

TEST REPORT

Product : WCDMA Digital Mobile Phone
Trade mark : RugGear
Model/Type reference : RG310, RG310EX, RG320EX
Serial Number : N/A
Report Number : EED32I00185905
FCC ID : ZLE-RG310
Date of Issue : Jul. 18, 2016
Test Standards : 47 CFR Part 2(2015)
47 CFR Part 22 subpart H(2015)
47 CFR Part 24 subpart E(2015)
Test result : PASS

Prepared for:

Power Idea Technology Limited.

**4th Floor, A Section, Languang Science&technology Xinxi RD,
Hi-Tech Industrial Park North, Nanshan, ShenZhen, China**

Prepared by:

**Centre Testing International Group Co., Ltd.
Hongwei Industrial Zone, Bao'an 70 District,
Shenzhen, Guangdong, China**

TEL: +86-755-3368 3668

FAX: +86-755-3368 3385

Tested By:

Tom - chen

Tom chen (Test Project)

Compiled by:

Kevin Yang

Kevin yang (Project Engineer)

Reviewed by:

Sheek, Luo

Sheek Luo (Reviewer)

Approved by:

Sheek, Luo

Sheek Luo (Lab supervisor)

Date:

Jul. 18, 2016

Check No.: 2384307786



2 Version

Version No.	Date	Description
00	Jul. 18, 2016	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-D-2010 &KDB 971168 D01v02r02	PASS
Effective Radiated Power of Transmitter(ERP)	Part 2.1046(a)/Part 22.913(a)	TIA-603-D-2010 &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-D-2010 &KDB 971168 D01v02r02	PASS
Field strength of spurious radiation	Part 2.1053/ Part 2.1057/ Part 22.917(a)(b)	TIA-603-D-2010 &KDB 971168 D01v02r02	PASS
Frequency stability	Part 2.1055/ Part 22.355	TIA-603-D-2010 &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-D-2010&KDB 971168 D01v02r02	PASS
Effective Radiated Power of Transmitter(EIRP)	Part 2.1046(a) / Part 24.232(c)	TIA-603-D-2010 &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-D-2010 &KDB 971168 D01v02r02	PASS
Field strength of spurious radiation	Part 2.1053 /Part 2.1057 / Part 24.238(a)(b)	TIA-603-D-2010 &KDB 971168 D01v02r02	PASS
Frequency stability	Part 2.1055/Part 24.235	TIA-603-D-2010 &KDB 971168 D01v02r02	PASS

Remark:

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

Model No.: RG310, RG310EX, RG320EX

Only the model RG310 was tested, the PCB, Schematic, Hardware etc were identical for the above models, Only different model name due to difference agent and marketing purposes.

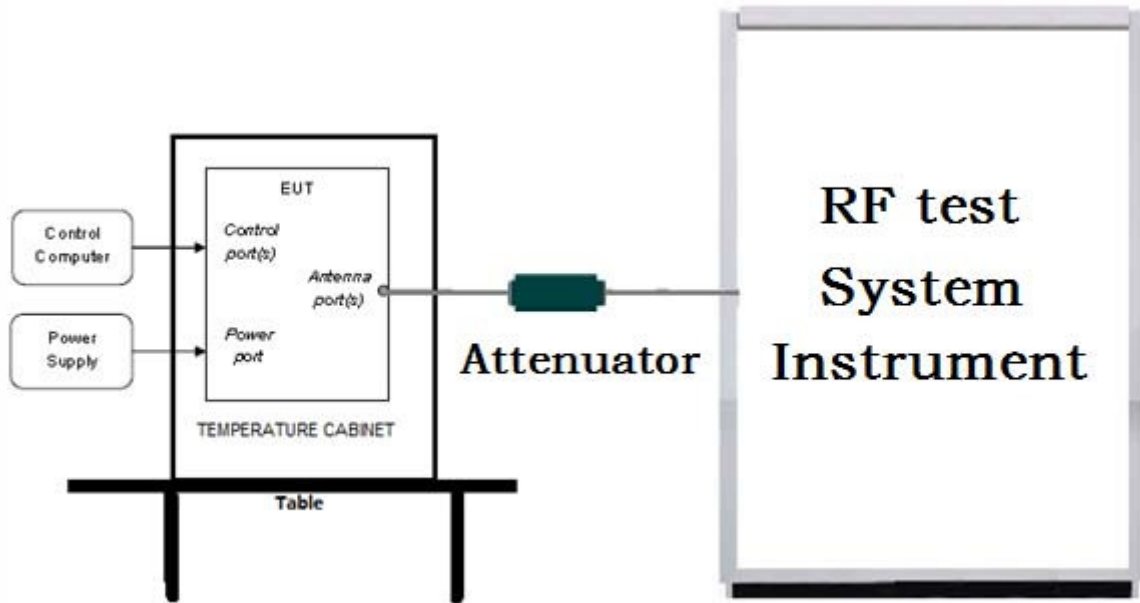
4 Content

1 COVER PAGE	1
2 VERSION	2
3 TEST SUMMARY	3
4 CONTENT	4
5 TEST REQUIREMENT	5
5.1 TEST SETUP	5
5.1.1 For Conducted test setup	5
5.1.2 For Radiated Emissions test setup	5
5.2 TEST ENVIRONMENT	6
5.3 TEST CONDITION	6
6 GENERAL INFORMATION	9
6.1 CLIENT INFORMATION	9
6.2 GENERAL DESCRIPTION OF EUT	9
6.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD	9
6.4 DESCRIPTION OF SUPPORT UNITS	9
6.5 TEST LOCATION	9
6.6 TEST FACILITY	10
6.7 DEVIATION FROM STANDARDS	11
6.8 ABNORMALITIES FROM STANDARD CONDITIONS	11
6.9 OTHER INFORMATION REQUESTED BY THE CUSTOMER	11
6.10 MEASUREMENT UNCERTAINTY (95% CONFIDENCE LEVELS, K=2)	11
7 EQUIPMENT LIST	12
8 RADIO TECHNICAL REQUIREMENTS SPECIFICATION	14
Appendix A): RF Power Output	15
Appendix B): Peak-to-Average Ratio	17
Appendix C): BandWidth	26
Appendix D): Band Edges Compliance	43
Appendix E): Spurious Emission at Antenna Terminal	54
Appendix F): Frequency Stability	130
Appendix G): Effective Radiated Power of Transmitter (ERP/EIRP)	138
Appendix H): Field strength of spurious radiation	142
PHOTOGRAPHS OF TEST SETUP	158
PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS	159

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:

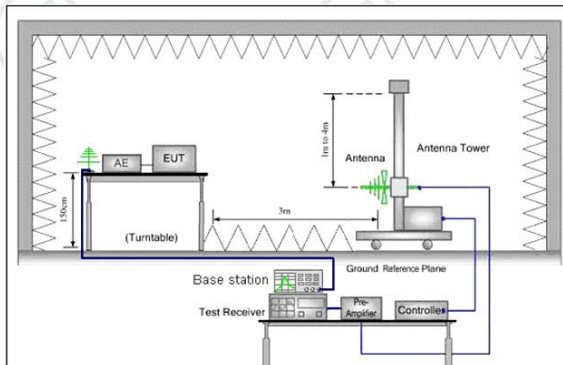


Figure 1.30MHz to 1GHz

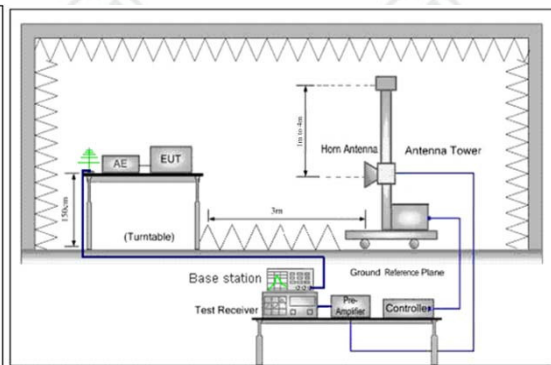


Figure 2. above 1GHz

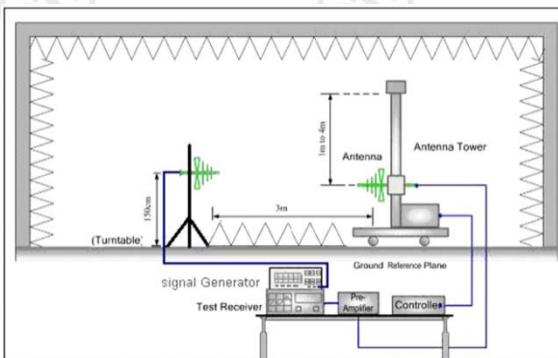


Figure 1. 30MHz to 1GHz

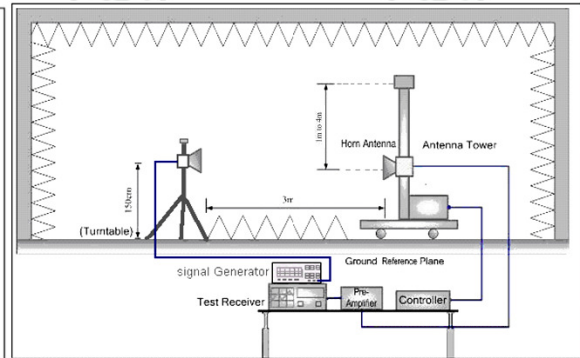


Figure 2. above 1GHz

5.2 Test Environment

Operating Environment:	
Temperature:	21°C
Humidity:	54% RH
Atmospheric Pressure:	1010mbar

5.3 Test Condition

Test channel:

Test Mode	Tx/Rx	RF Channel		
		Low(L)	Middle(M)	High(H)
GSM/GPRS/ EDGE850	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
GSM/GPRS/ EDGE1900	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

Test mode:

Pre-scan under all rate at lowest middle and highest channel ,find the transmitter power as below:

SIM 1 Card Conducted transmitter power measurement result.

band	GSM850 (dBm)			GSM1900 (dBm)		
Channel	128	190	251	512	661	810
Frequency(MHz)	824.2MHz	836.6MHz	848.8MHz	1850.2MHz	1880MHz	1909.8MHz
GSM	33.21	33.87	33.95	30.76	30.18	30.43
GPRS Class 8	33.21	33.82	33.92	30.74	30.12	30.44
EDGE Class 8	28.13	28.80	28.52	28.71	28.88	28.45

band	WCDMA Band V (dBm)			WCDMA Band II (dBm)		
Channel	4132	4182	4233	9262	9400	9538
Frequency(MHz)	826.4MHz	836.4MHz	846.6MHz	1852.4MHz	1880MHz	1907.6MHz
RMC 12.2K	23.92	23.76	23.78	24.52	24.55	24.85
HSDPA	22.92	22.82	22.88	23.52	23.68	24.02
HSUPA	22.17	22.12	22.17	22.82	22.79	23.18

SIM 2 Card Conducted transmitter power measurement result.

band	GSM850 (dBm)			GSM1900 (dBm)		
Channel	128	190	251	512	661	810
Frequency(MHz)	824.2MHz	836.6MHz	848.8MHz	1850.2MHz	1880MHz	1909.8MHz
GSM	33.13	33.73	33.79	30.70	30.02	30.42
GPRS Class 8	33.13	33.69	33.74	30.68	30.21	30.36
EDGE Class 8	28.06	28.75	28.50	28.67	28.86	28.41

band	WCDMA Band V (dBm)			WCDMA Band II (dBm)		
Channel	4132	4182	4233	9262	9400	9538
Frequency(MHz)	826.4MHz	836.4MHz	846.6MHz	1852.4MHz	1880MHz	1907.6MHz
RMC 12.2K	23.85	23.71	23.72	24.50	24.52	24.72
HSDPA	22.86	22.75	22.79	23.48	23.64	23.95
HSUPA	22.14	22.10	22.14	22.75	22.73	23.12

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
GSM/GPRS/EDGE 850	1)GSM Link 2)GPRS 8 Link 3)EDGE 8 Link	1)GSM Link 2)GPRS 8 Link 3)EDGE 8 Link
GSM/GPRS/EDGE 1900	1)GSM Link 2)GPRS 8 Link 3)EDGE 8 Link	1)GSM Link 2)GPRS 8 Link 3)EDGE 8 Link
WCDMA Band V	1)RMC 12.2Kbps Link 2)HSDPA	1)RMC 12.2Kbps Link 1)HSDPA
WCDMA Band II	1)RMC 12.2Kbps Link 2)HSDPA	1)RMC 12.2Kbps Link 2)HSDPA

