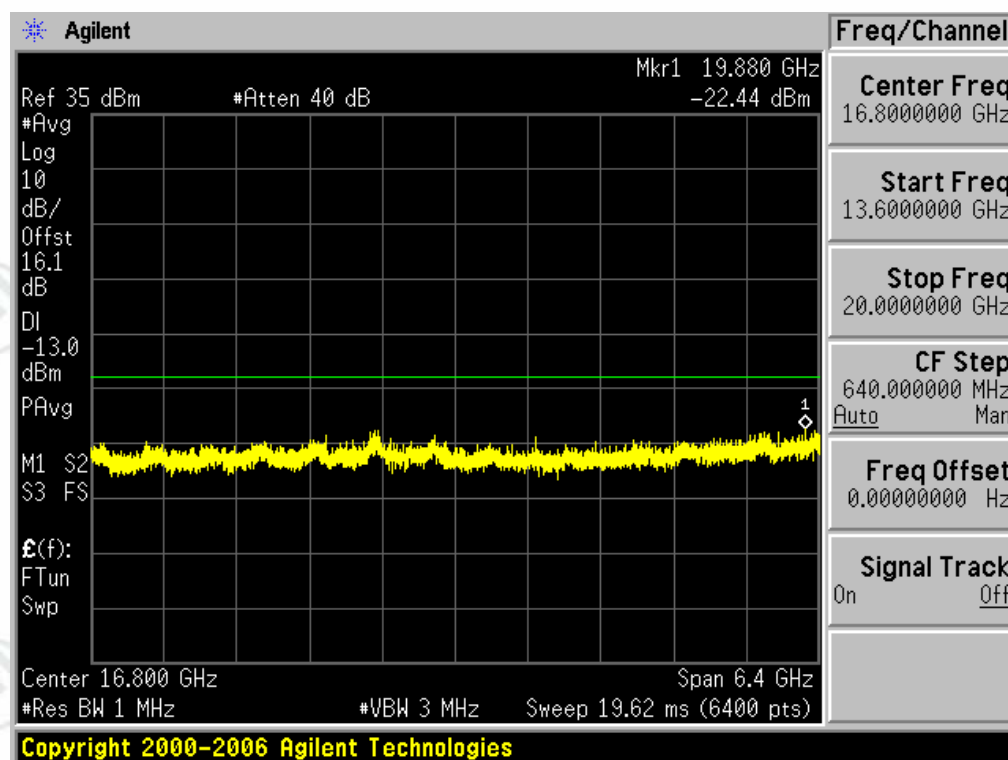
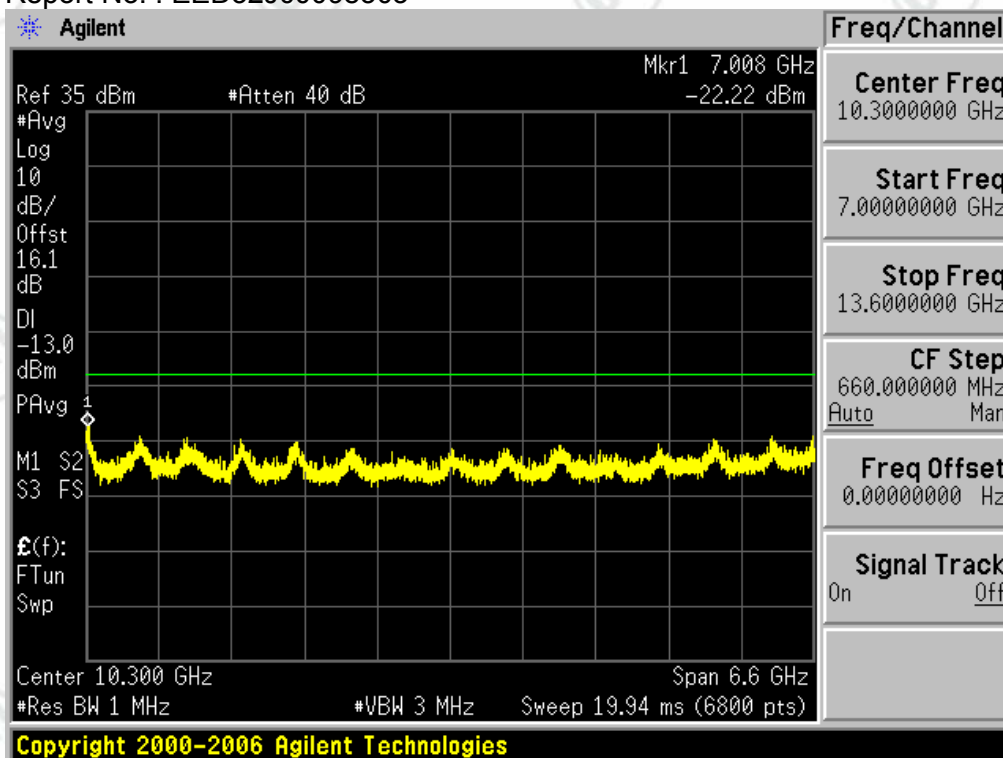




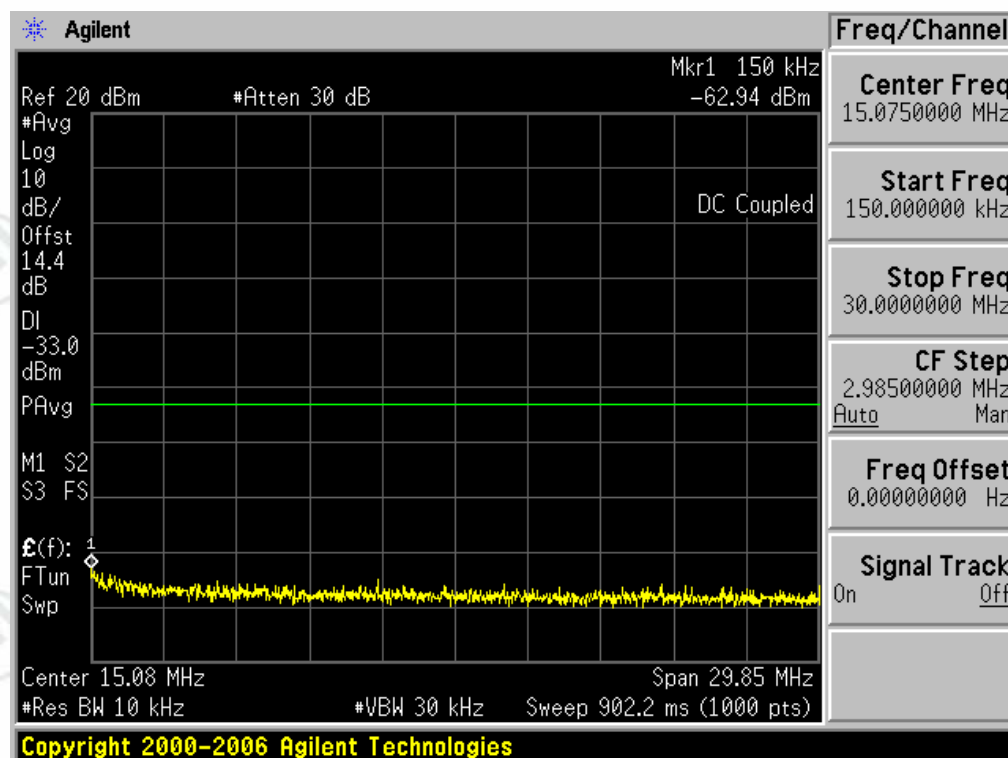
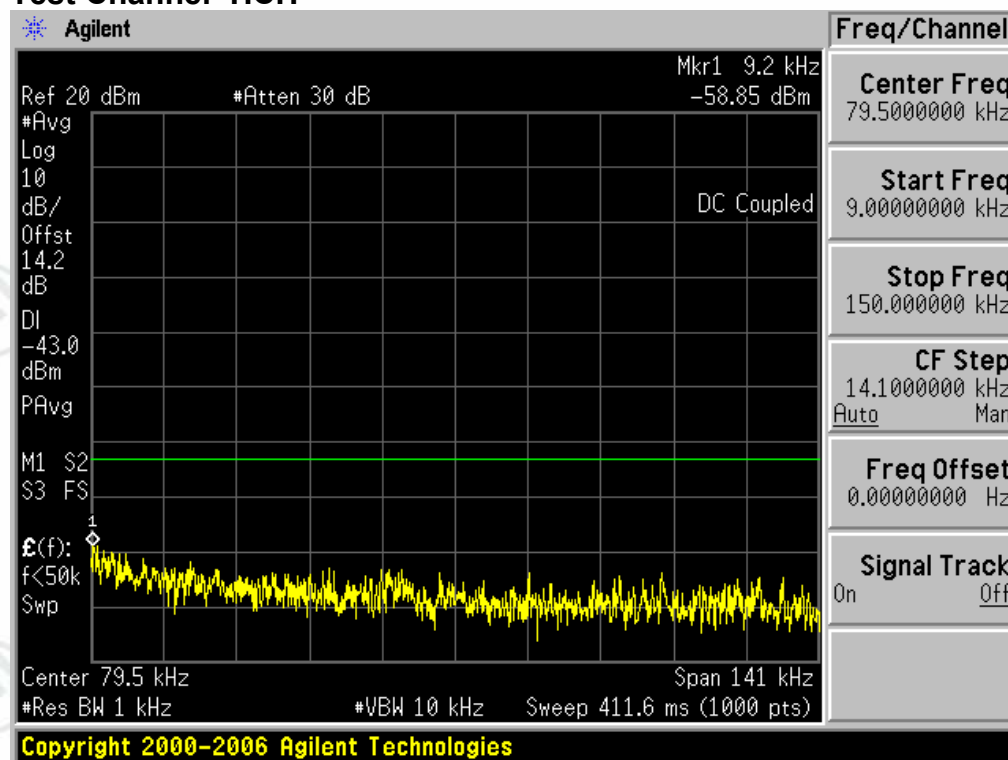
Test Channel=MCH

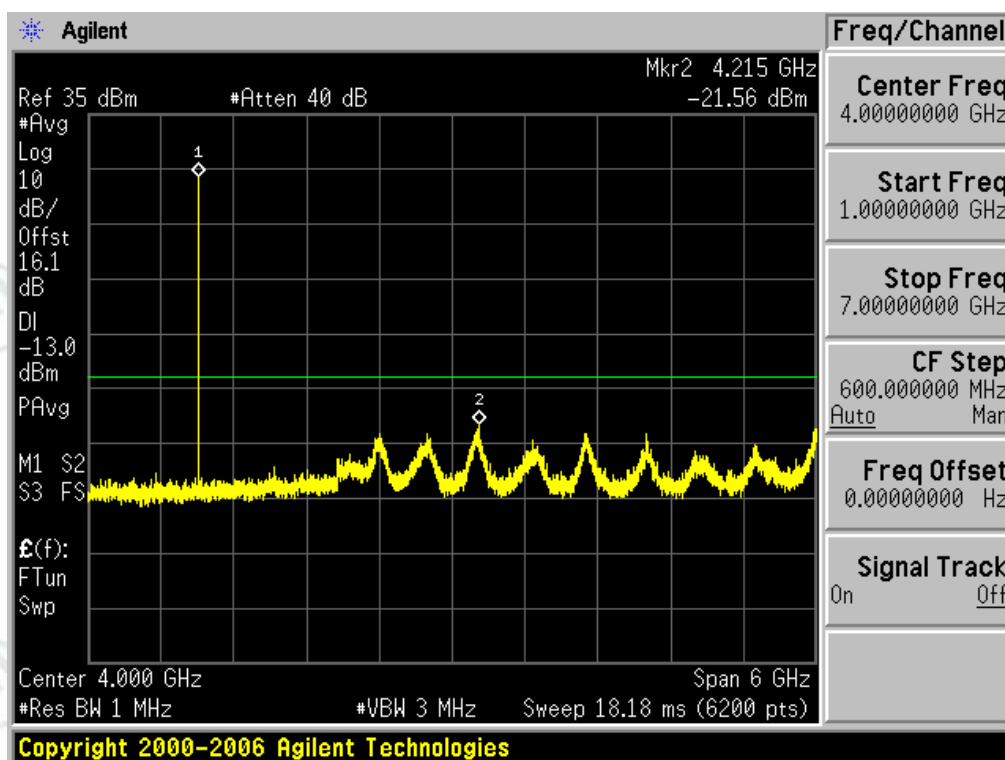
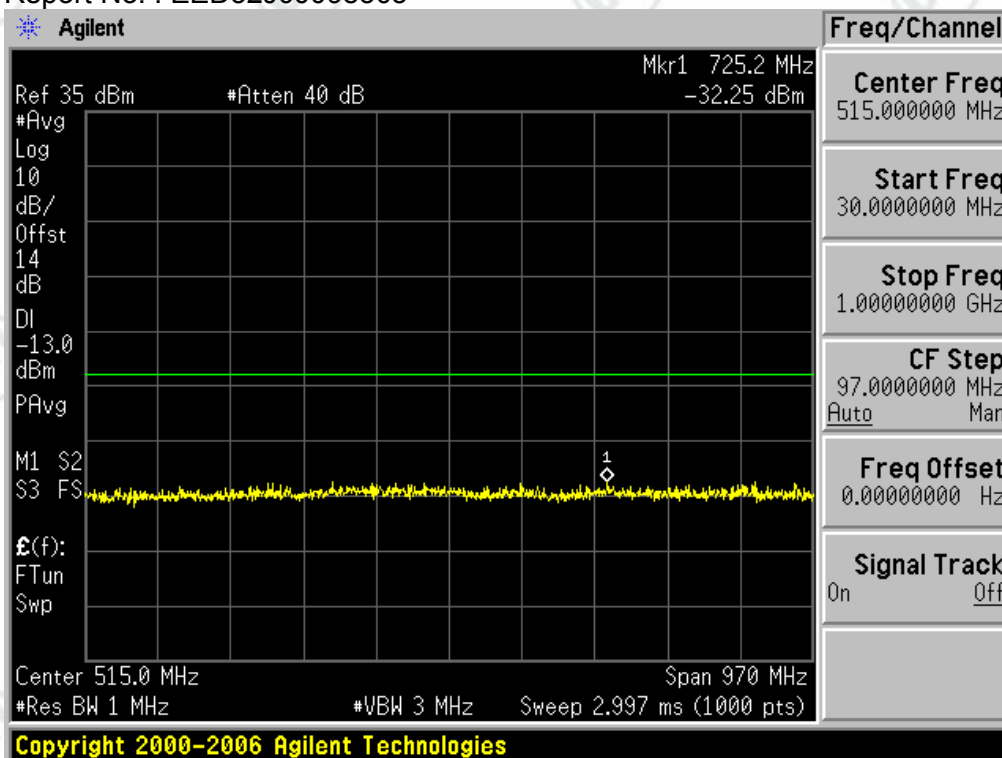


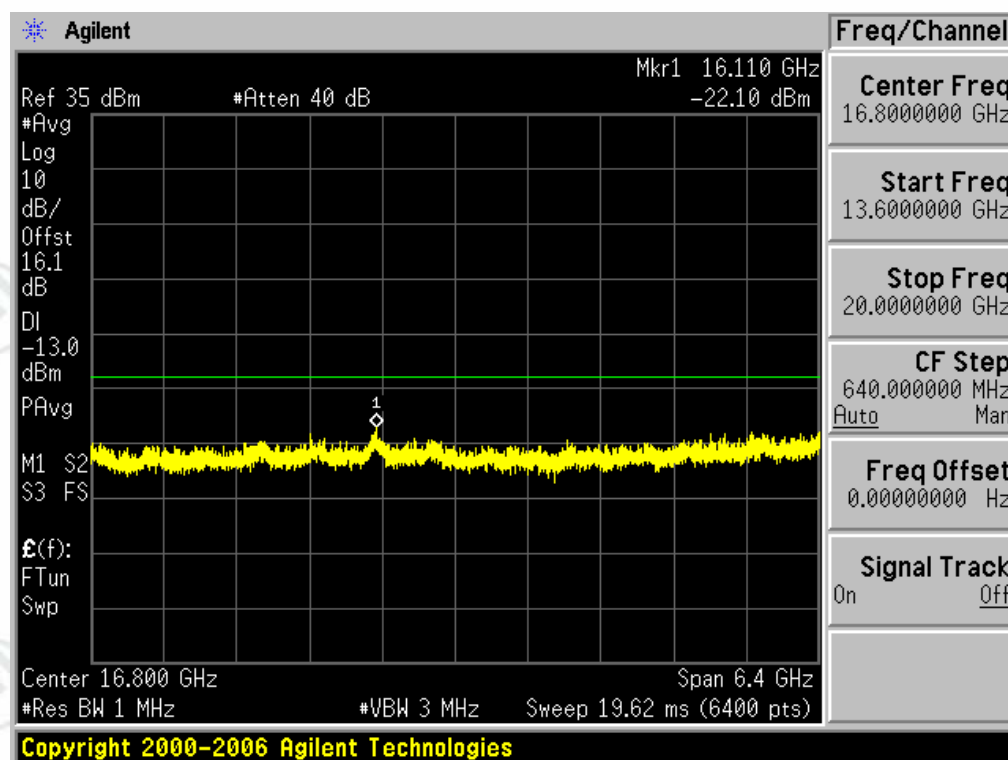
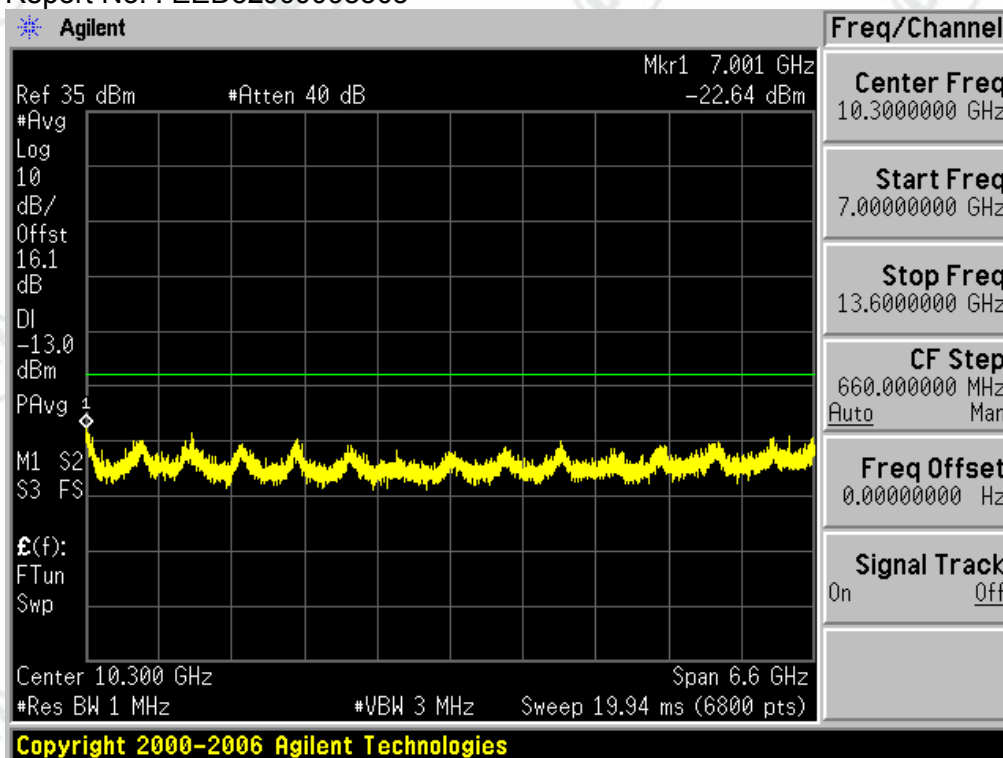




Test Channel=HCH

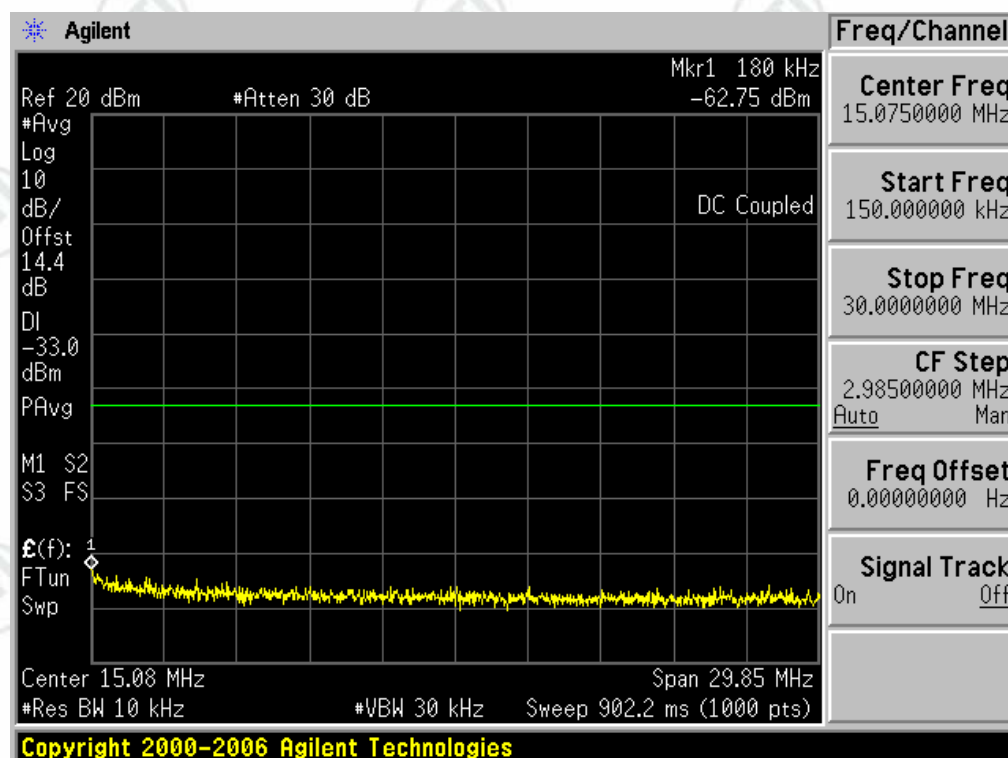
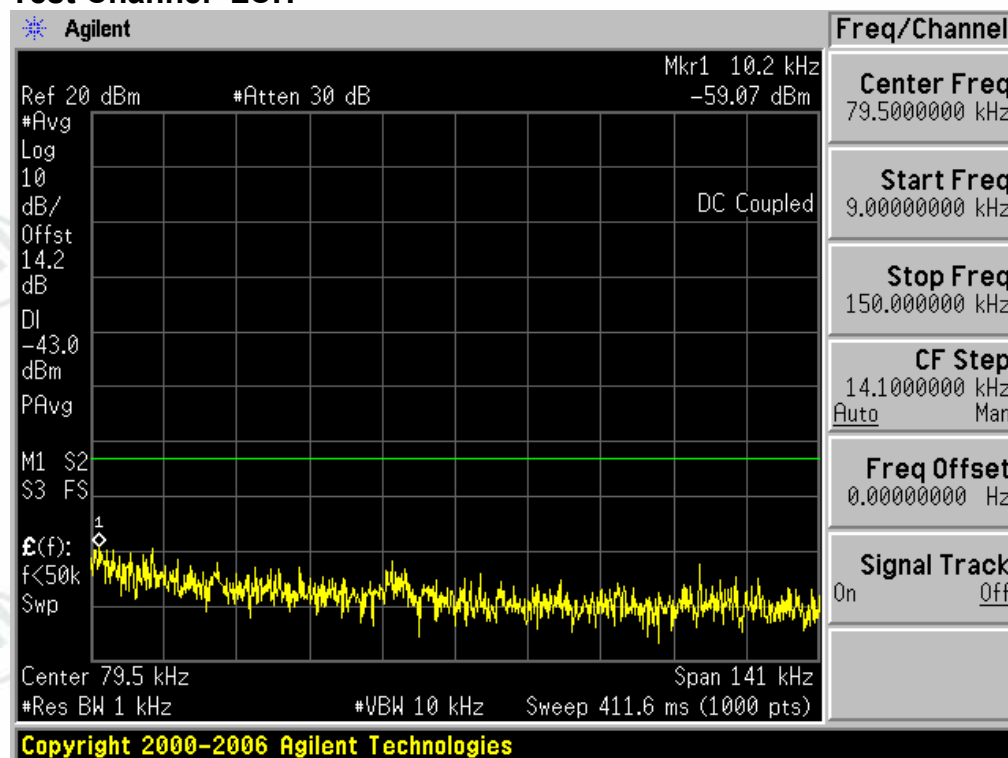


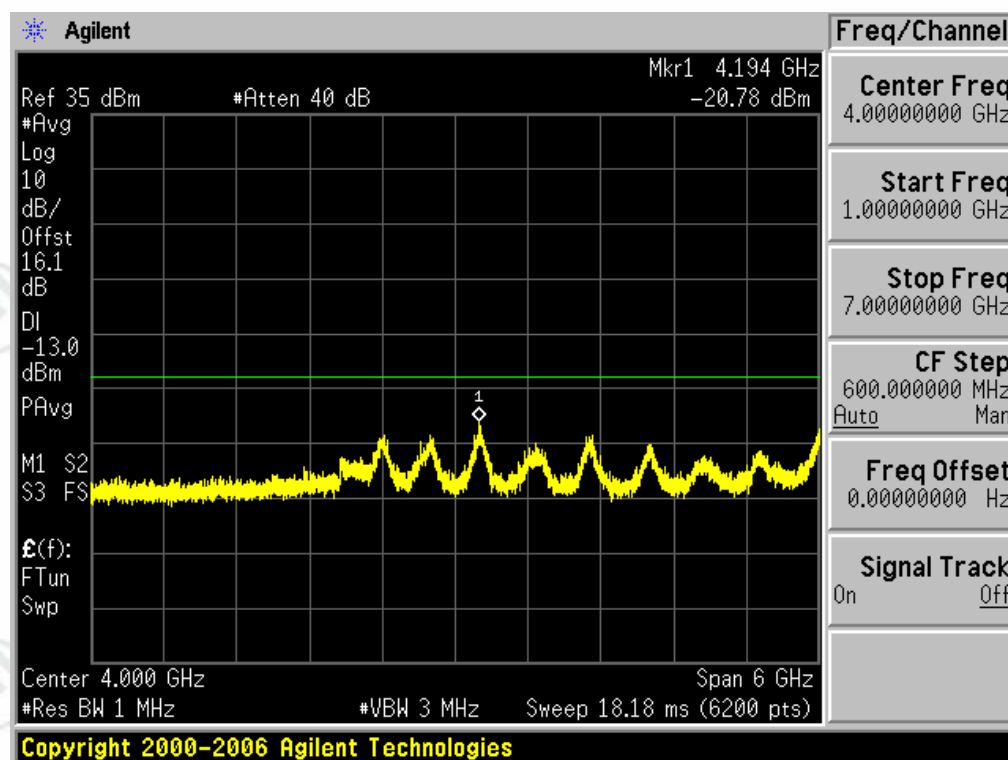
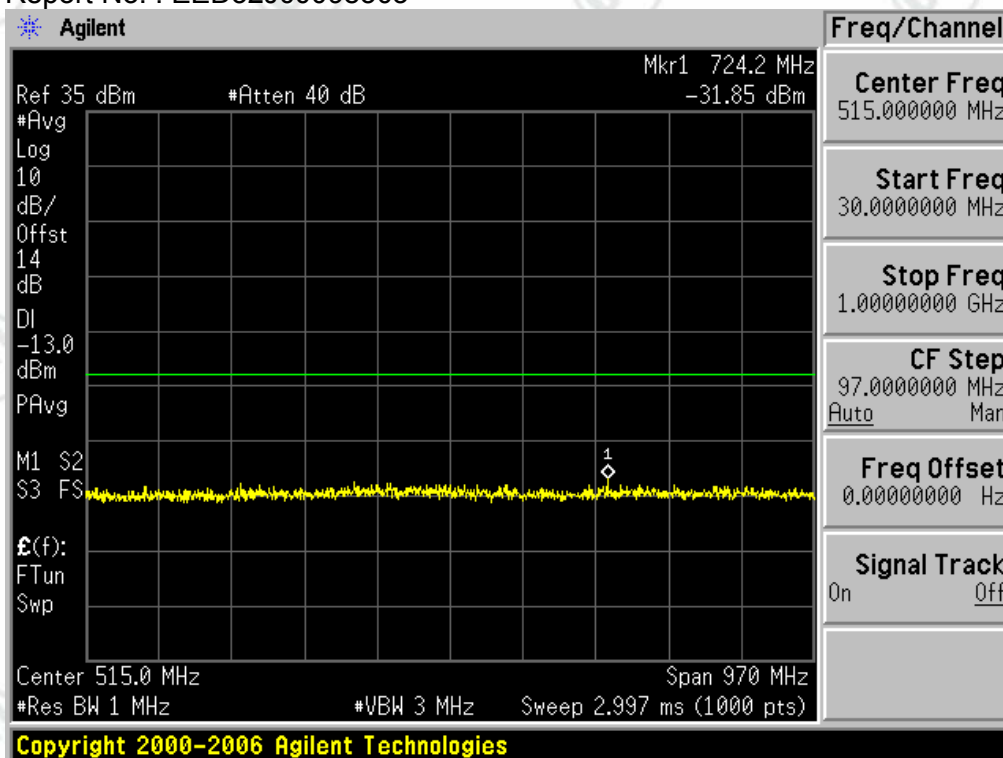


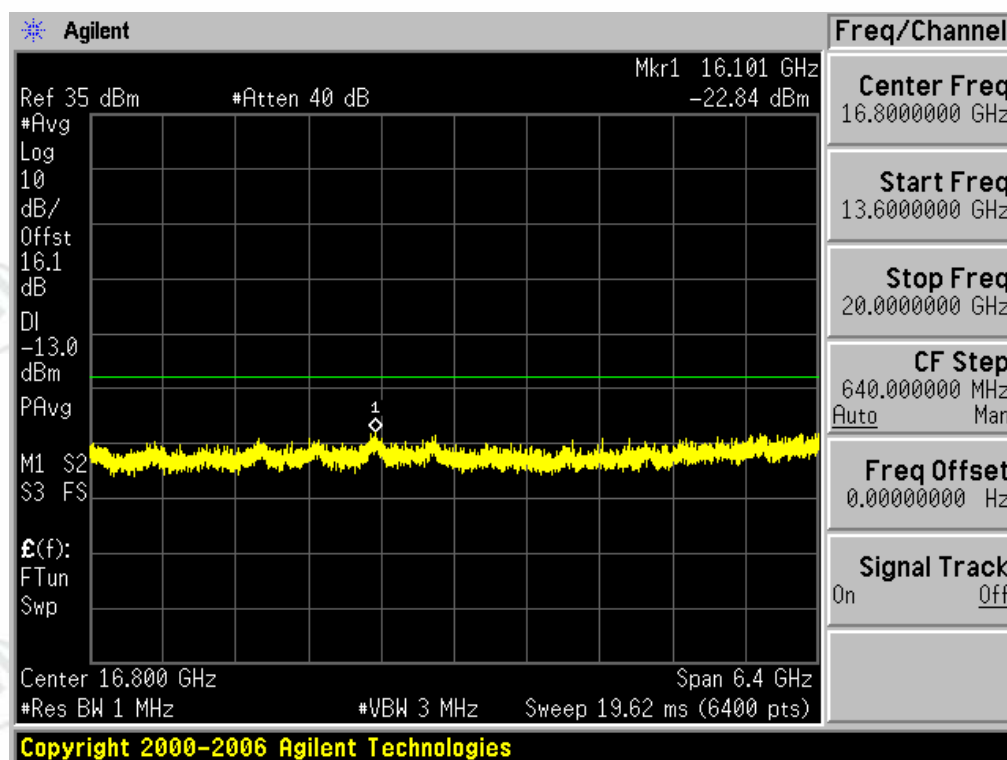
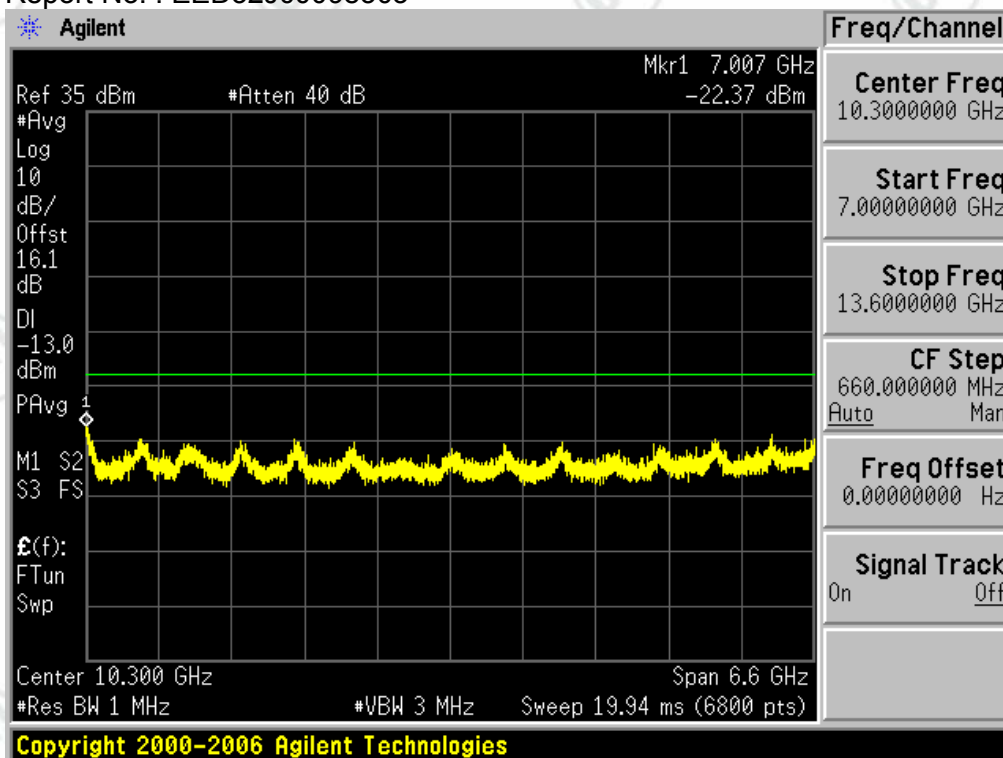


Test Mode=GSM/TM3

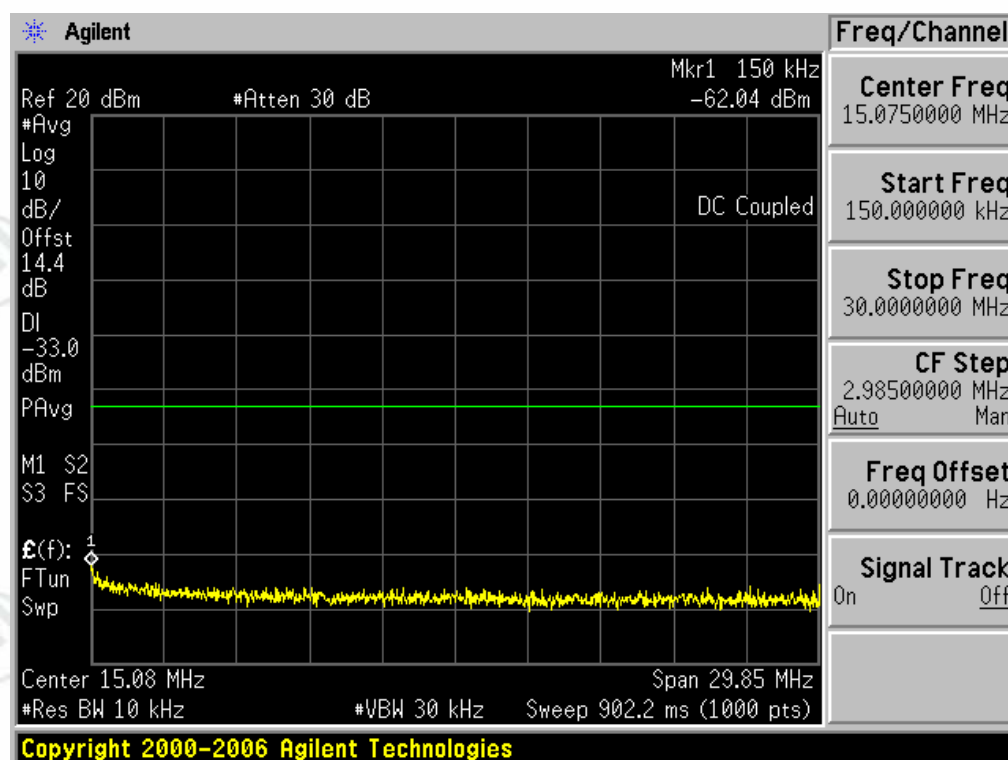
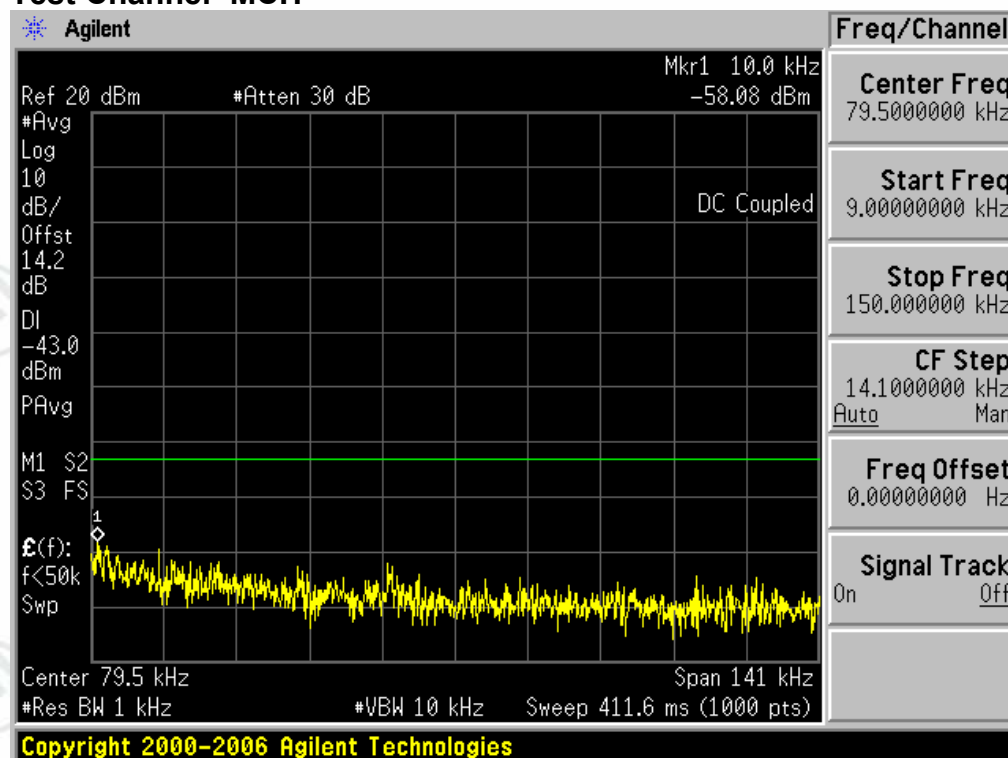
Test Channel=LCH

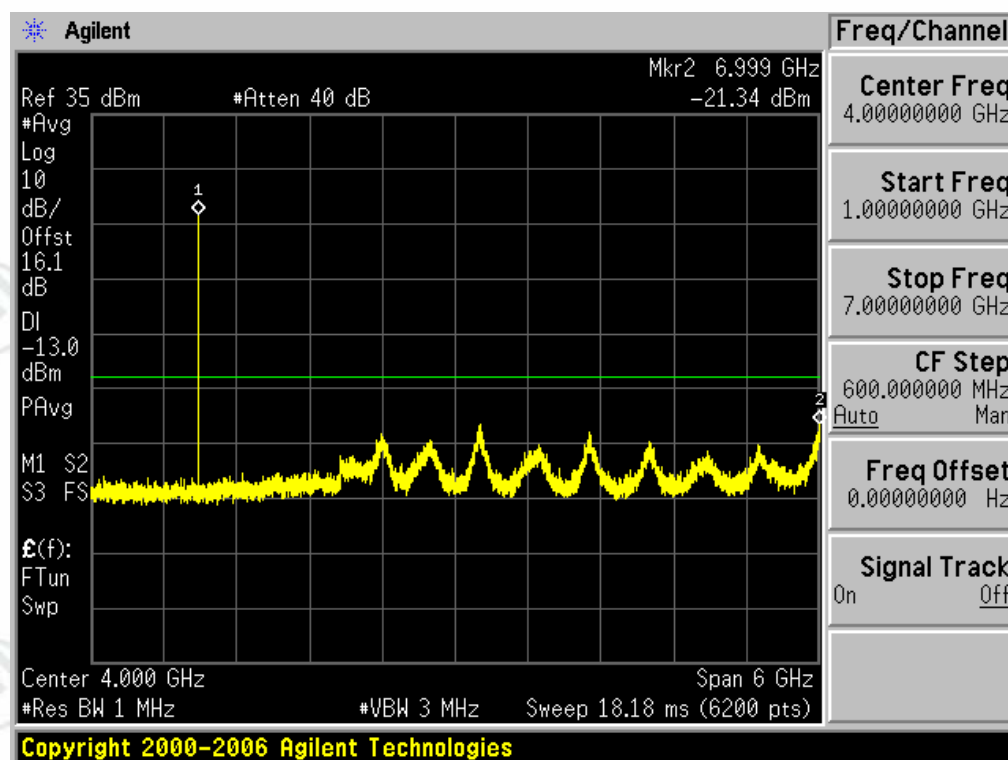
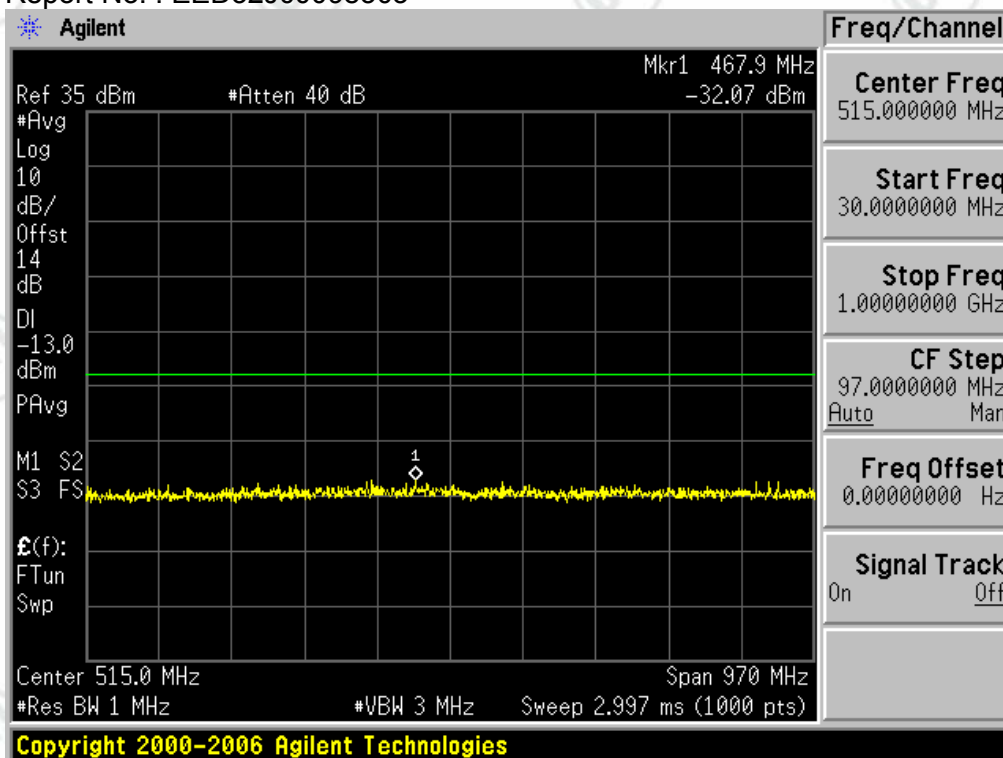