Test mode:

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

6 General Information

6.1 Client Information

Applicant:	Power Idea Technology Limited.
Address of Applicant:	4th Floor, A Section, Languang Science&technology Xinx RD, Hi-Tech Industrial Park North, Nanshan, ShenZhen, China
Manufacturer:	Power Idea Technology Limited.
Address of Manufacturer:	4th Floor, A Section, Languang Science&technology Xinx RD, Hi-Tech Industrial Park North, Nanshan, ShenZhen, China

6.2 General Description of EUT

Product Name:	WCDMA Digital Mobile Phone
Mode No.(EUT):	RG310, RG310EX, RG320EX
Test Mode No.:	RG310
Trade Mark:	RugGear
EUT Supports Radios application:	GSM/GPRS/EDGE 850/1900 WCDMA/HSDPA HSUPA HSPA+(Down Link) Band V/Band II
Power Supply:	Model: HKC0055010-2D Input: 100-240V~ 50/60Hz 0.2A Output: 5.0V $\pm$ 1.0A
Battery	Li-ion 3.7V/3600mAh
Sample Received Date:	Jun. 30, 2016
Sample tested Date:	Jun. 30, 2016 to Jul. 18, 2016

6.3 Product Specification subjective to this standard

Frequency Band:	GSM/GPRS/EDGE 850: Tx:824.20 -848.80MHz; Rx: 869.20 – 893.80MHz GSM/GPRS/EDGE 1900: Tx:1850.20 – 1909.80MHz; Rx:1930.20 – 1989.80MHz WCDMA/HSDPA/HSUPA/HSPA+(Down Link) Band V: Tx:826.40 -846.60MHz; Rx: 871.40 – 891.60MHz WCDMA/HSDPA/HSUPA/HSPA+(Down Link) Band II: Tx:1852.40 – 1907.60MHz; Rx:1932.40 – 1987.60MHz
Modulation Type:	GSM/GPRS Mode with GMSK Modulation EDGE Mode with 8PSK Modulation WCDMA Mode with QPSK Modulation
Sample Type:	Portable production
Antenna Type:	Integral
Antenna Gain:	GSM 850: 0.82dBi, GSM 1900: 3.4dBi, WCDMA Band II: 3.4dBi, WCDMA Band V: 0.82dBi
Test Voltage:	AC 120V/60Hz

6.4 Description of Support Units

The EUT has been tested independently.

6.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd.

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	12-31-2015	12-29-2016
Signal Generator	Agilent	E4438C	MY45095744	04-01-2016	03-31-2017
Communication test set	Agilent	E5515C	GB47050534	04-01-2016	03-31-2017
Signal Generator	Keysight	E8257D	MY53401106	04-01-2016	03-31-2017
Communication test set	R&S	CMW500	152394	04-01-2016	03-31-2017
High-pass filter	Sinoscite	FL3CX03WG18 NM12-0398-002	---	01-12-2016	01-11-2017
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-12-2016	01-11-2017
band rejection filter	Sinoscite	FL5CX01CA09C L12-0395-001	---	01-12-2016	01-11-2017
band rejection filter	Sinoscite	FL5CX01CA08C L12-0393-001	---	01-12-2016	01-11-2017
band rejection filter	Sinoscite	FL5CX02CA04C L12-0396-002	---	01-12-2016	01-11-2017
band rejection filter	Sinoscite	FL5CX02CA03C L12-0394-001	---	01-12-2016	01-11-2017
DC Power	Keysight	E3642A	MY54426112	04-08-2016	04-07-2017
DC Power	Keysight	E3642A	MY54426115	04-01-2016	03-31-2017
PC-2	Lenovo	R4960d	---	04-01-2016	03-31-2017
PC-3	Lenovo	R4960d	---	04-01-2016	03-31-2017
RF control unit	JS Tonscend	JS0806-1	158060004	04-01-2016	03-31-2017
DC power Box	JS Tonscend	JS0806-4	158060007	04-01-2016	03-31-2017
LTE Automatic test software	JS Tonscend	JS1120-1	---	04-01-2016	03-31-2017
WCDMA Automatic test software	JS Tonscend	JS1120-3	---	04-01-2016	03-31-2017
GSM Automatic test software	JS Tonscend	JS1120-3	---	04-01-2016	03-31-2017

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	05-23-2016	05-22-2017
Microwave Preamplifier	Agilent	8449B	3008A02425	02-04-2016	02-03-2017
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	maturio	NCD/070/10711 112	---	01-12-2016	01-11-2017
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	04-01-2016	03-31-2017
Signal Generator	Keysight	E8257D	MY53401106	04-01-2016	03-31-2017
Temperature/ Humidity Indicator	TAYLOR	1451	1905	04-27-2016	04-26-2017
Communication test set	Agilent	E5515C	GB47050534	04-01-2016	03-31-2017
Cable line	Fulai(7M)	SF106	5219/6A	01-12-2016	01-11-2017
Cable line	Fulai(6M)	SF106	5220/6A	01-12-2016	01-11-2017
Cable line	Fulai(3M)	SF106	5216/6A	01-12-2016	01-11-2017
Cable line	Fulai(3M)	SF106	5217/6A	01-12-2016	01-11-2017
Communication test set	R&S	CMW500	152394	04-01-2016	03-31-2017
High-pass filter(3-18GHz)	Sinoscite	FL3CX03WG18 NM12-0398-002	---	01-12-2016	01-11-2017
High-pass filter(6-18GHz)	MICRO-TRONICS	SPA-F-63029-4	---	01-12-2016	01-11-2017
band rejection filter	Sinoscite	FL5CX01CA09C L12-0395-001	---	01-12-2016	01-11-2017
band rejection filter	Sinoscite	FL5CX01CA08C L12-0393-001	---	01-12-2016	01-11-2017
band rejection filter	Sinoscite	FL5CX02CA04C L12-0396-002	---	01-12-2016	01-11-2017
band rejection filter	Sinoscite	FL5CX02CA03C L12-0394-001	---	01-12-2016	01-11-2017

8 Radio Technical Requirements Specification

Reference documents for testing:

No.	Identity	Document Title
1	PART 22 (2015)	PART 22 – PUBLIC MOBILE SERVICES Subpart H – Cellular Radiotelephone Service
2	PART 24 (2015)	PART 24 – PERSONAL COMMUNICATIONS SERVICES Subpart E – Broadband PCS
3	PART 2 (2015)	Frequency allocations and radio treaty matters; general rules and regulations
4	TIA-603-D-2010	Land Mobile FM or PM -Communications Equipment -Measurement and Performance Standards
5	KDB971168 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 2.1053/ 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 G)
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 H)

Appendix A): RF Power Output

Test Requirement:	Part 2.1046(a)		
Test Method:	TIA-603-D-2010 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 Data:

Test Band	Test Mode	Test Channel	Measured(dbm)	Limit(dbm)	Verdict
GSM850	GSM/TM1	LCH	33.21	38.5	PASS
		MCH	33.87	38.5	PASS
		HCH	33.95	38.5	PASS
	GSM/TM2	LCH	33.21	38.5	PASS
		MCH	33.82	38.5	PASS
		HCH	33.92	38.5	PASS
	GSM/TM3	LCH	28.13	38.5	PASS
		MCH	28.80	38.5	PASS
		HCH	28.52	38.5	PASS
Test Band	Test Mode	Test Channel	Measured(dbm)	Limit(dbm)	Verdict
GSM1900	GSM/TM1	LCH	30.76	33	PASS
		MCH	30.18	33	PASS
		HCH	30.43	33	PASS
	GSM/TM2	LCH	30.74	33	PASS
		MCH	30.12	33	PASS
		HCH	30.44	33	PASS
	GSM/TM3	LCH	28.71	33	PASS
		MCH	28.88	33	PASS
		HCH	28.45	33	PASS

Test Band	Test Mode	Test Channel	Measured(dbm)	Limit(dbm)	Verdict
WCDMA850	UMTS/TM1	LCH	23.92	38.5	PASS
		MCH	23.76	38.5	PASS
		HCH	23.78	38.5	PASS
Test Band	Test Mode	Test Channel	Measured(dbm)	Limit(dbm)	Verdict
WCDMA850	UMTS/TM2	LCH	22.92	38.5	PASS
		MCH	22.82	38.5	PASS
		HCH	22.88	38.5	PASS

Test Band	Test Mode	Test Channel	Measured(dbm)	Limit(dbm)	Verdict
WCDMA1900	UMTS/TM1	LCH	24.52	33	PASS
		MCH	24.55	33	PASS
		HCH	24.85	33	PASS
Test Band	Test Mode	Test Channel	Measured(dbm)	Limit(dbm)	Verdict
WCDMA1900	UMTS/TM2	LCH	23.52	33	PASS
		MCH	23.68	33	PASS
		HCH	24.02	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/TM1	LCH	2.65	13	PASS
		MCH	2.65	13	PASS
		HCH	2.65	13	PASS
	GSM/TM2	LCH	2.65	13	PASS
		MCH	2.65	13	PASS
		HCH	2.66	13	PASS
	GSM/TM3	LCH	5.08	13	PASS
		MCH	4.99	13	PASS
		HCH	5.07	13	PASS

Test Band	Test Mode	Test Channel	Measured (db)	Limit (db)	Verdict
WCDMA1900	UMTS/TM1	LCH	2.98	13	PASS
		MCH	3.11	13	PASS
		HCH	3.05	13	PASS

Test Band	Test Mode	Test Channel	Measured (db)	Limit (db)	Verdict
WCDMA1900	UMTS/TM2	LCH	3.18	13	PASS
		MCH	3.24	13	PASS
		HCH	3.32	13	PASS

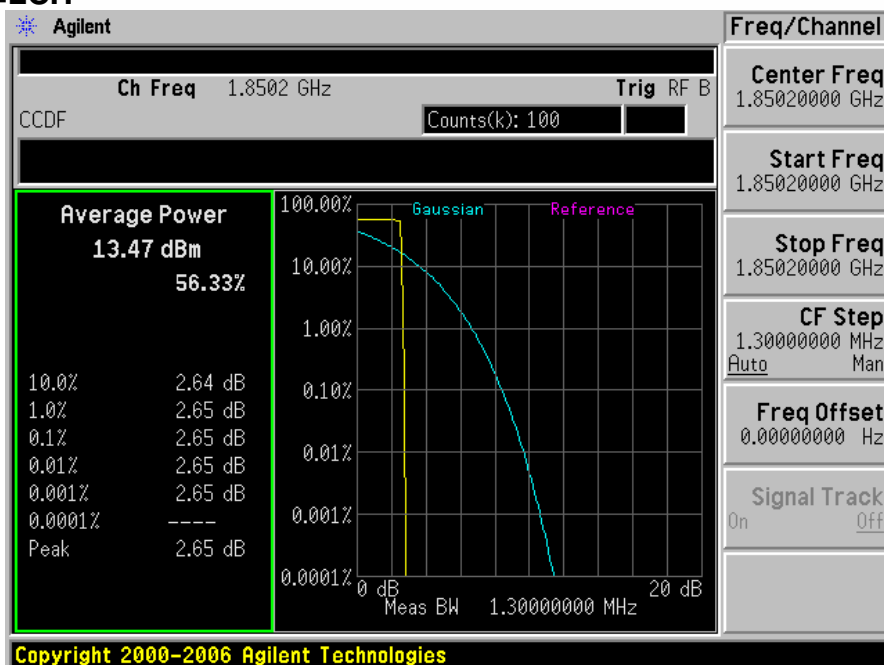
Test Graphs:

For GSM

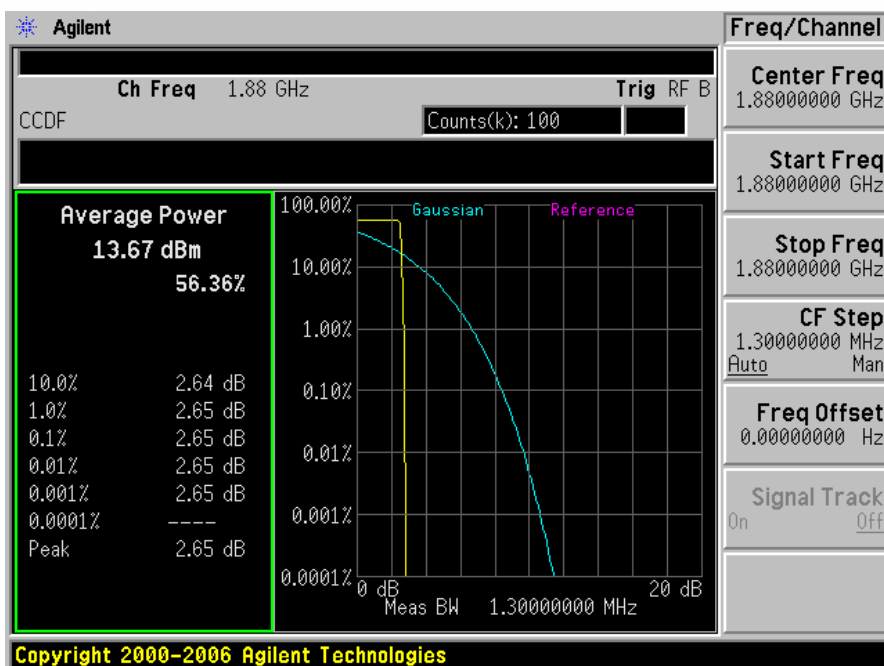
Test Band=GSM1900

Test Mode=GSM/TM1

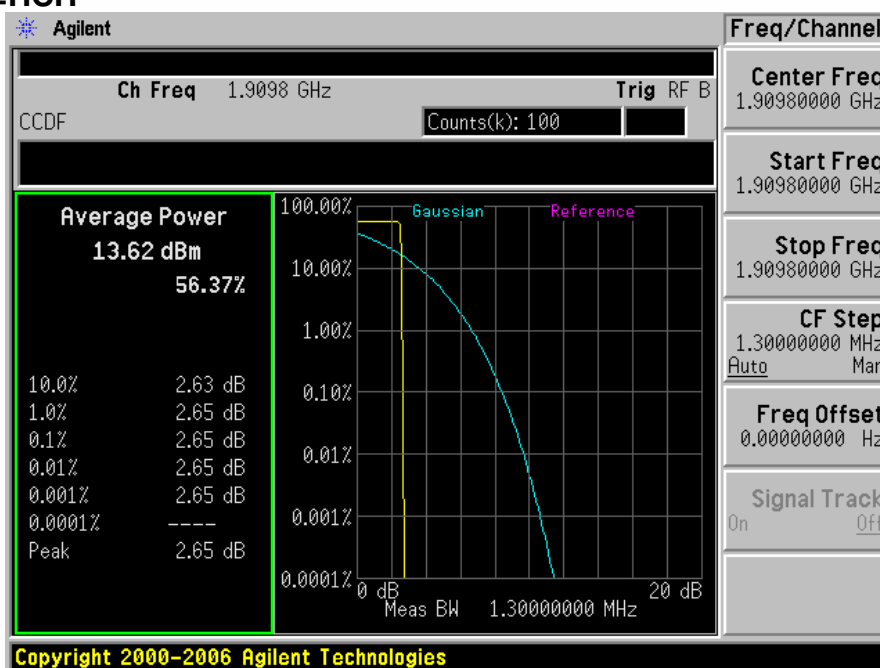
Test Channel=LCH



Test Channel=MCH



Test Channel=HCH

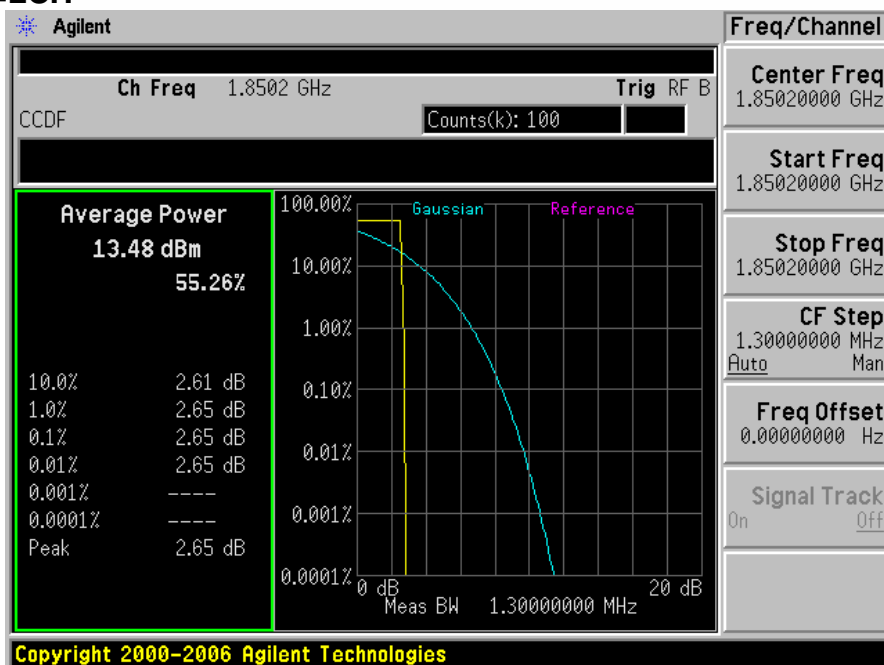


For GSM

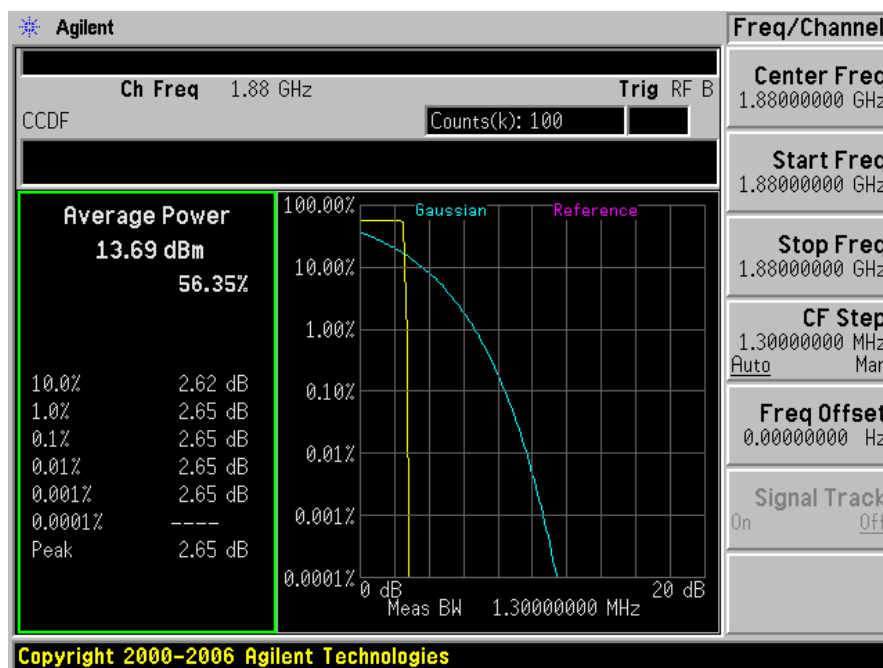
Test Band=GSM1900

Test Mode=GSM/TM2

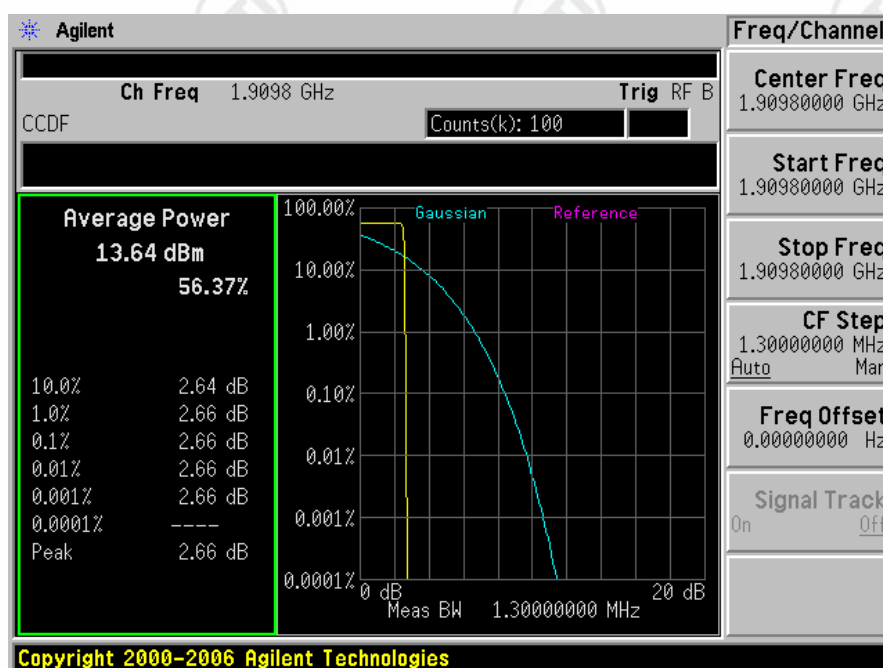
Test Channel=LCH



Test Channel=MCH



Test Channel=HCH

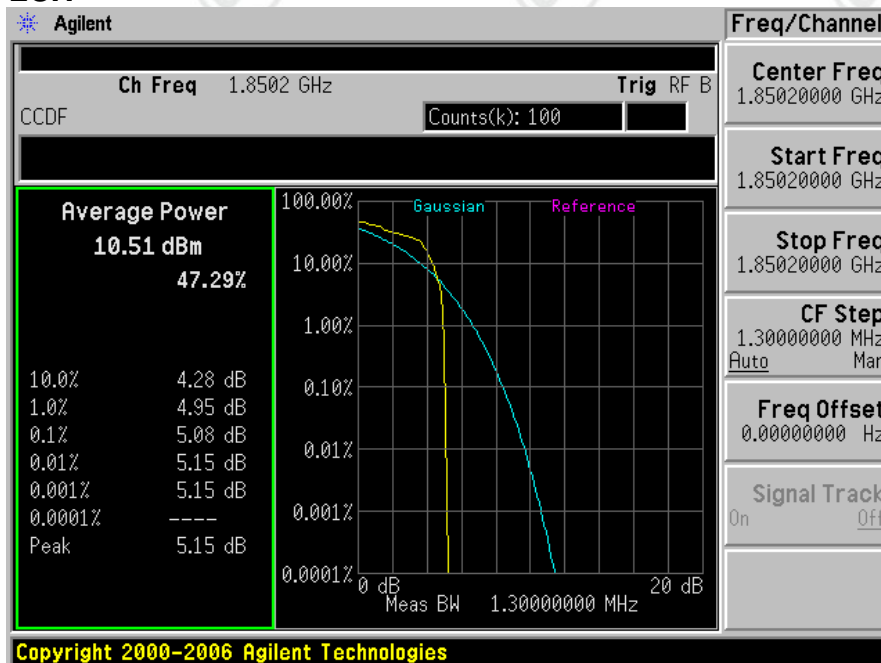


For GSM

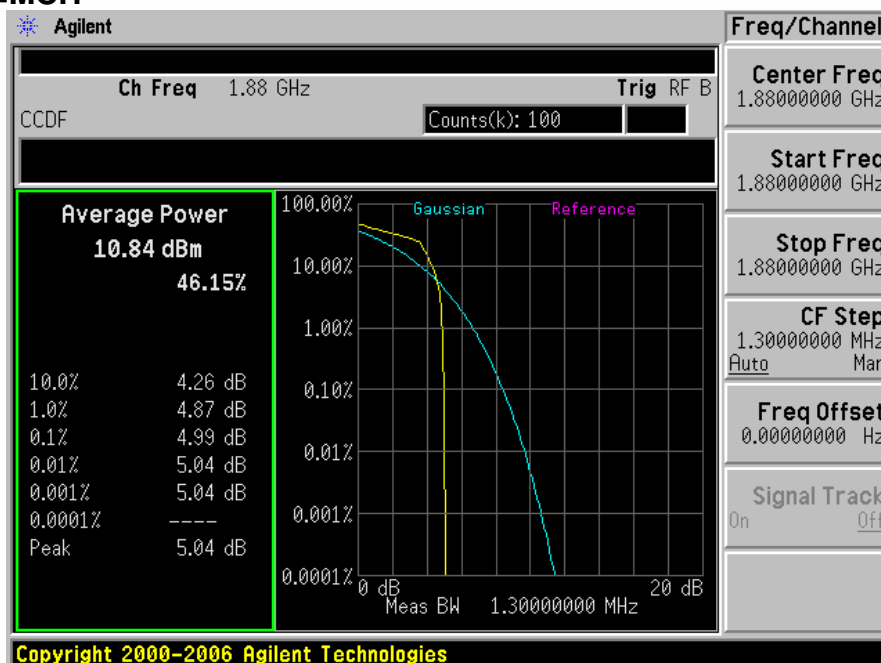
Test Band=GSM1900

Test Mode=GSM/TM3

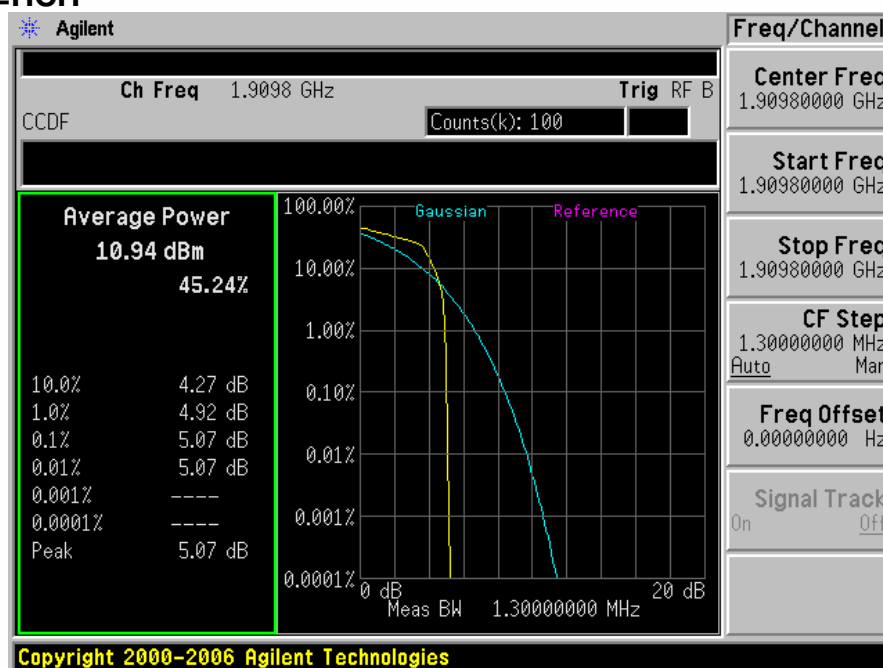
Test Channel=LCH



Test Channel=MCH



Test Channel=HCH

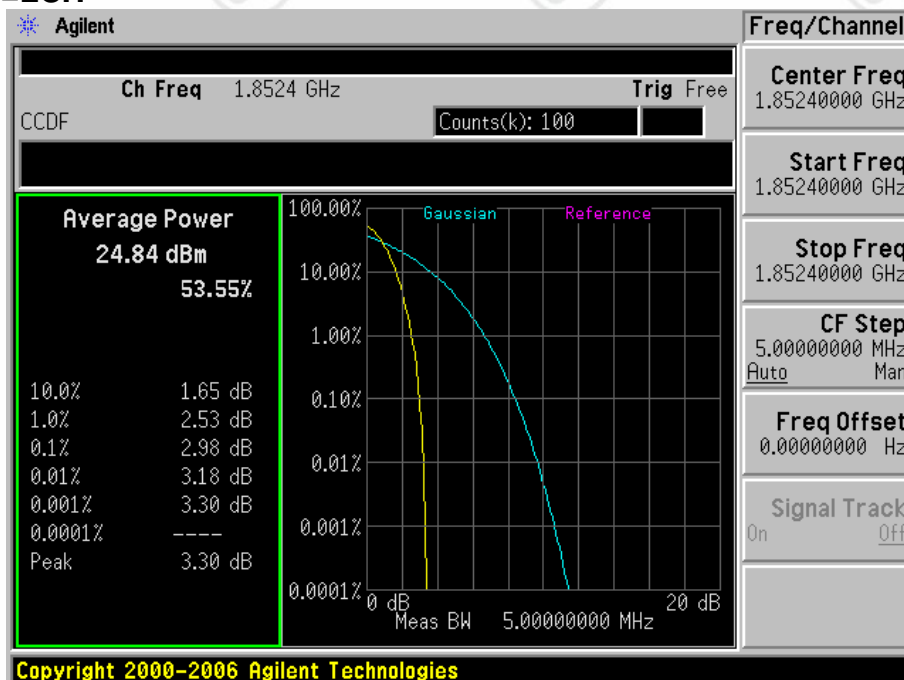


For WCDMA

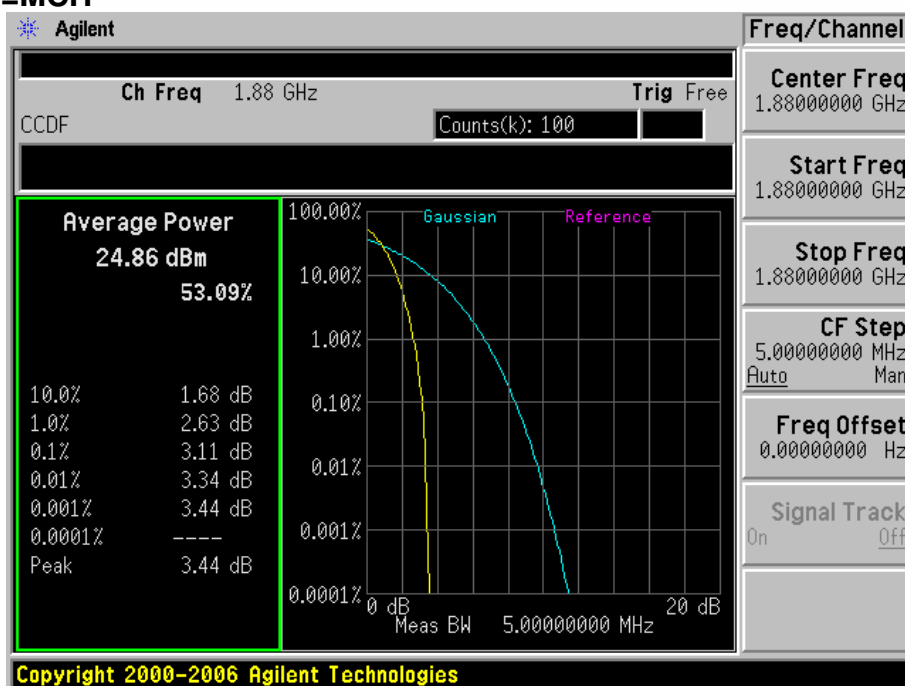
Test Band=WCDMA1900

Test Mode=UMTS/TM1

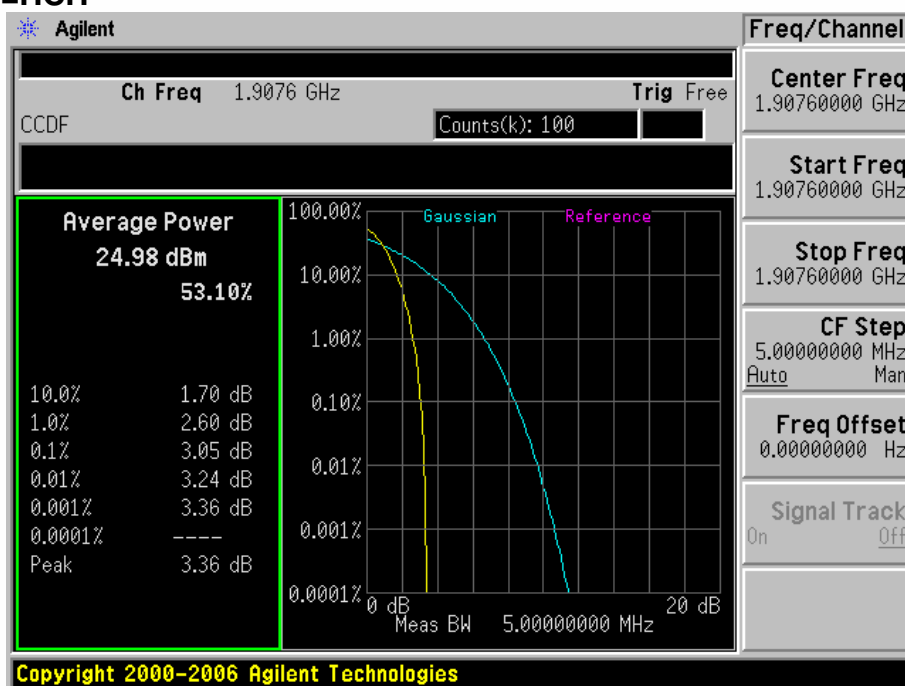
Test Channel=LCH



Test Channel=MCH



Test Channel=HCH

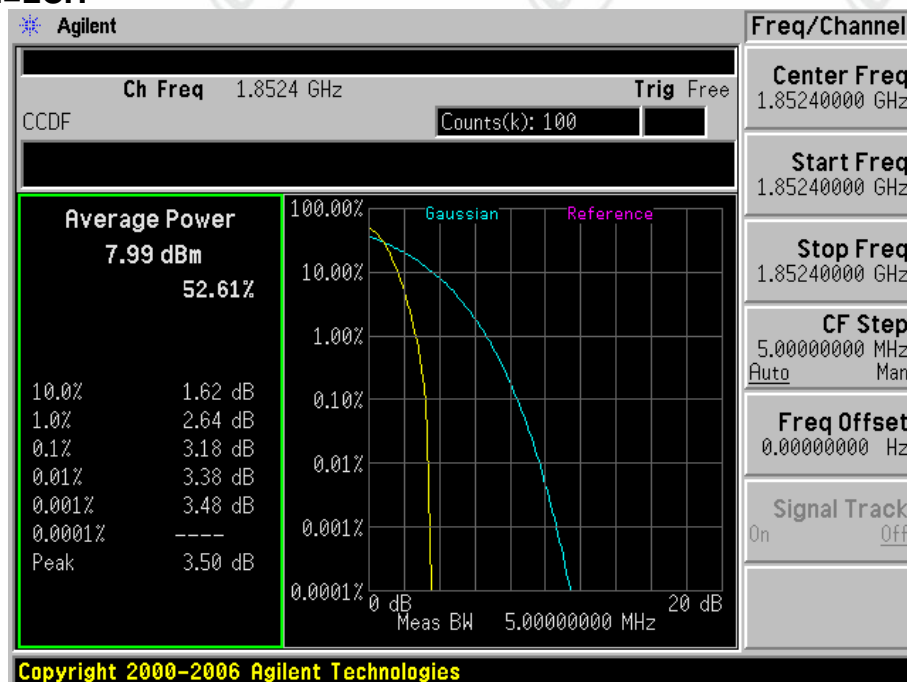


For WCDMA

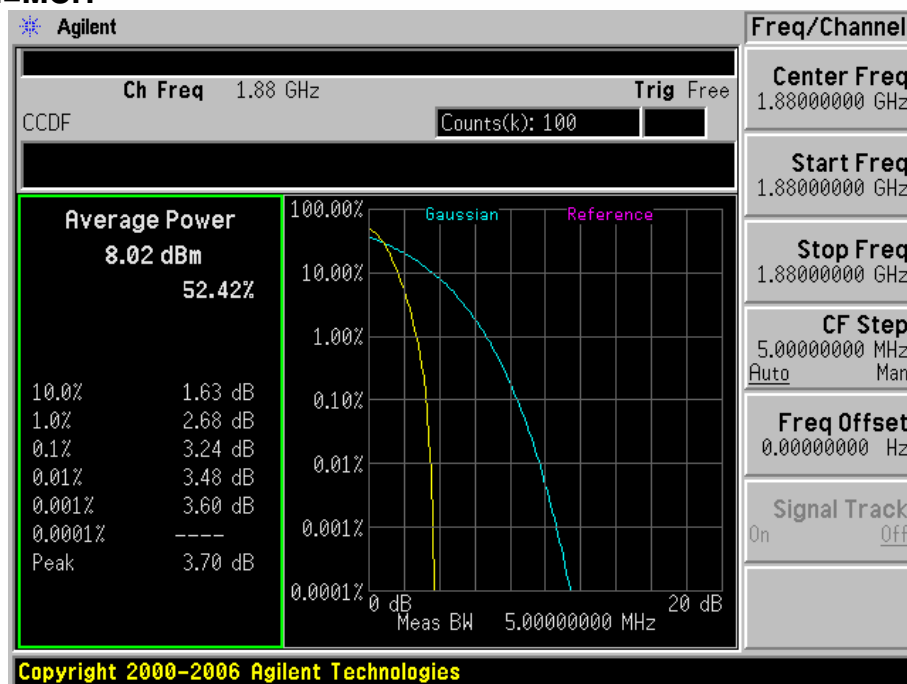
Test Band=WCDMA1900

Test Mode=UMTS/TM2

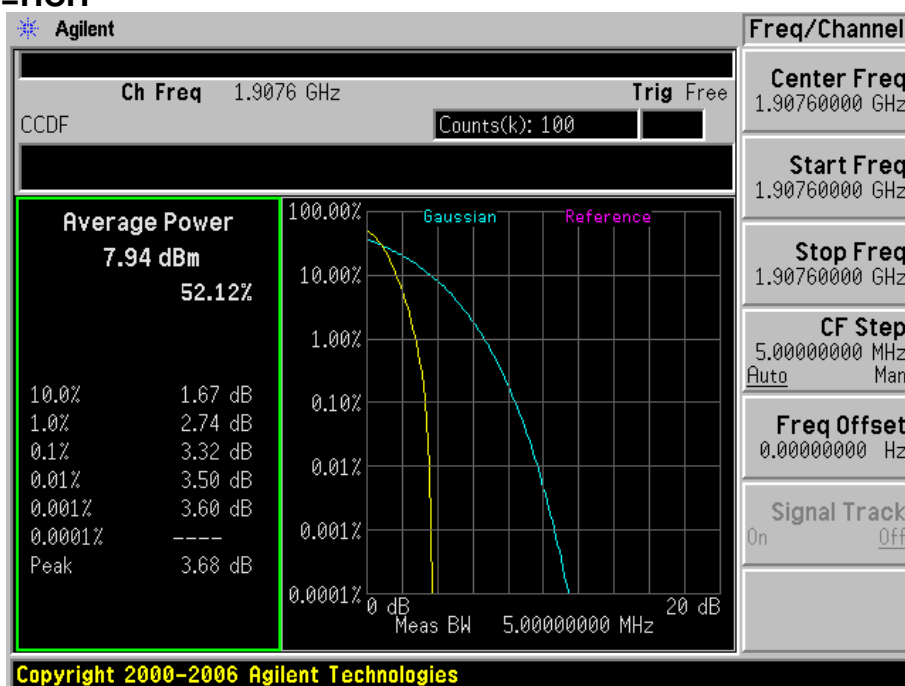
Test Channel=LCH



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 Data:

Test Band	Test Mode	Test Channel	Occupied Bandwidth (KHz)	Emission Bandwidth (KHz)	Verdict
GSM850	GSM/TM1	LCH	244.30	315.09	PASS