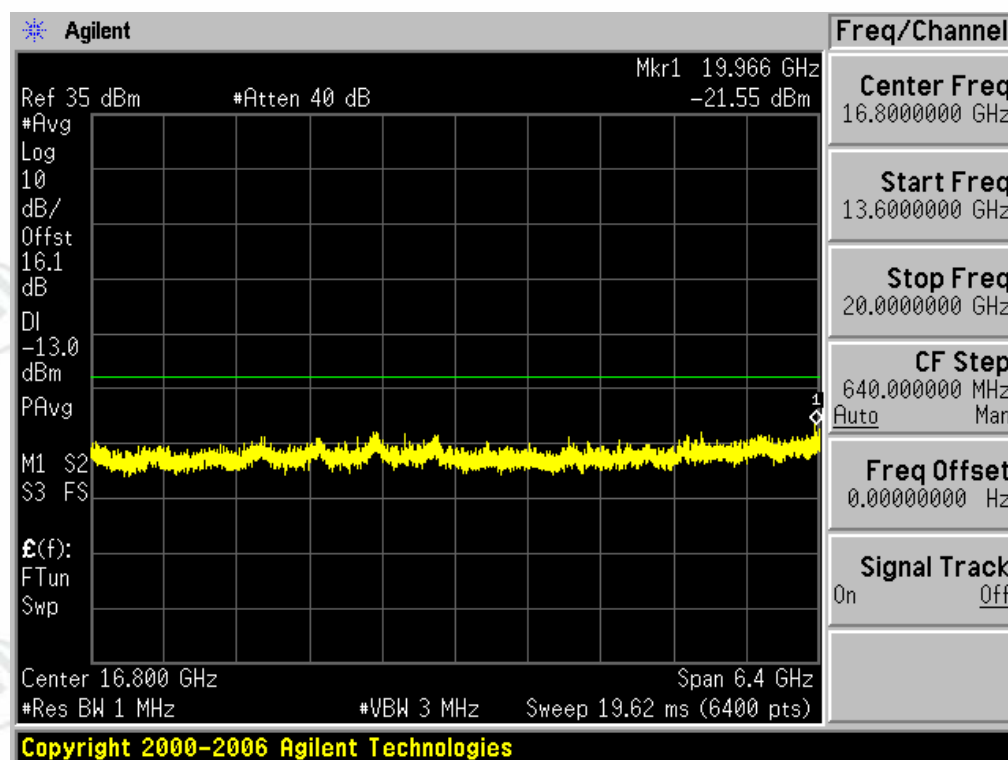
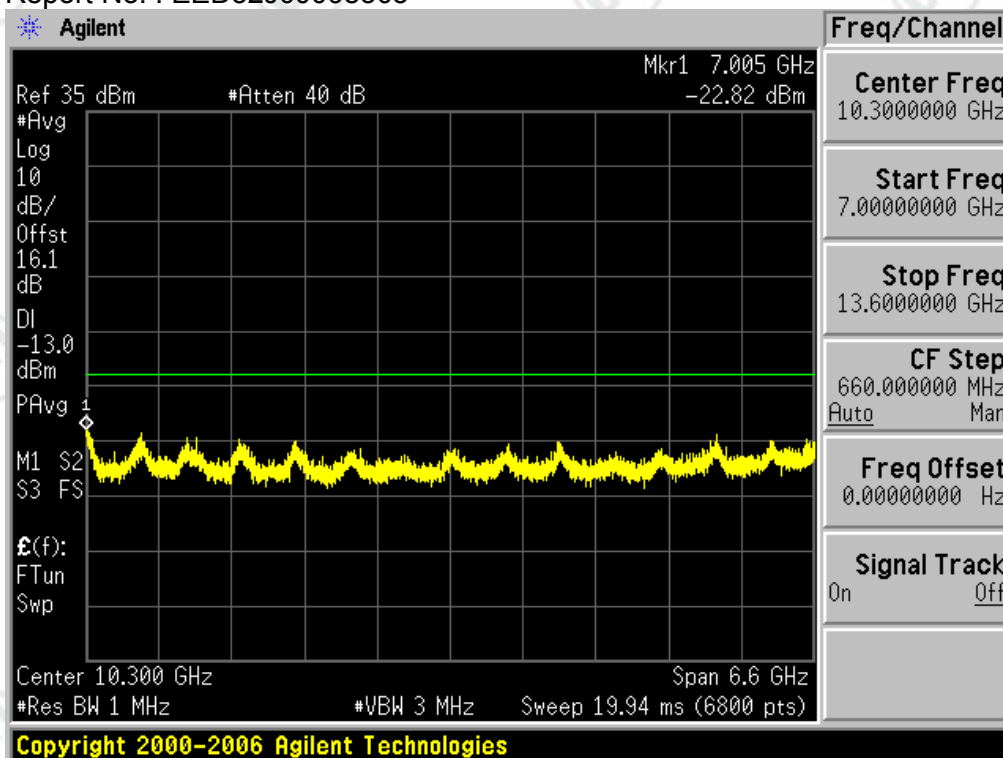




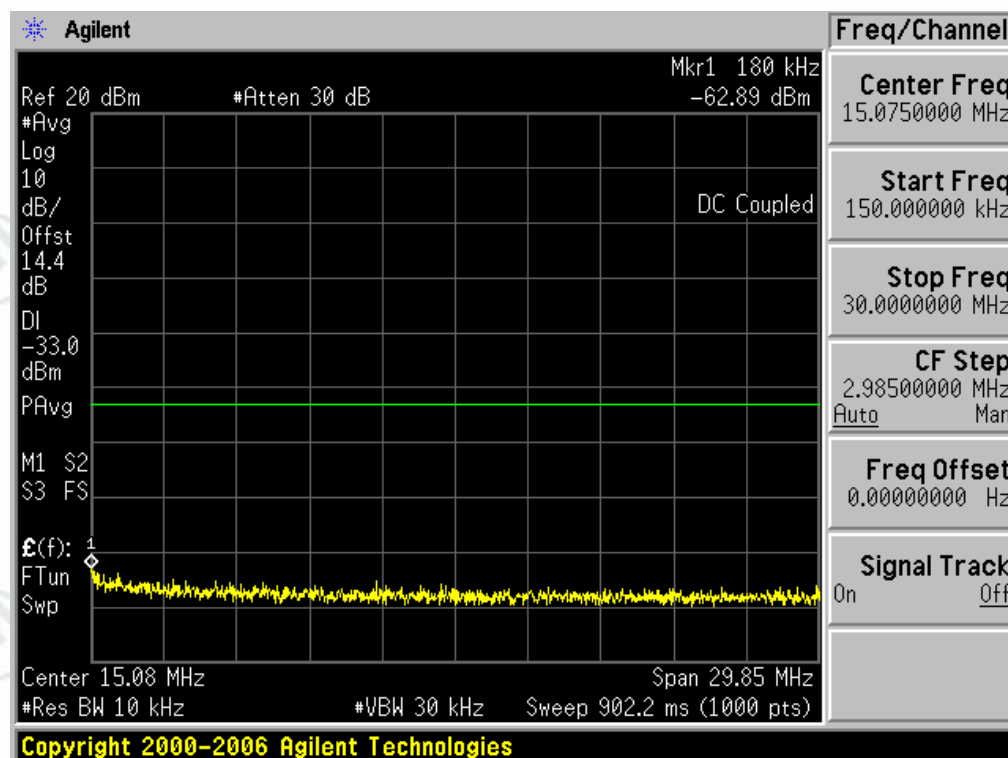
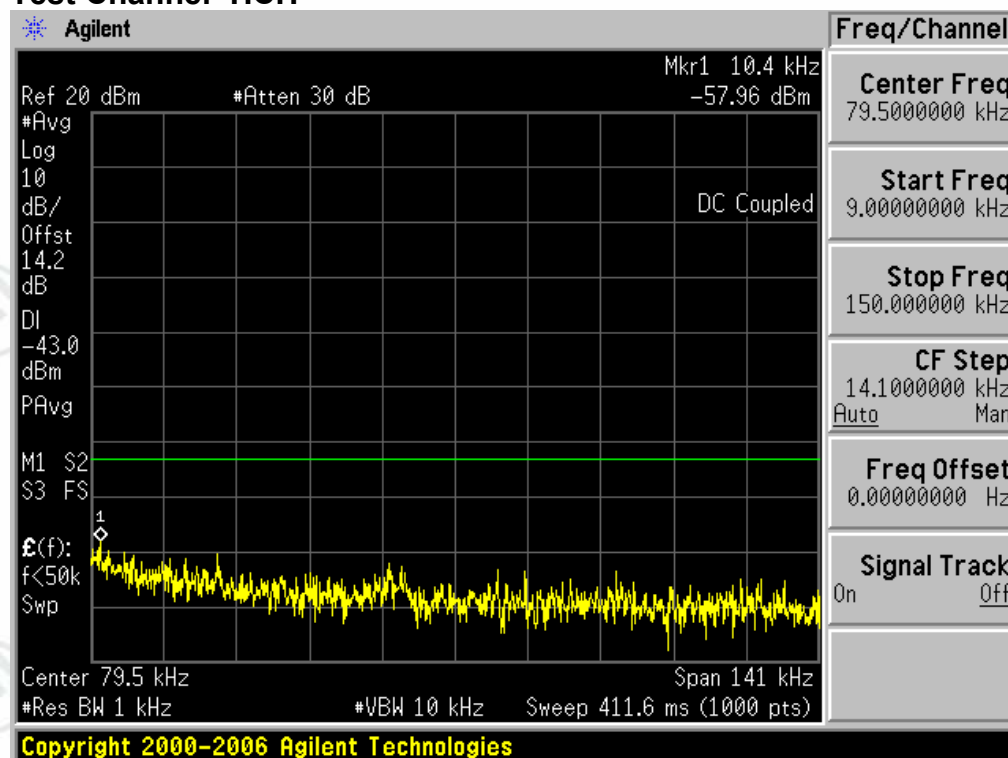
Test Channel=MCH

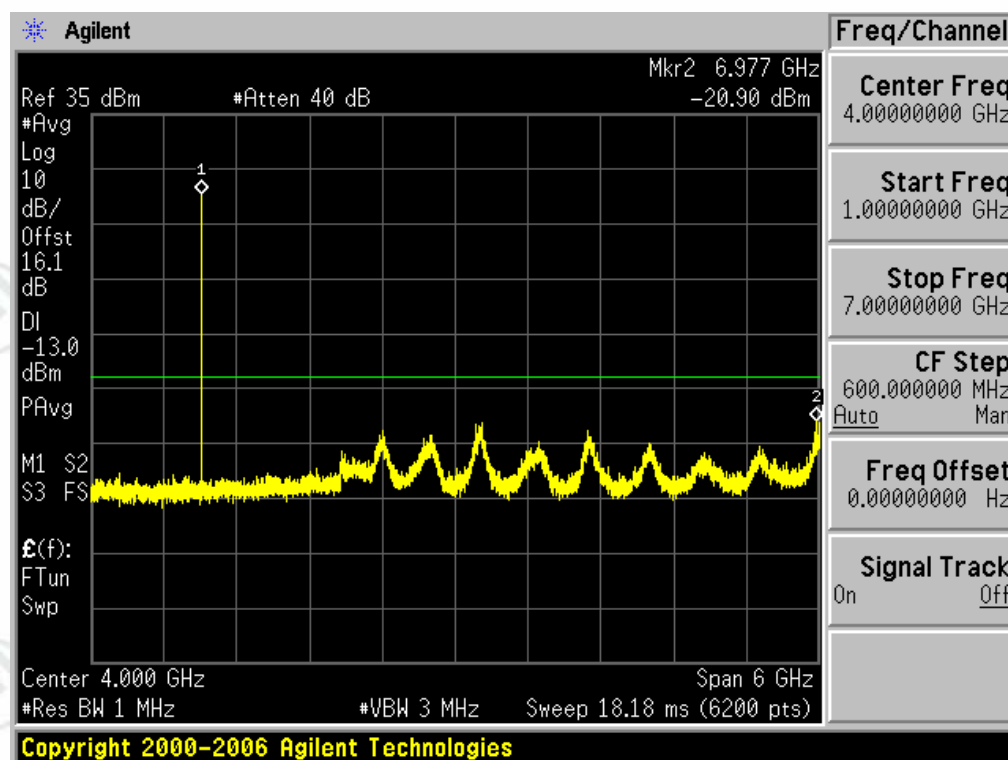
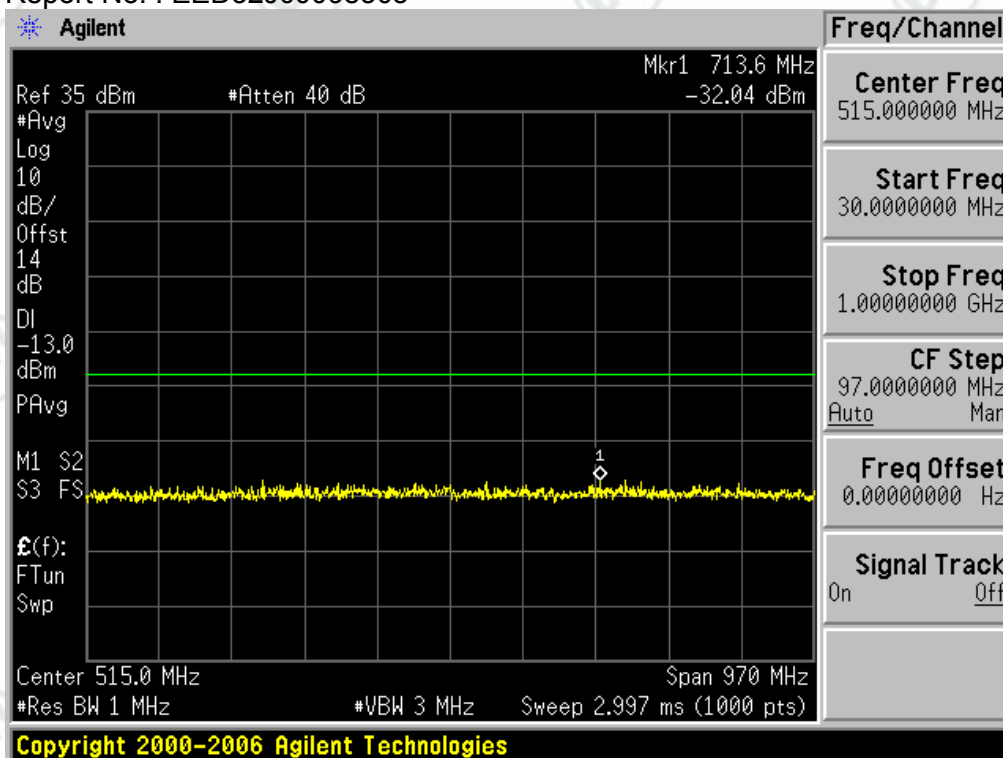


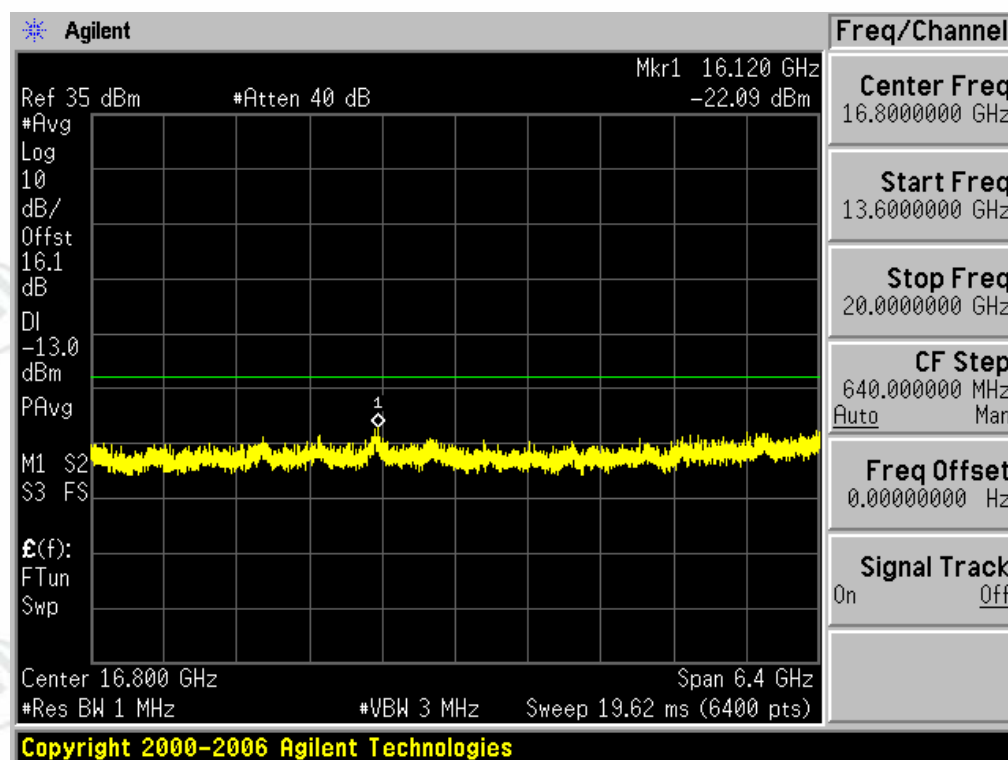
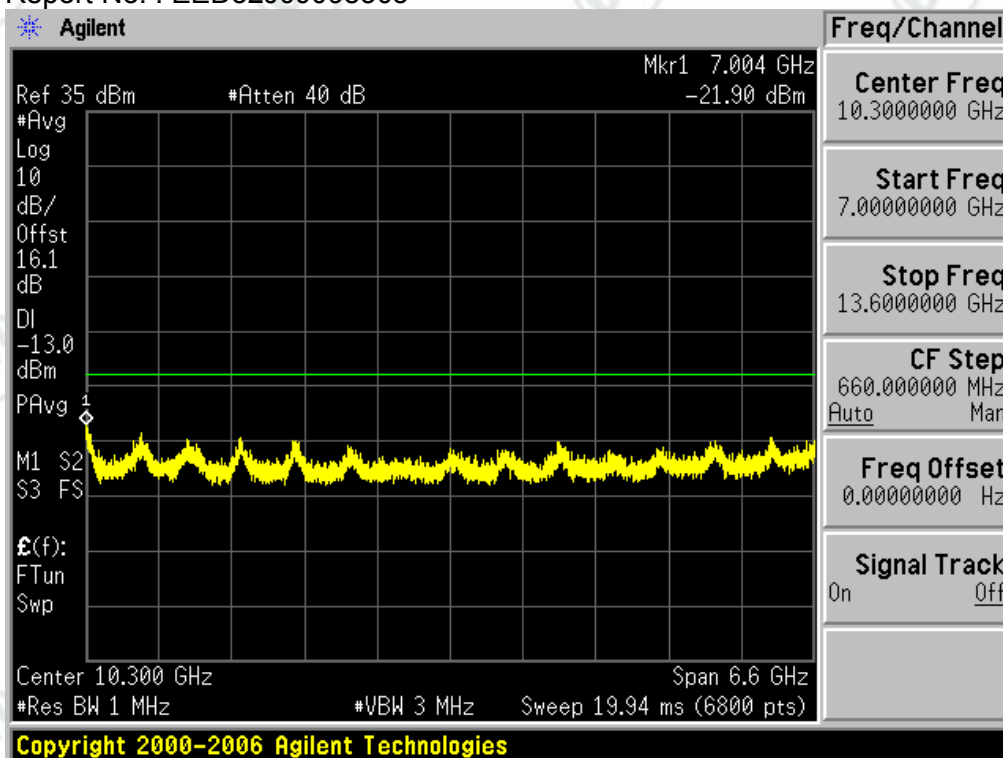




Test Channel=HCH





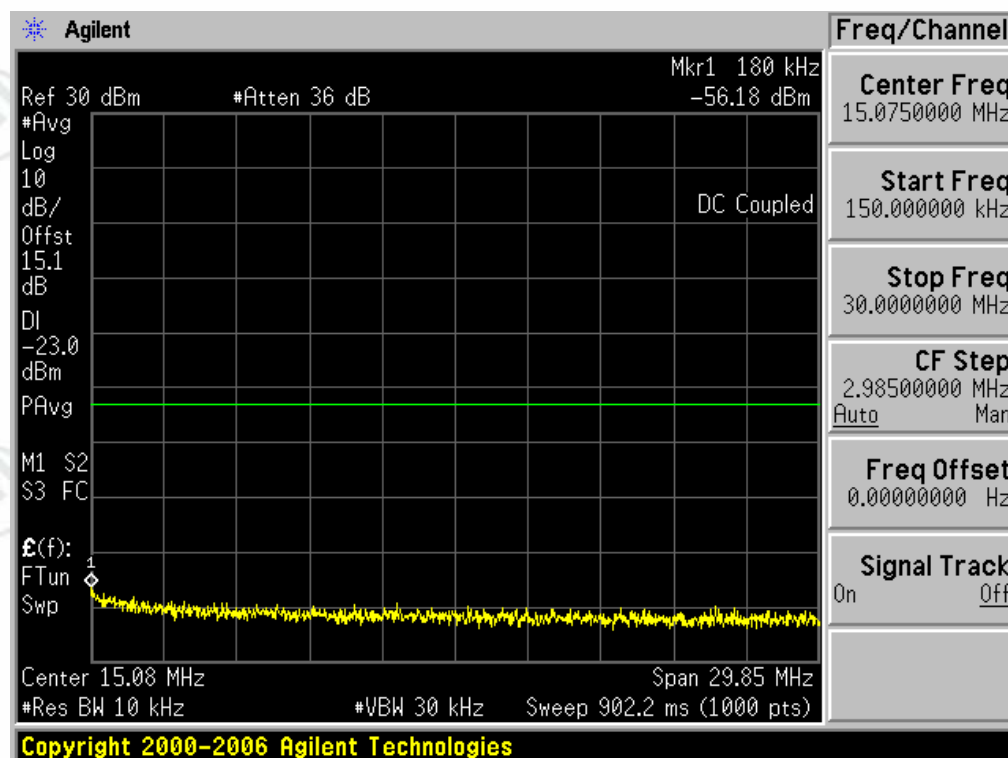
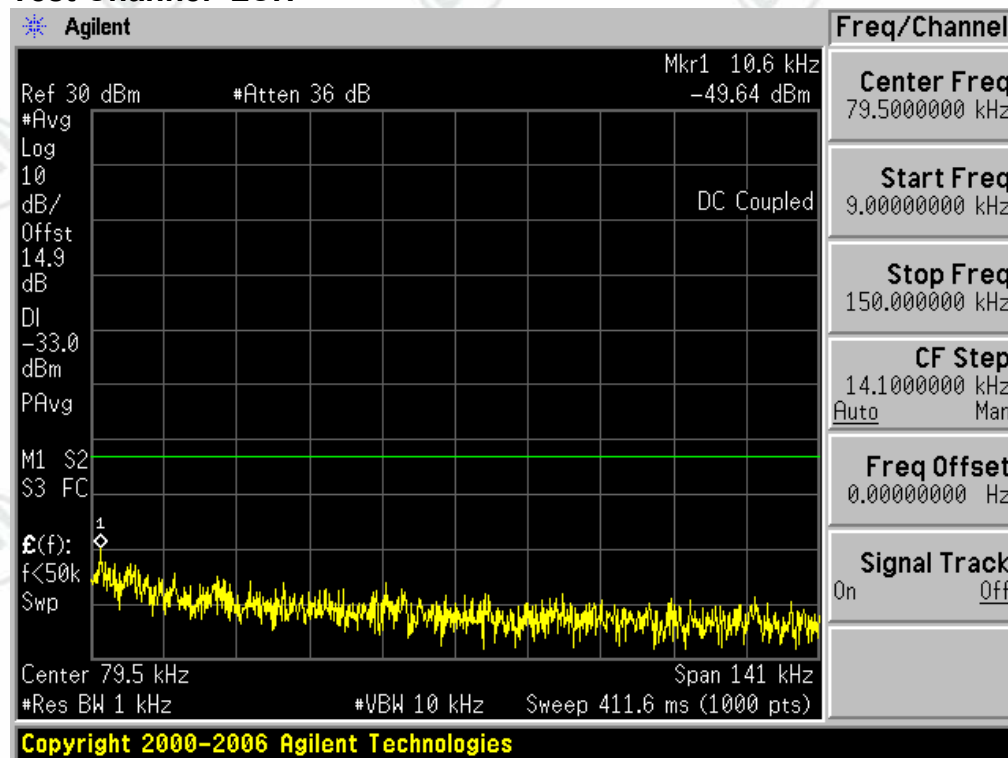


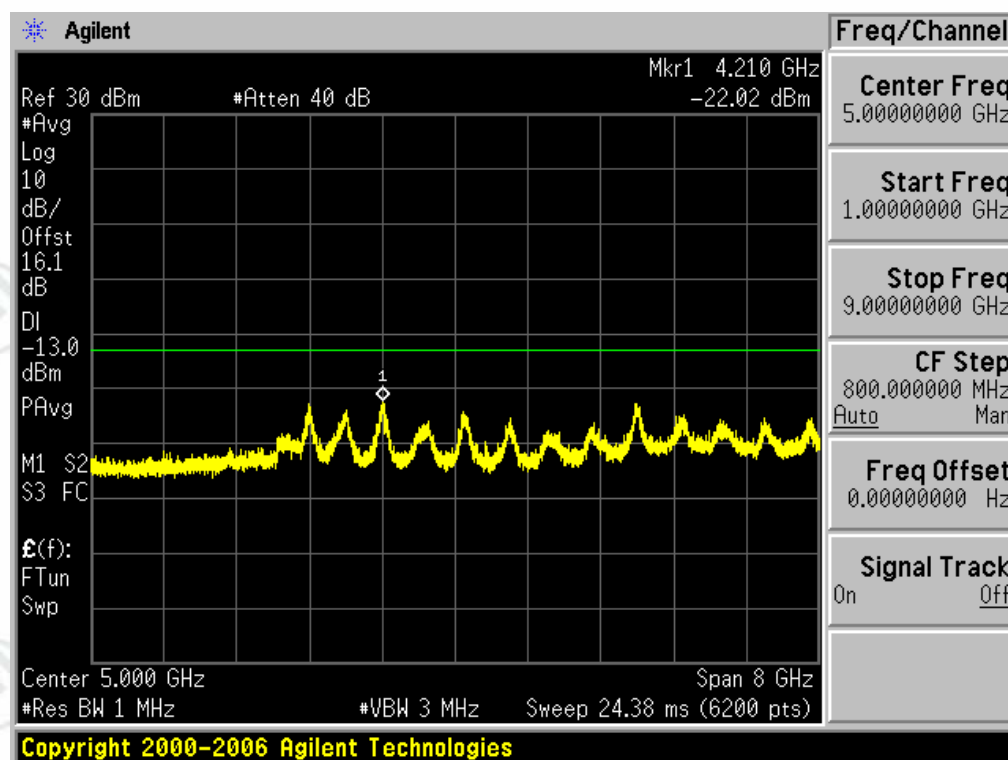
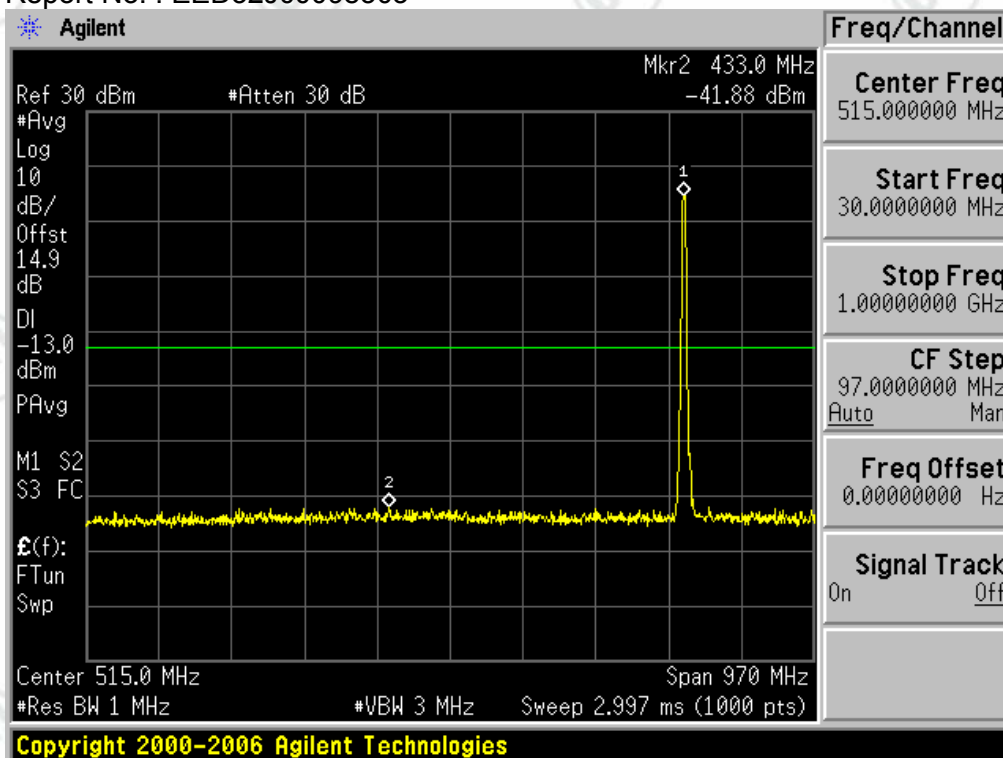
For WCDMA

Test Band=WCDMA850

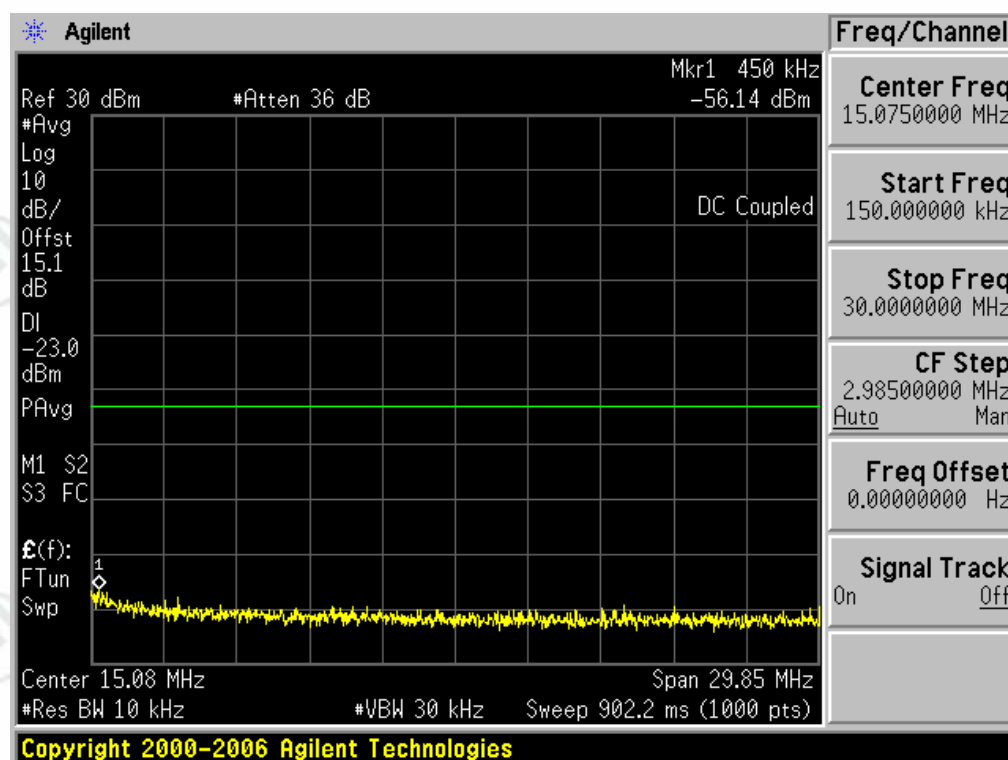
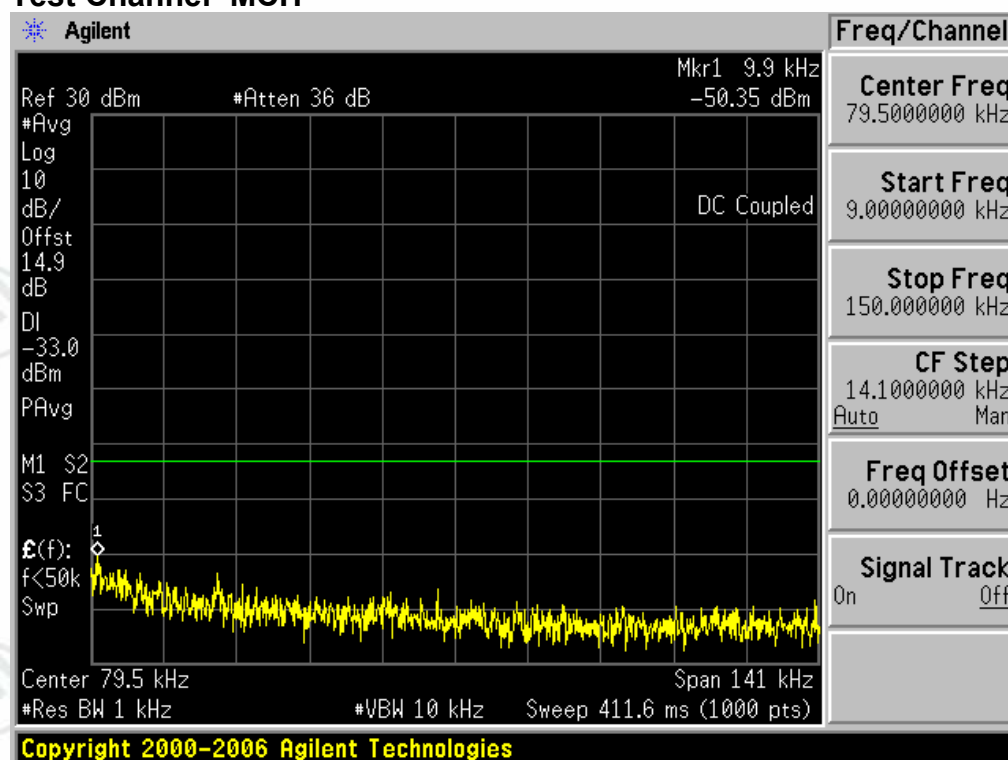
Test Mode=UMTS/TM1

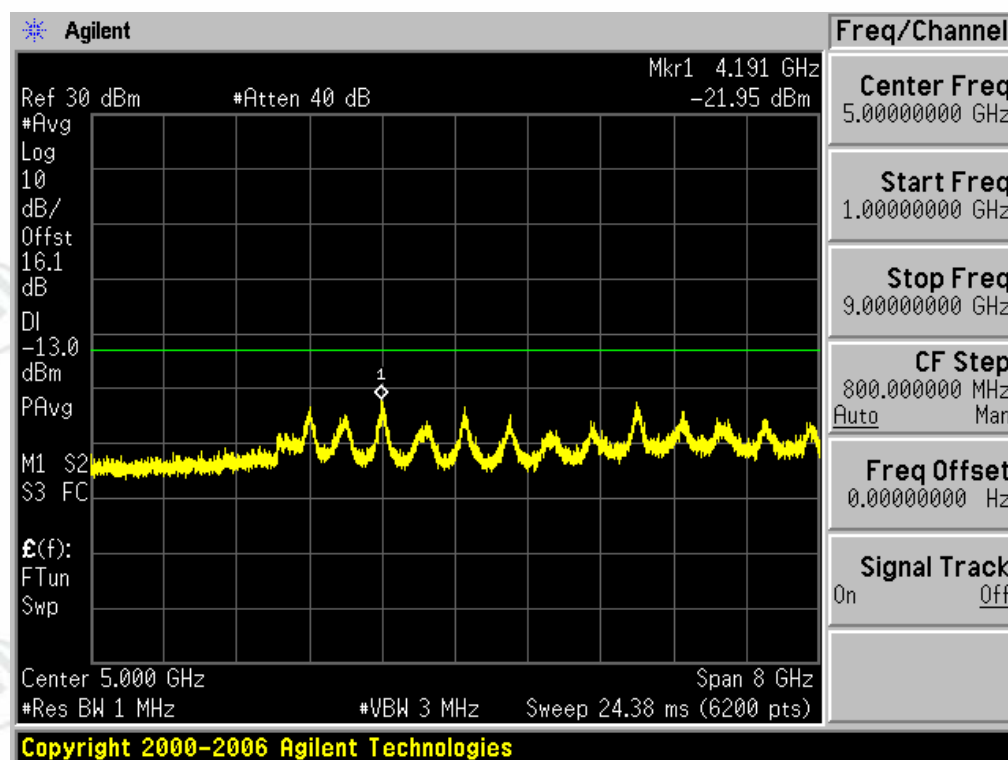
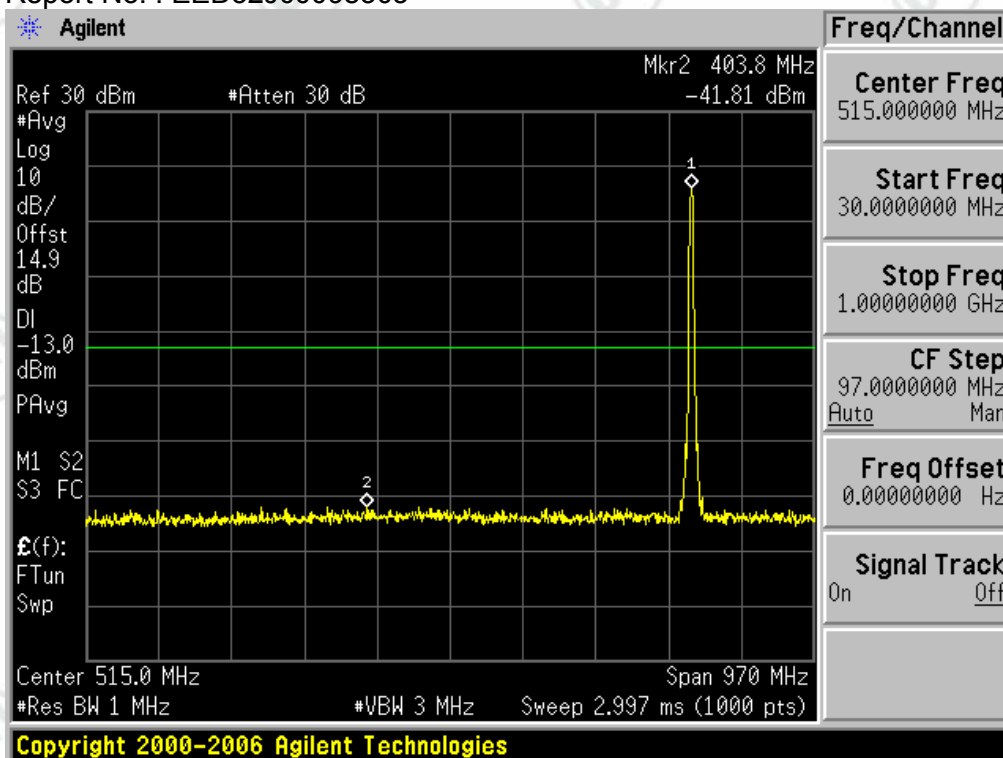
Test Channel=LCH



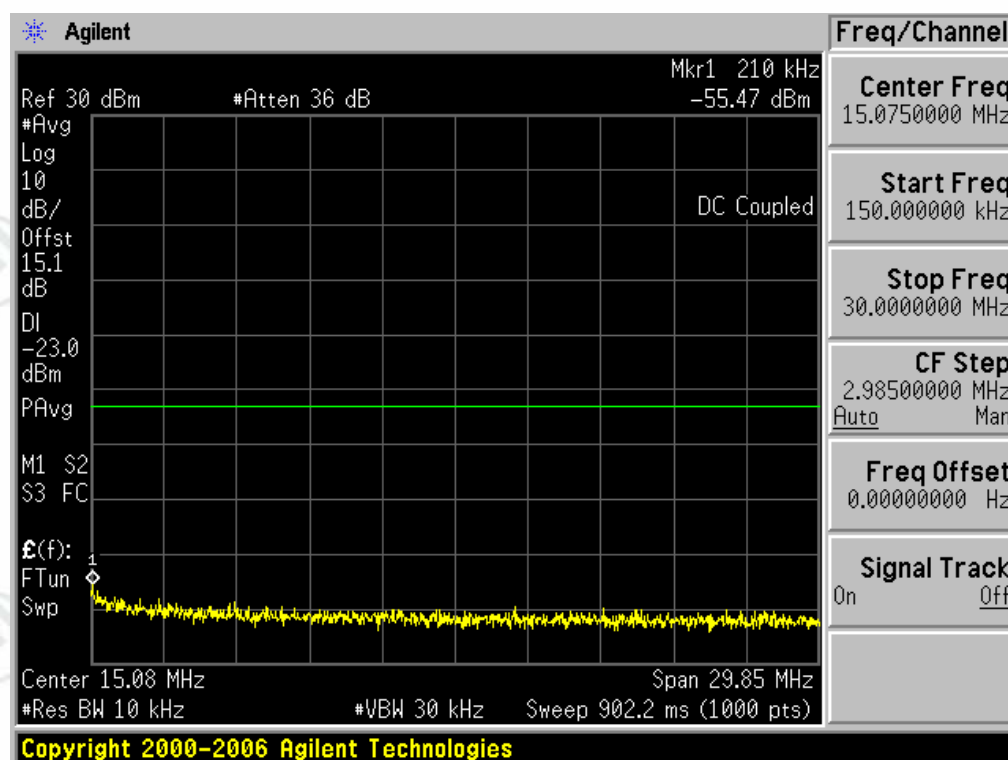
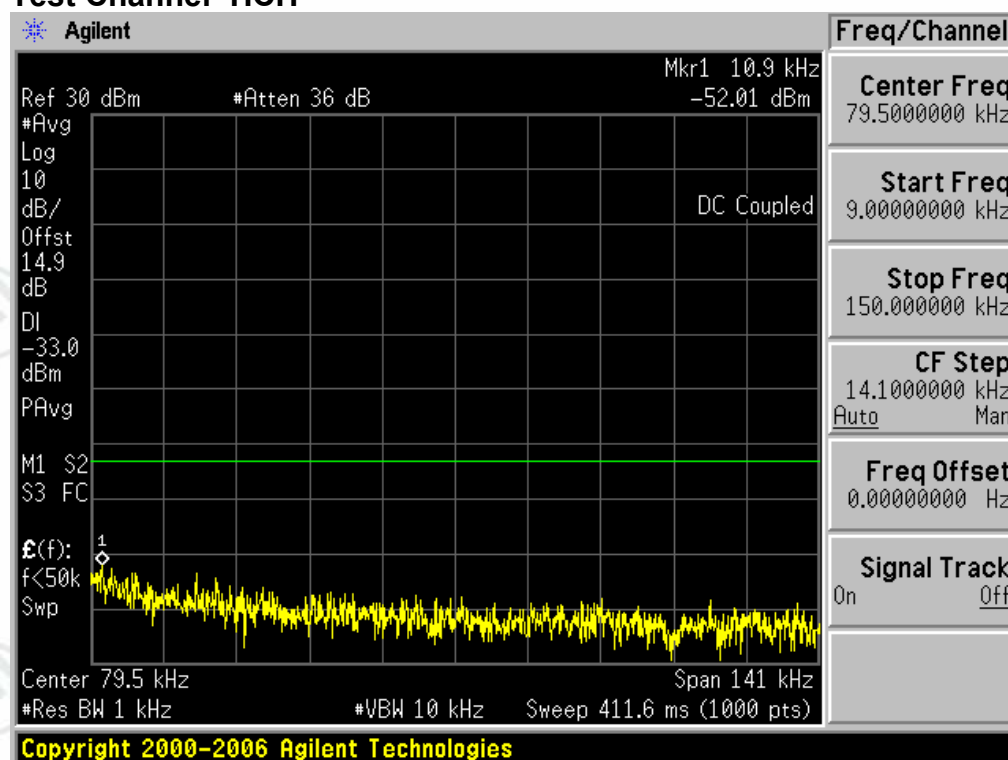


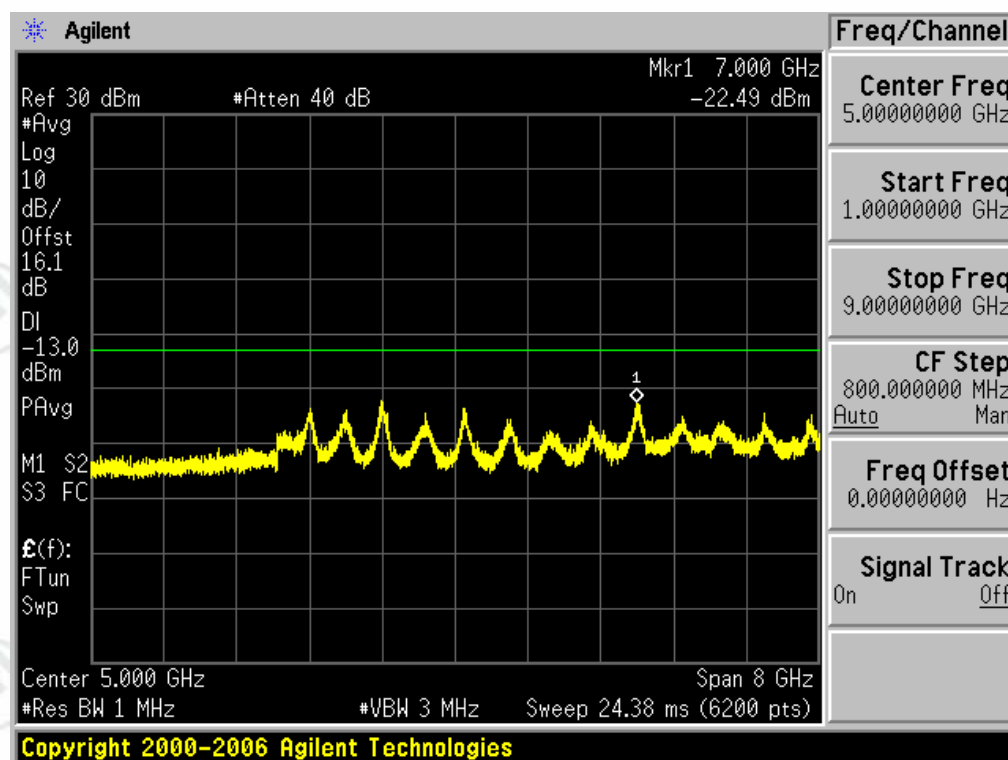
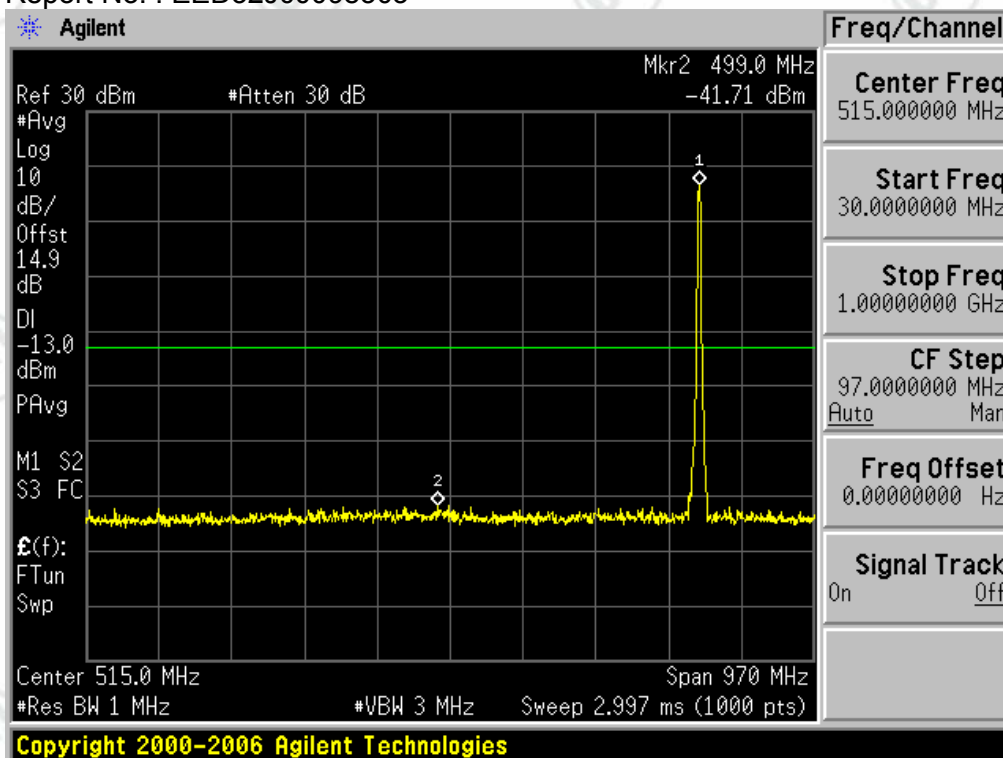
Test Channel=MCH





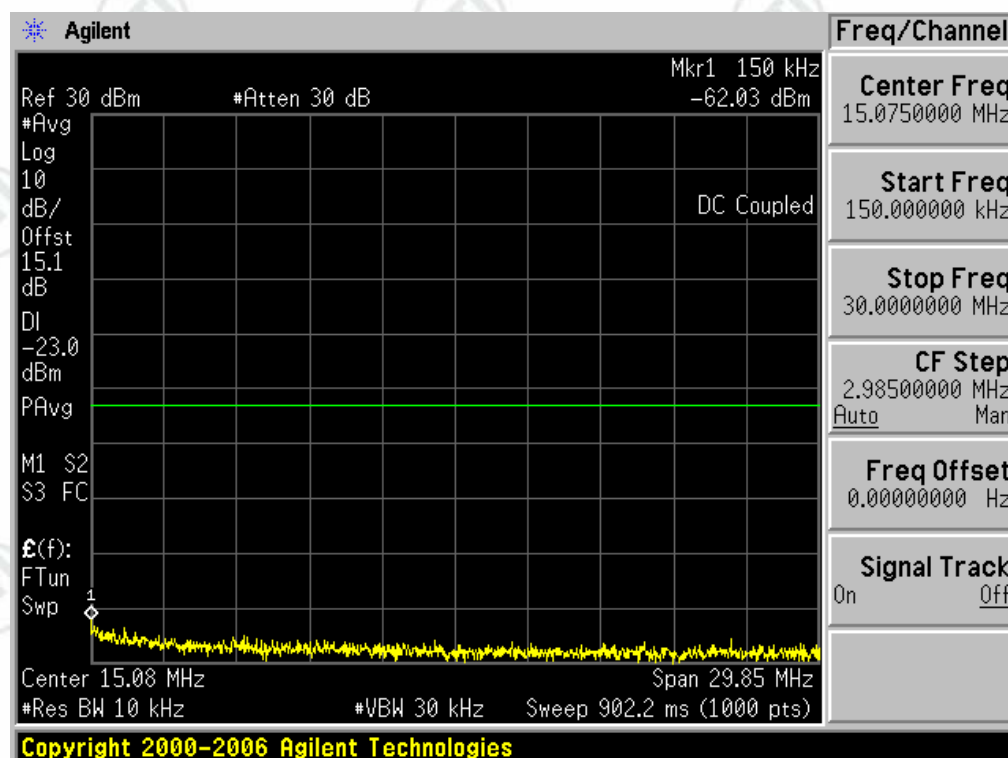
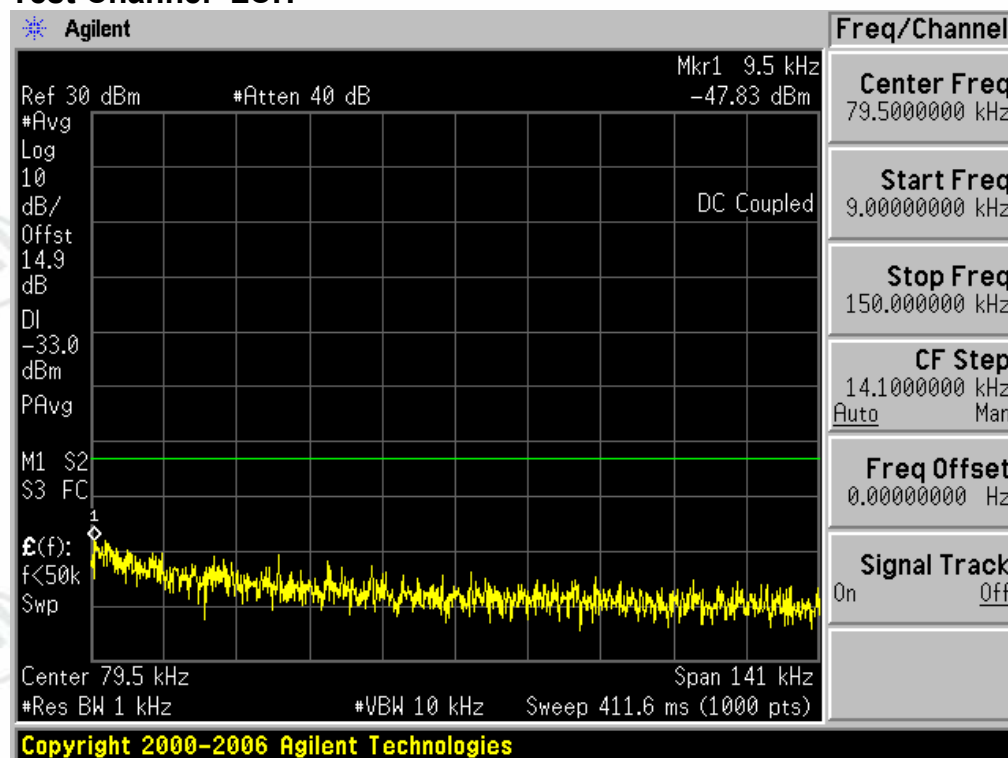
Test Channel=HCH

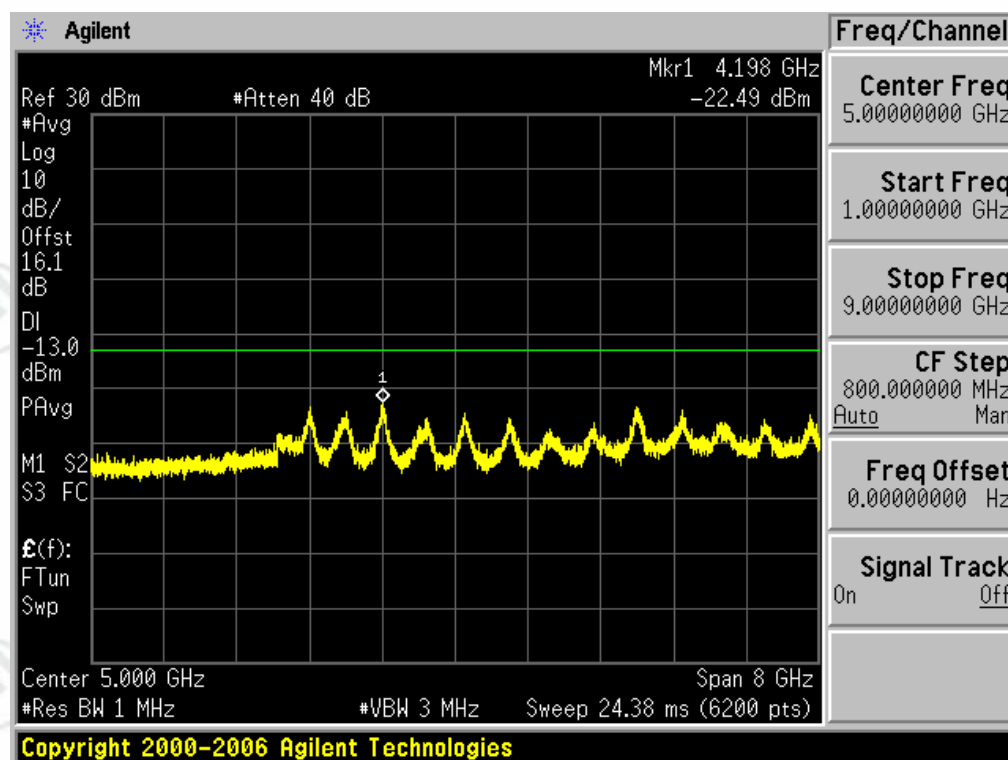
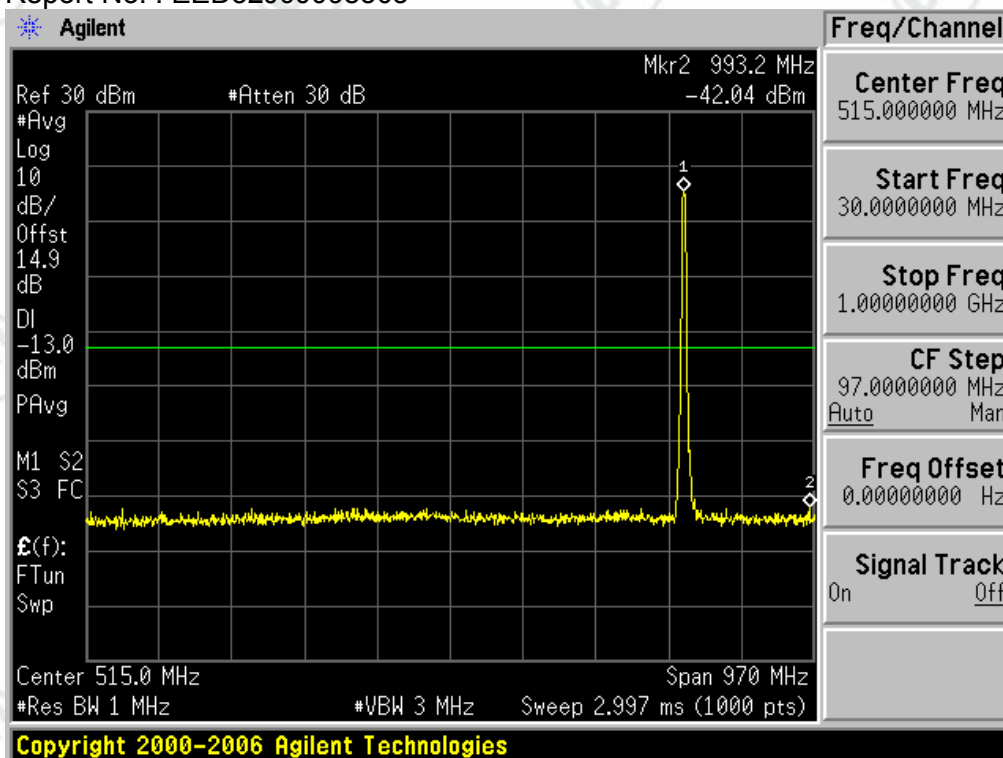




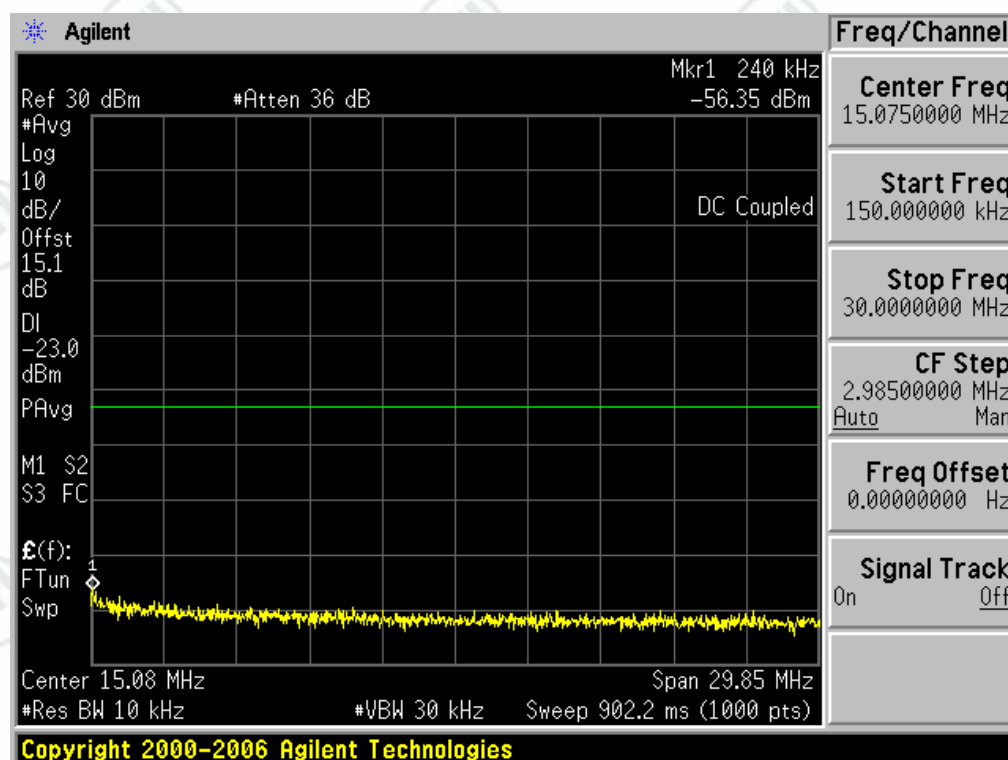
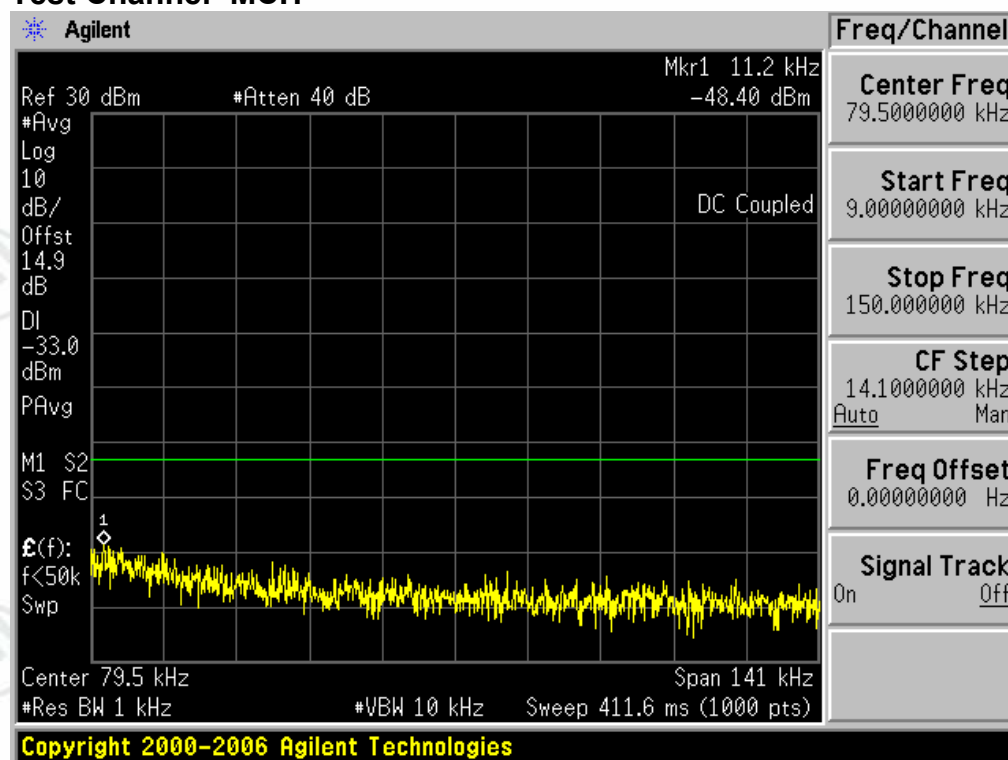
Test Mode=UMTS/TM2

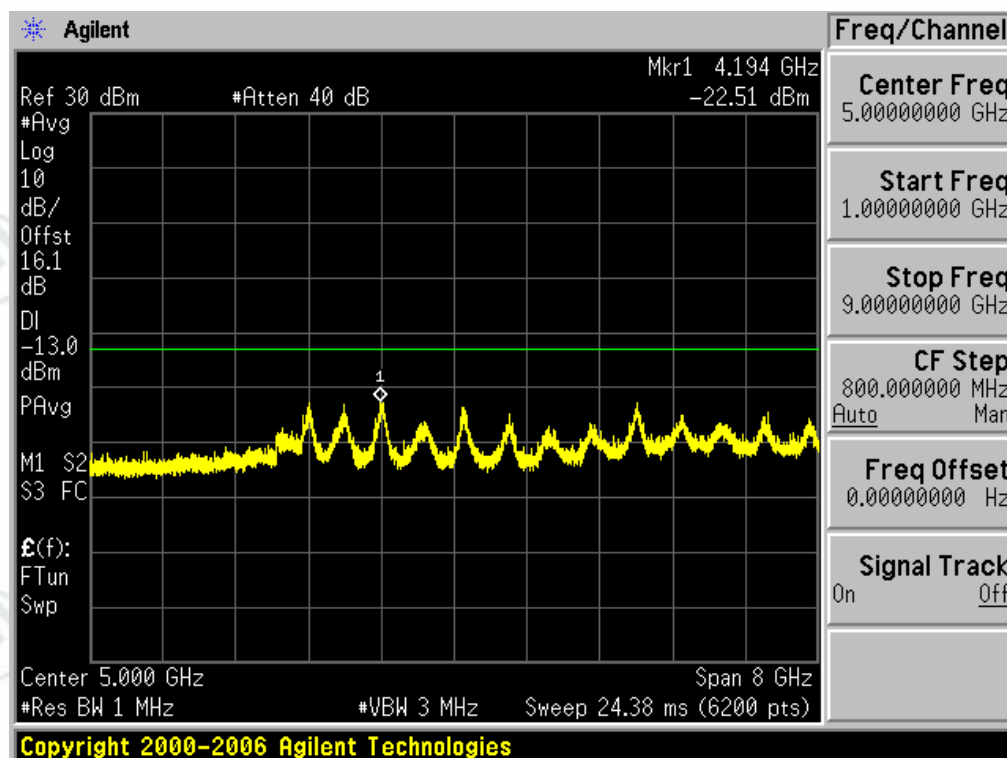
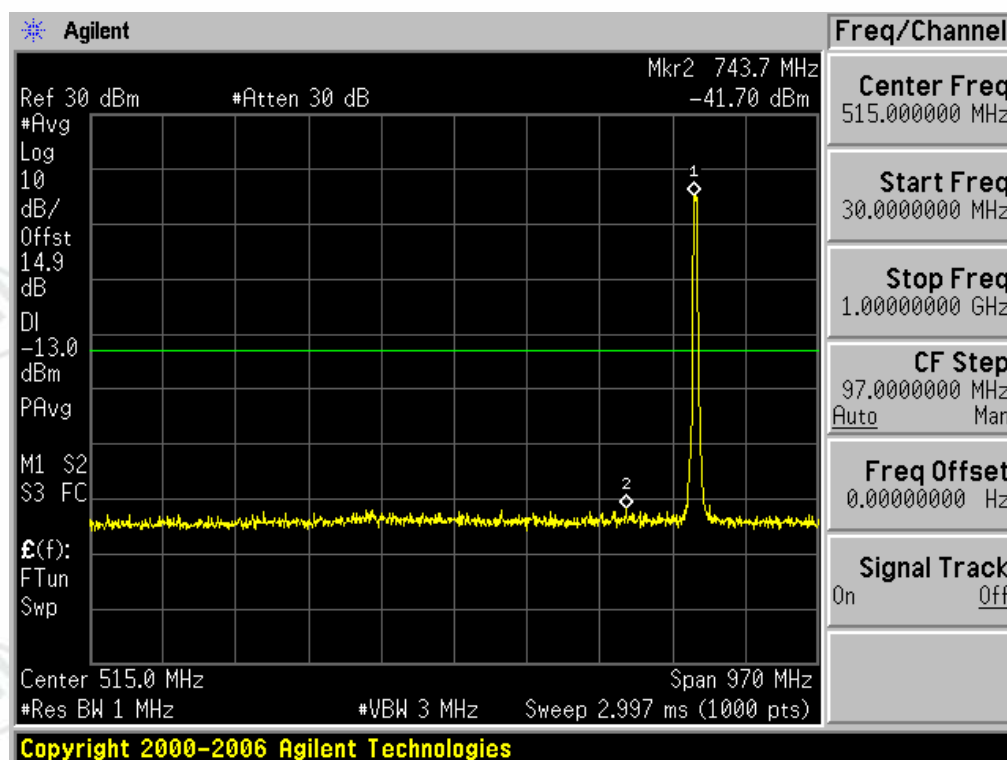
Test Channel=LCH



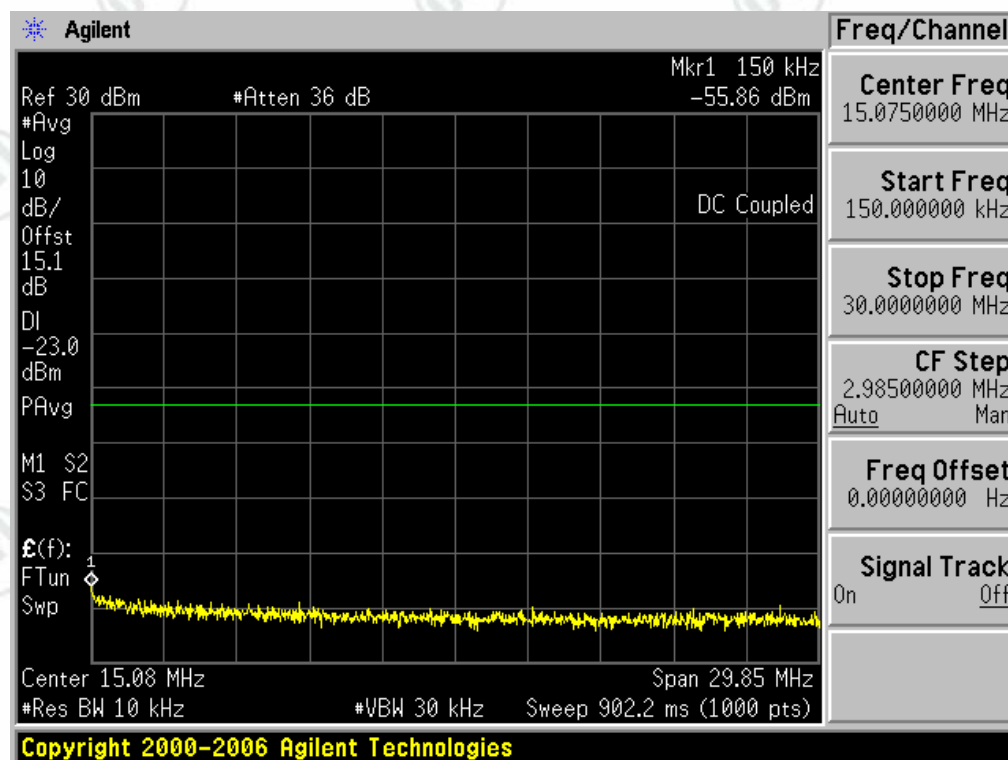
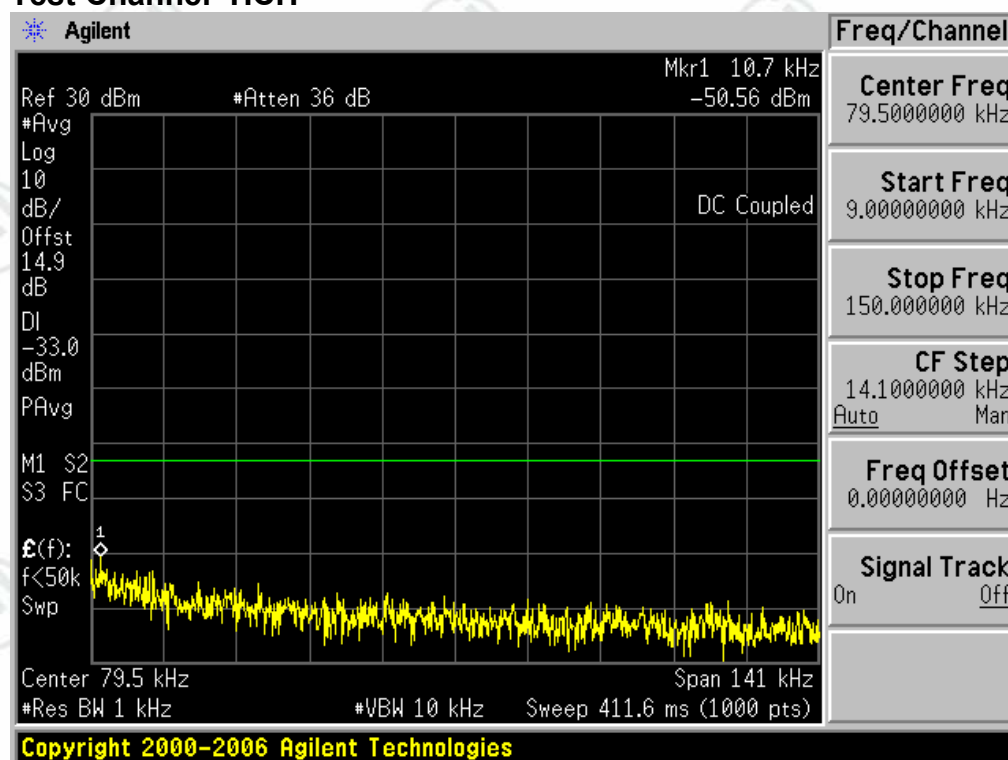


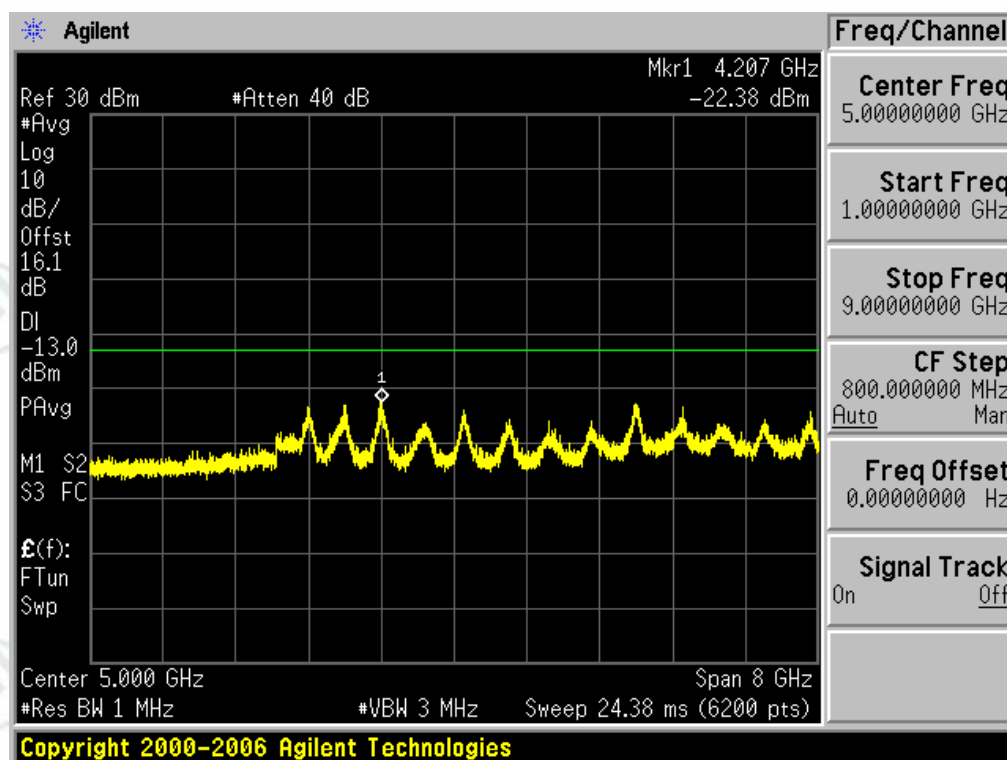
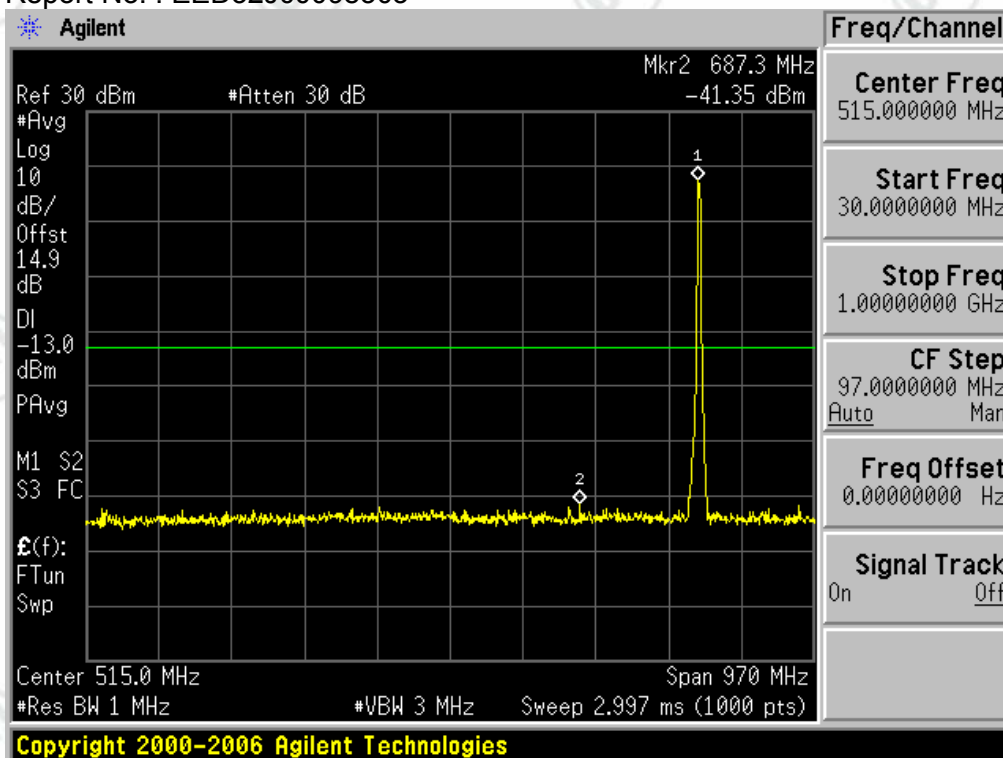
Test Channel=MCH





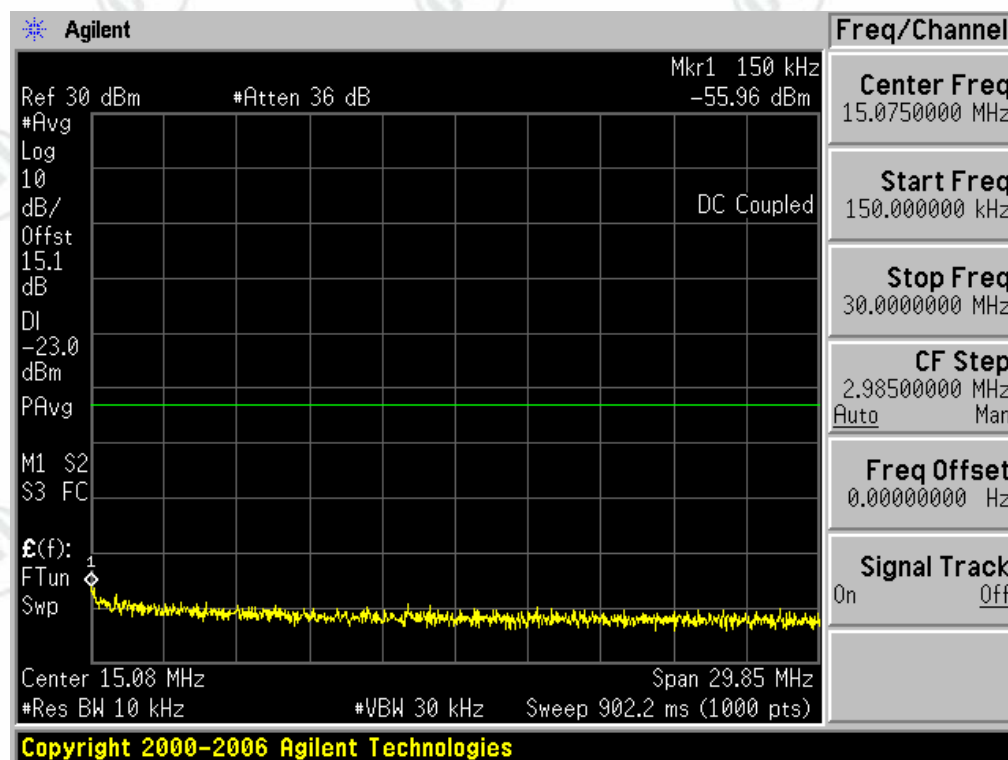
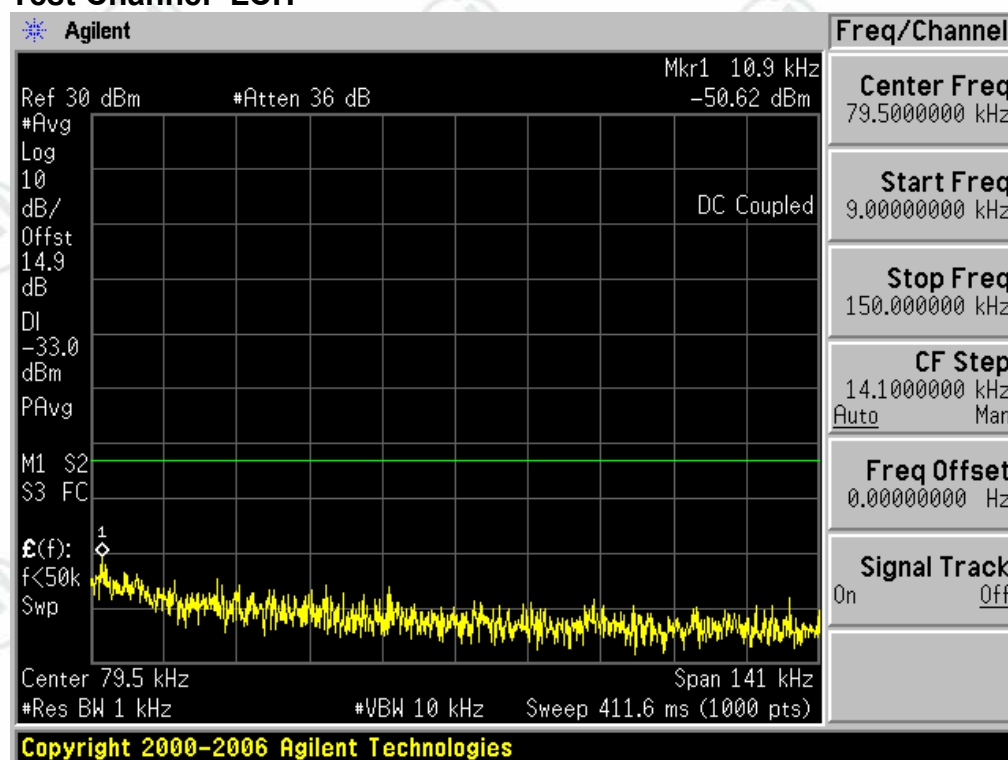
Test Channel=HCH

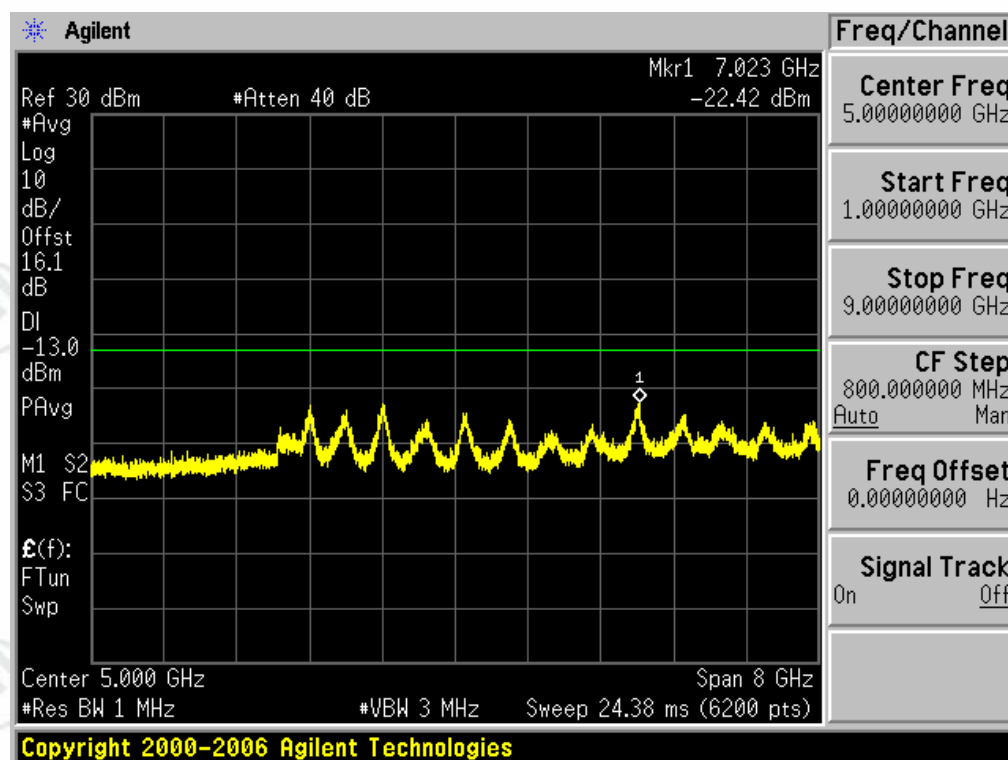
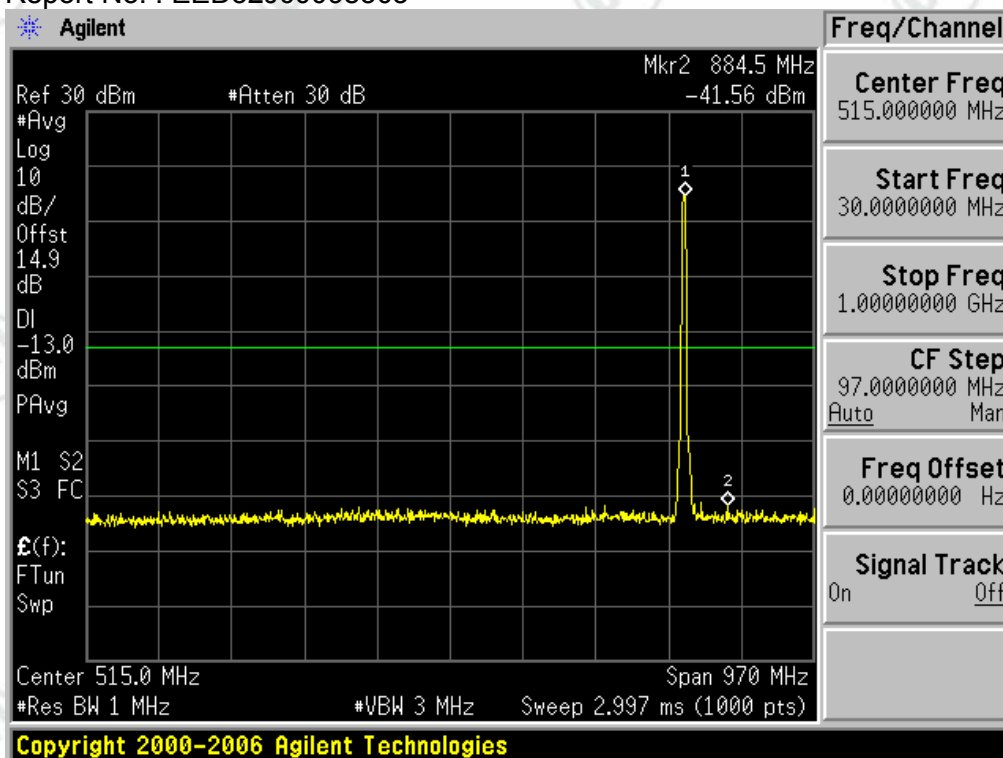