		MCH	247.79	309.88	PASS
		HCH	242.62	317.38	PASS
	GSM/TM2	LCH	244.13	316.06	PASS
		MCH	242.20	314.85	PASS
		HCH	246.23	312.42	PASS
	GSM/TM3	LCH	251.95	312.18	PASS
		MCH	250.11	310.86	PASS
		HCH	248.17	324.74	PASS

Test Band	Test Mode	Test Channel	Occupied Bandwidth (KHz)	Emission Bandwidth (KHz)	Verdict
GSM1900	GSM/TM1	LCH	244.27	316.47	PASS
		MCH	243.76	321.04	PASS
		HCH	247.64	314.88	PASS
	GSM/TM2	LCH	245.53	314.92	PASS
		MCH	244.97	310.96	PASS
		HCH	249.78	314.05	PASS
	GSM/TM3	LCH	252.46	321.90	PASS
		MCH	255.19	322.42	PASS
		HCH	255.29	325.35	PASS

Test Band	Test Mode	Test Channel	Occupied Bandwidth (KHz)	Emission Bandwidth (KHz)	Verdict
WCDMA850	UMTS/TM1	LCH	4169.4	4733	PASS
		MCH	4168.8	4708	PASS
		HCH	4136.8	4702	PASS

Test Band	Test Mode	Test Channel	Occupied Bandwidth (KHz)	Emission Bandwidth (KHz)	Verdict
WCDMA850	UMTS/TM2	LCH	4174.5	4699	PASS
		MCH	4161.6	4708	PASS
		HCH	4152.4	4640	PASS

Test Band	Test Mode	Test Channel	Occupied Bandwidth (KHz)	Emission Bandwidth (KHz)	Verdict
WCDMA1900	UMTS/TM1	LCH	4141.0	4696	PASS
		MCH	4152.9	4707	PASS
		HCH	4150.6	4698	PASS

Test Band	Test Mode	Test Channel	Occupied Bandwidth (KHz)	Emission Bandwidth (KHz)	Verdict
WCDMA1900	UMTS/TM2	LCH	4170.7	4714	PASS
		MCH	4153.1	4708	PASS
		HCH	4165.2	4716	PASS

Test Graph:

For GSM

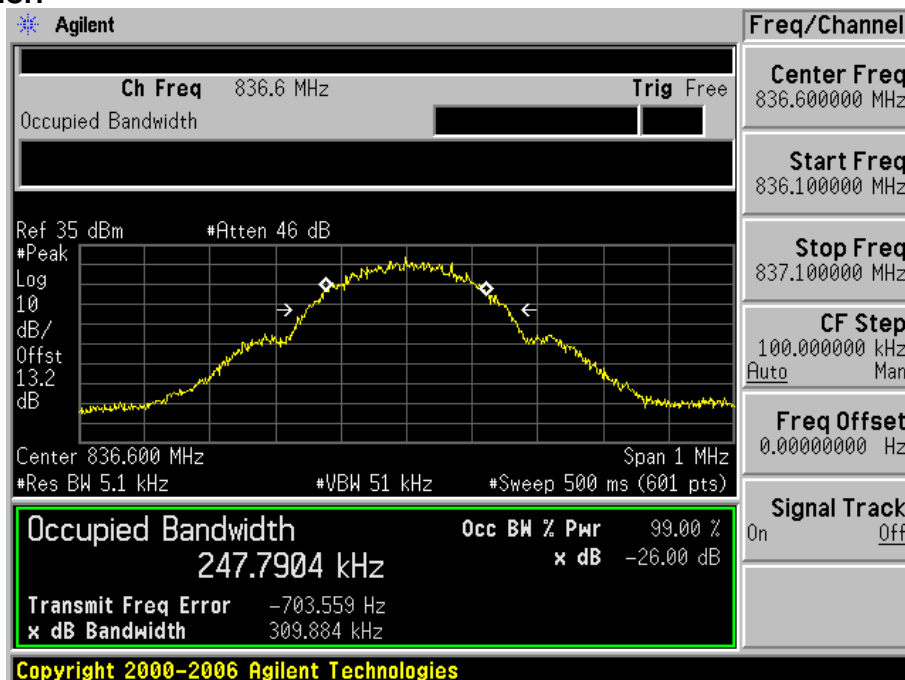
Test Band=GSM850

Test Mode=GSM/TM1

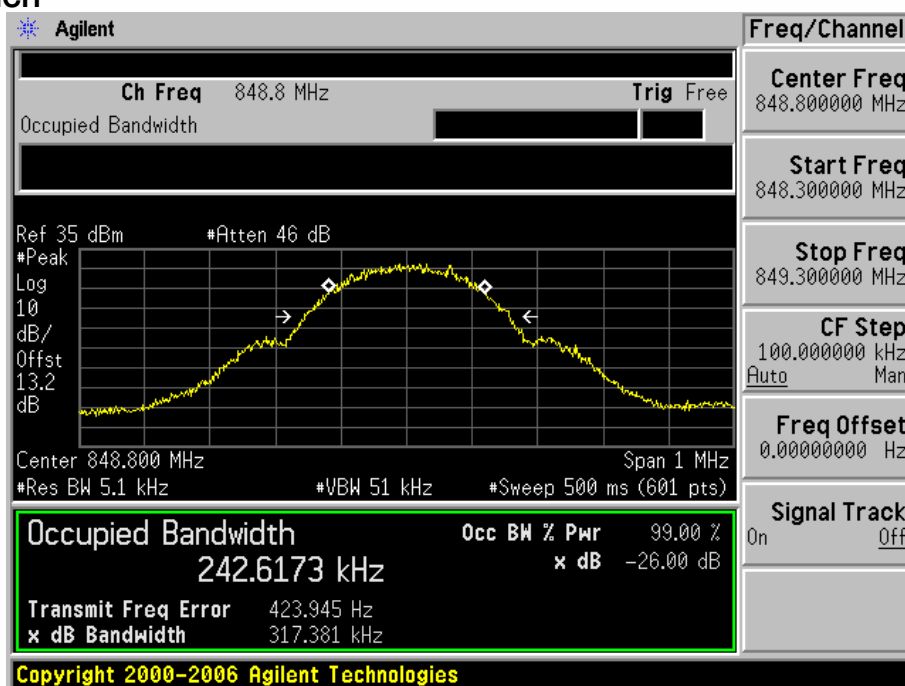
Test Channel=LCH



Test Channel=MCH



Test Channel=HCH

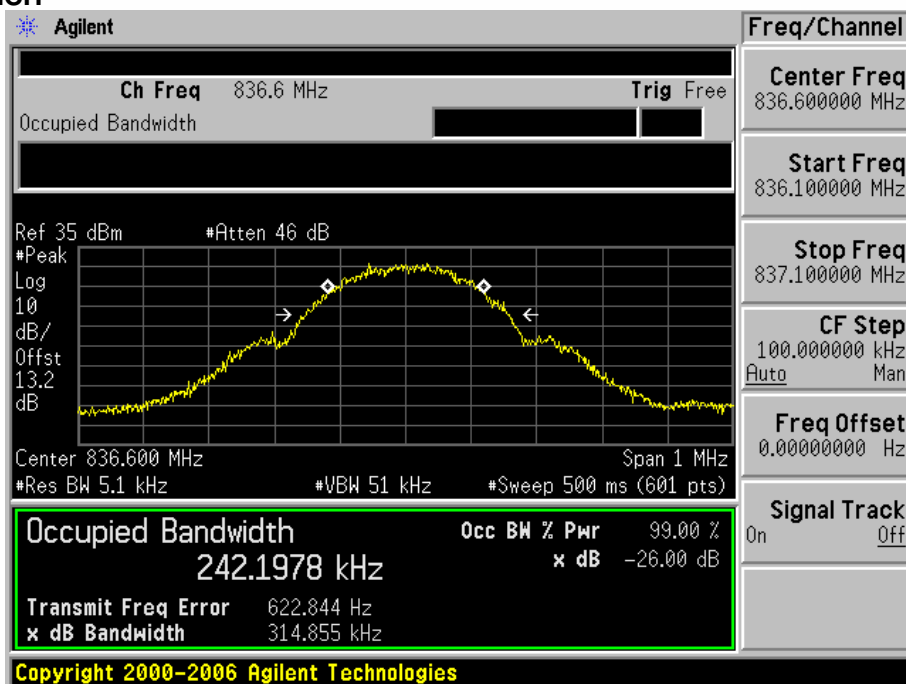


Test Mode=GSM/TM2

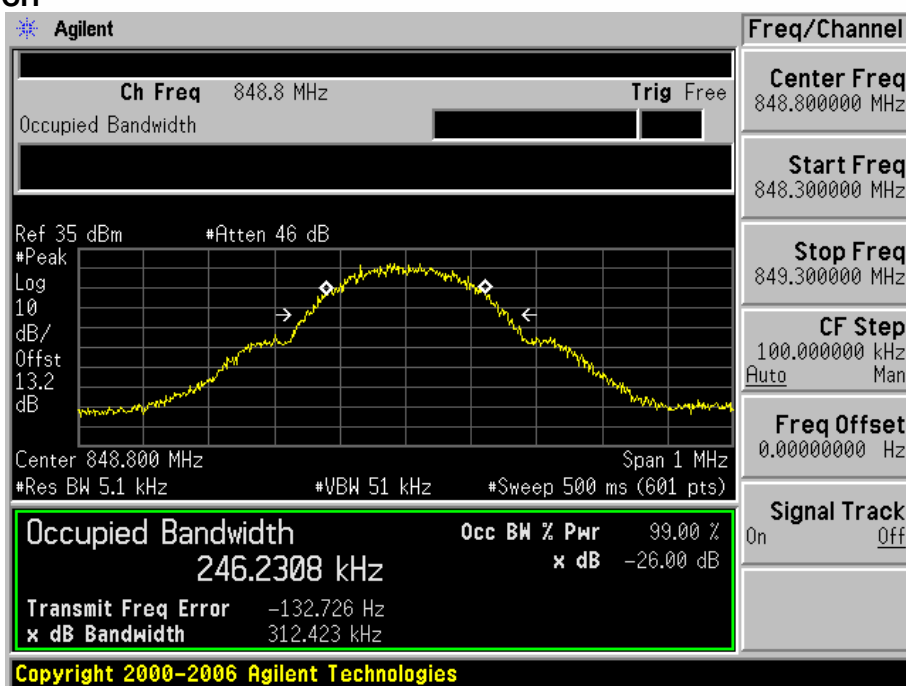
Test Channel=LCH



Test Channel=MCH



Test Channel=HCH



Test Mode=GSM/TM3

Test Channel=LCH



Test Channel=MCH