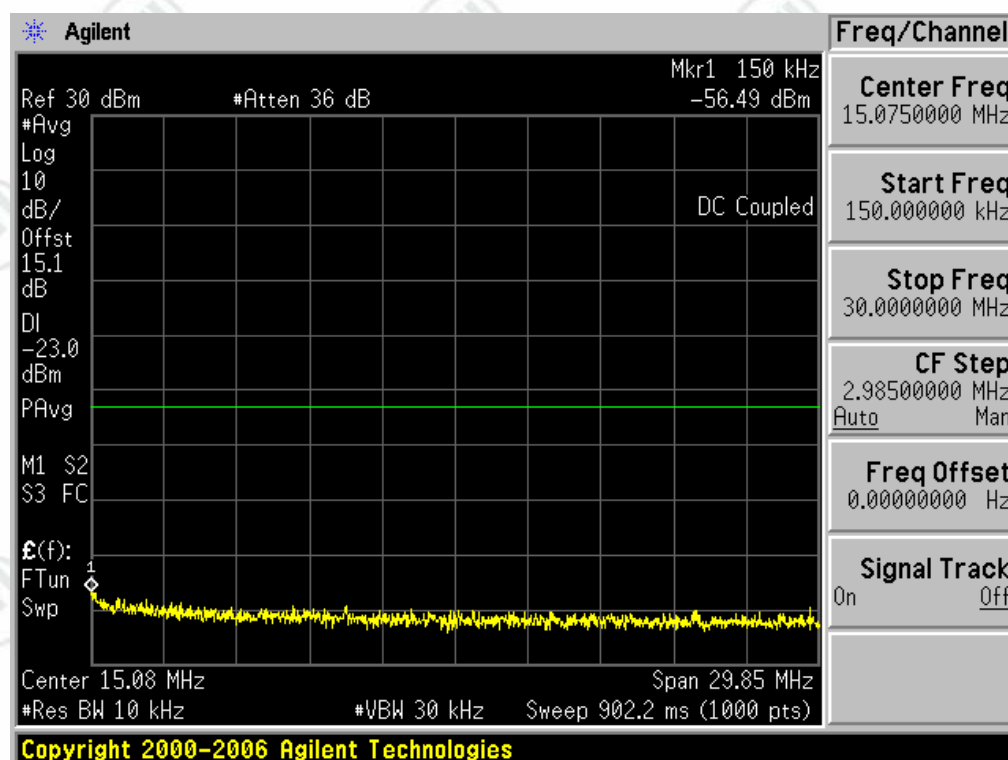
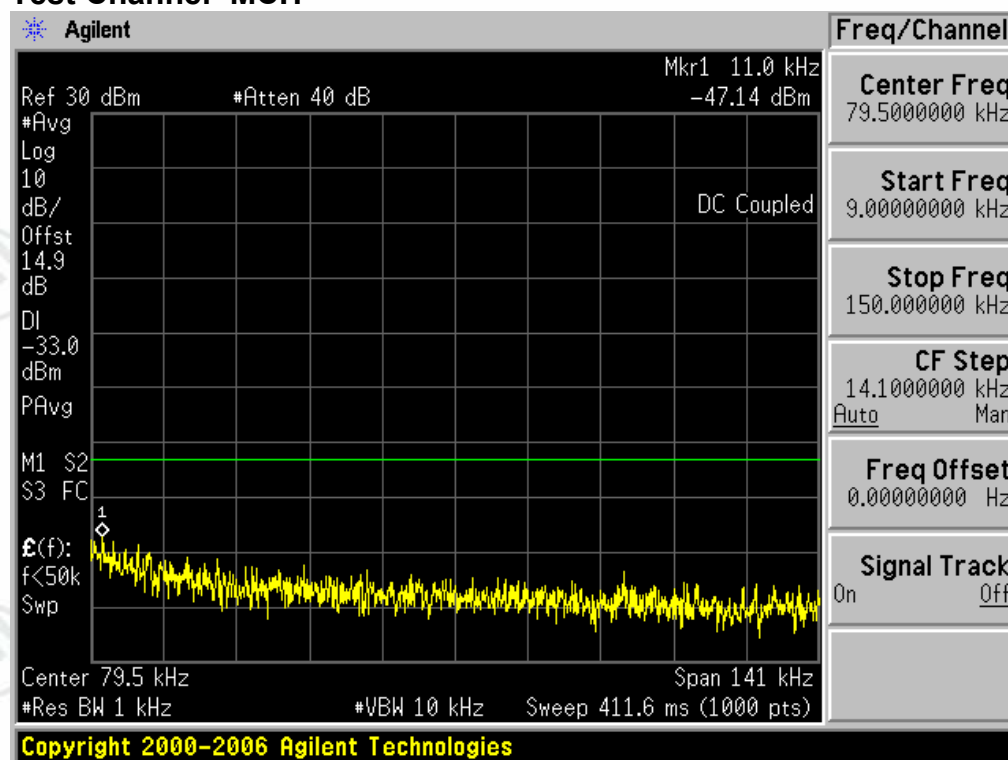
Test Mode=UMTS/TM3

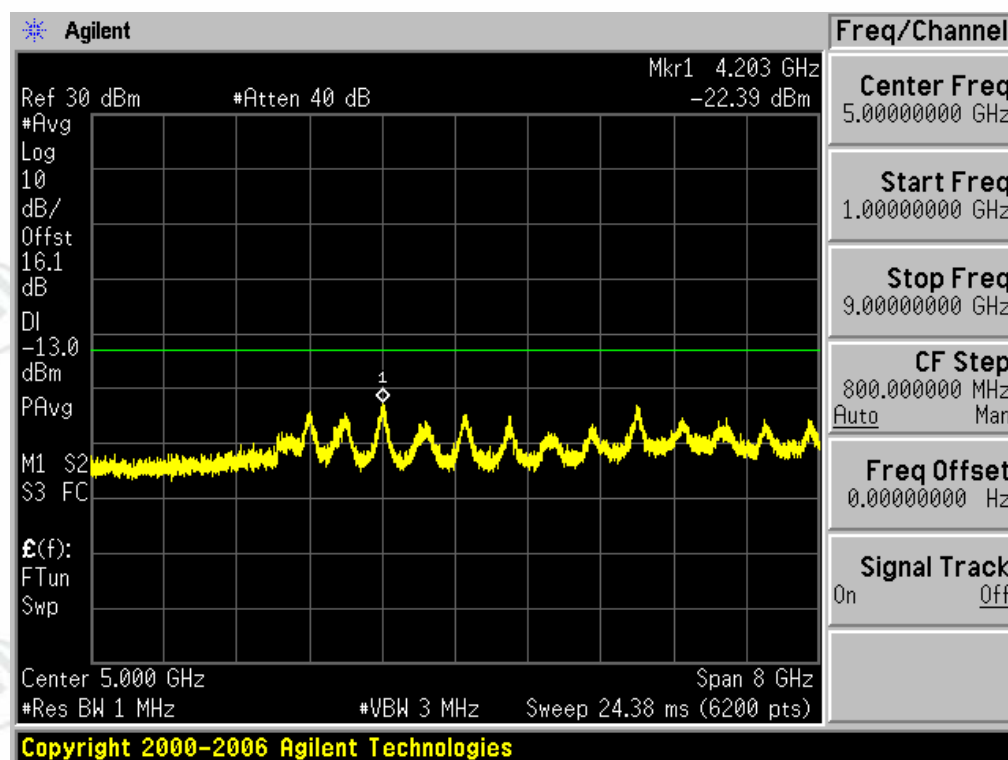
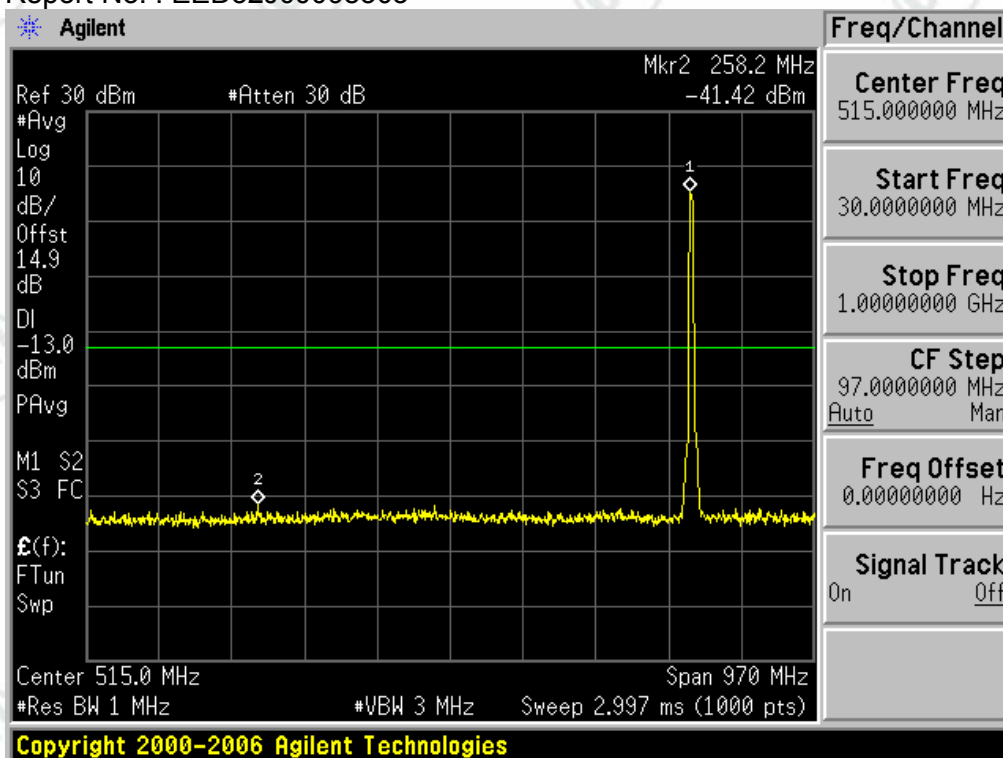
Test Channel=LCH



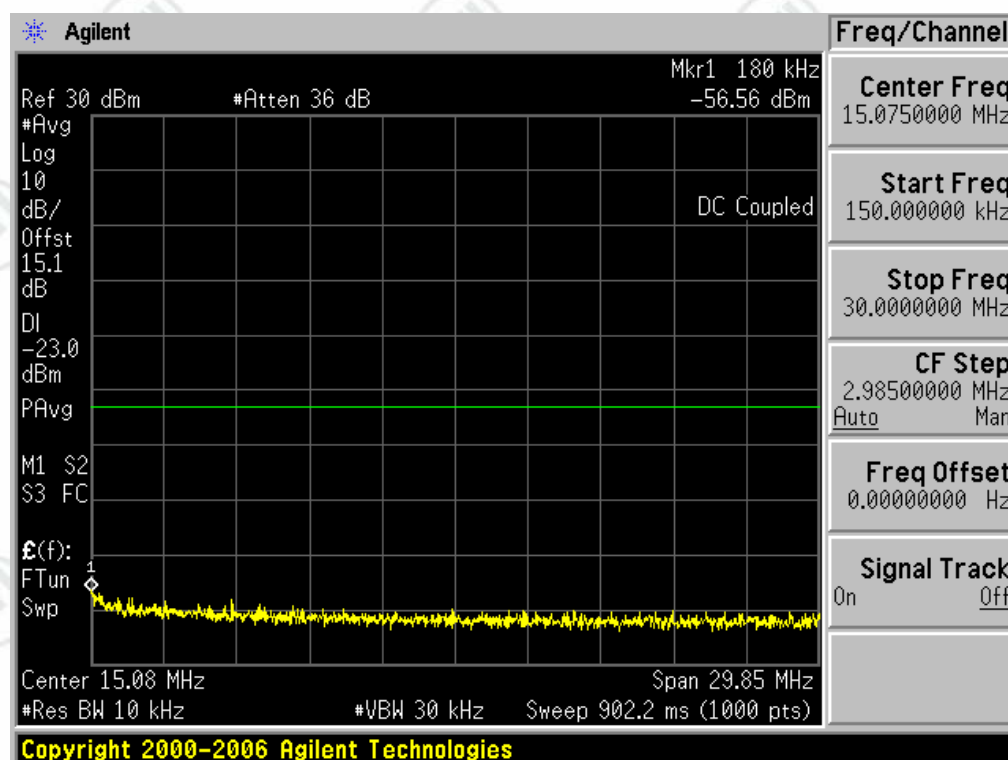
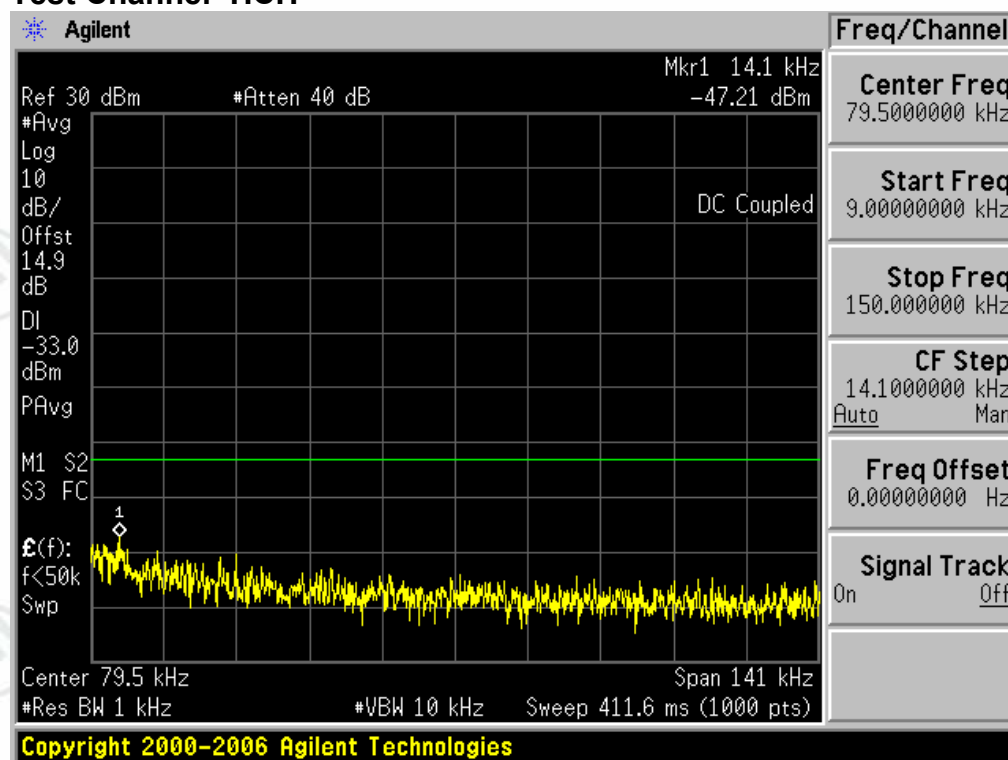


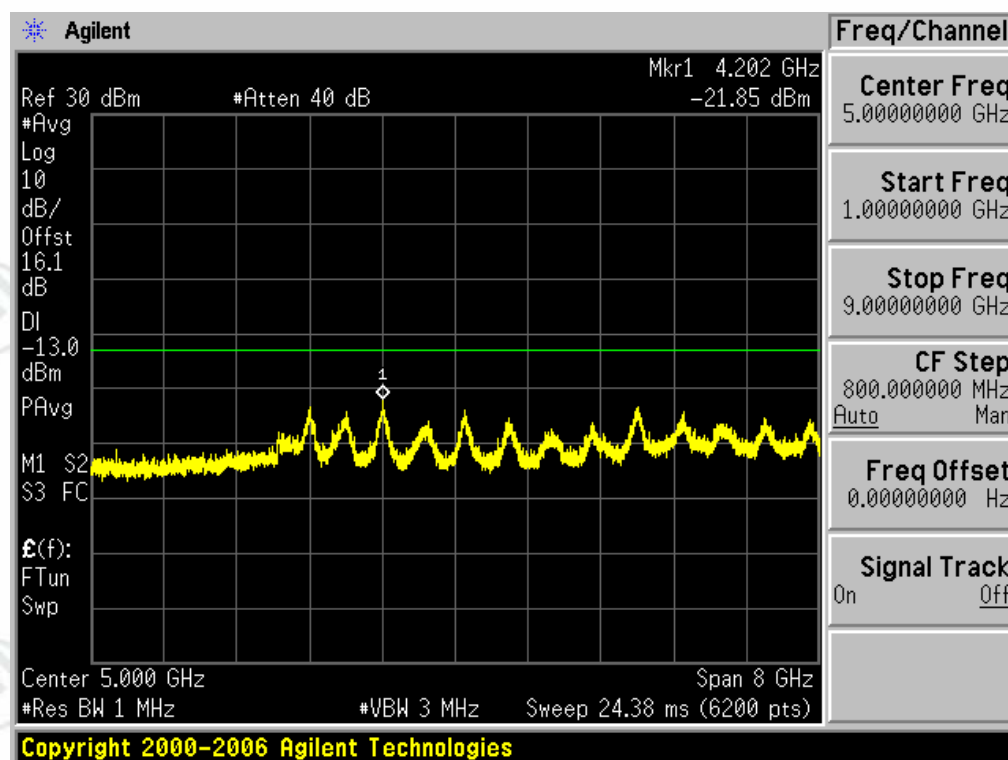
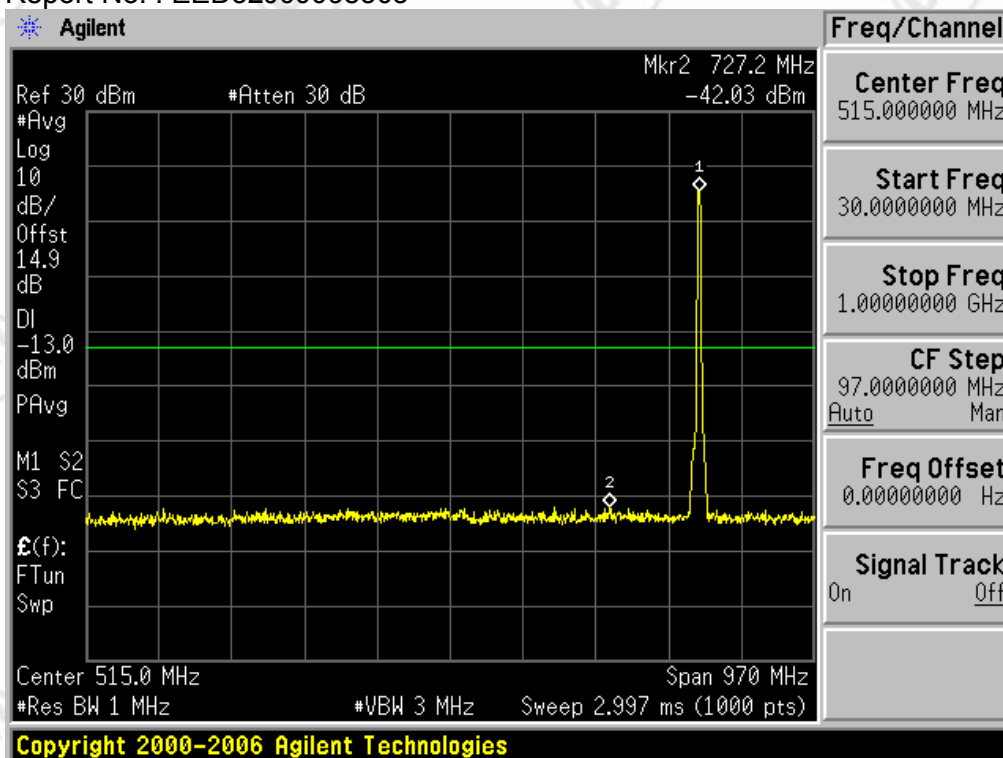
Test Channel=MCH





Test Channel=HCH

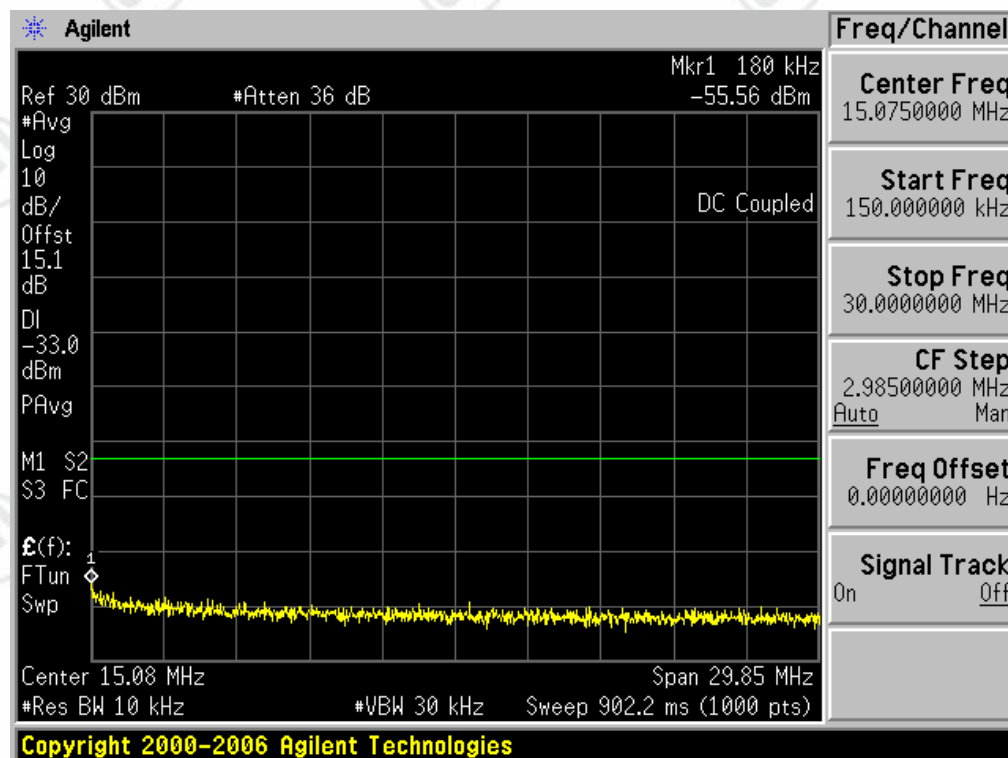
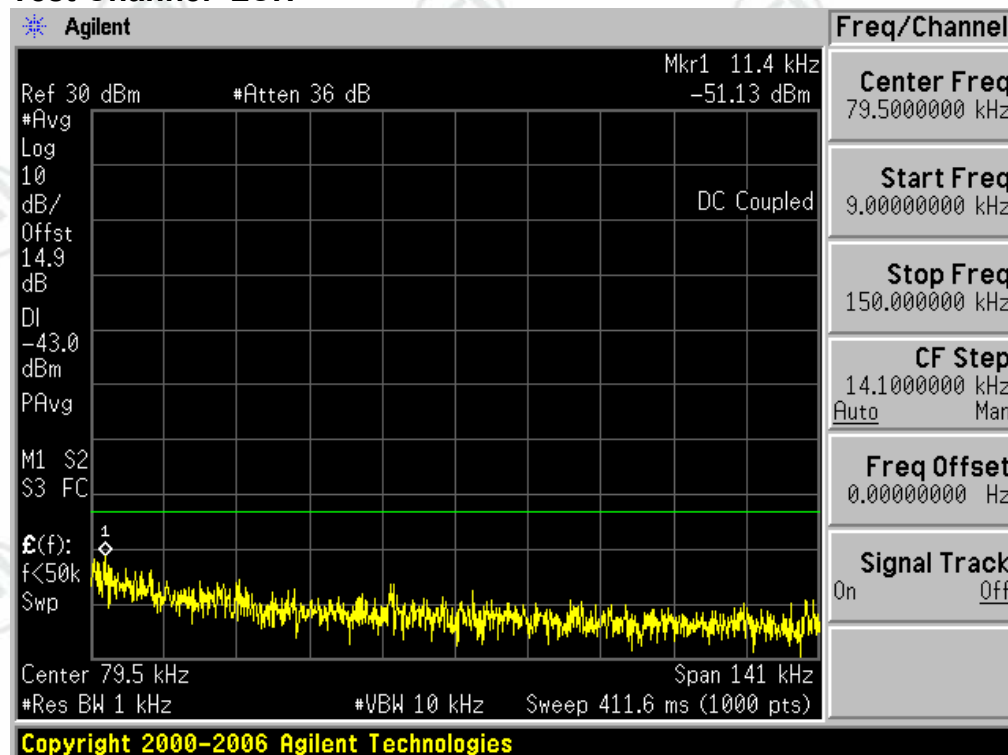


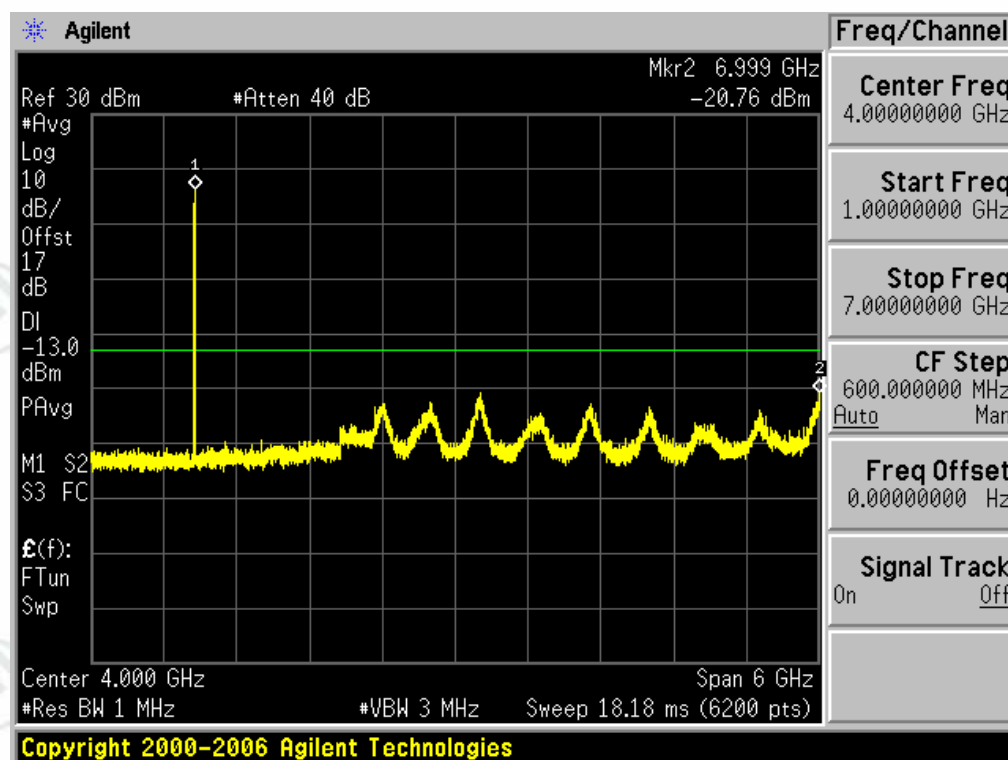
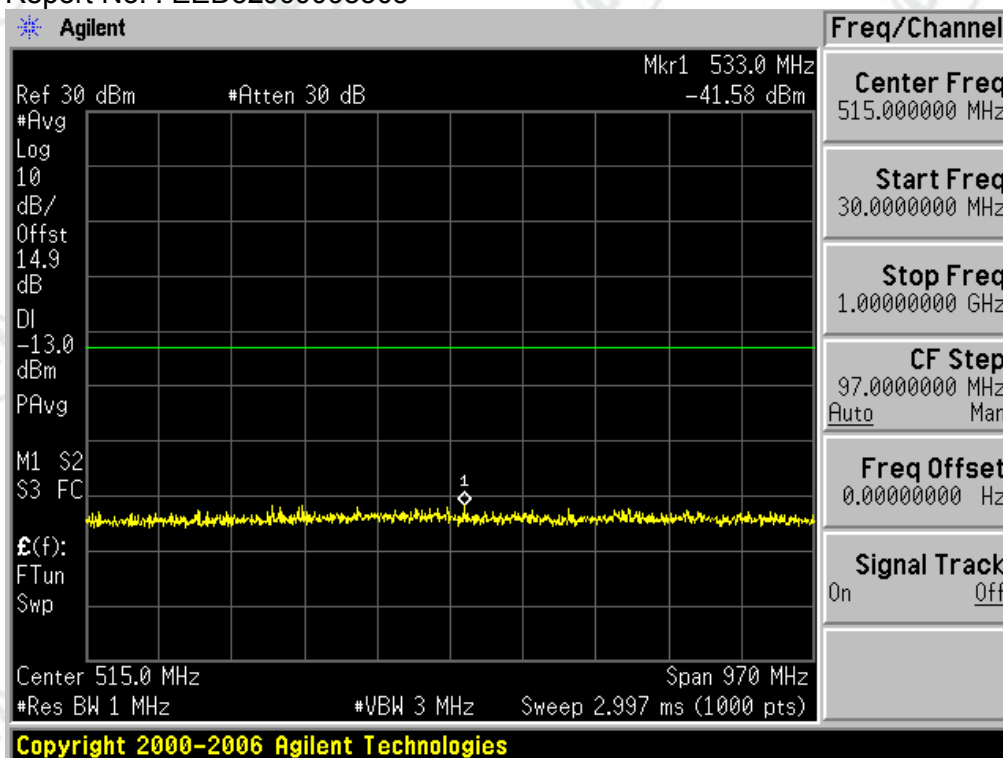


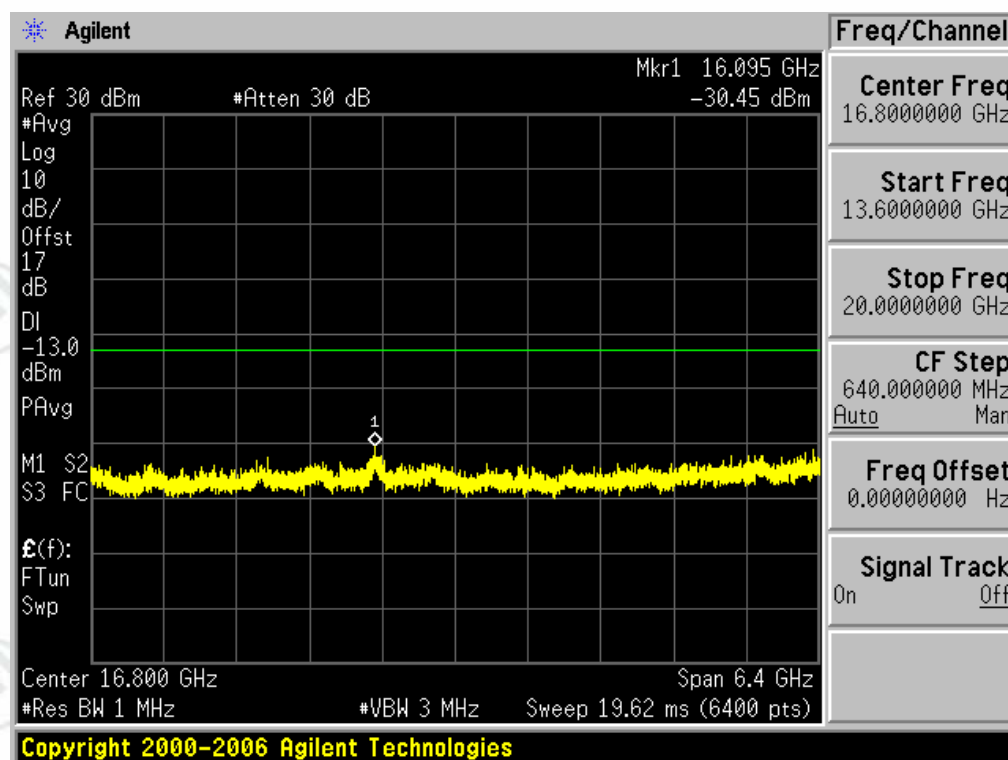
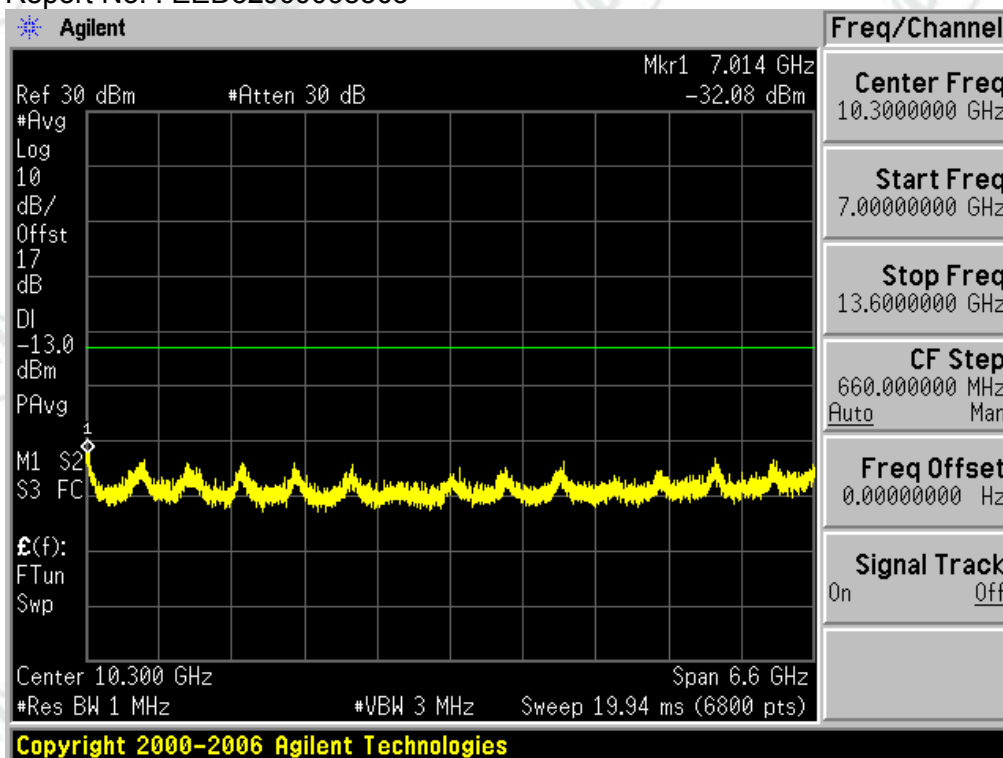
Test Band=WCDMA1900

Test Mode=UMTS/TM1

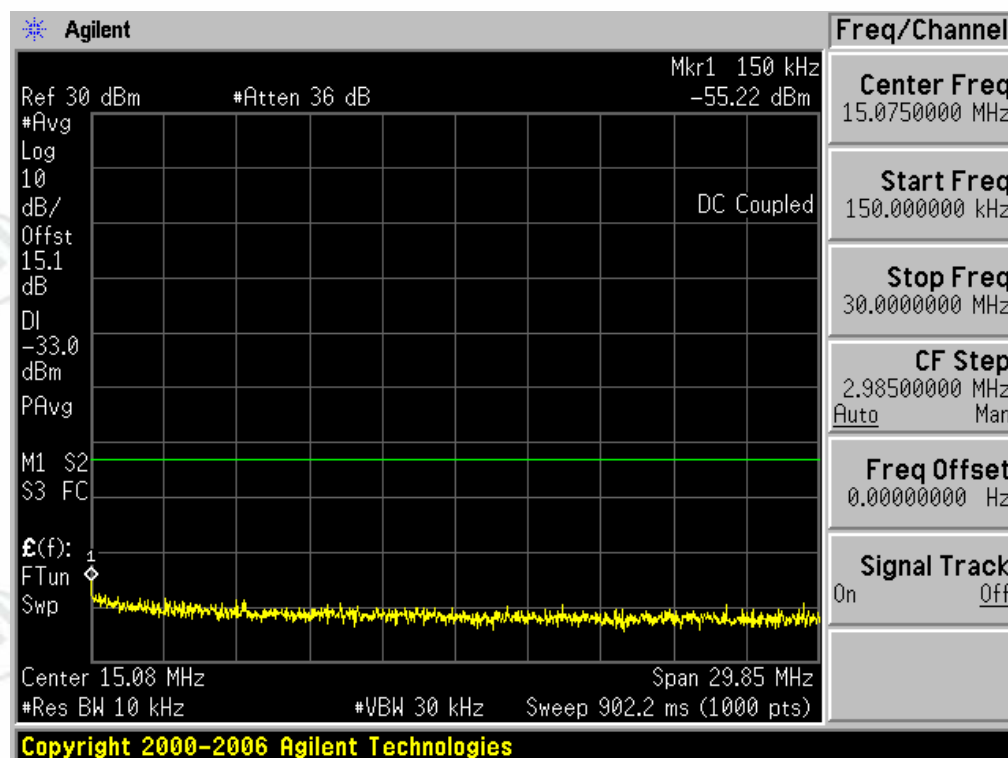
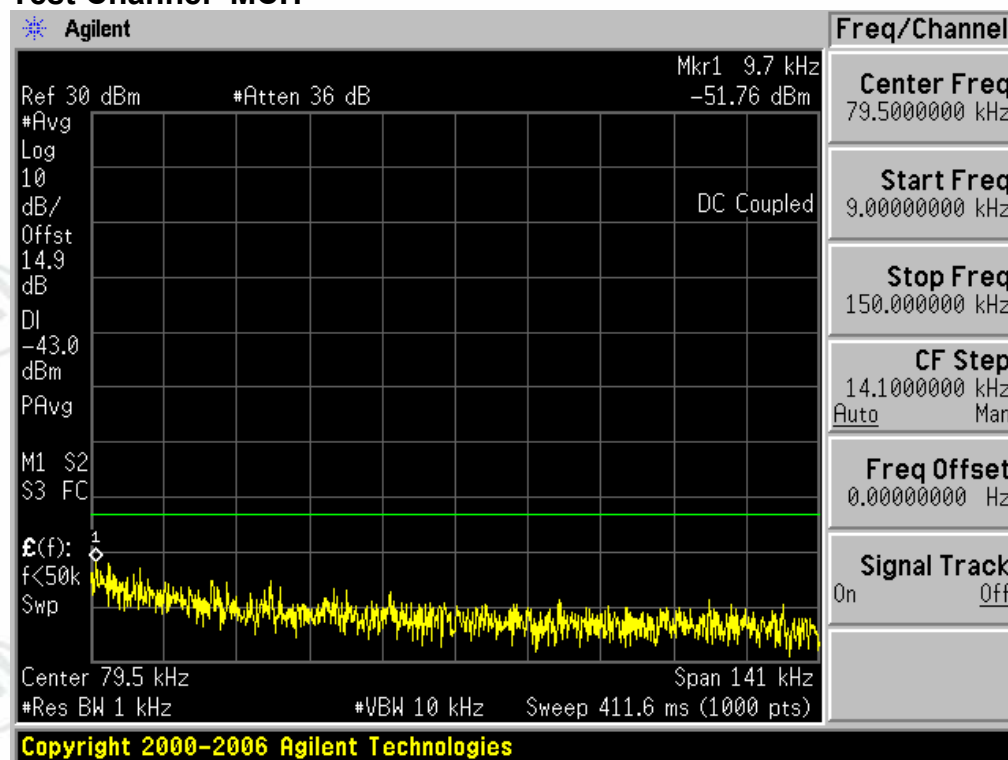
Test Channel=LCH

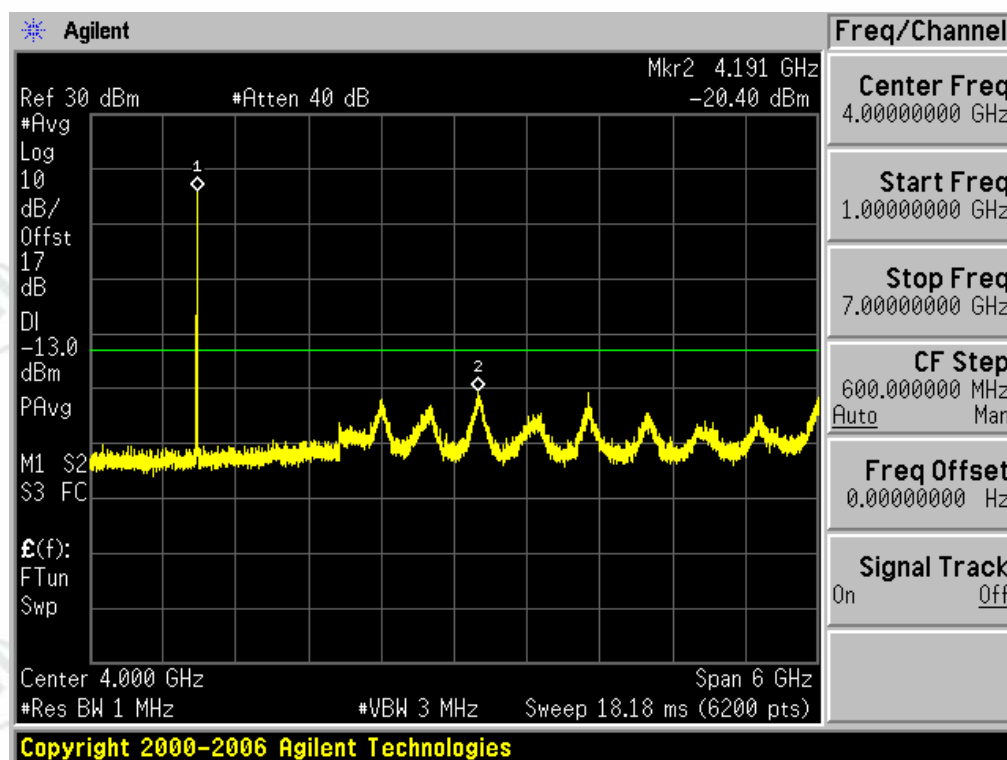
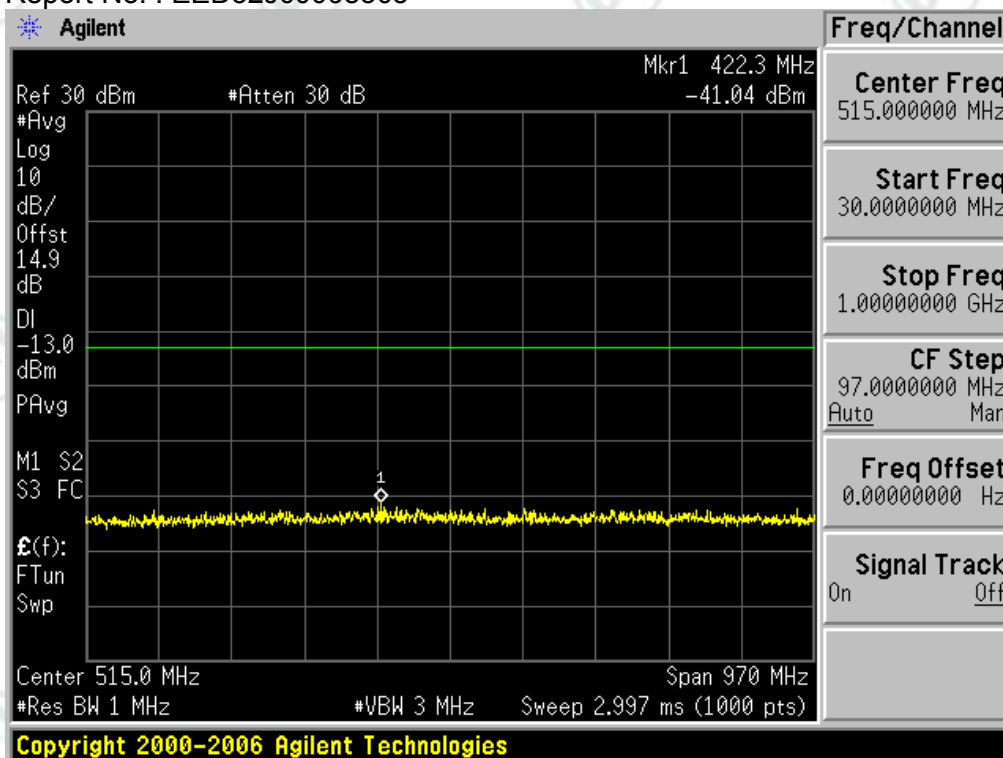


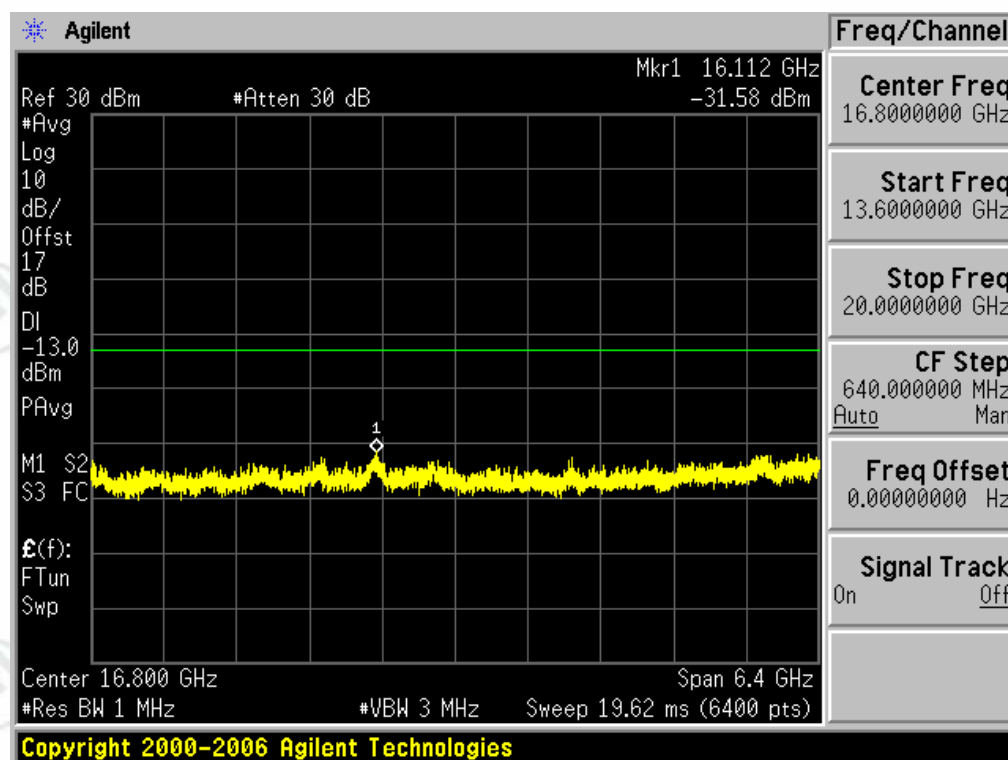
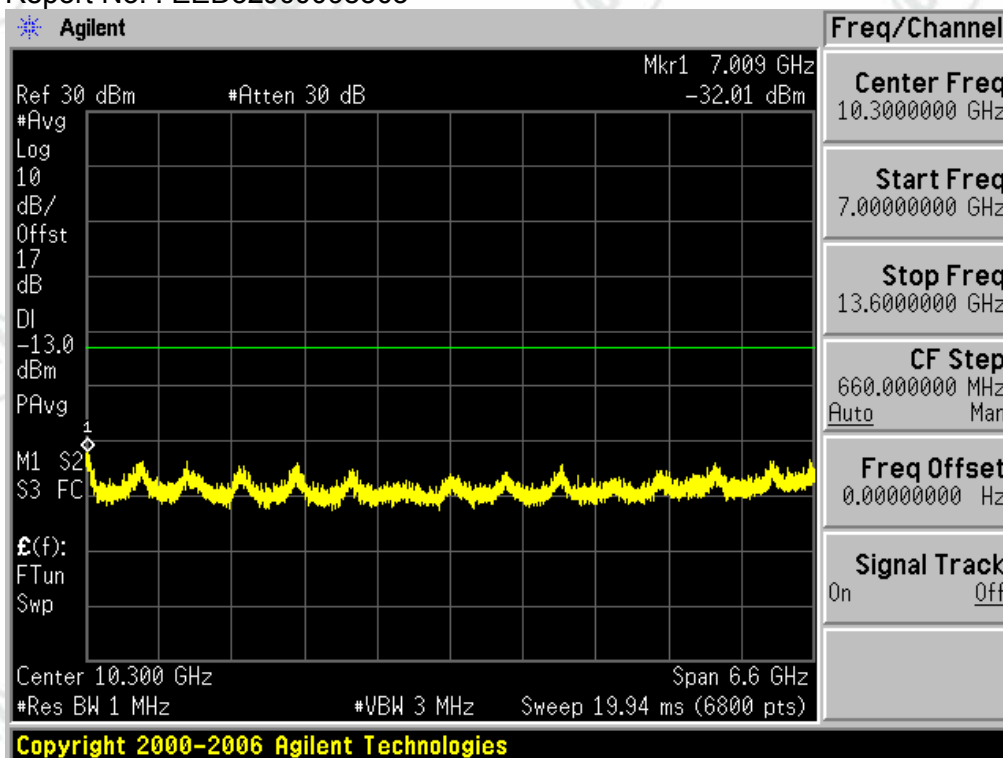




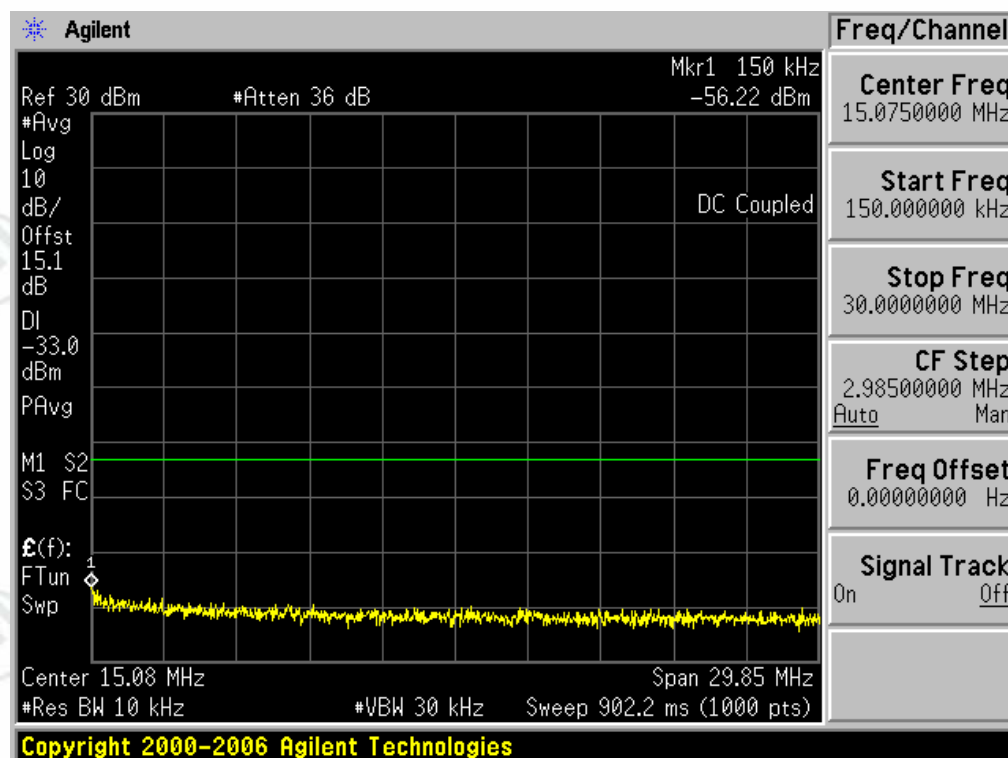
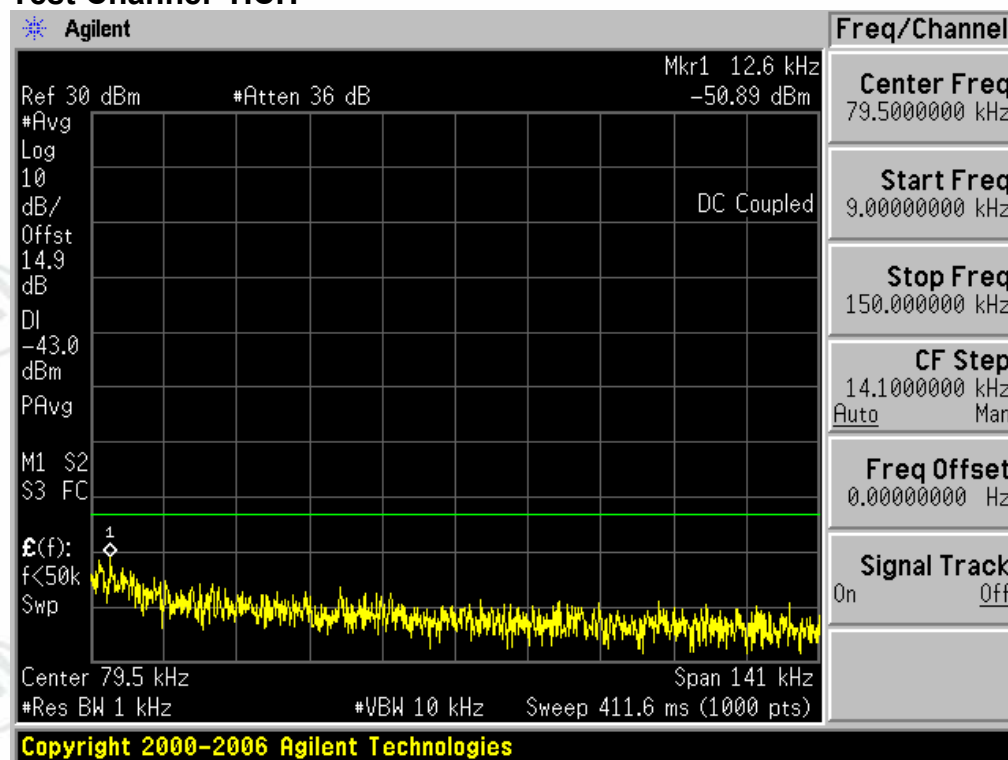
Test Channel=MCH

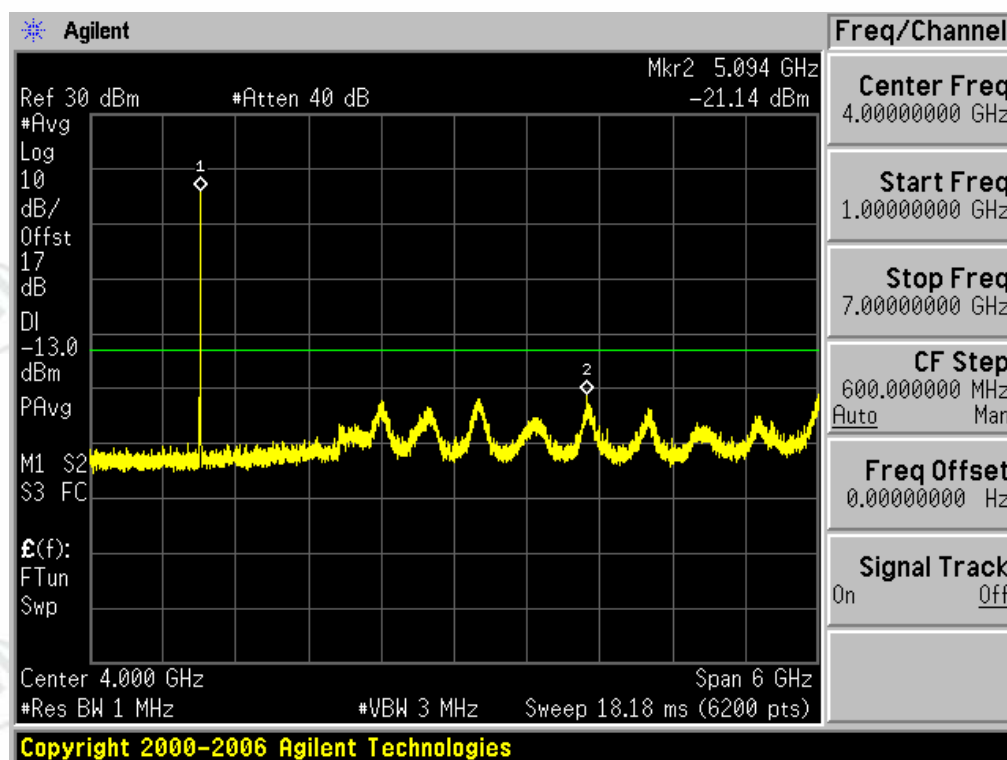
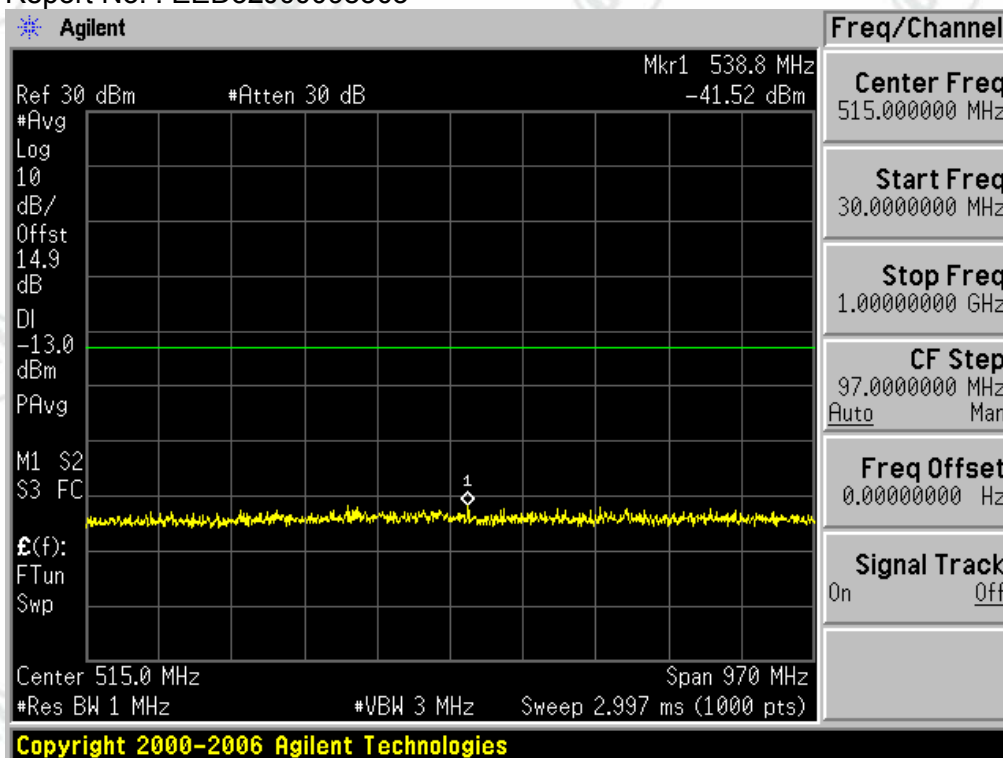


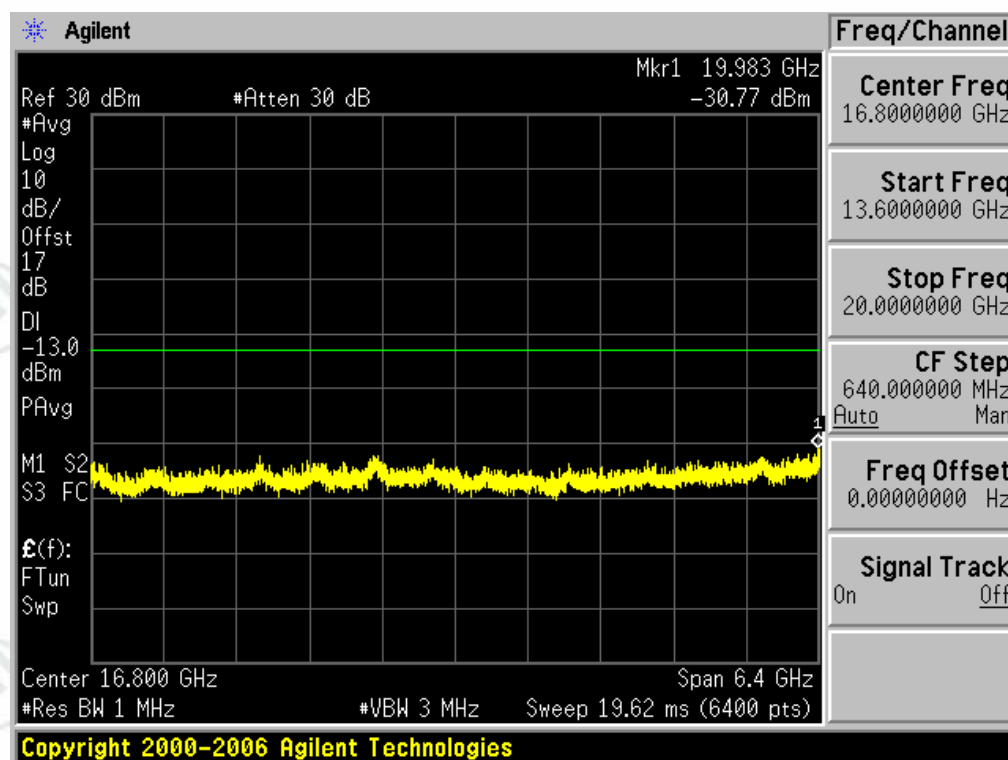
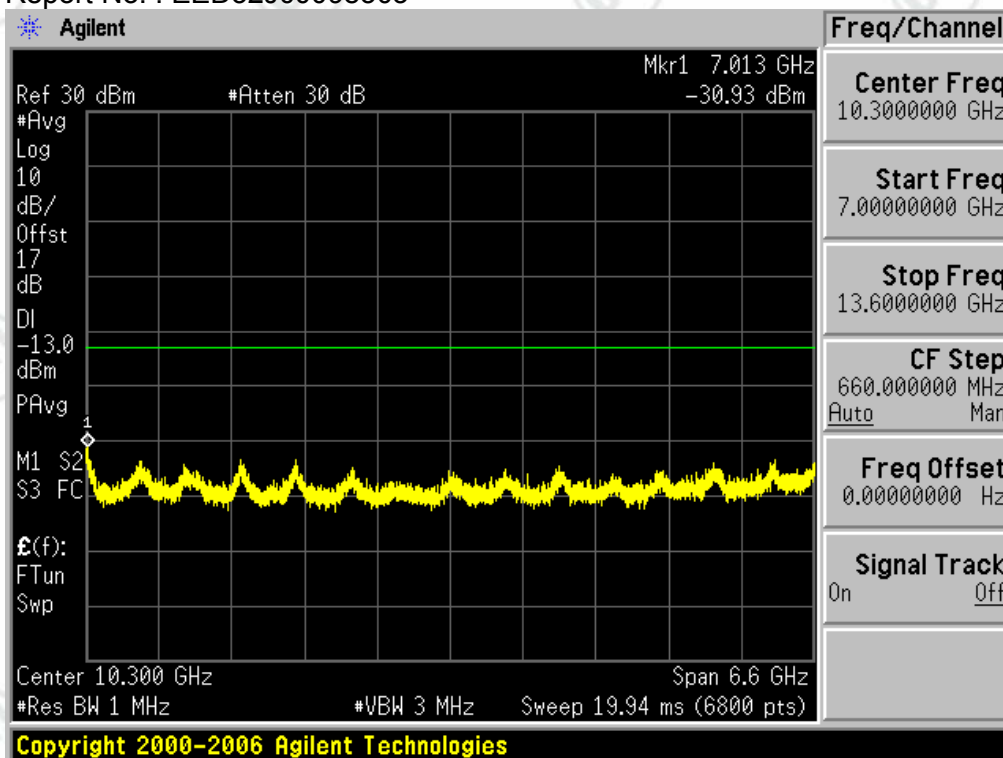




Test Channel=HCH

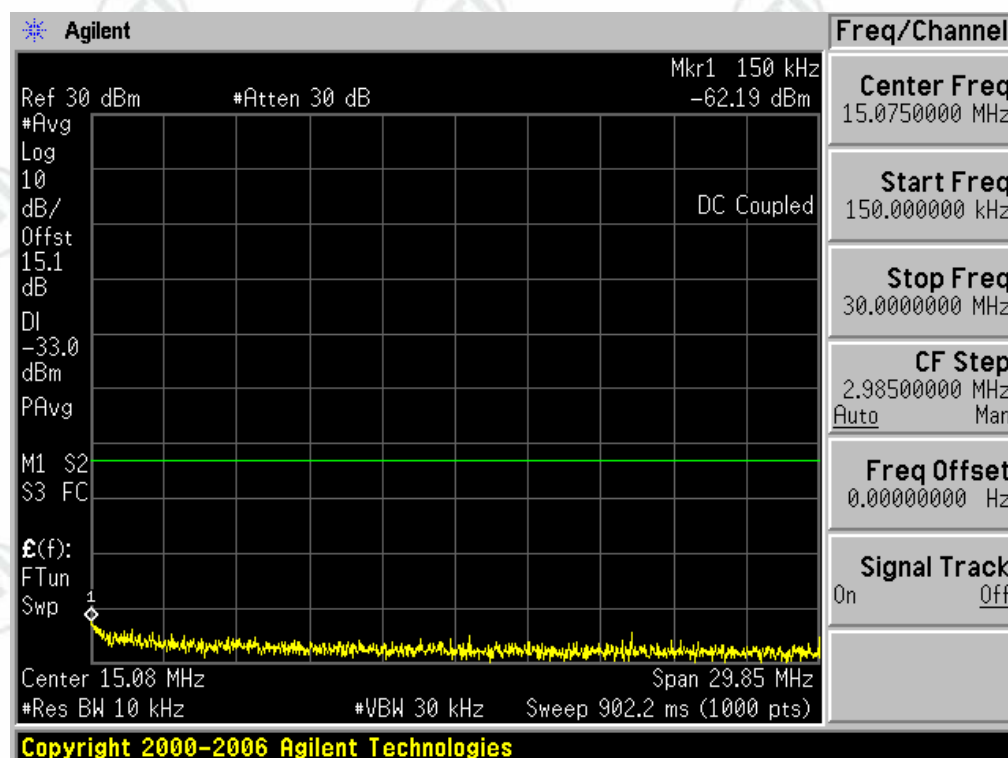
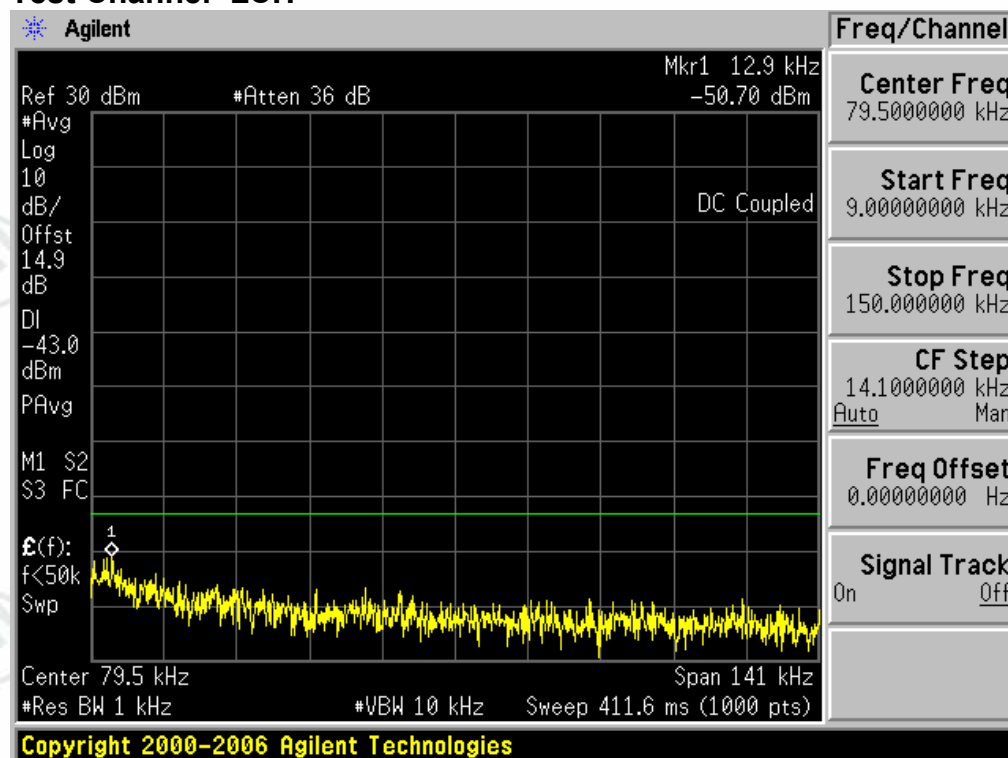


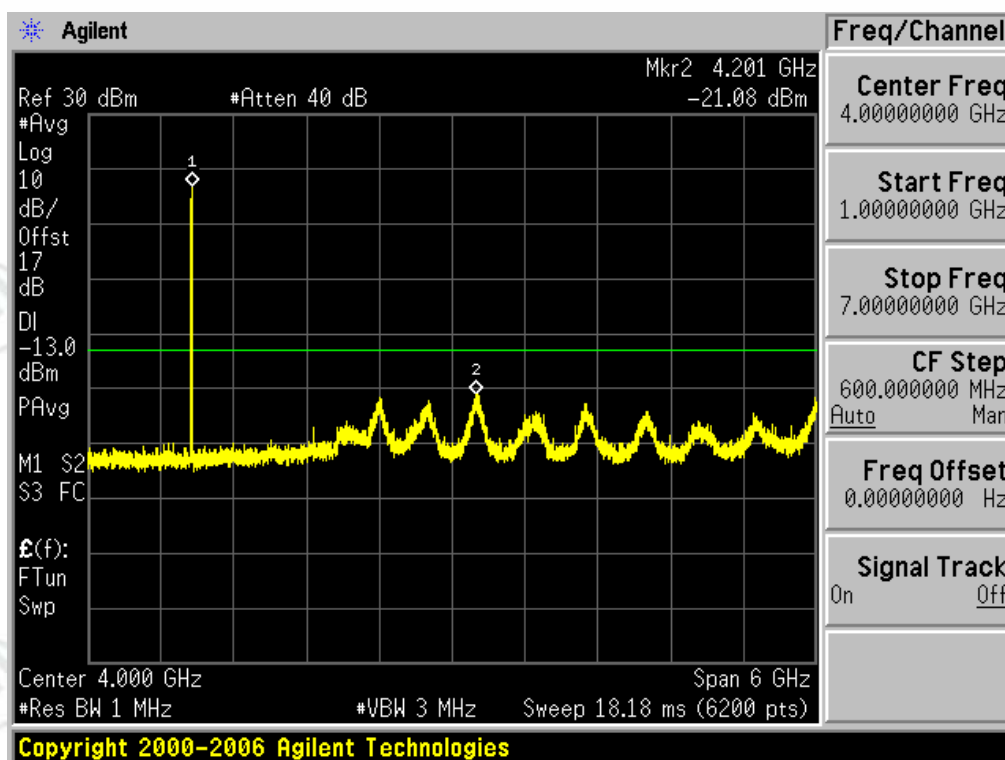
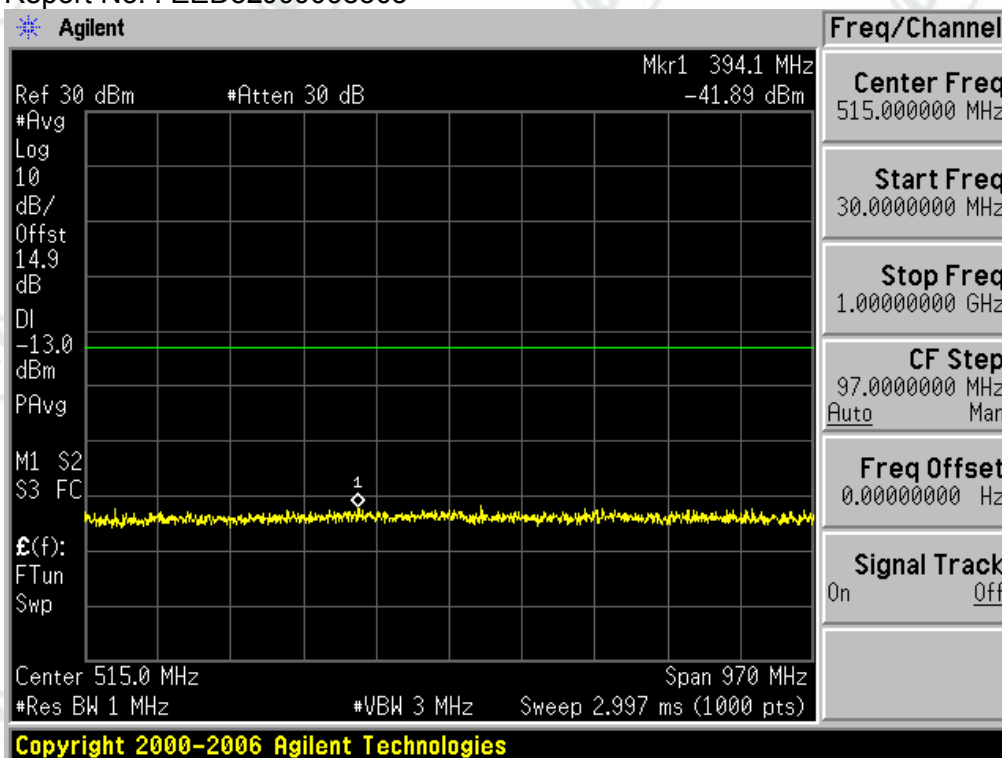


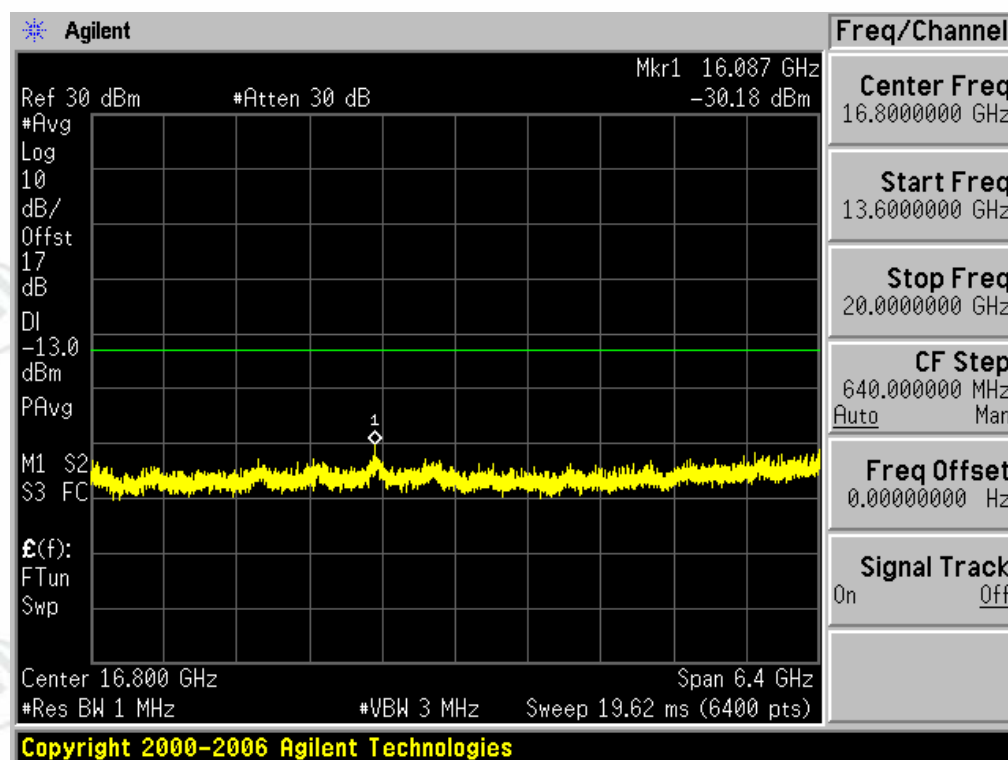
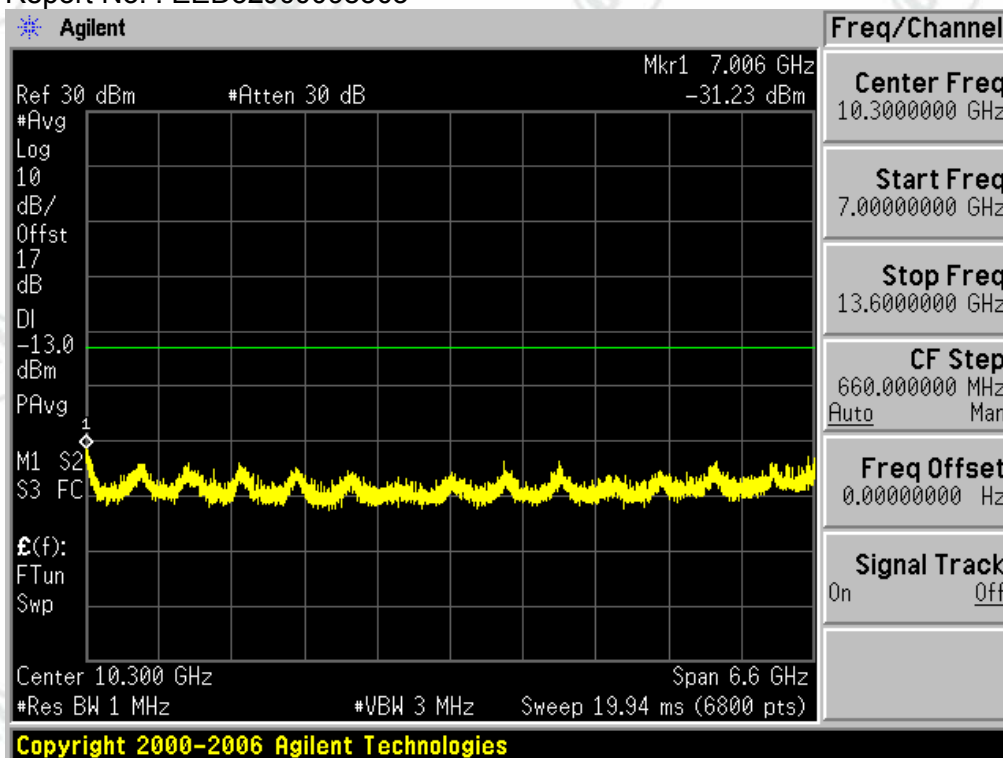


Test Mode=UMTS/TM2

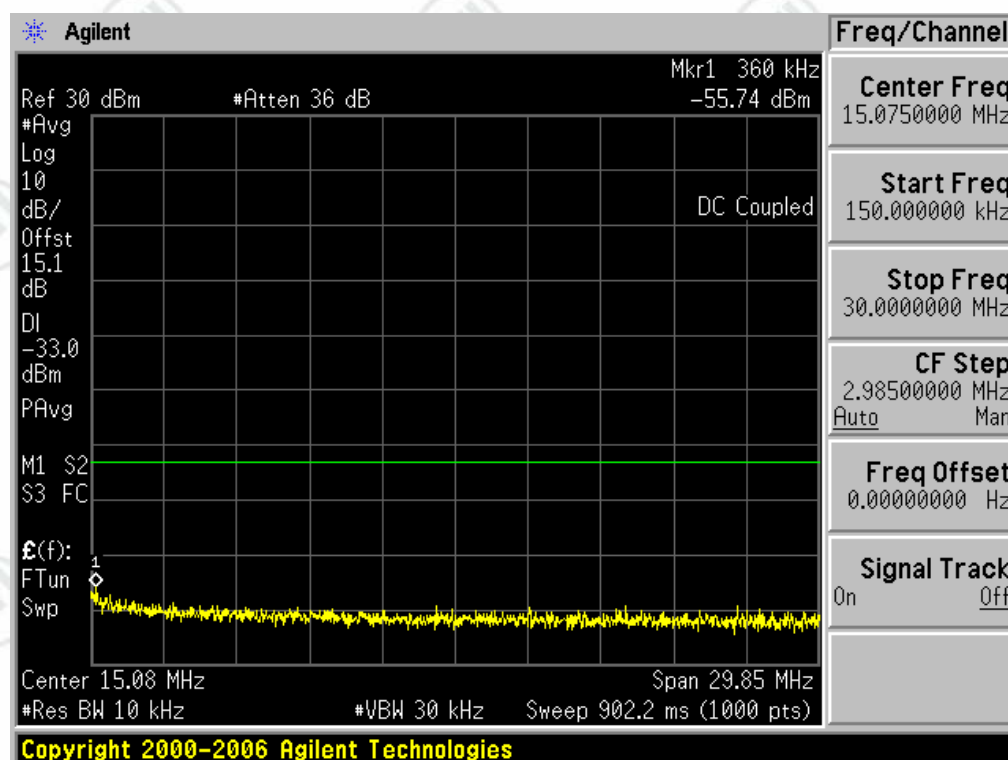
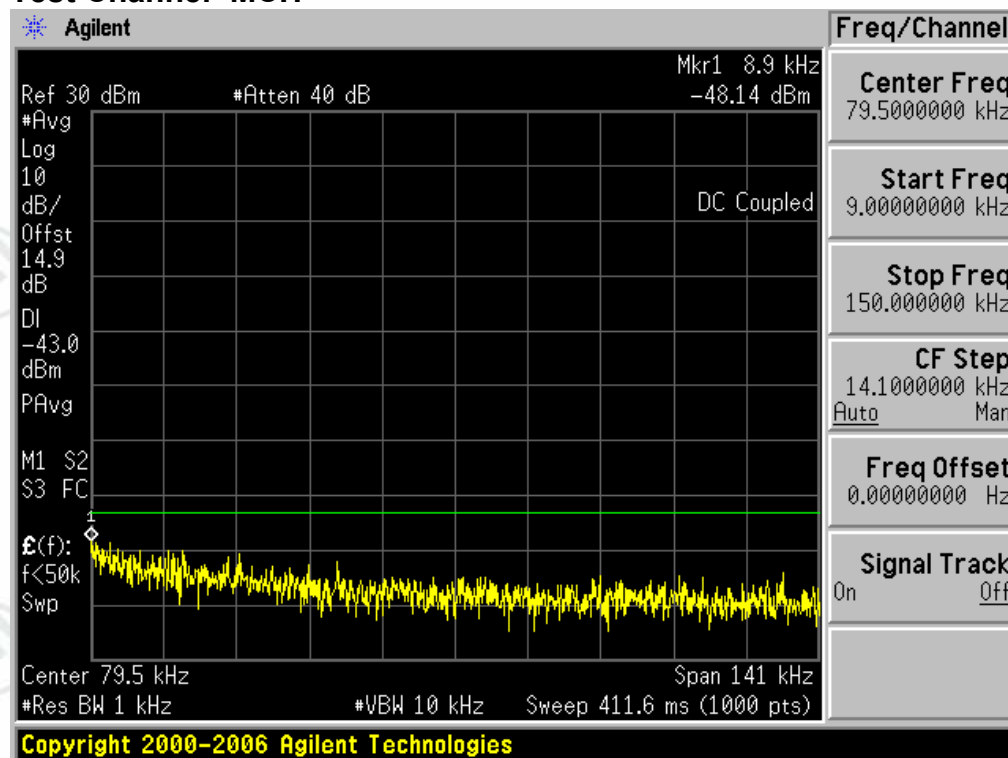
Test Channel=LCH