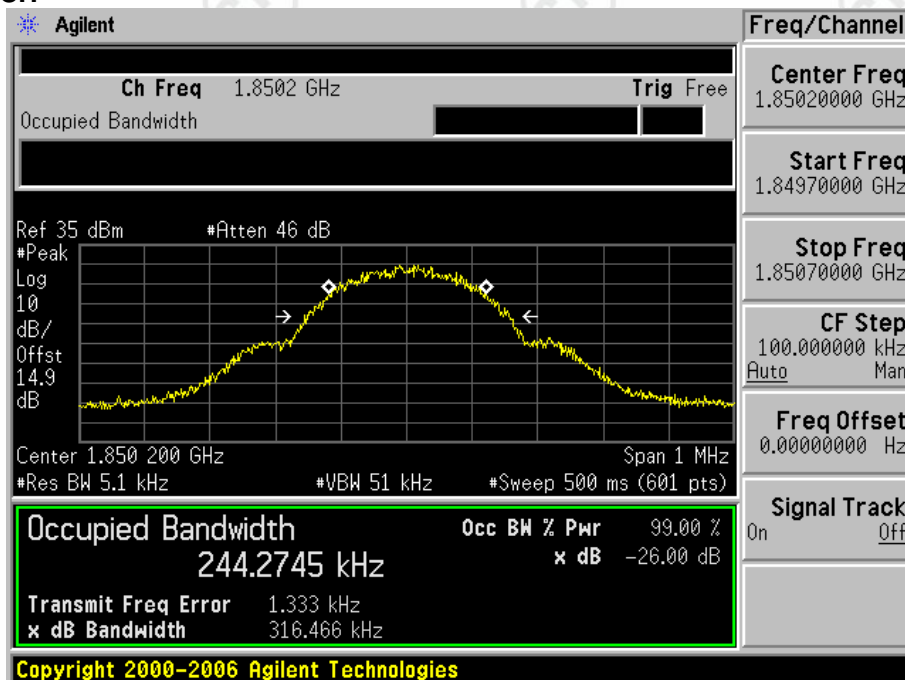
Test Channel=HCH



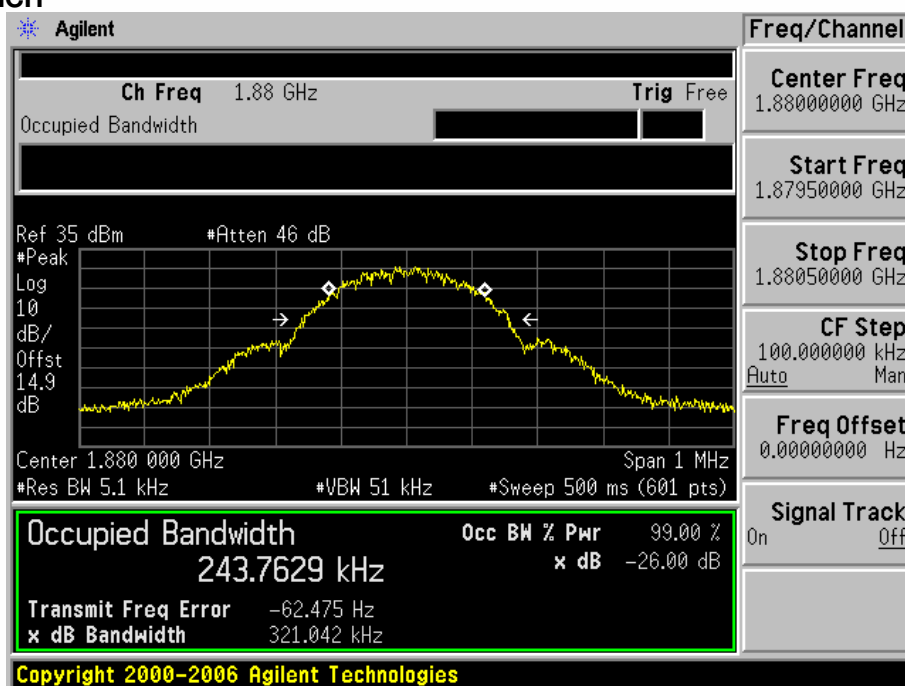
Test Band=GSM1900

Test Mode=GSM/TM1

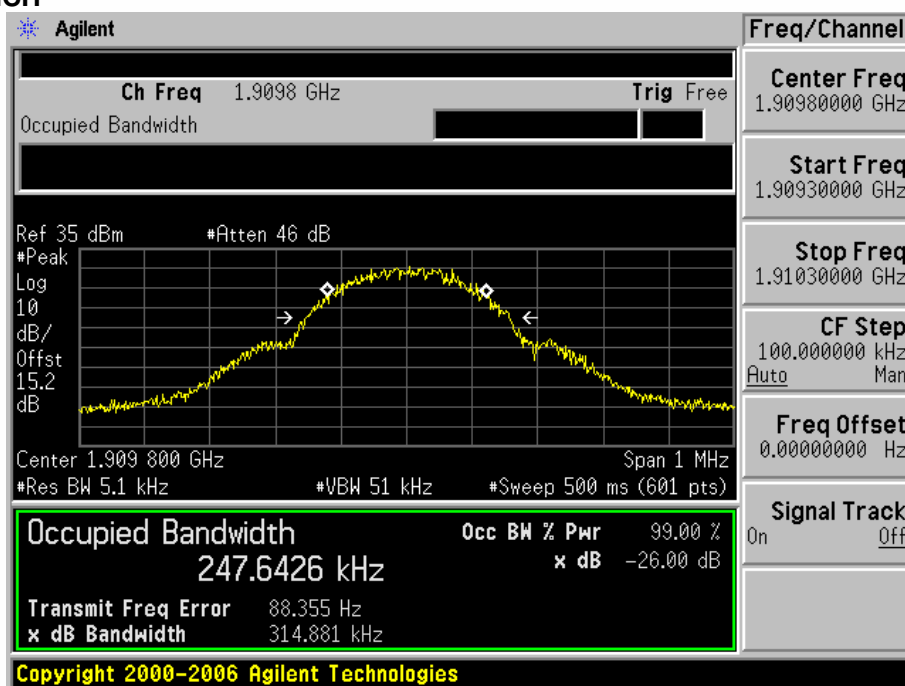
Test Channel=LCH



Test Channel=MCH

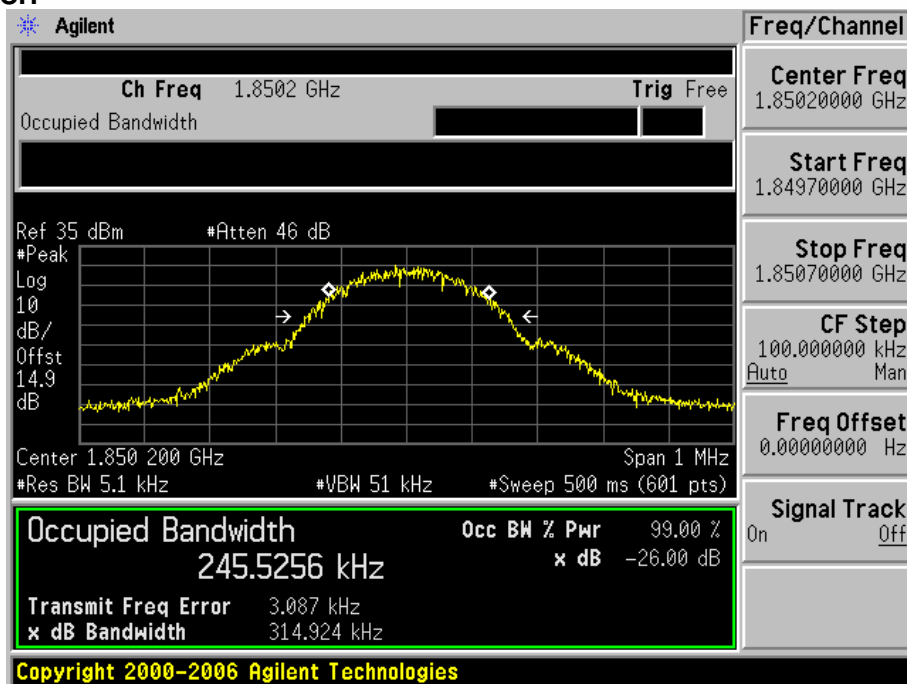


Test Channel=HCH



Test Mode=GSM/TM2

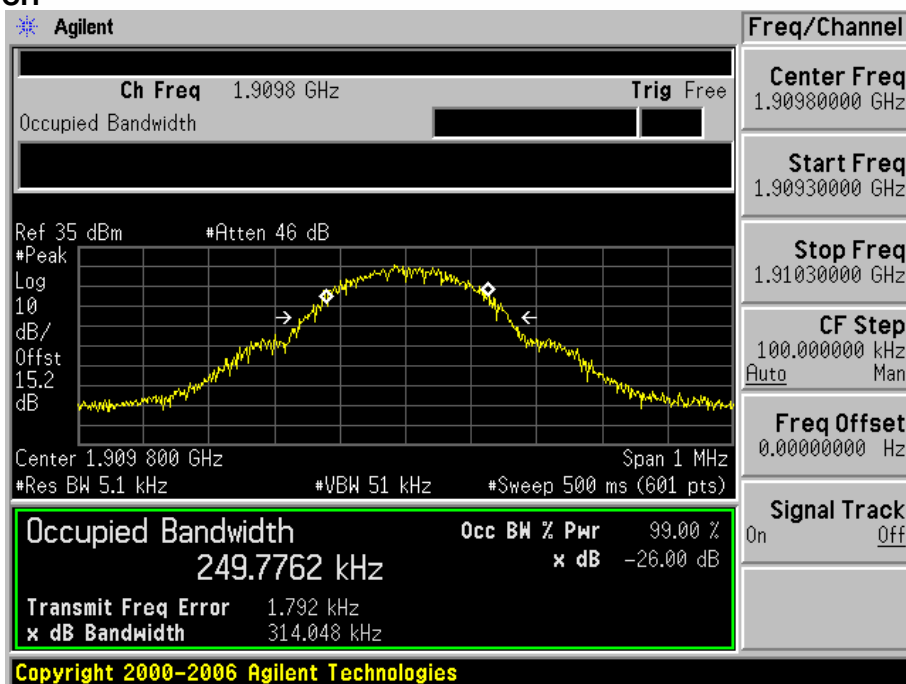
Test Channel=LCH



Test Channel=MCH

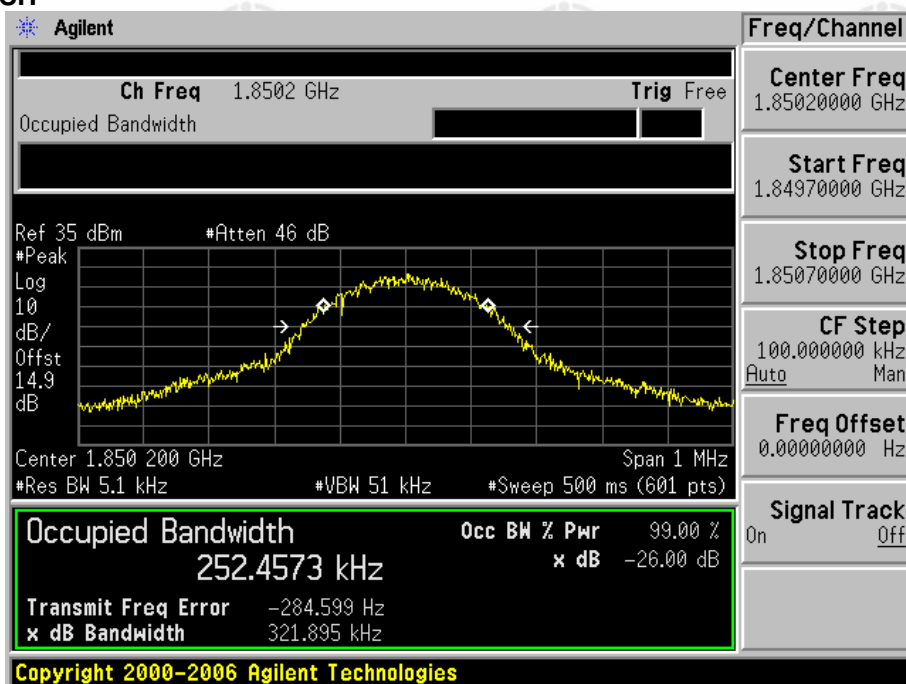


Test Channel=HCH