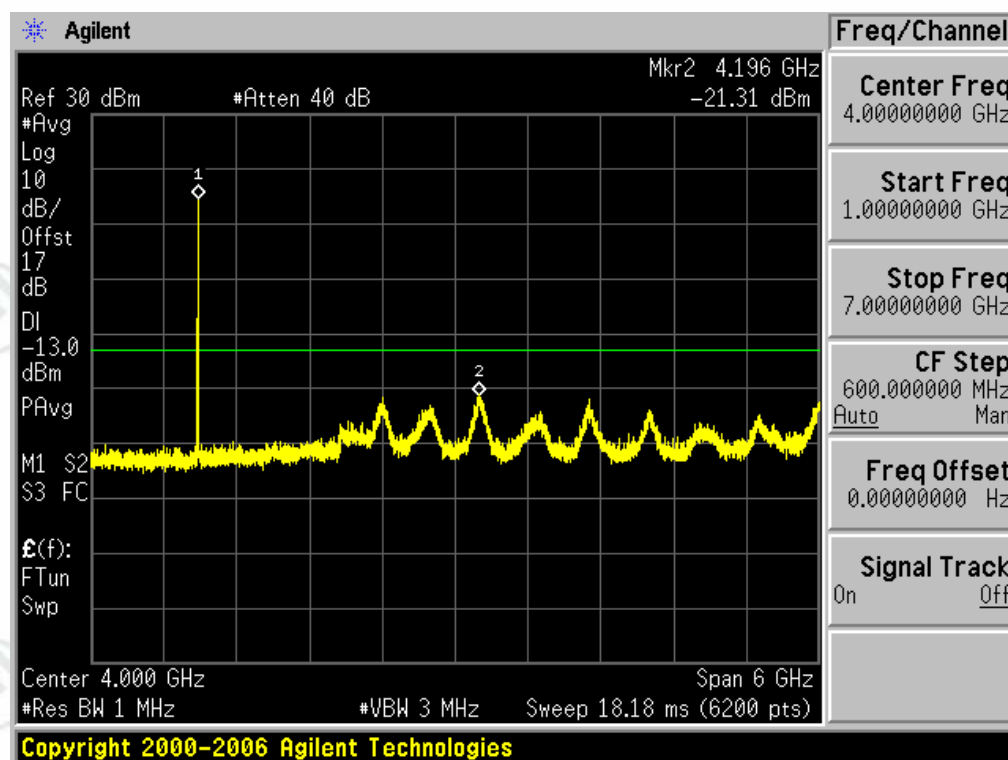
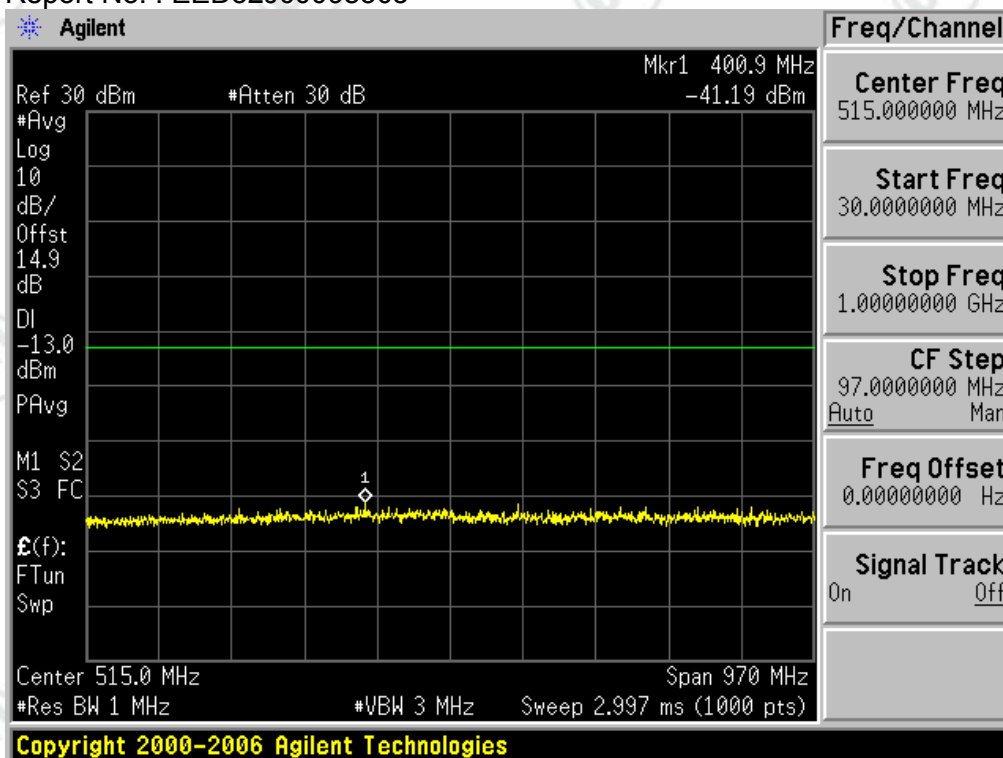


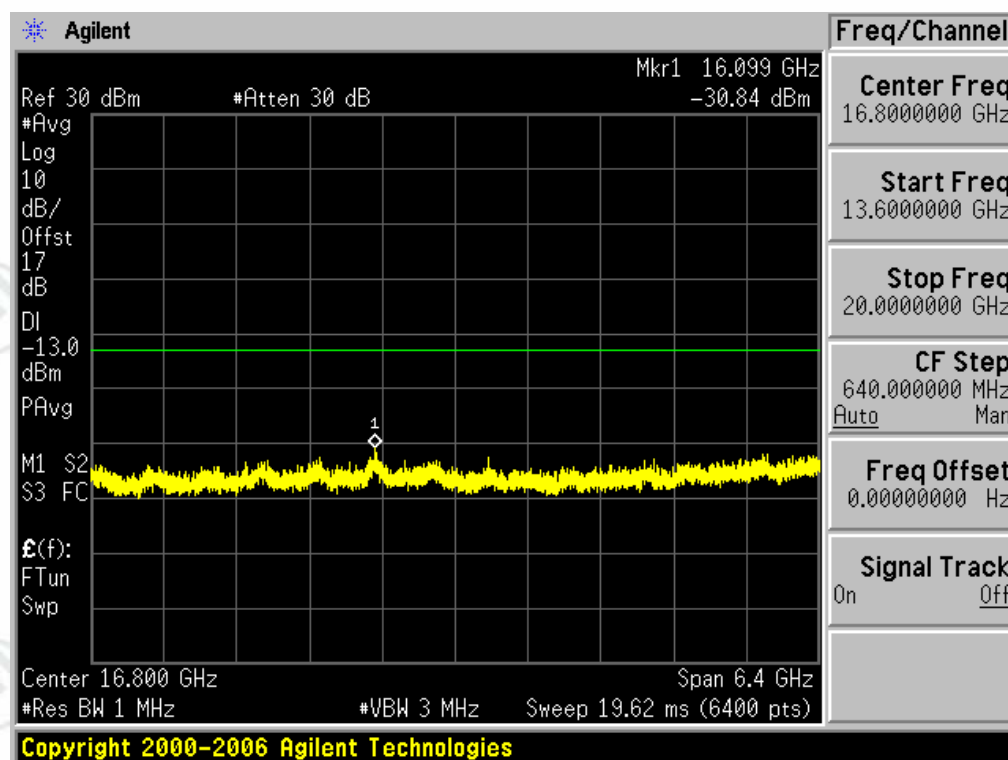
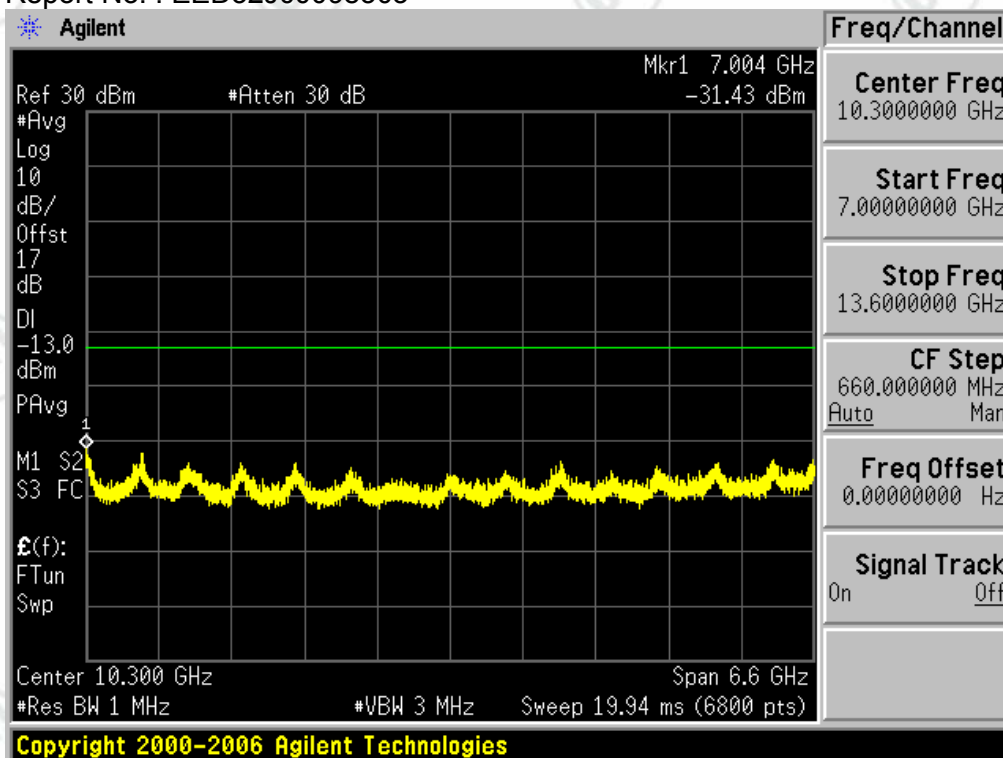




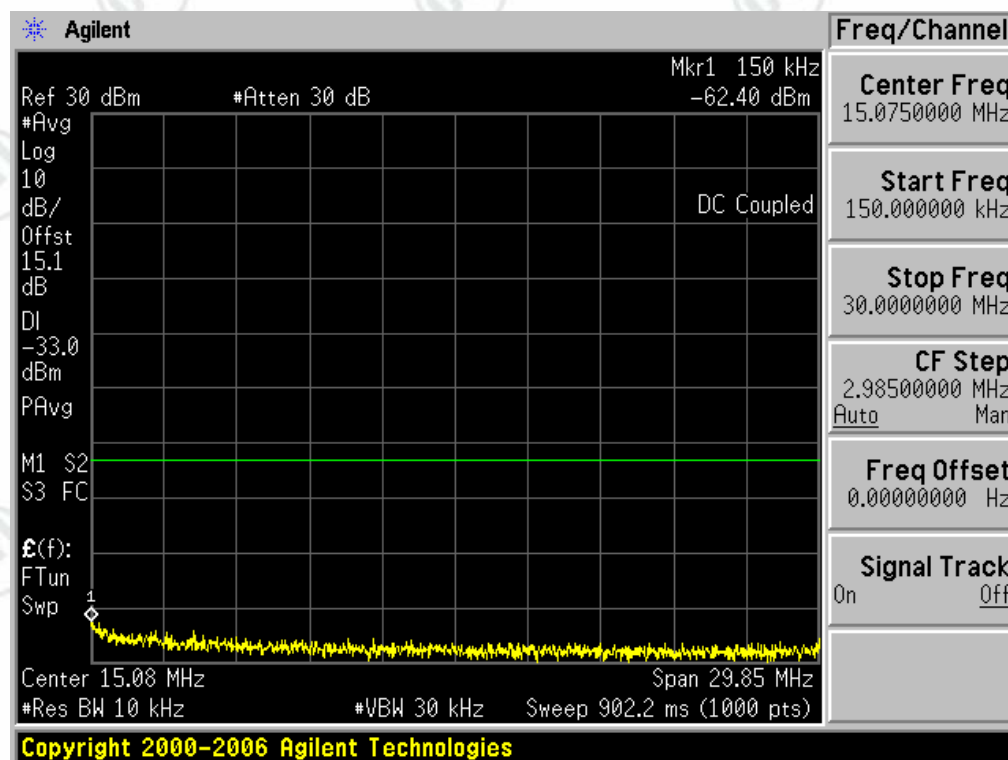
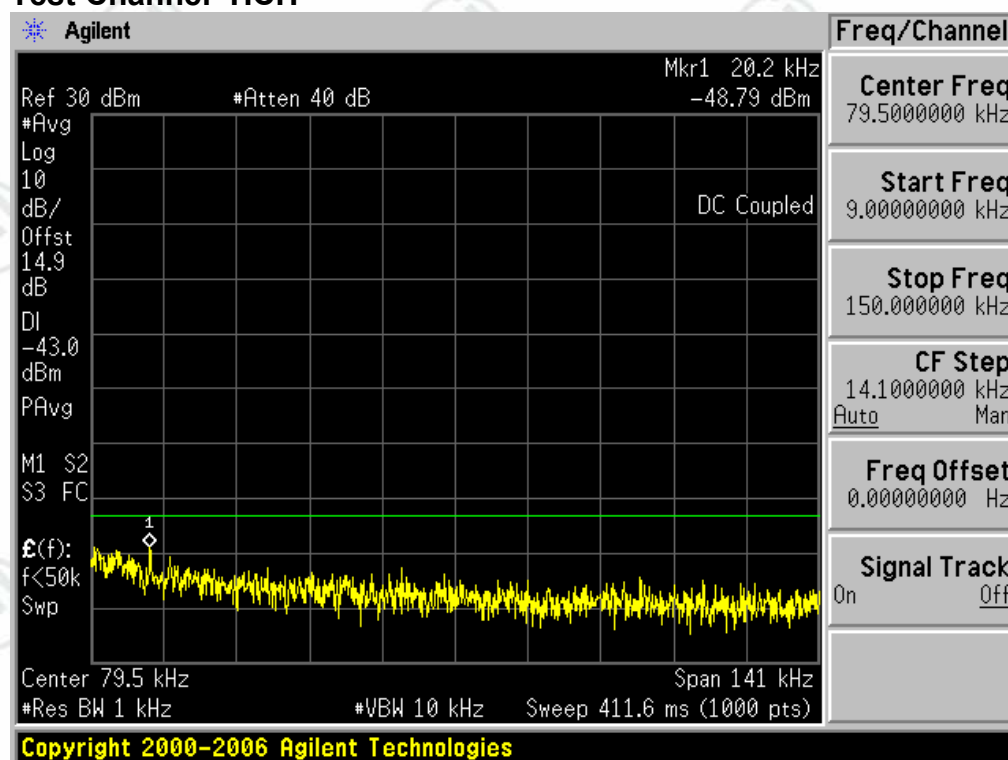
Test Channel=MCH

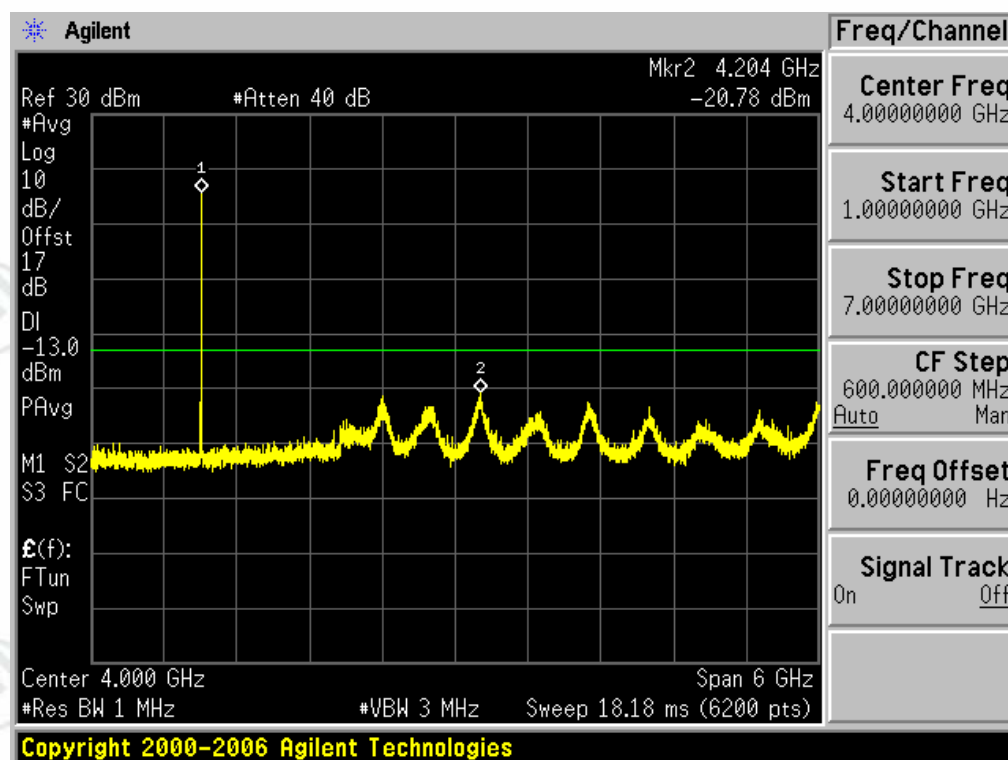
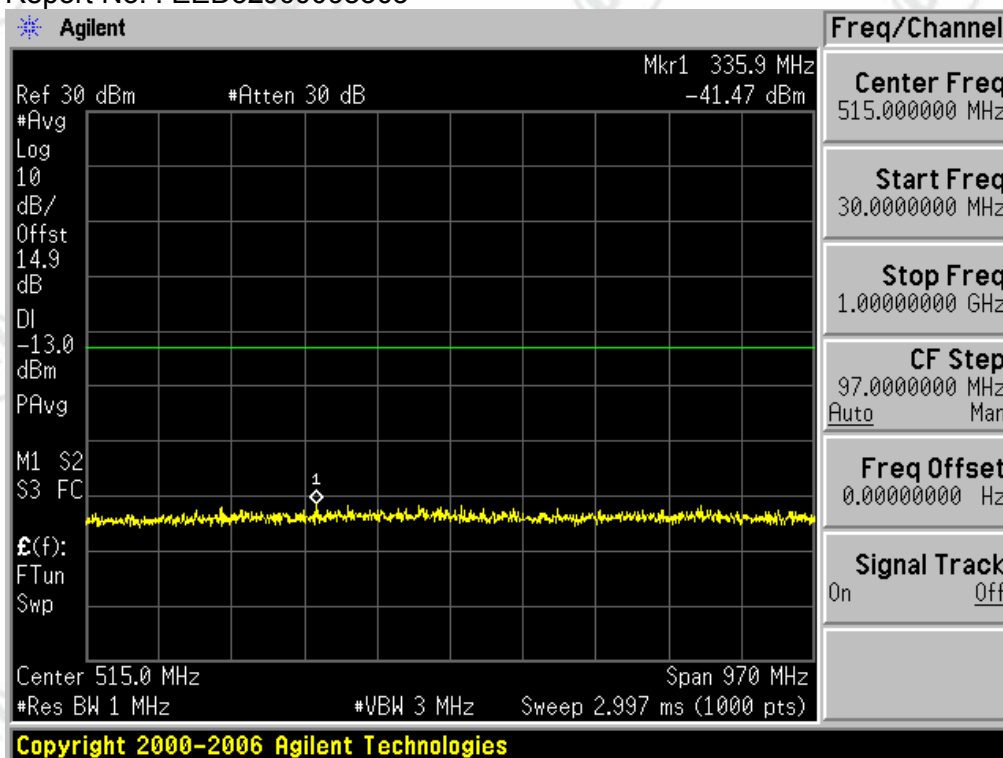


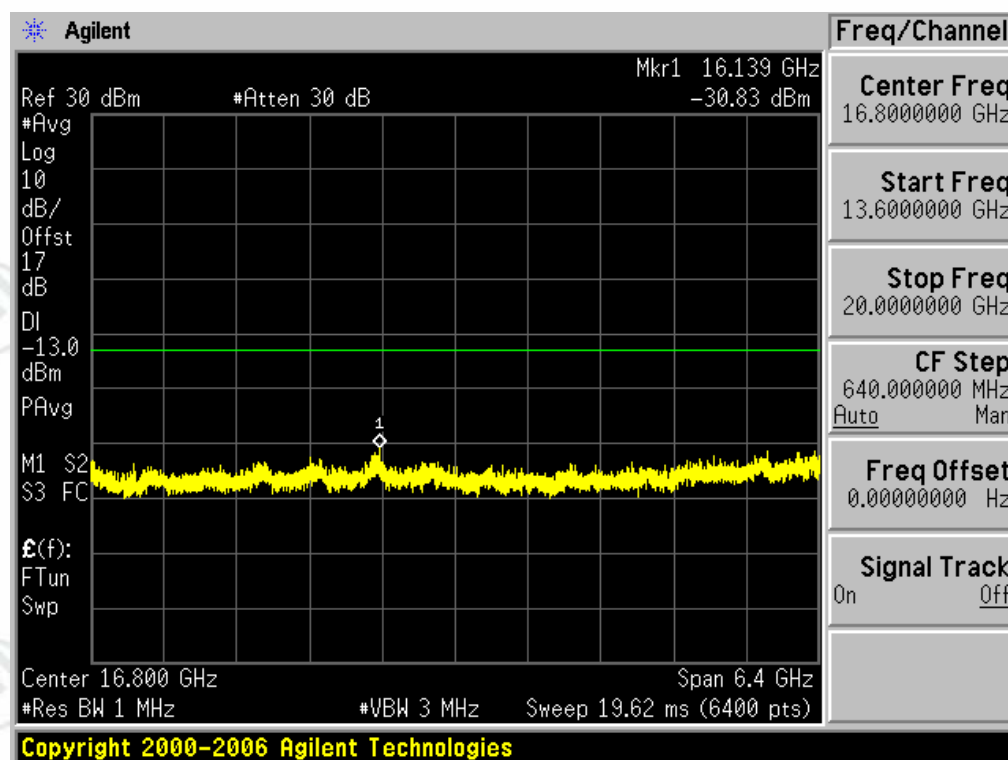
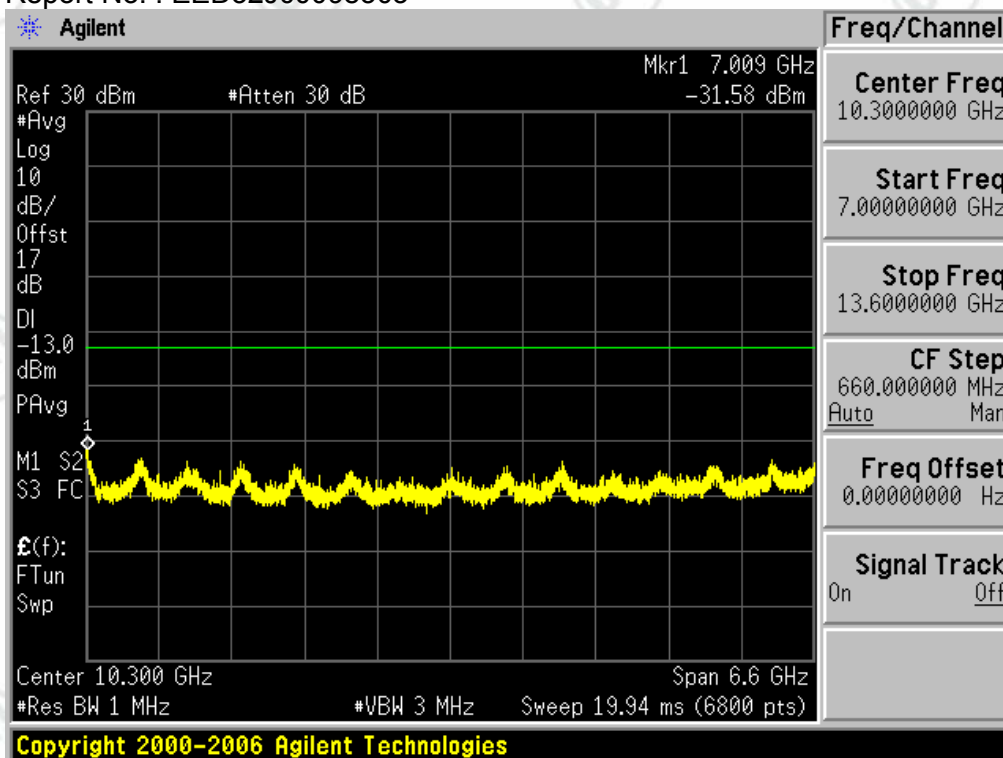




Test Channel=HCH

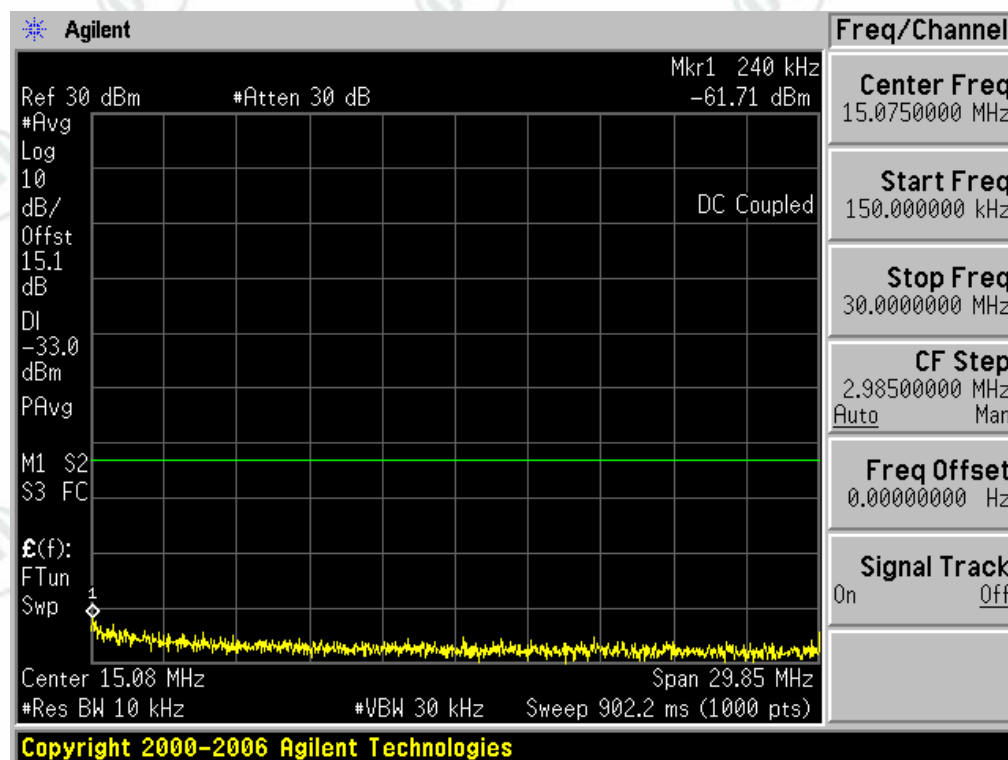
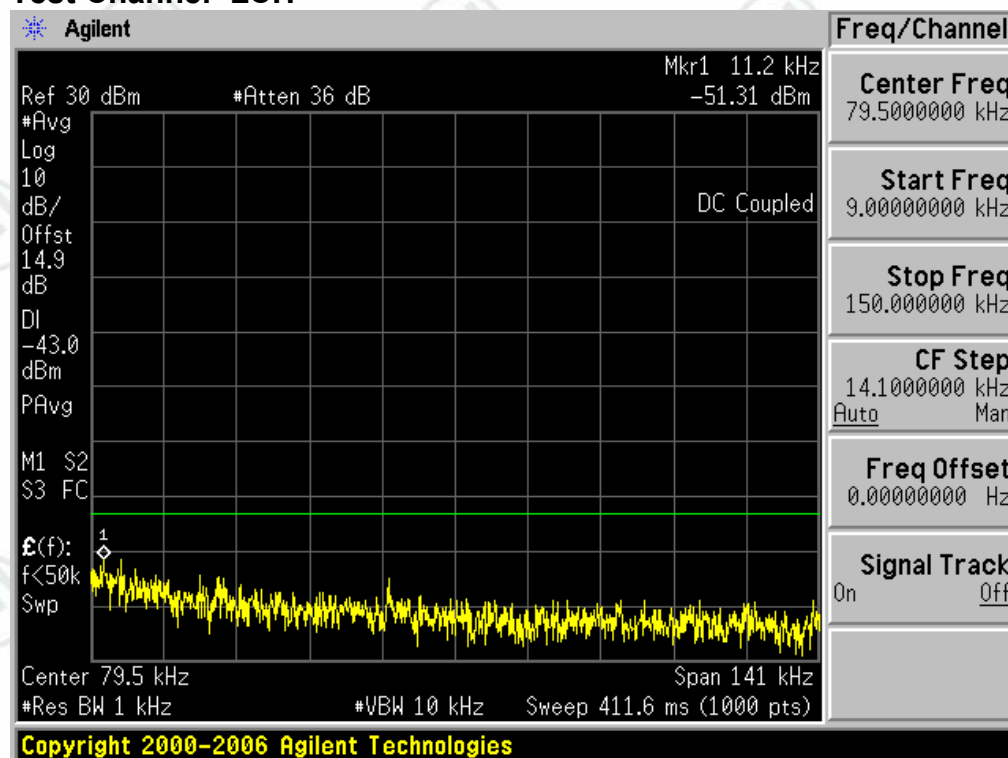


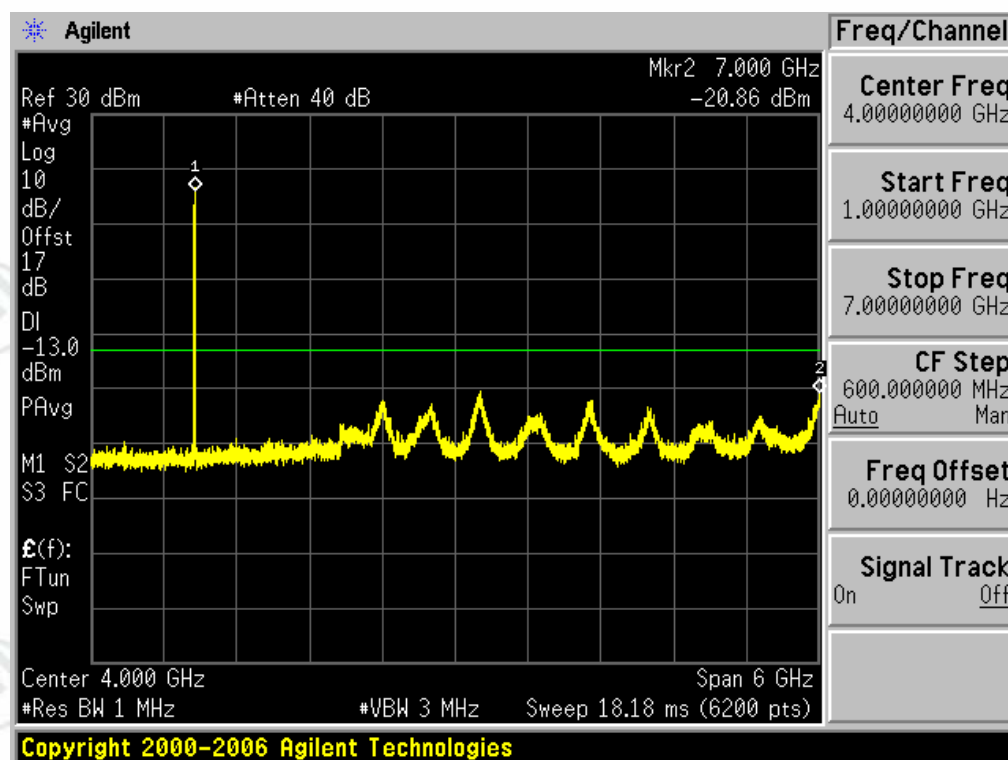
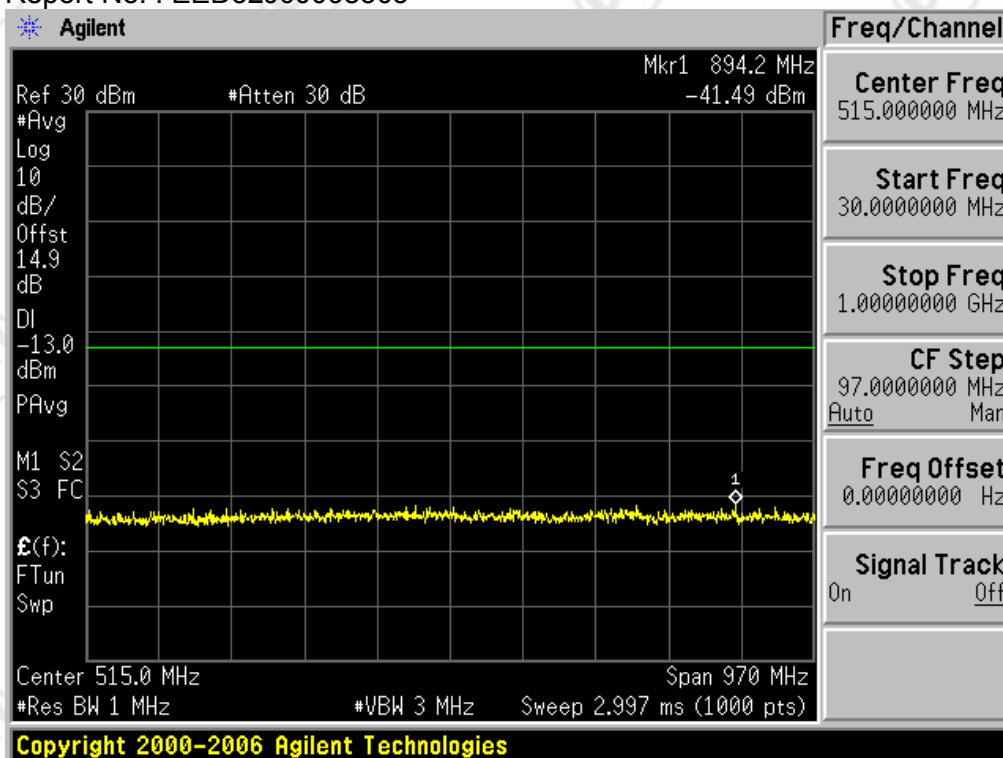


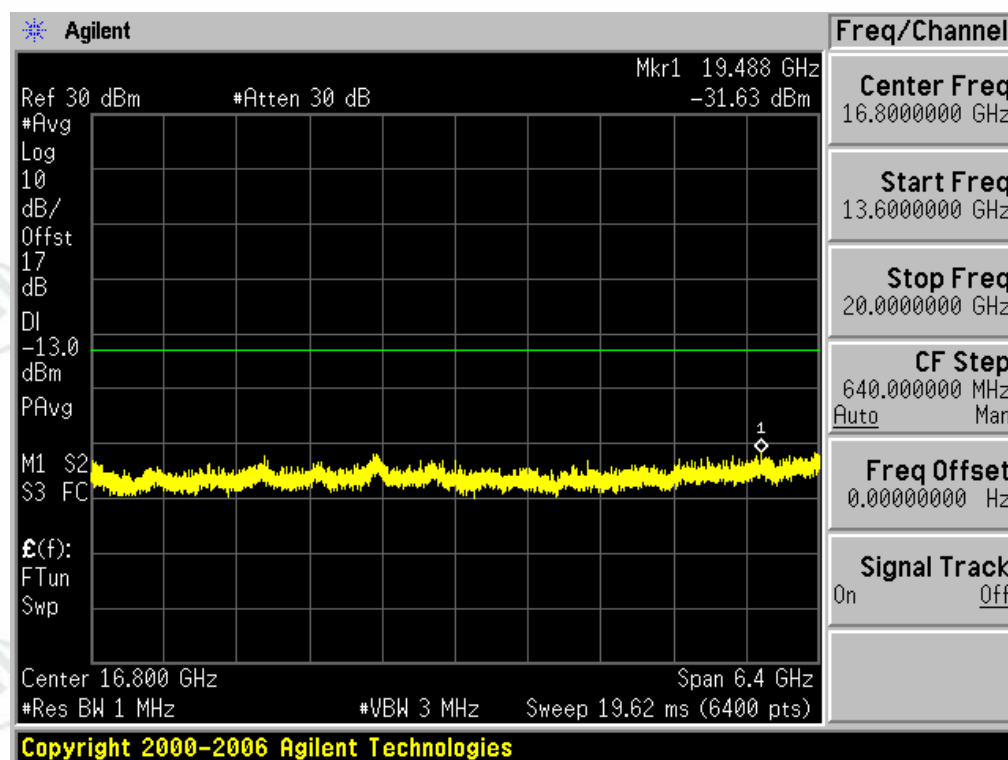
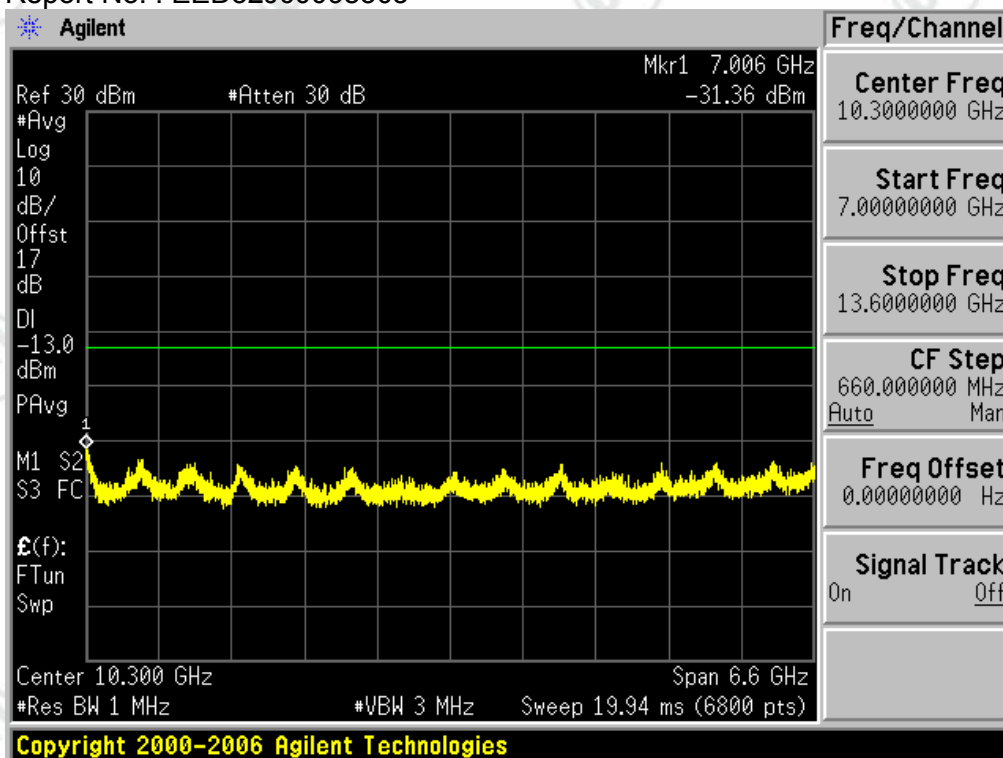


Test Mode=UMTS/TM3

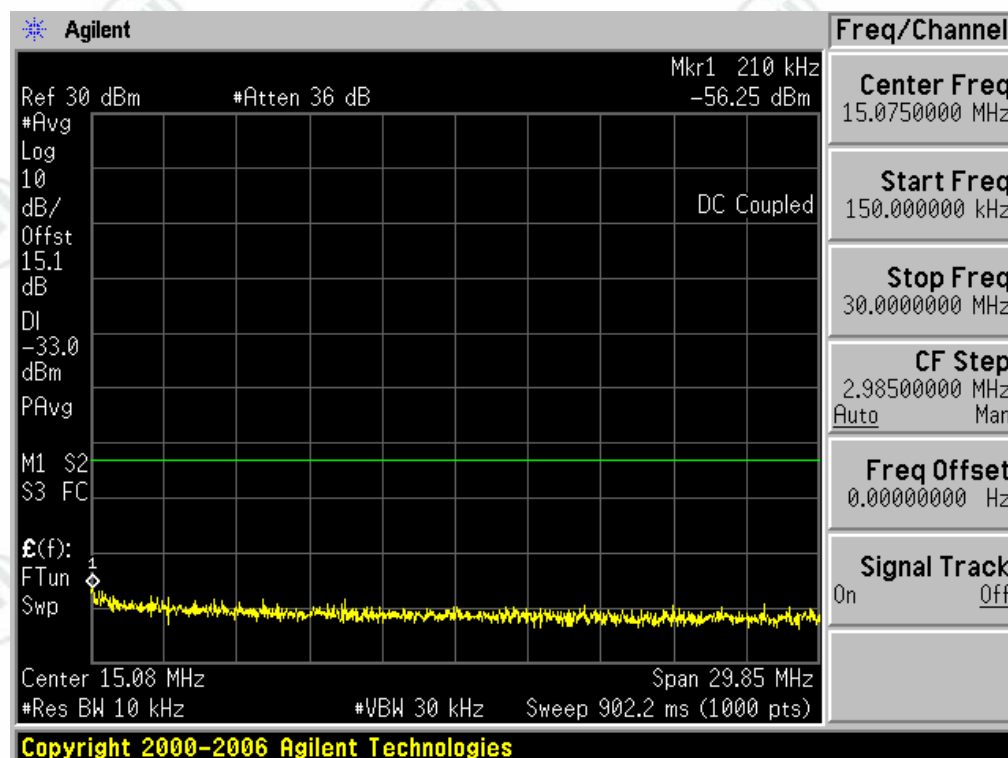
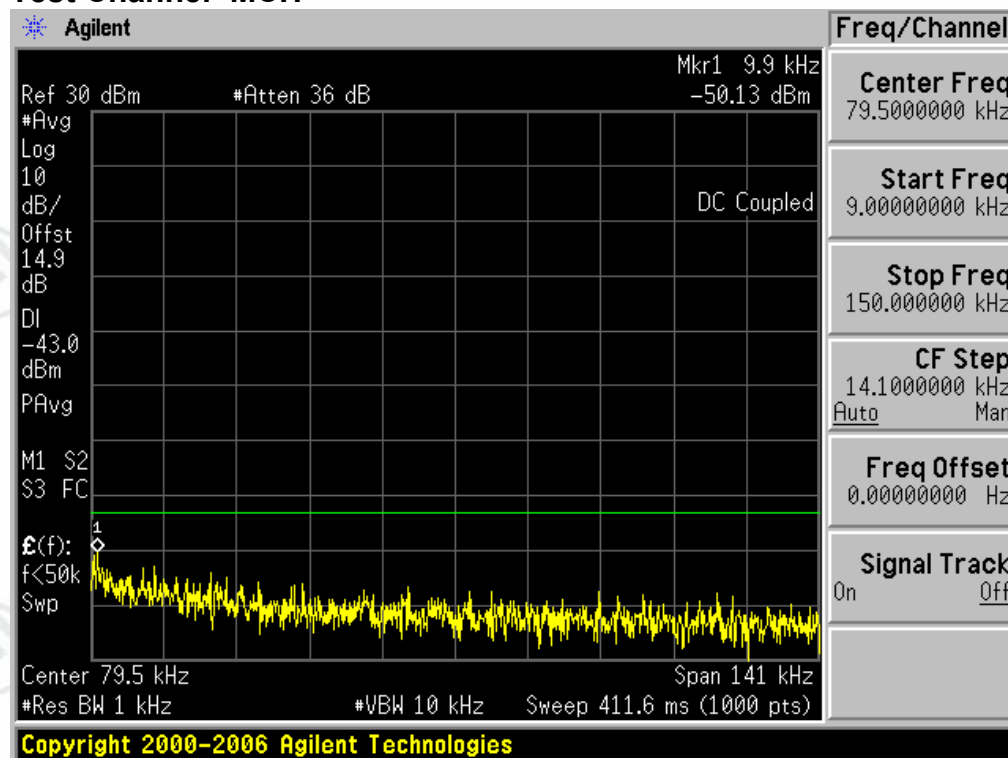
Test Channel=LCH

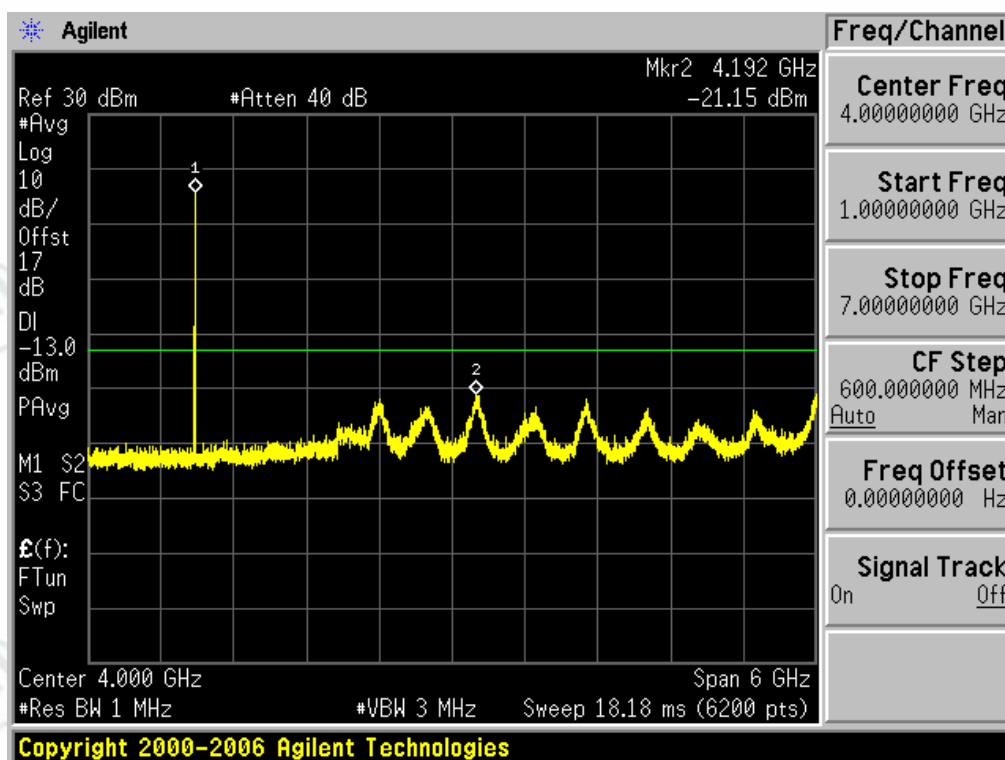
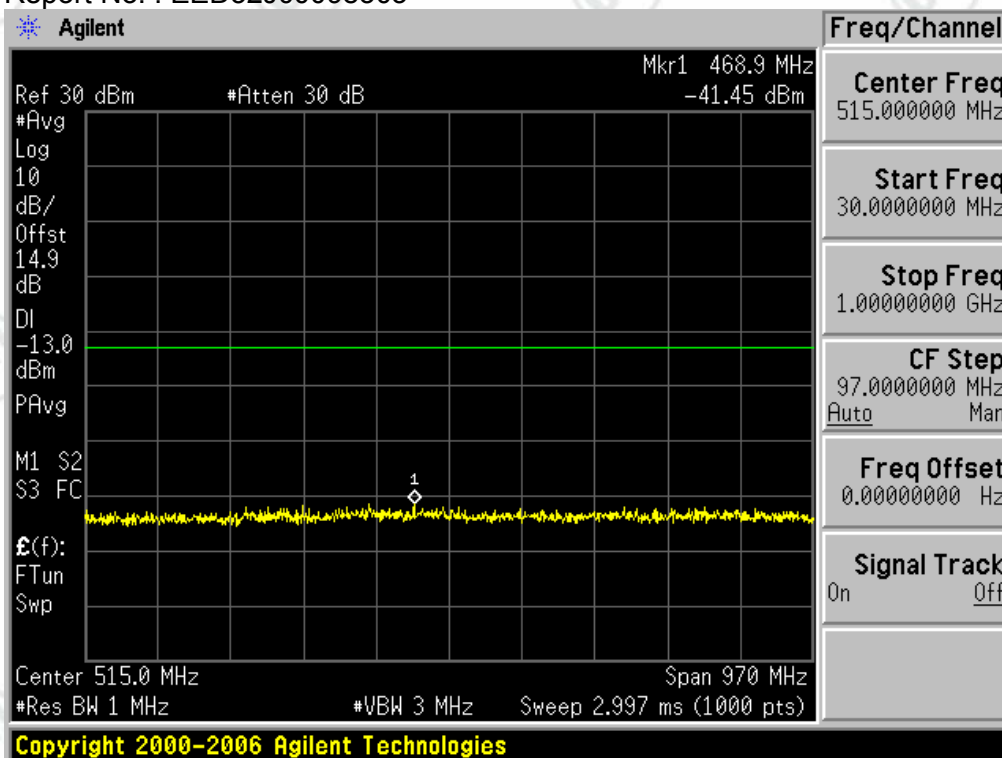


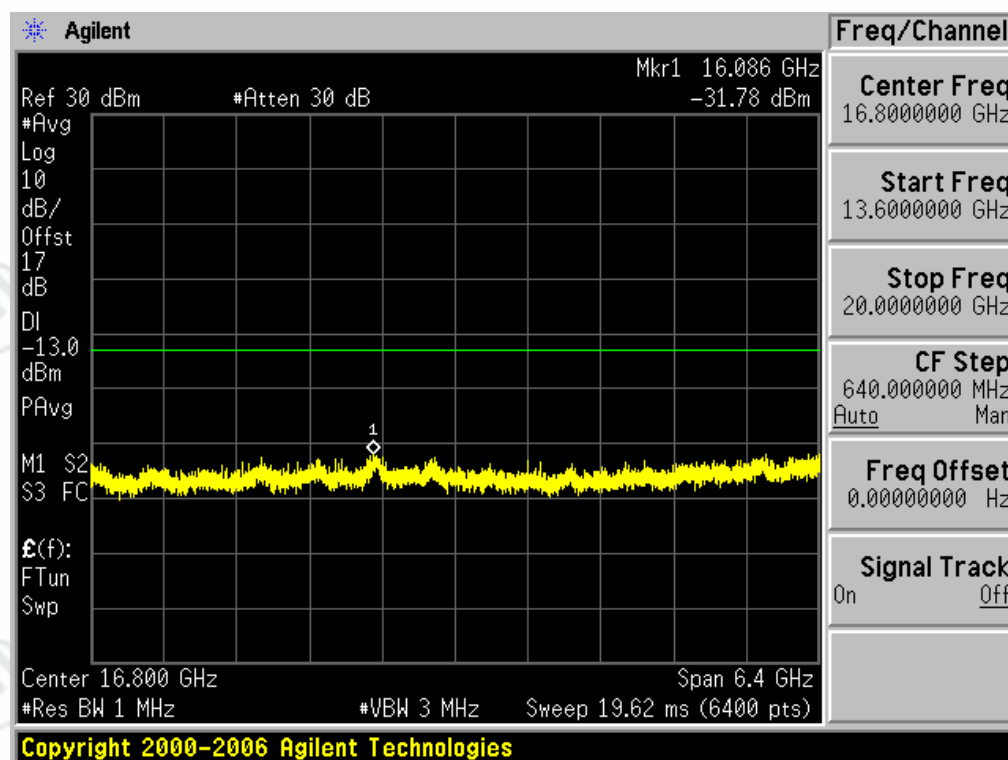
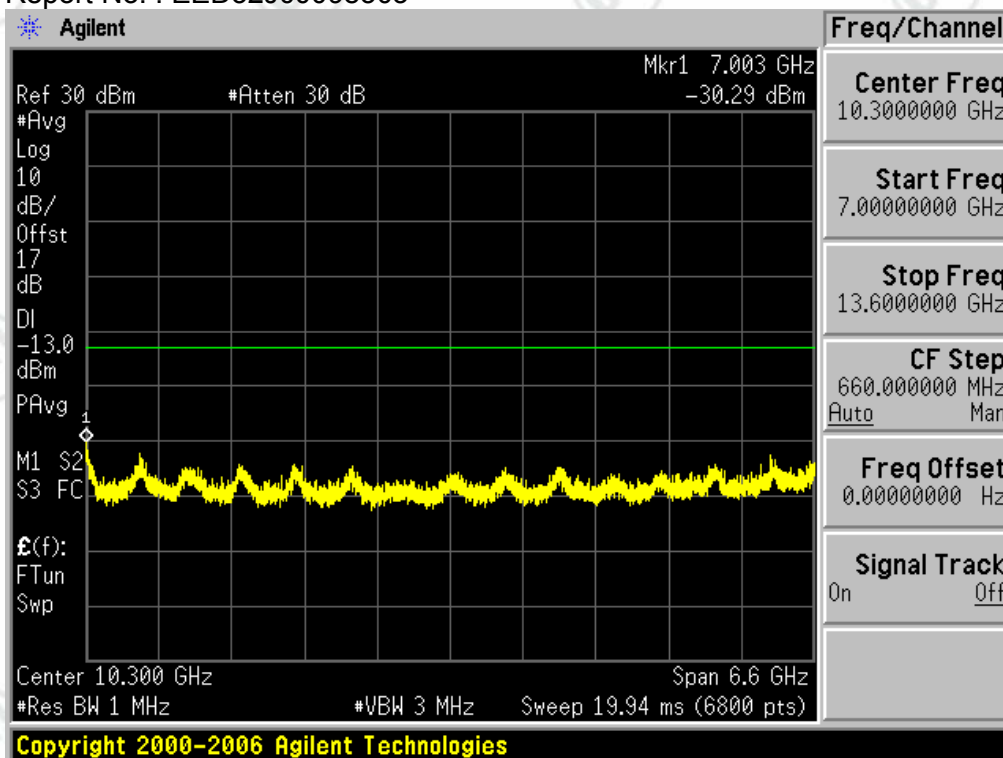




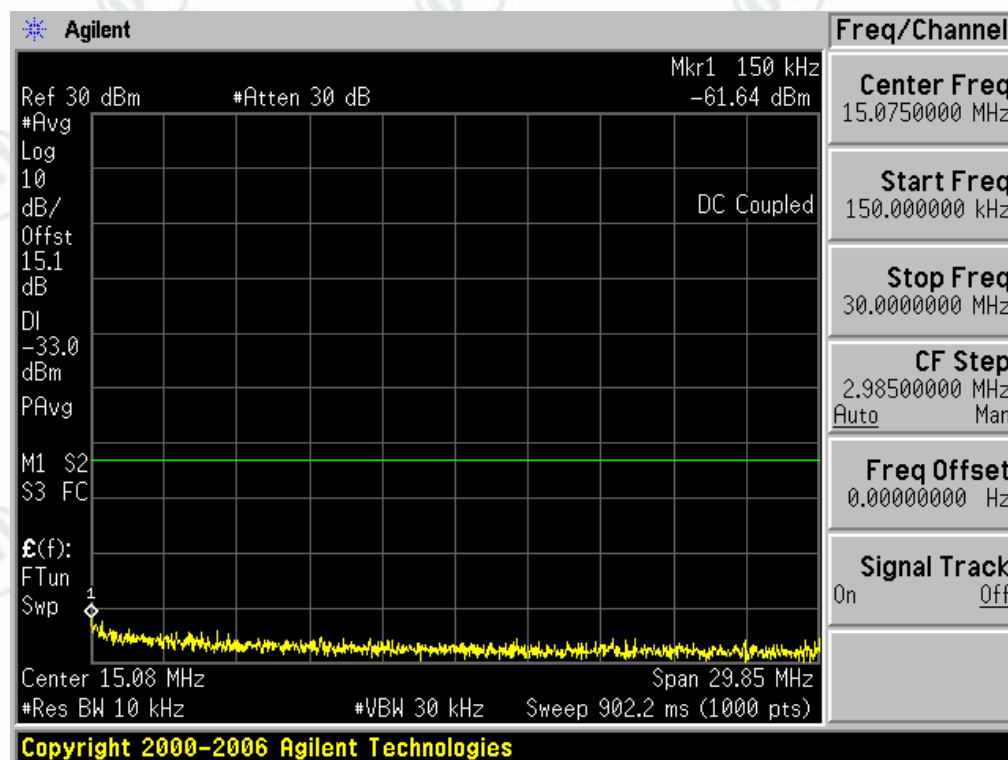
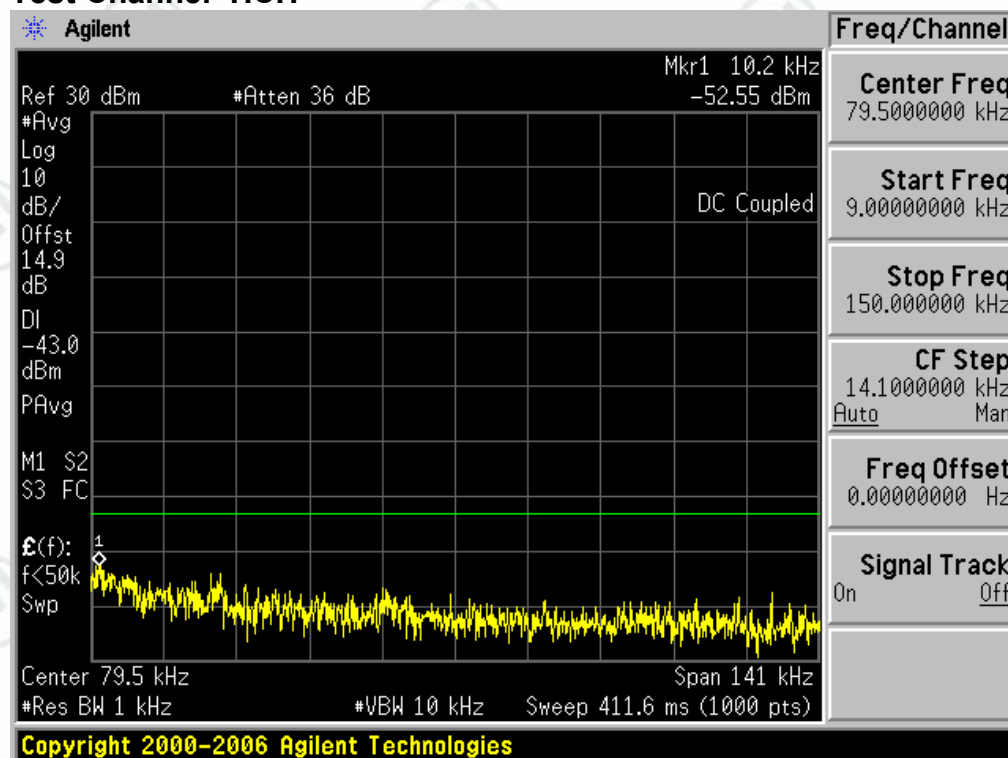
Test Channel=MCH

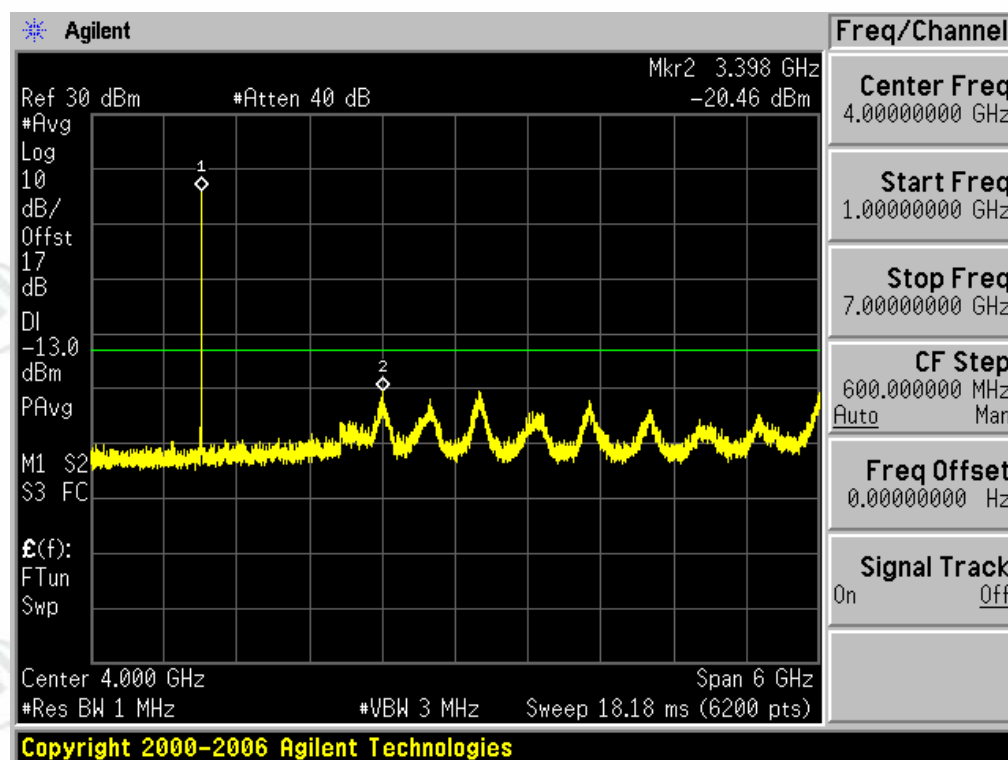
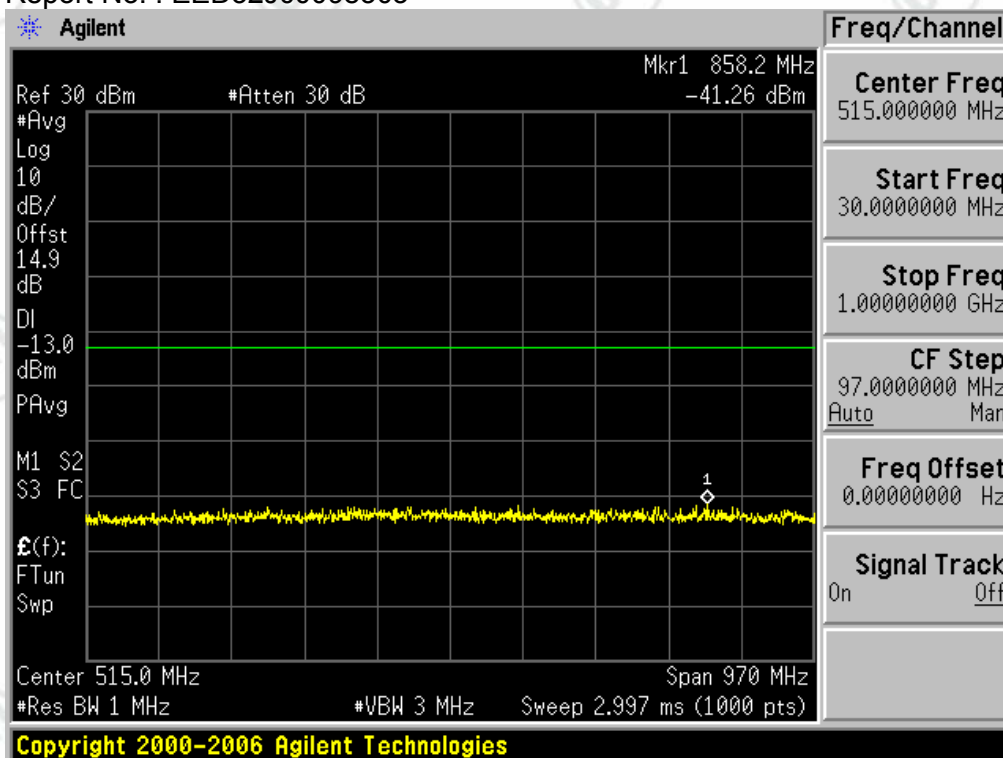


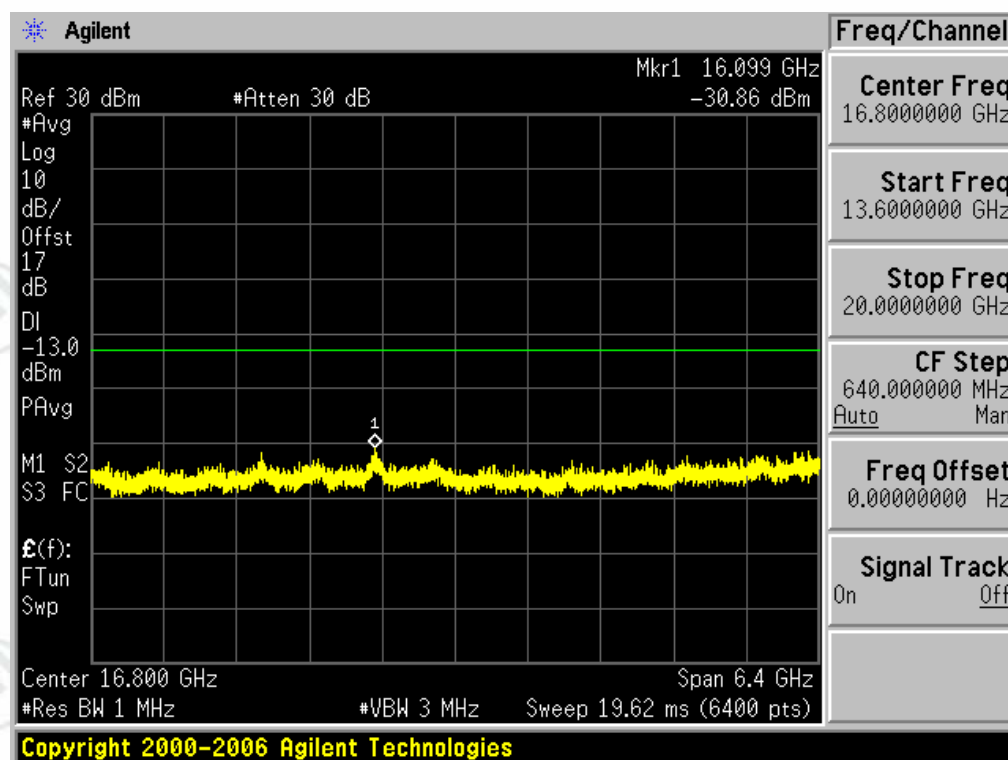
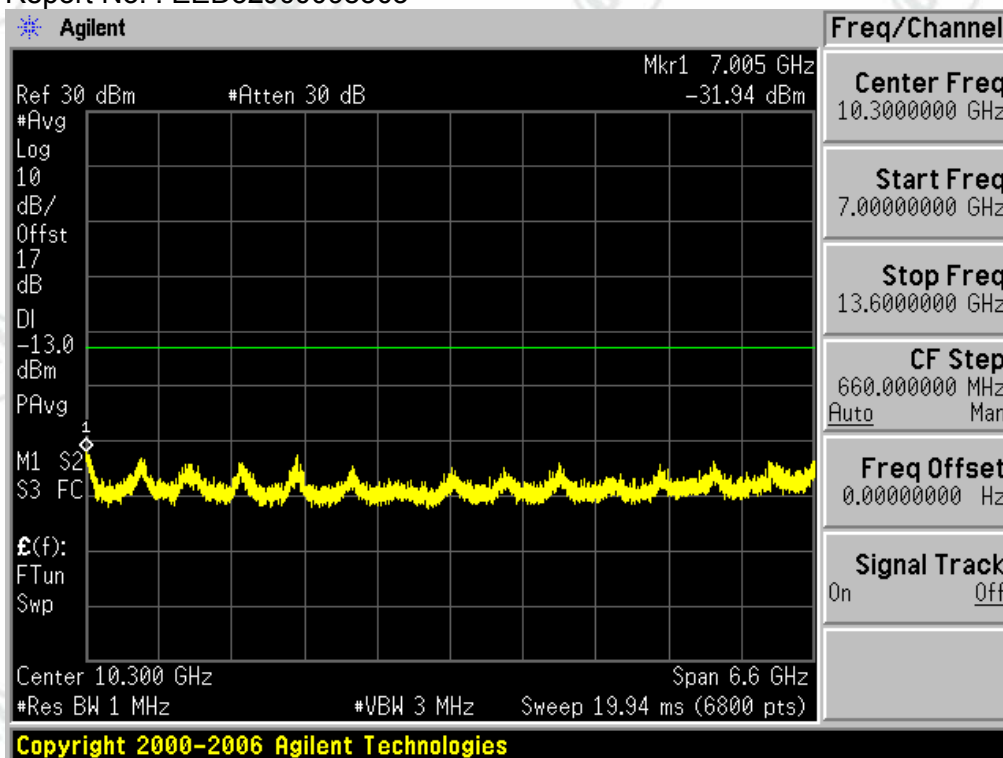




Test Channel=HCH







Appendix F) Frequency Stability

Test Requirement:	Part 2.1055	
Test Method:	TIA-603-E-2016 Clause 2.2.2	
Test Setup:	Refer to section 5 for details	
Measurement Procedure:	The transmitter output was connected to a calibrated coaxial cable and a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel and high channel). The EUT was placed in the temperature chamber, the DC leads and RF output cable exited the chamber through an opening made for that purpose. After operating the equipment in standby conditions for 15 minutes before proceeding. The temperature was varied from -30°C to +50°C at intervals of not more than 10°C. The frequency stability was read from the base station at 25°C. The input voltage was varied +/-15%, the frequency stability and input voltage was recorded.	
Instruments Used:	Refer to section 7 for details	
Limit:	Operation Band	Frequency stability Limit(ppm)
	GSM/GPRS/EDGE/WCDMA 850	±2.5ppm
	GSM/GPRS/EDGE/WCDMA 1900	---
Test Results:	Pass	

Test Data:

Frequency Error vs. Voltage:

(VL is 3.06V, VH is 4.14V, VN is 3.6V)

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM850	TM2	LCH	TN	VL	5.88	0.007134	±2.5	PASS
			TN	VN	5.49	0.006661	±2.5	PASS
			TN	VH	2.91	0.003531	±2.5	PASS
		MCH	TN	VL	0.52	0.000622	±2.5	PASS
			TN	VN	3.36	0.004016	±2.5	PASS
			TN	VH	5.62	0.006718	±2.5	PASS
		HCH	TN	VL	0.19	0.000224	±2.5	PASS
			TN	VN	-0.97	-0.001143	±2.5	PASS
			TN	VH	2.91	0.003428	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM850	TM3	LCH	TN	VL	-11.24	-0.013637	±2.5	PASS
			TN	VN	-2.84	-0.003446	±2.5	PASS
			TN	VH	-5.75	-0.006976	±2.5	PASS
		MCH	TN	VL	-8.98	-0.010734	±2.5	PASS
			TN	VN	-3.62	-0.004327	±2.5	PASS
			TN	VH	-7.01	-0.008379	±2.5	PASS
		HCH	TN	VL	-9.98	-0.011758	±2.5	PASS
			TN	VN	-4.91	-0.005785	±2.5	PASS
			TN	VH	-7.17	-0.008447	±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	VL	10.33	0.005583	±2.5	PASS
			TN	VN	10.78	0.005826	±2.5	PASS
			TN	VH	0.39	0.000211	±2.5	PASS
		MCH	TN	VL	2.20	0.001170	±2.5	PASS
			TN	VN	-2.45	-0.001303	±2.5	PASS
			TN	VH	-0.97	-0.000516	±2.5	PASS
		HCH	TN	VL	1.87	0.000979	±2.5	PASS
			TN	VN	12.01	0.006289	±2.5	PASS
			TN	VH	2.97	0.001555	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM1900	TM3	LCH	TN	VL	-3.71	-0.002005	±2.5	PASS
			TN	VN	-5.81	-0.003140	±2.5	PASS
			TN	VH	-17.31	-0.009356	±2.5	PASS
		MCH	TN	VL	-9.07	-0.004824	±2.5	PASS
			TN	VN	-13.88	-0.007383	±2.5	PASS
			TN	VH	-11.30	-0.006011	±2.5	PASS
		HCH	TN	VL	-4.94	-0.002587	±2.5	PASS
			TN	VN	-14.11	-0.007388	±2.5	PASS
			TN	VH	-6.20	-0.003246	±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	9.62	0.011672	±2.5	PASS
			VN	-20	7.23	0.008772	±2.5	PASS
			VN	-10	4.13	0.005011	±2.5	PASS
			VN	0	5.10	0.006188	±2.5	PASS
			VN	10	7.75	0.009403	±2.5	PASS
			VN	20	3.68	0.004465	±2.5	PASS
			VN	30	6.13	0.007438	±2.5	PASS
			VN	40	1.74	0.002111	±2.5	PASS
			VN	50	4.13	0.005011	±2.5	PASS
GSM850	TM2	MCH	VN	-30	2.78	0.003323	±2.5	PASS
			VN	-20	-0.19	-0.000227	±2.5	PASS
			VN	-10	0.52	0.000622	±2.5	PASS
			VN	0	7.55	0.009025	±2.5	PASS
			VN	10	3.49	0.004172	±2.5	PASS
			VN	20	2.97	0.003550	±2.5	PASS
			VN	30	5.88	0.007028	±2.5	PASS
			VN	40	6.13	0.007327	±2.5	PASS
			VN	50	8.91	0.010650	±2.5	PASS
GSM850	TM2	HCH	VN	-30	-1.23	-0.001449	±2.5	PASS
			VN	-20	1.94	0.002286	±2.5	PASS
			VN	-10	7.30	0.008600	±2.5	PASS
			VN	0	0.00	0.000000	±2.5	PASS
			VN	10	8.07	0.009508	±2.5	PASS
			VN	20	5.10	0.006008	±2.5	PASS
			VN	30	1.87	0.002203	±2.5	PASS
			VN	40	3.03	0.003570	±2.5	PASS
			VN	50	6.39	0.007528	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM850	TM3	LCH	VN	-30	-2.36	-0.002863	±2.5	PASS
			VN	-20	-4.10	-0.004975	±2.5	PASS
			VN	-10	-8.01	-0.009719	±2.5	PASS
			VN	0	-5.59	-0.006782	±2.5	PASS
			VN	10	-4.33	-0.005254	±2.5	PASS
			VN	20	-6.84	-0.008299	±2.5	PASS
			VN	30	-7.20	-0.008736	±2.5	PASS
			VN	40	-3.52	-0.004271	±2.5	PASS
			VN	50	-2.39	-0.002900	±2.5	PASS
GSM850	TM3	MCH	VN	-30	-3.87	-0.004626	±2.5	PASS
			VN	-20	-2.36	-0.002821	±2.5	PASS
			VN	-10	-2.03	-0.002426	±2.5	PASS
			VN	0	-8.20	-0.009802	±2.5	PASS
			VN	10	-8.72	-0.010423	±2.5	PASS
			VN	20	-8.68	-0.010375	±2.5	PASS
			VN	30	-5.91	-0.007064	±2.5	PASS
			VN	40	-12.72	-0.015204	±2.5	PASS
			VN	50	-10.07	-0.012037	±2.5	PASS
GSM850	TM3	HCH	VN	-30	-3.78	-0.004453	±2.5	PASS
			VN	-20	-7.97	-0.009390	±2.5	PASS
			VN	-10	-0.23	-0.000271	±2.5	PASS
			VN	0	0.84	0.000990	±2.5	PASS
			VN	10	-2.36	-0.002780	±2.5	PASS
			VN	20	-3.20	-0.003770	±2.5	PASS
			VN	30	-4.91	-0.005785	±2.5	PASS
			VN	40	-7.78	-0.009166	±2.5	PASS
			VN	50	-9.49	-0.011180	±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	4.13	0.002232	±2.5	PASS
			VN	-20	1.87	0.001011	±2.5	PASS
			VN	-10	8.91	0.004816	±2.5	PASS
			VN	0	5.68	0.003070	±2.5	PASS
			VN	10	2.58	0.001394	±2.5	PASS
			VN	20	6.84	0.003697	±2.5	PASS
			VN	30	4.78	0.002584	±2.5	PASS
			VN	40	6.72	0.003632	±2.5	PASS
			VN	50	8.46	0.004572	±2.5	PASS
GSM1900	TM2	MCH	VN	-30	-7.62	-0.004053	±2.5	PASS
			VN	-20	2.39	0.001271	±2.5	PASS
			VN	-10	4.78	0.002543	±2.5	PASS
			VN	0	0.45	0.000239	±2.5	PASS
			VN	10	-8.65	-0.004601	±2.5	PASS
			VN	20	-8.14	-0.004330	±2.5	PASS
			VN	30	-1.94	-0.001032	±2.5	PASS
			VN	40	-4.39	-0.002335	±2.5	PASS
			VN	50	5.10	0.002713	±2.5	PASS
GSM1900	TM2	HCH	VN	-30	0.52	0.000272	±2.5	PASS
			VN	-20	-2.00	-0.001047	±2.5	PASS
			VN	-10	12.33	0.006456	±2.5	PASS
			VN	0	-0.97	-0.000508	±2.5	PASS
			VN	10	-4.65	-0.002435	±2.5	PASS
			VN	20	-8.85	-0.004634	±2.5	PASS
			VN	30	0.52	0.000272	±2.5	PASS
			VN	40	11.17	0.005849	±2.5	PASS
			VN	50	0.26	0.000136	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM1900	TM3	LCH	VN	-30	-4.10	-0.002216	±2.5	PASS
			VN	-20	-9.94	-0.005372	±2.5	PASS
			VN	-10	-4.75	-0.002567	±2.5	PASS
			VN	0	-0.52	-0.000281	±2.5	PASS
			VN	10	0.13	0.000070	±2.5	PASS
			VN	20	-9.88	-0.005340	±2.5	PASS
			VN	30	-10.11	-0.005464	±2.5	PASS
			VN	40	-12.56	-0.006788	±2.5	PASS
			VN	50	-8.33	-0.004502	±2.5	PASS
GSM1900	TM3	MCH	VN	-30	-2.62	-0.001394	±2.5	PASS
			VN	-20	-17.43	-0.009271	±2.5	PASS
			VN	-10	-10.85	-0.005771	±2.5	PASS
			VN	0	-4.84	-0.002574	±2.5	PASS
			VN	10	1.16	0.000617	±2.5	PASS
			VN	20	-10.30	-0.005479	±2.5	PASS
			VN	30	-3.94	-0.002096	±2.5	PASS
			VN	40	-2.13	-0.001133	±2.5	PASS
			VN	50	-11.82	-0.006287	±2.5	PASS
GSM1900	TM3	HCH	VN	-30	0.00	0.000000	±2.5	PASS
			VN	-20	-16.27	-0.008519	±2.5	PASS
			VN	-10	-10.33	-0.005409	±2.5	PASS
			VN	0	-7.97	-0.004173	±2.5	PASS
			VN	10	-9.78	-0.005121	±2.5	PASS
			VN	20	-4.75	-0.002487	±2.5	PASS
			VN	30	-6.13	-0.003210	±2.5	PASS
			VN	40	-15.95	-0.008352	±2.5	PASS
			VN	50	-9.01	-0.004718	±2.5	PASS

Frequency Error vs. Voltage:

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA 850	TM1	LCH	TN	VL	117.48	0.142156	±2.5	PASS
			TN	VN	400.96	0.485183	±2.5	PASS
			TN	VH	113.80	0.137706	±2.5	PASS
		MCH	TN	VL	567.23	0.678181	±2.5	PASS
			TN	VN	400.96	0.521634	±2.5	PASS
			TN	VH	275.12	0.328929	±2.5	PASS
		HCH	TN	VL	-18.08	-0.021358	±2.5	PASS
			TN	VN	400.96	-0.036750	±2.5	PASS
			TN	VH	-27.10	-0.032010	±2.5	PASS
Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA 850	TM2	LCH	TN	VL	1.95	0.002363	±2.5	PASS
			TN	VN	68.04	0.082332	±2.5	PASS
			TN	VH	-38.77	-0.046917	±2.5	PASS
		MCH	TN	VL	117.98	0.141058	±2.5	PASS
			TN	VN	68.04	-0.242546	±2.5	PASS
			TN	VH	88.18	0.105429	±2.5	PASS
		HCH	TN	VL	-109.62	-0.129482	±2.5	PASS
			TN	VN	68.04	0.085234	±2.5	PASS
			TN	VH	-11.00	-0.012995	±2.5	PASS
Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA 850	TM3	LCH	TN	VL	45.78	0.055393	±2.5	PASS
			TN	VN	-85.24	-0.103141	±2.5	PASS
			TN	VH	-14.51	-0.017559	±2.5	PASS
		MCH	TN	VL	-91.00	-0.108804	±2.5	PASS
			TN	VN	-85.24	0.075929	±2.5	PASS
			TN	VH	-56.08	-0.067045	±2.5	PASS
		HCH	TN	VL	63.14	0.074582	±2.5	PASS
			TN	VN	-85.24	0.026242	±2.5	PASS
			TN	VH	-25.02	-0.029559	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA 1900	TM1	LCH	TN	VL	-58.11	-0.031368	±2.5	PASS
			TN	VN	-41.61	-0.022463	±2.5	PASS
			TN	VH	104.92	0.056640	±2.5	PASS
		MCH	TN	VL	-37.67	-0.020039	±2.5	PASS
			TN	VN	-41.61	0.215790	±2.5	PASS
			TN	VH	705.67	0.375358	±2.5	PASS
		HCH	TN	VL	112.12	0.058776	±2.5	PASS
			TN	VN	-41.61	0.065223	±2.5	PASS
			TN	VH	242.55	0.127151	±2.5	PASS
Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA 1900	TM2	LCH	TN	VL	-91.87	-0.049597	±2.5	PASS
			TN	VN	3.22	0.001738	±2.5	PASS
			TN	VH	-63.32	-0.034185	±2.5	PASS
		MCH	TN	VL	29.05	0.015454	±2.5	PASS
			TN	VN	3.22	-0.044299	±2.5	PASS
			TN	VH	-29.83	-0.015868	±2.5	PASS
		HCH	TN	VL	126.71	0.066423	±2.5	PASS
			TN	VN	3.22	-0.119312	±2.5	PASS
			TN	VH	-165.51	-0.086765	±2.5	PASS
Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA 1900	TM3	LCH	TN	VL	-12.71	-0.006862	±2.5	PASS
			TN	VN	90.36	0.048781	±2.5	PASS
			TN	VH	3.43	0.001853	±2.5	PASS
		MCH	TN	VL	11.83	0.006290	±2.5	PASS
			TN	VN	90.36	-0.064136	±2.5	PASS
			TN	VH	-2.46	-0.001307	±2.5	PASS
		HCH	TN	VL	-67.29	-0.035275	±2.5	PASS
			TN	VN	90.36	-0.065375	±2.5	PASS
			TN	VH	43.72	0.022917	±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
WCDMA 850	TM1	LCH	VN	-30	-6.70	-0.008106	±2.5	PASS
			VN	-20	257.40	0.311472	±2.5	PASS
			VN	-10	123.58	0.149541	±2.5	PASS
			VN	0	575.36	0.696228	±2.5	PASS
			VN	10	113.10	0.136856	±2.5	PASS
			VN	20	-11.90	-0.014402	±2.5	PASS
			VN	30	121.83	0.147418	±2.5	PASS
			VN	40	278.92	0.337507	±2.5	PASS
			VN	50	-21.53	-0.026053	±2.5	PASS
WCDMA 850	TM1	MCH	VN	-30	569.69	0.681118	±2.5	PASS
			VN	-20	408.62	0.488540	±2.5	PASS
			VN	-10	854.51	1.021649	±2.5	PASS
			VN	0	545.65	0.652384	±2.5	PASS
			VN	10	579.94	0.693377	±2.5	PASS
			VN	20	551.94	0.659901	±2.5	PASS
			VN	30	271.07	0.324094	±2.5	PASS
			VN	40	143.36	0.171397	±2.5	PASS
			VN	50	578.20	0.691298	±2.5	PASS
WCDMA 850	TM1	HCH	VN	-30	-26.00	-0.030712	±2.5	PASS
			VN	-20	-8.77	-0.010364	±2.5	PASS
			VN	-10	-23.21	-0.027414	±2.5	PASS
			VN	0	-8.07	-0.009534	±2.5	PASS
			VN	10	-15.76	-0.018618	±2.5	PASS
			VN	20	-32.70	-0.038625	±2.5	PASS
			VN	30	-8.90	-0.010508	±2.5	PASS
			VN	40	-10.62	-0.012544	±2.5	PASS
			VN	50	-19.36	-0.022872	±2.5	PASS
Test Band	Test Mode	Test Channel	Test Volt.	Test Temp	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA 850	TM2	LCH	VN	-30	19.44	0.023523	±2.5	PASS
			VN	-20	-30.73	-0.037187	±2.5	PASS
			VN	-10	15.41	0.018649	±2.5	PASS
			VN	0	114.53	0.138592	±2.5	PASS

			VN	10	39.89	0.048265	±2.5	PASS
			VN	20	-56.30	-0.068133	±2.5	PASS
			VN	30	71.56	0.086597	±2.5	PASS
			VN	40	-43.35	-0.052457	±2.5	PASS
			VN	50	-24.48	-0.029617	±2.5	PASS
WCDMA 850	TM2	MCH	VN	-30	-6.87	-0.008210	±2.5	PASS
			VN	-20	-72.69	-0.086912	±2.5	PASS
			VN	-10	-34.71	-0.041504	±2.5	PASS
			VN	0	-124.34	-0.148666	±2.5	PASS
			VN	10	-28.47	-0.034042	±2.5	PASS
			VN	20	96.50	0.115371	±2.5	PASS
			VN	30	30.49	0.036450	±2.5	PASS
			VN	40	-154.85	-0.185134	±2.5	PASS
			VN	50	32.39	0.038731	±2.5	PASS
			VN	-30	-106.20	-0.125444	±2.5	PASS
WCDMA 850	TM2	HCH	VN	-20	-121.29	-0.143270	±2.5	PASS
			VN	-10	-35.19	-0.041562	±2.5	PASS
			VN	0	-7.46	-0.008814	±2.5	PASS
			VN	10	-54.79	-0.064723	±2.5	PASS
			VN	20	34.01	0.040175	±2.5	PASS
			VN	30	-138.90	-0.164069	±2.5	PASS
			VN	40	-28.06	-0.033145	±2.5	PASS
			VN	50	-152.80	-0.180488	±2.5	PASS
Test Band	Test Mode	Test Channel	Test Volt.	Test Temp	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA 850	TM3	LCH	VN	-30	-64.15	-0.077623	±2.5	PASS
			VN	-20	35.13	0.042505	±2.5	PASS
			VN	-10	108.14	0.130856	±2.5	PASS
			VN	0	30.17	0.036504	±2.5	PASS
			VN	10	62.82	0.076017	±2.5	PASS
			VN	20	-64.32	-0.077826	±2.5	PASS
			VN	30	81.13	0.098174	±2.5	PASS
			VN	40	-8.56	-0.010358	±2.5	PASS
			VN	50	-3.71	-0.004487	±2.5	PASS
WCDMA 850	TM3	MCH	VN	-30	99.75	0.119257	±2.5	PASS
			VN	-20	-71.50	-0.085489	±2.5	PASS
			VN	-10	-46.84	-0.056007	±2.5	PASS
			VN	0	17.68	0.021144	±2.5	PASS