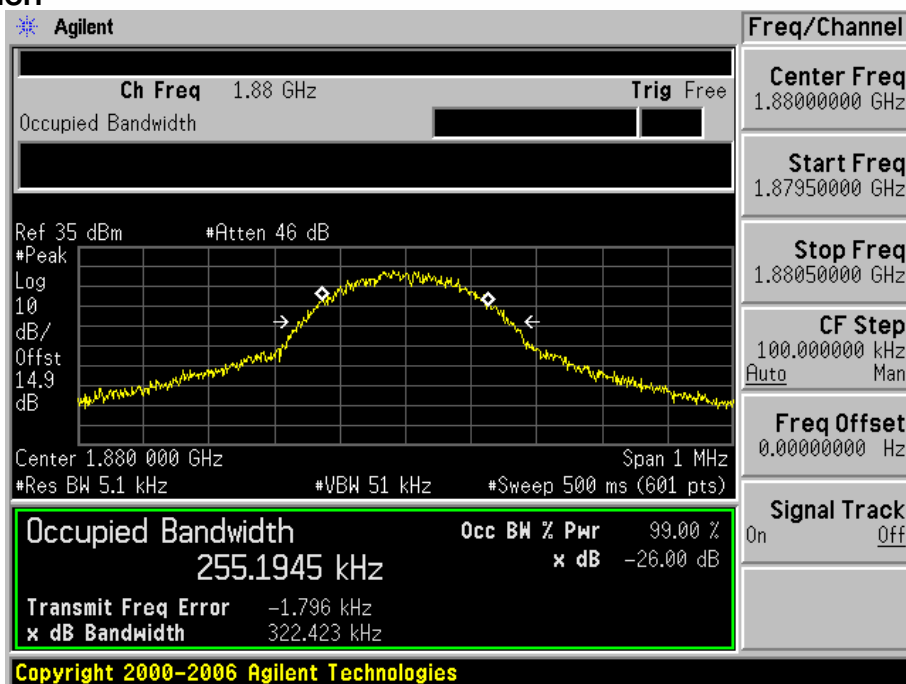


Test Mode=GSM/TM3

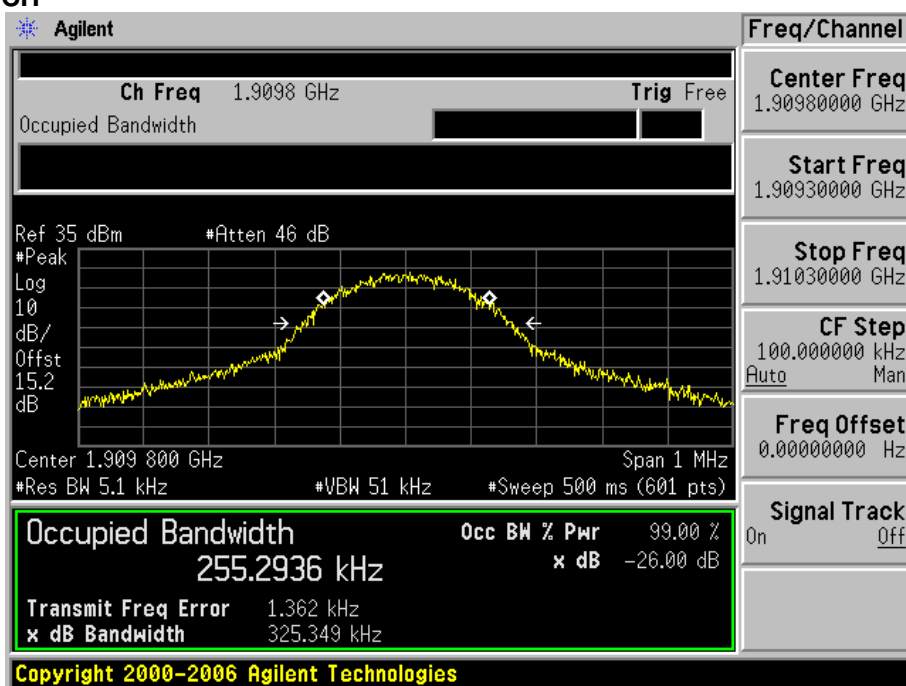
Test Channel=LCH



Test Channel=MCH



Test Channel=HCH

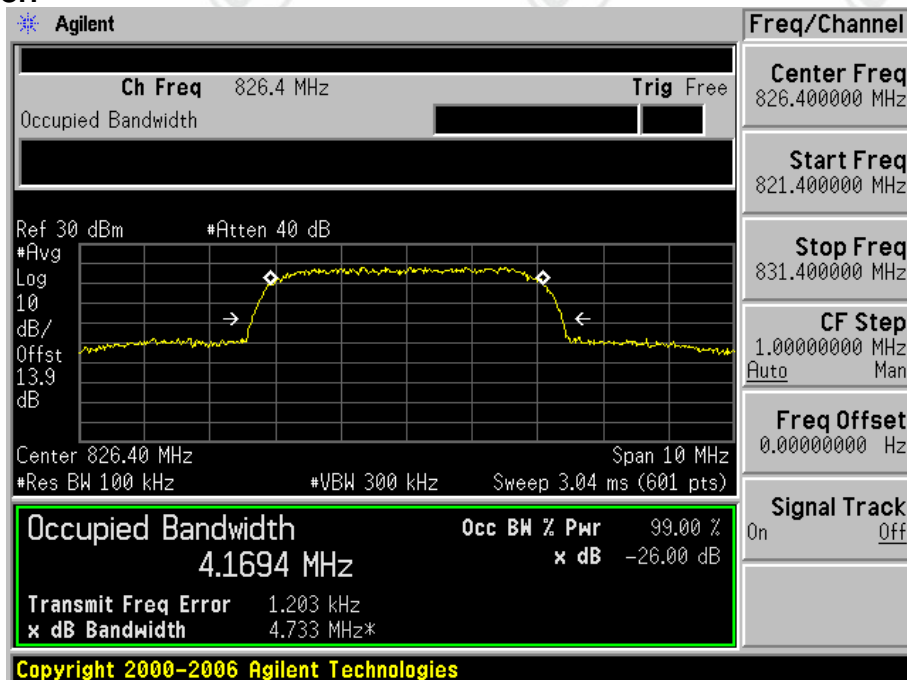


For WCDMA

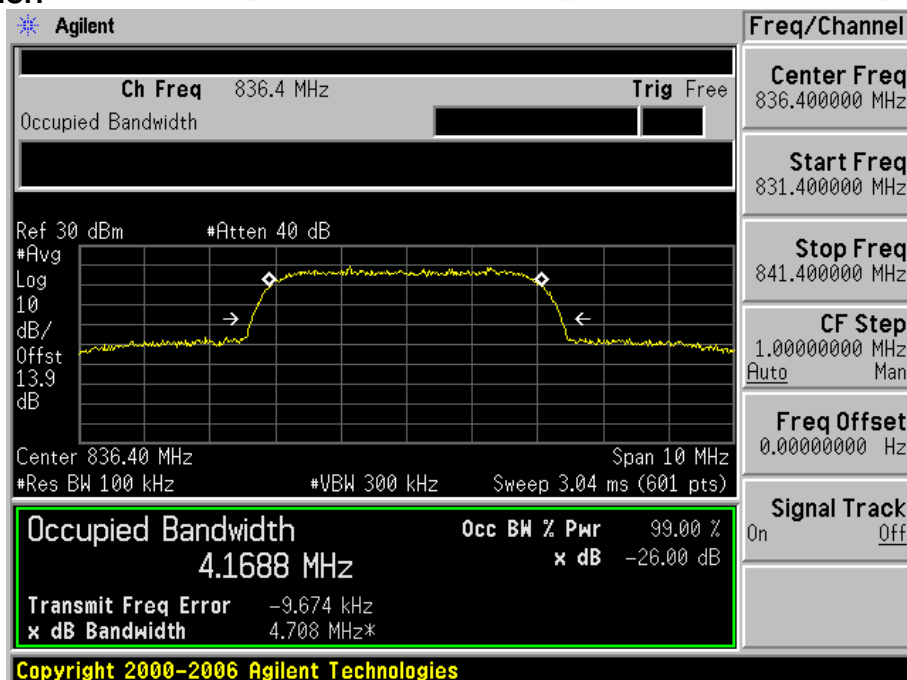
Test Band=WCDMA850

Test Mode=UMTS/TM1

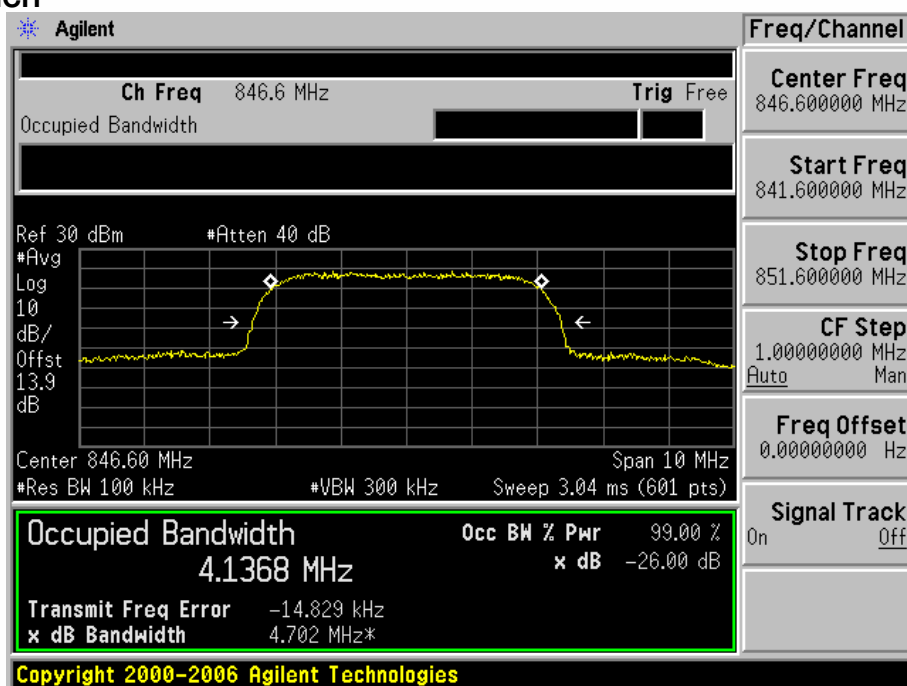
Test Channel=LCH



Test Channel=MCH



Test Channel=HCH