			VN	10	21.62	0.025851	±2.5	PASS
			VN	20	-59.23	-0.070821	±2.5	PASS
			VN	30	16.34	0.019539	±2.5	PASS
			VN	40	64.71	0.077370	±2.5	PASS
			VN	50	-106.25	-0.127029	±2.5	PASS
WCDMA 850	TM3	HCH	VN	-30	27.45	0.032424	±2.5	PASS
			VN	-20	-18.88	-0.022295	±2.5	PASS
			VN	-10	-65.63	-0.077520	±2.5	PASS
			VN	0	-111.24	-0.131392	±2.5	PASS
			VN	10	-7.05	-0.008327	±2.5	PASS
			VN	20	-25.27	-0.029847	±2.5	PASS
			VN	30	-51.77	-0.061154	±2.5	PASS
			VN	40	120.03	0.141774	±2.5	PASS
			VN	50	80.15	0.094678	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA 1900	TM1	LCH	VN	-30	-38.77	-0.020931	±2.5	PASS
			VN	-20	-49.79	-0.026878	±2.5	PASS
			VN	-10	110.26	0.059523	±2.5	PASS
			VN	0	-56.56	-0.030536	±2.5	PASS
			VN	10	-53.33	-0.028789	±2.5	PASS
			VN	20	119.92	0.064737	±2.5	PASS
			VN	30	-59.57	-0.032158	±2.5	PASS
			VN	40	249.01	0.134425	±2.5	PASS
			VN	50	251.13	0.135570	±2.5	PASS
WCDMA 1900	TM1	MCH	VN	-30	266.60	0.141809	±2.5	PASS
			VN	-20	418.76	0.222746	±2.5	PASS
			VN	-10	537.35	0.285826	±2.5	PASS
			VN	0	394.01	0.209581	±2.5	PASS
			VN	10	245.53	0.130601	±2.5	PASS
			VN	20	-42.39	-0.022547	±2.5	PASS
			VN	30	669.25	0.355984	±2.5	PASS
			VN	40	99.23	0.052781	±2.5	PASS
			VN	50	399.40	0.212446	±2.5	PASS
WCDMA 1900	TM1	HCH	VN	-30	-29.31	-0.015366	±2.5	PASS
			VN	-20	314.67	0.164954	±2.5	PASS
			VN	-10	-51.38	-0.026932	±2.5	PASS

			VN	0	235.15	0.123272	±2.5	PASS
			VN	10	-53.44	-0.028012	±2.5	PASS
			VN	20	85.53	0.044834	±2.5	PASS
			VN	30	83.36	0.043698	±2.5	PASS
			VN	40	-43.98	-0.023053	±2.5	PASS
			VN	50	381.59	0.200038	±2.5	PASS
Test Band	Test Mode	Test Channel	Test Volt.	Test Temp	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA 1900	TM2	LCH	VN	-30	-2.43	-0.001310	±2.5	PASS
			VN	-20	-87.88	-0.047439	±2.5	PASS
			VN	-10	25.63	0.013839	±2.5	PASS
			VN	0	-116.49	-0.062884	±2.5	PASS
			VN	10	-0.14	-0.000074	±2.5	PASS
			VN	20	-35.31	-0.019061	±2.5	PASS
			VN	30	-111.33	-0.060099	±2.5	PASS
			VN	40	-99.15	-0.053526	±2.5	PASS
			VN	50	-116.73	-0.063015	±2.5	PASS
WCDMA 1900	TM2	MCH	VN	-30	-59.88	-0.031849	±2.5	PASS
			VN	-20	-169.56	-0.090189	±2.5	PASS
			VN	-10	42.25	0.022474	±2.5	PASS
			VN	0	-38.59	-0.020526	±2.5	PASS
			VN	10	-20.13	-0.010706	±2.5	PASS
			VN	20	-30.30	-0.016119	±2.5	PASS
			VN	30	72.25	0.038431	±2.5	PASS
			VN	40	-16.80	-0.008936	±2.5	PASS
			VN	50	5.95	0.003165	±2.5	PASS
WCDMA 1900	TM2	HCH	VN	-30	51.01	0.026740	±2.5	PASS
			VN	-20	-79.21	-0.041523	±2.5	PASS
			VN	-10	-111.28	-0.058336	±2.5	PASS
			VN	0	-44.66	-0.023413	±2.5	PASS
			VN	10	125.56	0.065823	±2.5	PASS
			VN	20	-25.85	-0.013550	±2.5	PASS
			VN	30	-31.45	-0.016486	±2.5	PASS
			VN	40	96.73	0.050705	±2.5	PASS
			VN	50	-41.02	-0.021501	±2.5	PASS
Test Band	Test Mode	Test Channel	Test Volt.	Test Temp	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict

WCDMA 1900	TM3	LCH	VN	-30	-8.58	-0.004629	±2.5	PASS
			VN	-20	-132.92	-0.071755	±2.5	PASS
			VN	-10	2.11	0.001137	±2.5	PASS
			VN	0	-92.68	-0.050033	±2.5	PASS
			VN	10	19.42	0.010486	±2.5	PASS
			VN	20	-71.15	-0.038411	±2.5	PASS
			VN	30	-81.12	-0.043790	±2.5	PASS
			VN	40	-30.24	-0.016326	±2.5	PASS
			VN	50	33.10	0.017867	±2.5	PASS
WCDMA 1900	TM3	MCH	VN	-30	27.42	0.014585	±2.5	PASS
			VN	-20	55.48	0.029511	±2.5	PASS
			VN	-10	-90.64	-0.048211	±2.5	PASS
			VN	0	4.07	0.002167	±2.5	PASS
			VN	10	-12.33	-0.006558	±2.5	PASS
			VN	20	3.45	0.001834	±2.5	PASS
			VN	30	62.71	0.033358	±2.5	PASS
			VN	40	-23.65	-0.012580	±2.5	PASS
			VN	50	115.57	0.061473	±2.5	PASS
WCDMA 1900	TM3	HCH	VN	-30	-50.06	-0.026245	±2.5	PASS
			VN	-20	-70.60	-0.037011	±2.5	PASS
			VN	-10	-52.09	-0.027308	±2.5	PASS
			VN	0	-15.01	-0.007871	±2.5	PASS
			VN	10	-77.00	-0.040363	±2.5	PASS
			VN	20	10.91	0.005719	±2.5	PASS
			VN	30	-104.78	-0.054929	±2.5	PASS
			VN	40	-70.25	-0.036827	±2.5	PASS
			VN	50	-140.38	-0.073590	±2.5	PASS

Appendix G): Effective Radiated Power of Transmitter (ERP/EIRP)

Receiver Setup:	<table><tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr><tr><td>30MHz-1GHz</td><td>peak</td><td>120kHz</td><td>300kHz</td><td>Peak</td></tr><tr><td>Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak</td></tr></table>					Frequency	Detector	RBW	VBW	Remark	30MHz-1GHz	peak	120kHz	300kHz	Peak	Above 1GHz	Peak	1MHz	3MHz	Peak
Frequency	Detector	RBW	VBW	Remark																
30MHz-1GHz	peak	120kHz	300kHz	Peak																
Above 1GHz	Peak	1MHz	3MHz	Peak																
Measurement Procedure:	Test procedure as below: 1) The EUT was powered ON and placed on a 1.5m high table at a 3 meter fully Anechoic Chamber. The antenna of the transmitter was extended to its maximum length. modulation mode and the measuring receiver shall be tuned to the frequency of the transmitter under test. 2) The EUT was set 3 meters(above 18GHz the distance is 1 meter) away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3) The disturbance of the transmitter was maximized on the test receiver display by raising and lowering from 1m to 4m the receive antenna and by rotating through 360° the turntable. After the fundamental emission was maximized, a field strength measurement was made. 4) Steps 1) to 3) were performed with the EUT and the receive antenna in both vertical and horizontal polarization. 5) The transmitter was then removed and replaced with another antenna. The center of the antenna was approximately at the same location as the center of the transmitter. 6) A signal at the disturbance was fed to the substitution antenna by means of a non-radiating cable. With both the substitution and the receive antennas horizontally polarized, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver. The level of the signal generator was adjusted until the measured field strength level in step 3) is obtained for this set of conditions. 7) The output power into the substitution antenna was then measured. 8) Steps 6) and 7)were repeated with both antennas polarized. 9) Calculate power in dBm by the following formula: ERP(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dBd) EIRP(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dBi) EIRP=ERP+2.15dB where: Pg is the generator output power into the substitution antenna. 10) Test the EUT in the lowest channel, the middle channel the Highest channel 11) The radiation measurements are performed in X, Y, Z axis positioning for EUT operation mode,And found the X axis positioning which it is worse case. 12) Repeat above procedures until all frequencies measured was complete.																			
Limit:	<table><tr><td>Mode</td><td>GSM 850/WCDMA/HSDPA /HSUPA Band V</td><td>GSM 1900/WCDMA/HSDPA /HSUPA Band II</td></tr><tr><td>Frequency</td><td>824 – 849MHz</td><td>1850 – 1910MHz</td></tr><tr><td>Limit</td><td>38.45dBm (7W)</td><td>33.01dBm (2W)</td></tr></table>					Mode	GSM 850/WCDMA/HSDPA /HSUPA Band V	GSM 1900/WCDMA/HSDPA /HSUPA Band II	Frequency	824 – 849MHz	1850 – 1910MHz	Limit	38.45dBm (7W)	33.01dBm (2W)						
Mode	GSM 850/WCDMA/HSDPA /HSUPA Band V	GSM 1900/WCDMA/HSDPA /HSUPA Band II																		
Frequency	824 – 849MHz	1850 – 1910MHz																		
Limit	38.45dBm (7W)	33.01dBm (2W)																		

Measurement Data

GPRS 850							
Channel/fc (MHz)	Height (cm)	Azimuth (deg)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
128/824.2	151	29	31.25	38.45	-7.2	Pass	H
	149	335	27.08	38.45	-11.37	Pass	V
190/836.6	150	59	34.57	38.45	-3.88	Pass	H
	152	117	31.27	38.45	-7.18	Pass	V
251/848.8	151	350	30.32	38.45	-8.13	Pass	H
	150	19	34.51	38.45	-3.94	Pass	V

GPRS 1900							
Channel/fc (MHz)	Height (cm)	Azimuth (deg)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
512/1850.2	151	88	29.33	33.01	-3.68	Pass	H
	149	169	28.19	33.01	-4.82	Pass	V
661/1880.0	151	227	30.4	33.01	-2.61	Pass	H
	150	19	22.9	33.01	-10.11	Pass	V
810/1909.8	151	79	26.04	33.01	-6.97	Pass	H
	150	249	25.02	33.01	-7.99	Pass	V

EGPRS 850							
Channel/fc (MHz)	Height (cm)	Azimuth (deg)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
128/824.2	151	39	27.79	38.45	-10.66	Pass	H
	150	167	17.84	38.45	-20.61	Pass	V
190/836.6	150	85	25.5	38.45	-12.95	Pass	H
	149	215	18.19	38.45	-20.26	Pass	V
251/848.8	151	272	24.75	38.45	-13.7	Pass	H
	150	39	20.23	38.45	-18.22	Pass	V

EGPRS 1900							
Channel/fc (MHz)	Height (cm)	Azimuth (deg)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
512/1850.2	151	25	29.43	33.01	-3.58	Pass	H
	150	129	21.48	33.01	-11.53	Pass	V
661/1880.0	149	226	24.88	33.01	-8.13	Pass	H
	152	73	19.93	33.01	-13.08	Pass	V
810/1909.8	150	23	28.75	33.01	-4.26	Pass	H
	151	116	19.72	33.01	-13.29	Pass	V

RMC band V							
Channel/fc (MHz)	Height (cm)	Azimuth (deg)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
4132/826.4	151	59	23.54	38.45	-14.91	Pass	H
	151	76	13.9	38.45	-24.55	Pass	V
4182/836.6	150	267	23.05	38.45	-15.4	Pass	H
	150	159	15.26	38.45	-23.19	Pass	V
4233/846.6	149	12	22.57	38.45	-15.88	Pass	H
	151	359	17.41	38.45	-21.04	Pass	V

RMC band II							
Channel/fc (MHz)	Height (cm)	Azimuth (deg)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
9262/1852.4	151	29	22.8	33.01	-10.21	Pass	H
	150	279	19.11	33.01	-13.9	Pass	V
9400/1880.0	150	16	22.26	33.01	-10.75	Pass	H
	149	149	18.63	33.01	-14.38	Pass	V
9538/1907.6	150	26	25.32	33.01	-7.69	Pass	H
	151	180	19.3	33.01	-13.71	Pass	V

HSDPA band V							
Channel/fc (MHz)	Height (cm)	Azimuth (deg)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
4132/826.4	151	29	21.9	38.45	-16.55	Pass	H
	150	189	9.47	38.45	-28.98	Pass	V
4182/836.6	150	297	22.07	38.45	-16.38	Pass	H
	149	20	17.84	38.45	-20.61	Pass	V
4233/846.6	151	59	21.72	38.45	-16.73	Pass	H
	150	267	24.25	38.45	-14.2	Pass	V

HSDPA band II							
Channel/fc (MHz)	Height (cm)	Azimuth (deg)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
9262/1852.4	151	29	22.14	33.01	-10.87	Pass	H
	150	268	19.34	33.01	-13.67	Pass	V
9400/1880.0	152	67	22.2	33.01	-10.81	Pass	H
	150	168	17.42	33.01	-15.59	Pass	V
9538/1907.6	149	60	24.99	33.01	-8.02	Pass	H
	151	98	18.42	33.01	-14.59	Pass	V

HSUPA band V							
Channel/fc (MHz)	Height (cm)	Azimuth (deg)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
4132/ 826.4	151	88	21.58	38.45	-16.87	Pass	H
	152	279	19.48	38.45	-18.97	Pass	V
4182/ 836.6	151	56	11.73	38.45	-26.72	Pass	H
	150	198	21.49	38.45	-16.96	Pass	V
4233/ 846.6	150	21	22.01	38.45	-16.44	Pass	H
	149	114	15.64	38.45	-22.81	Pass	V

HSUPA band II							
Channel/fc (MHz)	Height (cm)	Azimuth (deg)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
9262/1852.4	151	59	22.09	33.01	-10.92	Pass	H
	152	226	15.99	33.01	-17.02	Pass	V
9400/1880.0	150	189	22.06	33.01	-10.95	Pass	H
	150	23	15.46	33.01	-17.55	Pass	V
9538/1907.6	149	112	23.24	33.01	-9.77	Pass	H
	151	360	17.26	33.01	-15.75	Pass	V

Appendix H): Field strength of spurious radiation

Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	0.009MHz-30MHz	Peak	10kHz	30kHz	Peak
	30MHz-1GHz	Peak	120kHz	300kHz	Peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
Measurement Procedure:	1. Scan up to 10th harmonic, find the maximum radiation frequency to measure. 2. The technique used to find the Spurious Emissions of the transmitter was the antenna substitution method. Substitution method was performed to determine the actual ERP/EIRP emission levels of the EUT. Test procedure as below: 1) The EUT was powered ON and placed on a 1.5m high table at a 3 meter fully Anechoic Chamber. The antenna of the transmitter was extended to its maximum length. modulation mode and the measuring receiver shall be tuned to the frequency of the transmitter under test. 2) The EUT was set 3 meters(above 18GHz the distance is 1 meter) away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3) The disturbance of the transmitter was maximized on the test receiver display by raising and lowering from 1m to 4m the receive antenna and by rotating through 360° the turntable. After the fundamental emission was maximized, a field strength measurement was made. 4) Steps 1) to 3) were performed with the EUT and the receive antenna in both vertical and horizontal polarization. 5) The transmitter was then removed and replaced with another antenna. The center of the antenna was approximately at the same location as the center of the transmitter. 6) A signal at the disturbance was fed to the substitution antenna by means of a non-radiating cable. With both the substitution and the receive antennas horizontally polarized, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver. The level of the signal generator was adjusted until the measured field strength level in step 3) is obtained for this set of conditions. 7) The output power into the substitution antenna was then measured. 8) Steps 6) and 7) were repeated with both antennas polarized. 9) Calculate power in dBm by the following formula: $\text{ERP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dBi)}$ $\text{EIRP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dBi)}$ $\text{EIRP} = \text{ERP} + 2.15\text{dB}$ where: Pg is the generator output power into the substitution antenna. 10) Test the EUT in the lowest channel, the middle channel the Highest channel 11) The radiation measurements are performed in X, Y, Z axis positioning for EUT operation mode, And found the X axis positioning which it is worse case. 12) Repeat above procedures until all frequencies measured was complete.				
Limit:	Attenuated at least $43 + 10\log(P)$				

Test Data:

GPRS 850 128channel/824.2MHz(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1659.574	151	14	-52.57	-13.00	-39.57	Pass	H
2124.374	152	124	-53.35	-13.00	-40.35	Pass	H
2678.135	150	360	-53.29	-13.00	-40.29	Pass	H
3653.463	149	359	-53.89	-13.00	-40.89	Pass	H
5850.919	150	147	-49.59	-13.00	-36.59	Pass	H
7451.566	150	124	-50.44	-13.00	-37.44	Pass	H
1353.804	151	78	-57.54	-13.00	-44.54	Pass	V
2382.204	152	99	-54.53	-13.00	-41.53	Pass	V
3728.625	150	147	-53.76	-13.00	-40.76	Pass	V
4871.103	150	154	-54.93	-13.00	-41.93	Pass	V
5971.290	151	167	-49.94	-13.00	-36.94	Pass	V
7585.533	149	347	-50.90	-13.00	-37.90	Pass	V

GPRS 850 190channel/836.6MHz(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1371.145	151	226	-57.29	-13.00	-44.29	Pass	H
2637.542	150	21	-53.64	-13.00	-40.64	Pass	H
3700.260	150	360	-54.16	-13.00	-41.16	Pass	H
6047.776	151	70	-49.08	-13.00	-36.08	Pass	H
7643.683	150	148	-50.81	-13.00	-37.81	Pass	H
11056.090	149	97	-47.47	-13.00	-34.47	Pass	H
1663.803	150	27	-52.66	-13.00	-39.66	Pass	V
2678.135	150	100	-53.78	-13.00	-40.78	Pass	V
3719.146	151	359	-53.81	-13.00	-40.81	Pass	V
5986.509	152	20	-49.34	-13.00	-36.34	Pass	V
7451.566	150	147	-50.52	-13.00	-37.52	Pass	V
8506.170	149	100	-51.25	-13.00	-38.25	Pass	V

GPRS 850 251channel/848.8MHz(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1659.574	151	351	-51.72	-13.00	-38.72	Pass	H
2644.264	151	200	-53.66	-13.00	-40.66	Pass	H
4245.509	150	316	-53.87	-13.00	-40.87	Pass	H
6017.064	150	100	-49.60	-13.00	-36.60	Pass	H
8042.903	149	79	-50.76	-13.00	-37.76	Pass	H
10400.860	149	10	-47.90	-13.00	-34.90	Pass	H
1668.044	150	47	-51.62	-13.00	-38.62	Pass	V
2358.071	150	100	-53.96	-13.00	-40.96	Pass	V
3367.661	151	360	-53.73	-13.00	-40.73	Pass	V
5448.410	152	70	-52.03	-13.00	-39.03	Pass	V
5925.863	150	27	-49.84	-13.00	-36.84	Pass	V
8042.903	149	210	-51.18	-13.00	-38.18	Pass	V

EGPRS 850 128channel/824.2MHz(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1659.574	151	356	-52.61	-13.00	-39.61	Pass	H
2184.699	151	147	-53.87	-13.00	-40.87	Pass	H
2905.419	150	97	-53.29	-13.00	-40.29	Pass	H
4213.211	150	100	-54.17	-13.00	-41.17	Pass	H
5462.297	152	110	-51.95	-13.00	-38.95	Pass	H
6001.768	150	57	-49.24	-13.00	-36.24	Pass	H
1663.803	149	248	-52.11	-13.00	-39.11	Pass	V
2018.928	151	220	-44.13	-13.00	-31.13	Pass	V
2854.107	150	10	-54.13	-13.00	-41.13	Pass	V
3747.656	151	100	-53.96	-13.00	-40.96	Pass	V
4399.537	150	38	-54.69	-13.00	-41.69	Pass	V
6017.064	152	360	-49.36	-13.00	-36.36	Pass	V

EGPRS 850 190channel/836.6MHz(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1079.357	151	352	-58.89	-13.00	-45.89	Pass	H
1764.123	150	167	-41.82	-13.00	-28.82	Pass	H
2394.363	152	91	-54.38	-13.00	-41.38	Pass	H
3216.838	150	211	-53.16	-13.00	-40.16	Pass	H
6032.401	152	100	-49.35	-13.00	-36.35	Pass	H
7045.735	151	360	-50.91	-13.00	-37.91	Pass	H
1371.145	150	79	-57.32	-13.00	-44.32	Pass	V
1764.123	149	70	-36.59	-13.00	-23.59	Pass	V
2003.569	149	254	-53.05	-13.00	-40.05	Pass	V
2456.095	150	100	-49.08	-13.00	-36.08	Pass	V
4321.837	151	10	-53.98	-13.00	-40.98	Pass	V
5925.863	150	78	-49.63	-13.00	-36.63	Pass	V

EGPRS 850 251channel/848.8MHz(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1663.803	151	331	-52.88	-13.00	-39.88	Pass	H
2388.276	149	100	-54.19	-13.00	-41.19	Pass	H
3738.129	149	261	-53.22	-13.00	-40.22	Pass	H
4223.950	150	20	-53.79	-13.00	-40.79	Pass	H
6017.064	150	31	-48.99	-13.00	-35.99	Pass	H
7489.599	152	200	-50.50	-13.00	-37.50	Pass	H
1439.090	151	37	-56.40	-13.00	-43.40	Pass	V
1715.411	150	100	-39.87	-13.00	-26.87	Pass	V
2558.193	150	69	-54.22	-13.00	-41.22	Pass	V
3738.129	149	147	-53.19	-13.00	-40.19	Pass	V
5925.863	150	100	-49.07	-13.00	-36.07	Pass	V
7117.842	149	359	-50.66	-13.00	-37.66	Pass	V

GPRS1900 512channel/1850.2MHz(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1079.357	151	360	-58.10	-13.00	-45.10	Pass	H
2768.242	152	121	-53.79	-13.00	-40.79	Pass	H
4245.509	150	110	-53.90	-13.00	-40.90	Pass	H
5971.290	151	11	-49.96	-13.00	-36.96	Pass	H
7663.165	150	169	-50.86	-13.00	-37.86	Pass	H
11056.090	150	64	-47.95	-13.00	-34.95	Pass	H
1159.096	149	278	-58.07	-13.00	-45.07	Pass	V
2854.107	150	200	-53.91	-13.00	-40.91	Pass	V
4234.716	149	220	-54.22	-13.00	-41.22	Pass	V
6017.064	150	360	-49.76	-13.00	-36.76	Pass	V
8083.955	149	359	-51.01	-13.00	-38.01	Pass	V
9884.602	151	341	-49.59	-13.00	-36.59	Pass	V

GPRS1900 661channel/1880MHz(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1244.726	151	39	-58.35	-13.00	-45.35	Pass	H
2630.837	150	360	-53.85	-13.00	-40.85	Pass	H
3653.463	149	70	-53.94	-13.00	-40.94	Pass	H
5986.509	150	61	-49.43	-13.00	-36.43	Pass	H
7961.425	151	359	-50.99	-13.00	-37.99	Pass	H
10427.370	150	241	-48.64	-13.00	-35.64	Pass	H
1309.737	150	289	-57.91	-13.00	-44.91	Pass	V
3216.838	149	10	-53.32	-13.00	-40.32	Pass	V
4310.849	150	100	-53.88	-13.00	-40.88	Pass	V
6001.768	150	110	-49.48	-13.00	-36.48	Pass	V
8229.291	149	79	-50.97	-13.00	-37.97	Pass	V
10999.950	152	64	-47.47	-13.00	-34.47	Pass	V

GPRS1900 810channel/1909.8MHz(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1289.885	151	79	-58.35	-13.00	-45.35	Pass	H
2905.419	152	146	-52.94	-13.00	-39.94	Pass	H
4310.849	150	100	-53.77	-13.00	-40.77	Pass	H
6001.768	150	255	-49.71	-13.00	-36.71	Pass	H
7961.425	151	10	-50.95	-13.00	-37.95	Pass	H
9909.795	150	360	-49.39	-13.00	-36.39	Pass	H
1244.726	150	79	-57.86	-13.00	-44.86	Pass	V
2719.353	149	51	-54.23	-13.00	-41.23	Pass	V
4299.890	150	200	-53.98	-13.00	-40.98	Pass	V
6001.768	149	249	-48.84	-13.00	-35.84	Pass	V
7981.717	149	78	-50.64	-13.00	-37.64	Pass	V
10480.590	151	100	-48.73	-13.00	-35.73	Pass	V

EGPRS1900 512channel/1850.2MHz(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1079.357	152	10	-56.75	-13.00	-43.75	Pass	H
1346.929	151	179	-56.90	-13.00	-43.90	Pass	H
2617.477	150	141	-53.60	-13.00	-40.60	Pass	H
4433.263	150	200	-53.92	-13.00	-40.92	Pass	H
5490.177	150	201	-50.71	-13.00	-37.71	Pass	H
7920.996	149	360	-49.58	-13.00	-36.58	Pass	H
1225.860	151	70	-58.13	-13.00	-45.13	Pass	V
3151.992	150	89	-53.26	-13.00	-40.26	Pass	V
4920.955	150	100	-53.50	-13.00	-40.50	Pass	V
6001.768	151	211	-49.14	-13.00	-36.14	Pass	V
7413.726	149	64	-51.00	-13.00	-38.00	Pass	V
10400.860	149	278	-48.38	-13.00	-35.38	Pass	V

EGPRS1900 661channel/1880MHz(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1247.899	151	81	-57.99	-13.00	-44.99	Pass	H
3176.155	150	64	-53.76	-13.00	-40.76	Pass	H
4444.562	150	79	-54.49	-13.00	-41.49	Pass	H
5956.109	152	100	-48.56	-13.00	-35.56	Pass	H
8208.370	151	360	-50.52	-13.00	-37.52	Pass	H
9909.795	150	70	-48.19	-13.00	-35.19	Pass	H
1263.883	152	10	-57.70	-13.00	-44.70	Pass	V
3151.992	150	61	-53.96	-13.00	-40.96	Pass	V
3913.393	149	104	-53.85	-13.00	-40.85	Pass	V
5325.007	149	110	-52.89	-13.00	-39.89	Pass	V
5986.509	150	101	-48.89	-13.00	-35.89	Pass	V
8250.266	151	360	-51.22	-13.00	-38.22	Pass	V

EGPRS1900 810channel/1909.8MHz(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1079.357	151	316	-57.03	-13.00	-44.03	Pass	H
1510.402	151	70	-55.24	-13.00	-42.24	Pass	H
3208.660	150	81	-53.46	-13.00	-40.46	Pass	H
3913.393	149	226	-53.07	-13.00	-40.07	Pass	H
5971.290	150	210	-49.78	-13.00	-36.78	Pass	H
7663.165	150	101	-50.63	-13.00	-37.63	Pass	H
1159.096	150	79	-57.84	-13.00	-44.84	Pass	V
3208.660	149	100	-52.14	-13.00	-39.14	Pass	V
4278.055	150	360	-54.24	-13.00	-41.24	Pass	V
4858.719	151	70	-54.03	-13.00	-41.03	Pass	V
6001.768	151	89	-49.51	-13.00	-36.51	Pass	V
8506.170	150	100	-51.31	-13.00	-38.31	Pass	V

RMC band V 4132 channel/826.4MHz(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1353.804	151	38	-57.70	-13.00	-44.70	Pass	H
2179.145	150	161	-53.38	-13.00	-40.38	Pass	H
3410.797	152	79	-53.83	-13.00	-40.83	Pass	H
3973.622	150	271	-53.95	-13.00	-40.95	Pass	H
6032.401	150	345	-49.23	-13.00	-36.23	Pass	H
6544.350	150	161	-50.28	-13.00	-37.28	Pass	H
1293.173	149	332	-57.27	-13.00	-44.27	Pass	V
2698.665	149	100	-54.01	-13.00	-41.01	Pass	V
3112.129	150	147	-53.31	-13.00	-40.31	Pass	V
5420.742	151	10	-52.70	-13.00	-39.70	Pass	V
6032.401	151	360	-50.22	-13.00	-37.22	Pass	V
6561.030	150	14	-50.48	-13.00	-37.48	Pass	V

RMC band V 4182 channel/836.4MHz(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1340.089	151	352	-56.91	-13.00	-43.91	Pass	H
2768.242	150	164	-54.22	-13.00	-41.22	Pass	H
3644.175	152	79	-53.60	-13.00	-40.60	Pass	H
5406.961	150	100	-52.07	-13.00	-39.07	Pass	H
5895.771	151	258	-49.89	-13.00	-36.89	Pass	H
7585.533	150	76	-50.08	-13.00	-37.08	Pass	H
1159.096	150	360	-58.52	-13.00	-45.52	Pass	V
2431.213	150	124	-53.73	-13.00	-40.73	Pass	V
3112.129	149	10	-53.77	-13.00	-40.77	Pass	V
4444.562	151	360	-54.37	-13.00	-41.37	Pass	V
5895.771	150	70	-49.76	-13.00	-36.76	Pass	V
8042.903	152	281	-50.27	-13.00	-37.27	Pass	V

RMC band V 4233 channel/846.6MHz(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1247.899	150	332	-57.82	-13.00	-44.82	Pass	H
2513.013	150	161	-53.62	-13.00	-40.62	Pass	H
3700.260	150	316	-54.00	-13.00	-41.00	Pass	H
4785.075	150	100	-54.10	-13.00	-41.10	Pass	H
6125.242	150	24	-49.59	-13.00	-36.59	Pass	H
8125.215	150	144	-50.78	-13.00	-37.78	Pass	H
1159.096	150	179	-58.03	-13.00	-45.03	Pass	V
2425.032	150	10	-52.08	-13.00	-39.08	Pass	V
3350.560	150	46	-53.73	-13.00	-40.73	Pass	V
4444.562	150	147	-53.45	-13.00	-40.45	Pass	V
5986.509	150	100	-49.61	-13.00	-36.61	Pass	V
8125.215	150	50	-50.16	-13.00	-37.16	Pass	V

HSDPA band V 4132 channel/826.4MHz(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1165.013	151	159	-58.53	-13.00	-45.53	Pass	H
2684.961	150	170	-52.94	-13.00	-39.94	Pass	H
3653.463	150	160	-53.51	-13.00	-40.51	Pass	H
6078.644	152	100	-50.06	-13.00	-37.06	Pass	H
7941.185	150	360	-50.96	-13.00	-37.96	Pass	H
11428.080	150	79	-47.95	-13.00	-34.95	Pass	H
1159.096	149	247	-58.39	-13.00	-45.39	Pass	V
2394.363	150	220	-53.62	-13.00	-40.62	Pass	V
4213.211	151	200	-53.94	-13.00	-40.94	Pass	V
5490.177	150	21	-51.42	-13.00	-38.42	Pass	V
6017.064	149	156	-49.59	-13.00	-36.59	Pass	V
8104.559	150	100	-51.03	-13.00	-38.03	Pass	V

HSDPA band V 4182 channel/836.4MHz(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1350.362	151	39	-57.92	-13.00	-44.92	Pass	H
2558.193	150	161	-53.26	-13.00	-40.26	Pass	H
3233.257	149	78	-53.30	-13.00	-40.30	Pass	H
5925.863	150	351	-48.99	-13.00	-35.99	Pass	H
8083.955	150	349	-50.87	-13.00	-37.87	Pass	H
9275.160	152	217	-50.33	-13.00	-37.33	Pass	H
1254.268	150	100	-57.78	-13.00	-44.78	Pass	V
3128.013	150	145	-53.46	-13.00	-40.46	Pass	V
4433.263	151	360	-54.25	-13.00	-41.25	Pass	V
6078.644	150	54	-49.42	-13.00	-36.42	Pass	V
8083.955	149	100	-51.02	-13.00	-38.02	Pass	V
10453.950	150	246	-47.41	-13.00	-34.41	Pass	V

HSDPA band V 4233channel/846.6MHz(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1296.469	151	326	-57.76	-13.00	-44.76	Pass	H
2328.249	150	100	-53.72	-13.00	-40.72	Pass	H
3410.797	152	172	-52.80	-13.00	-39.80	Pass	H
5365.828	150	98	-52.91	-13.00	-39.91	Pass	H
6527.712	150	47	-49.17	-13.00	-36.17	Pass	H
8083.955	150	100	-49.80	-13.00	-36.80	Pass	H
1319.777	150	284	-58.09	-13.00	-45.09	Pass	V
2905.419	149	100	-53.19	-13.00	-40.19	Pass	V
4388.352	149	61	-53.51	-13.00	-40.51	Pass	V
5940.967	150	360	-50.20	-13.00	-37.20	Pass	V
6561.030	150	79	-49.31	-13.00	-36.31	Pass	V
8042.903	151	56	-50.91	-13.00	-37.91	Pass	V

HSUPA band V 4132 channel/826.4MHz(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1247.899	151	159	-58.27	-13.00	-45.27	Pass	H
3143.979	150	170	-53.56	-13.00	-40.56	Pass	H
4455.890	150	160	-54.35	-13.00	-41.35	Pass	H
6001.768	152	100	-50.02	-13.00	-37.02	Pass	H
7624.250	150	360	-50.88	-13.00	-37.88	Pass	H
9884.602	150	79	-50.24	-13.00	-37.24	Pass	H
1159.096	150	247	-57.45	-13.00	-44.45	Pass	V
3208.660	149	220	-53.56	-13.00	-40.56	Pass	V
4332.852	149	200	-54.56	-13.00	-41.56	Pass	V
6047.776	150	21	-50.19	-13.00	-37.19	Pass	V
7432.622	150	156	-51.26	-13.00	-38.26	Pass	V
9562.854	151	100	-51.16	-13.00	-38.16	Pass	V

HSUPA band V 4182 channel/836.4MHz(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1247.899	151	39	-58.42	-13.00	-45.42	Pass	H
2705.543	150	161	-54.47	-13.00	-41.47	Pass	H
3507.652	150	78	-53.75	-13.00	-40.75	Pass	H
4688.616	152	351	-53.85	-13.00	-40.85	Pass	H
6047.776	150	349	-50.24	-13.00	-37.24	Pass	H
7470.558	150	217	-51.33	-13.00	-38.33	Pass	H
1159.096	149	100	-58.60	-13.00	-45.60	Pass	V
2340.132	151	145	-53.54	-13.00	-40.54	Pass	V
3757.208	150	360	-52.98	-13.00	-39.98	Pass	V
6078.644	149	54	-49.93	-13.00	-36.93	Pass	V
8083.955	149	100	-51.56	-13.00	-38.56	Pass	V
9734.779	150	246	-49.31	-13.00	-36.31	Pass	V

HSUPA band V 4233channel/846.6MHz(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1228.984	151	326	-58.31	-13.00	-45.31	Pass	H
3135.986	152	100	-54.06	-13.00	-41.06	Pass	H
4310.849	150	172	-53.53	-13.00	-40.53	Pass	H
5895.771	150	98	-49.52	-13.00	-36.52	Pass	H
7585.533	150	47	-50.36	-13.00	-37.36	Pass	H
9759.591	151	100	-49.60	-13.00	-36.60	Pass	H
1159.096	151	284	-58.06	-13.00	-45.06	Pass	V
2875.986	150	100	-53.81	-13.00	-40.81	Pass	V
3672.110	150	61	-53.76	-13.00	-40.76	Pass	V
6017.064	149	360	-49.56	-13.00	-36.56	Pass	V
7432.622	150	79	-50.89	-13.00	-37.89	Pass	V
10427.370	150	56	-47.75	-13.00	-34.75	Pass	V

RMC band II 9262 channel/1852.4MHz(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1254.268	151	351	-58.57	-13.00	-45.57	Pass	H
3160.026	150	200	-53.62	-13.00	-40.62	Pass	H
4202.500	150	217	-54.17	-13.00	-41.17	Pass	H
6001.768	152	96	-49.61	-13.00	-36.61	Pass	H
7413.726	150	100	-50.89	-13.00	-37.89	Pass	H
11084.270	151	351	-47.36	-13.00	-34.36	Pass	H
1293.173	150	70	-57.92	-13.00	-44.92	Pass	V
3233.257	150	151	-53.39	-13.00	-40.39	Pass	V
4310.849	149	100	-54.05	-13.00	-41.05	Pass	V
6001.768	150	21	-49.83	-13.00	-36.83	Pass	V
7117.842	150	10	-50.76	-13.00	-37.76	Pass	V
11545.040	151	360	-46.98	-13.00	-33.98	Pass	V

RMC band II 9400 channel/1880MHz(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1343.505	152	91	-57.47	-13.00	-44.47	Pass	H
3241.498	150	100	-52.87	-13.00	-39.87	Pass	H
4478.633	150	360	-54.13	-13.00	-41.13	Pass	H
6001.768	149	351	-49.72	-13.00	-36.72	Pass	H
7941.185	151	359	-50.44	-13.00	-37.44	Pass	H
11197.710	150	240	-47.29	-13.00	-34.29	Pass	H
1276.818	151	100	-57.58	-13.00	-44.58	Pass	V
2590.961	150	248	-53.82	-13.00	-40.82	Pass	V
3662.775	150	358	-53.46	-13.00	-40.46	Pass	V
6001.768	150	70	-49.60	-13.00	-36.60	Pass	V
8145.925	150	154	-50.93	-13.00	-37.93	Pass	V
10944.090	152	100	-47.67	-13.00	-34.67	Pass	V

RMC band II 9538 channel/1907.6MHz(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1329.894	151	331	-57.58	-13.00	-44.58	Pass	H
3143.979	152	100	-53.32	-13.00	-40.32	Pass	H
4096.875	150	147	-54.08	-13.00	-41.08	Pass	H
6017.064	150	154	-48.99	-13.00	-35.99	Pass	H
8208.370	150	121	-50.48	-13.00	-37.48	Pass	H
11027.980	151	76	-45.47	-13.00	-32.47	Pass	H
1235.257	151	49	-57.40	-13.00	-44.40	Pass	V
3208.660	150	100	-53.10	-13.00	-40.10	Pass	V
4245.509	150	67	-53.98	-13.00	-40.98	Pass	V
6001.768	149	100	-49.32	-13.00	-36.32	Pass	V
7135.984	149	360	-50.46	-13.00	-37.46	Pass	V
11112.520	150	40	-47.40	-13.00	-34.40	Pass	V

HSDPA band II 9262 channel/1852.4MHz(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1247.899	151	61	-58.26	-13.00	-45.26	Pass	H
1439.090	150	200	-56.45	-13.00	-43.45	Pass	H
3241.498	150	157	-53.70	-13.00	-40.70	Pass	H
6017.064	150	241	-49.13	-13.00	-36.13	Pass	H
7920.996	149	100	-51.75	-13.00	-38.75	Pass	H
10217.170	151	169	-49.03	-13.00	-36.03	Pass	H
1319.777	150	254	-57.14	-13.00	-44.14	Pass	V
3112.129	150	26	-53.75	-13.00	-40.75	Pass	V
3983.750	150	100	-53.69	-13.00	-40.69	Pass	V
6001.768	151	332	-49.81	-13.00	-36.81	Pass	V
7643.683	151	159	-51.41	-13.00	-38.41	Pass	V
9935.053	150	100	-49.50	-13.00	-36.50	Pass	V

HSDPA band II 9400 channel/1880MHz(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1326.513	152	151	-57.22	-13.00	-44.22	Pass	H
3672.110	150	79	-53.04	-13.00	-40.04	Pass	H
4299.890	150	360	-54.11	-13.00	-41.11	Pass	H
5971.290	150	200	-49.49	-13.00	-36.49	Pass	H
8145.925	151	157	-50.79	-13.00	-37.79	Pass	H
11574.460	150	149	-46.91	-13.00	-33.91	Pass	H
1326.513	150	217	-58.43	-13.00	-45.43	Pass	V
3225.037	152	360	-53.14	-13.00	-40.14	Pass	V
4399.537	150	100	-54.36	-13.00	-41.36	Pass	V
6017.064	149	243	-49.77	-13.00	-36.77	Pass	V
8002.061	149	100	-50.97	-13.00	-37.97	Pass	V
10999.950	150	100	-48.15	-13.00	-35.15	Pass	V

HSDPA band II 9538 channel/1907.6MHz(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1162.051	152	37	-58.15	-13.00	-45.15	Pass	H
1573.189	151	60	-55.67	-13.00	-42.67	Pass	H
3393.477	150	360	-52.83	-13.00	-39.83	Pass	H
5986.509	150	79	-48.87	-13.00	-35.87	Pass	H
8208.370	149	151	-51.12	-13.00	-38.12	Pass	H
11056.090	150	247	-46.91	-13.00	-33.91	Pass	H
1296.469	150	291	-57.47	-13.00	-44.47	Pass	V
3653.463	149	200	-53.90	-13.00	-40.90	Pass	V
4245.509	150	147	-54.26	-13.00	-41.26	Pass	V
6017.064	151	10	-49.54	-13.00	-36.54	Pass	V
7961.425	151	36	-51.10	-13.00	-38.10	Pass	V
10480.590	150	111	-48.55	-13.00	-35.55	Pass	V

HSUPA band II 9262 channel/1852.4MHz(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1232.117	151	61	-57.99	-13.00	-44.99	Pass	H
3176.155	150	200	-53.69	-13.00	-40.69	Pass	H
4256.330	150	157	-53.57	-13.00	-40.57	Pass	H
6001.768	150	241	-49.69	-13.00	-36.69	Pass	H
7941.185	149	100	-50.69	-13.00	-37.69	Pass	H
9587.228	151	169	-49.86	-13.00	-36.86	Pass	H
1326.513	150	254	-58.03	-13.00	-45.03	Pass	V
1663.803	150	26	-52.74	-13.00	-39.74	Pass	V
3359.099	150	100	-53.66	-13.00	-40.66	Pass	V
5971.290	151	332	-49.90	-13.00	-36.90	Pass	V
8187.502	151	159	-51.04	-13.00	-38.04	Pass	V
10944.090	150	100	-47.10	-13.00	-34.10	Pass	V

HSUPA band II 9400 channel/1880MHz(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1079.357	152	151	-58.64	-13.00	-45.64	Pass	H
1634.419	150	79	-53.93	-13.00	-40.93	Pass	H
3192.366	150	360	-53.15	-13.00	-40.15	Pass	H
4245.509	150	200	-54.53	-13.00	-41.53	Pass	H
6001.768	151	157	-47.64	-13.00	-34.64	Pass	H
7981.717	150	149	-51.53	-13.00	-38.53	Pass	H
1159.096	150	217	-58.05	-13.00	-45.05	Pass	V
3766.785	152	360	-53.93	-13.00	-40.93	Pass	V
3973.622	150	100	-53.85	-13.00	-40.85	Pass	V
6001.768	149	243	-49.96	-13.00	-36.96	Pass	V
8229.291	149	100	-50.85	-13.00	-37.85	Pass	V
10696.210	150	100	-47.82	-13.00	-34.82	Pass	V

HSUPA band II 9538 channel/1907.6MHz(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1420.890	152	37	-57.22	-13.00	-44.22	Pass	H
3249.760	151	60	-53.49	-13.00	-40.49	Pass	H
5379.504	150	360	-50.18	-13.00	-37.18	Pass	H
6544.350	150	79	-51.00	-13.00	-38.00	Pass	H
8002.061	149	151	-51.32	-13.00	-38.32	Pass	H
9587.228	150	247	-50.78	-13.00	-37.78	Pass	H
1159.096	150	291	-56.99	-13.00	-43.99	Pass	V
2698.665	149	200	-54.21	-13.00	-41.21	Pass	V
4223.950	150	147	-54.29	-13.00	-41.29	Pass	V
6001.768	151	10	-50.16	-13.00	-37.16	Pass	V
8725.477	151	36	-50.87	-13.00	-37.87	Pass	V
9859.472	150	111	-49.95	-13.00	-36.95	Pass	V

Note:

1) Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

PHOTOGRAPHS OF TEST SETUP

Test mode No.: TWX5G02



Radiated spurious emission Test Setup-1(Below 1GHz)



Radiated spurious emission Test Setup-2(Above 1GHz)

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32J00098302 for EUT external and internal photos.

*** End of Report ***

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.