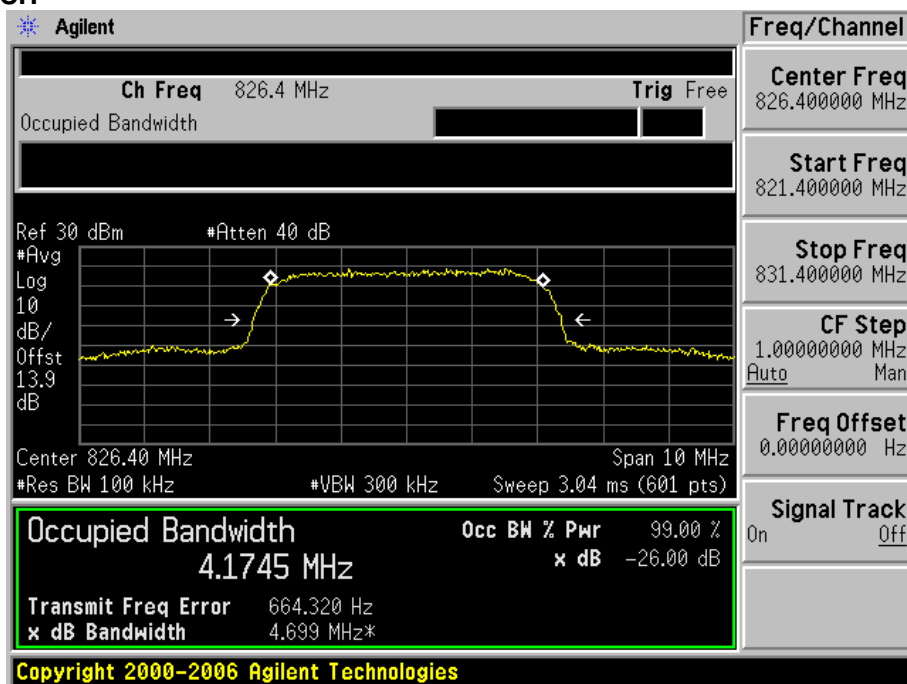


For WCDMA

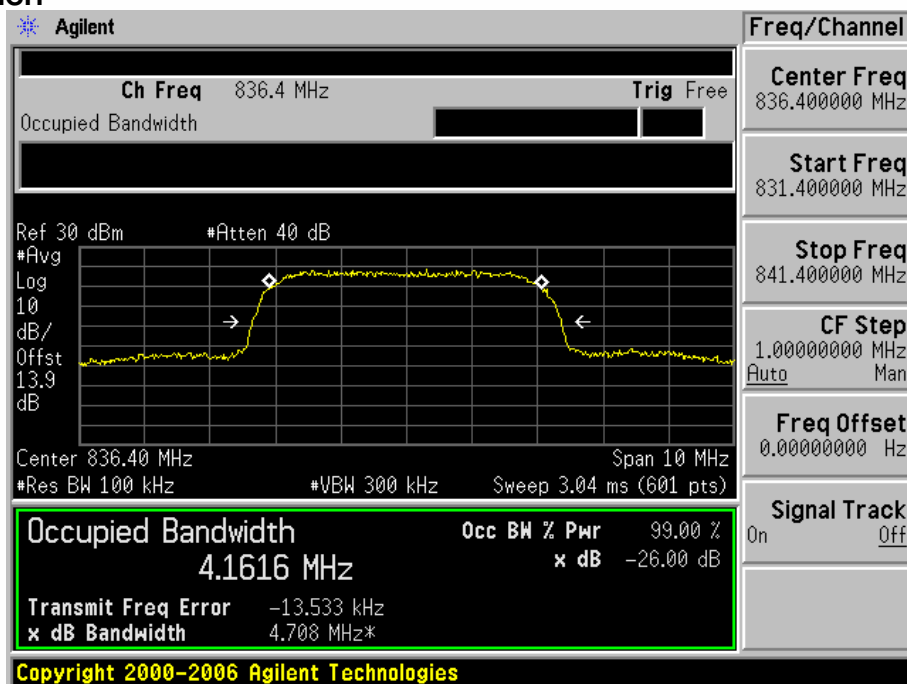
Test Band=WCDMA850

Test Mode=UMTS/TM2

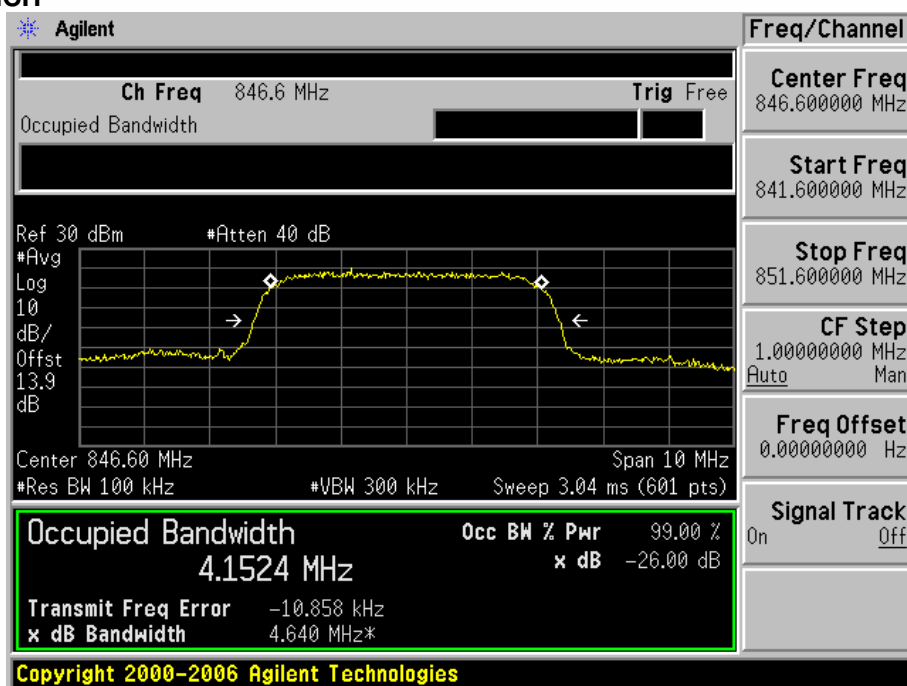
Test Channel=LCH



Test Channel=MCH



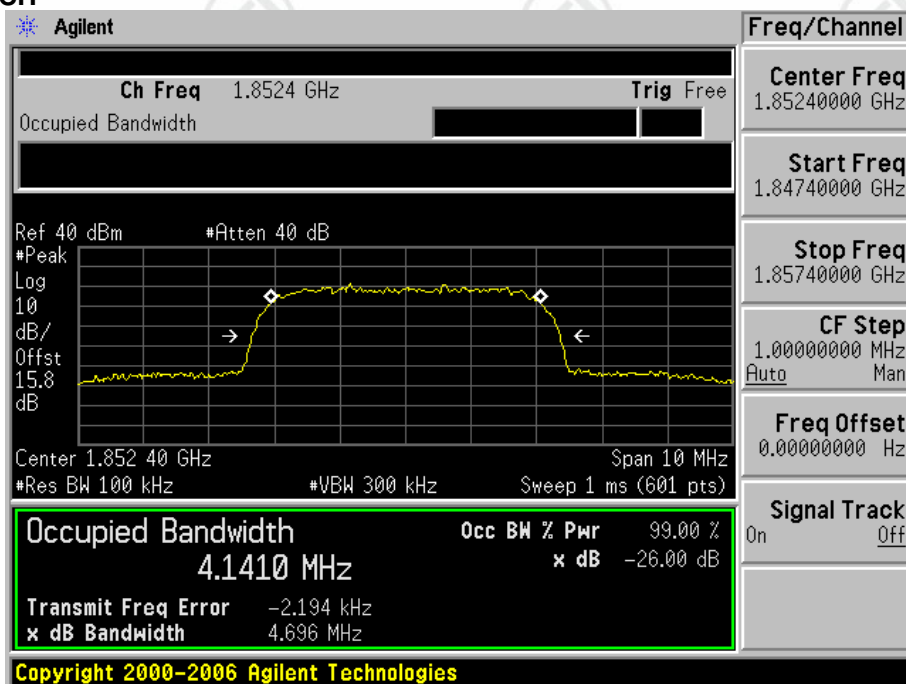
Test Channel=HCH



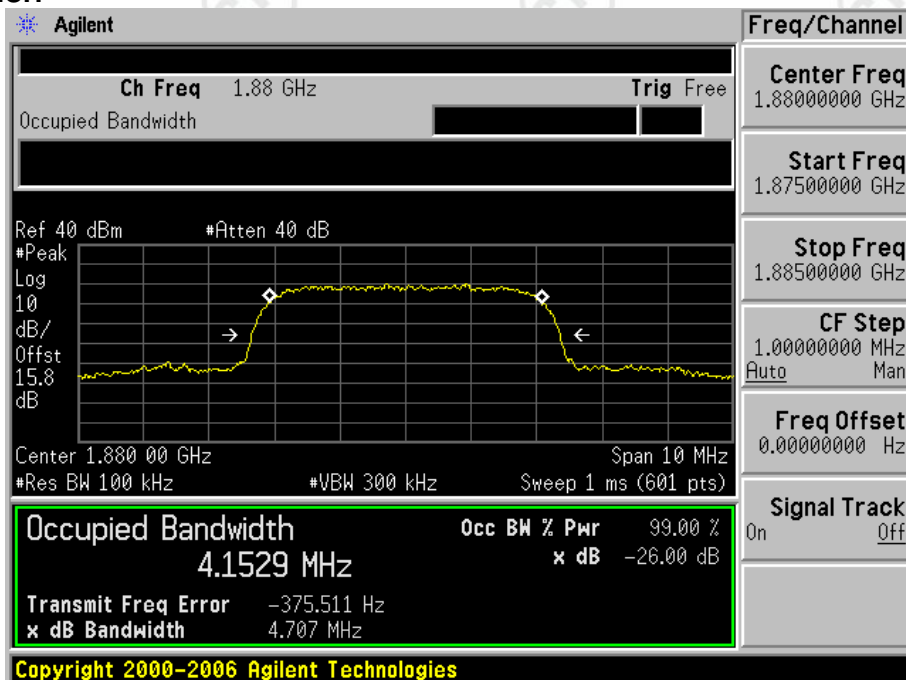
Test Band=WCDMA1900

Test Mode=UMTS/TM1

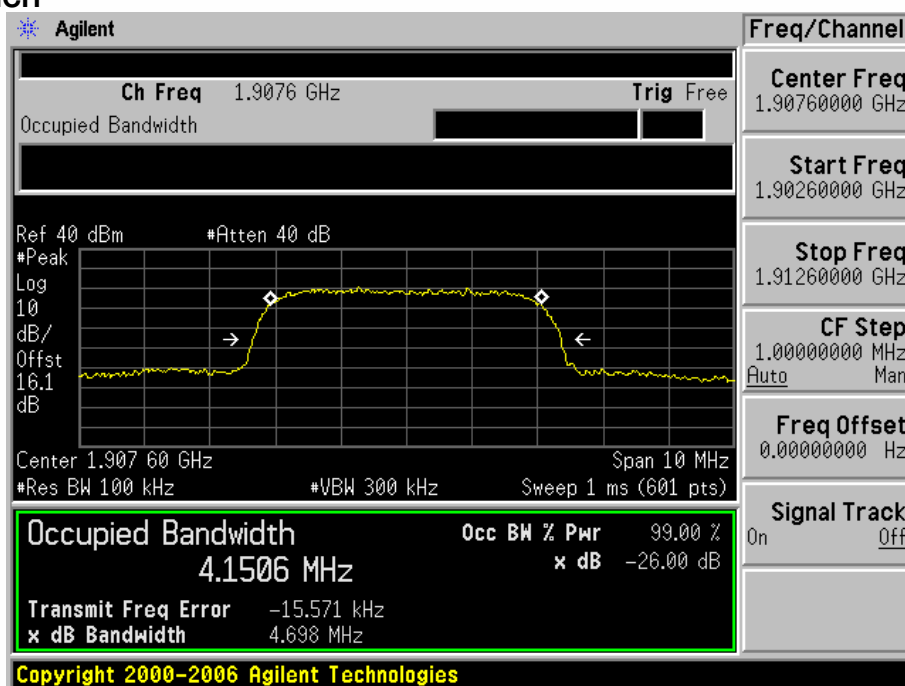
Test Channel=LCH



Test Channel=MCH



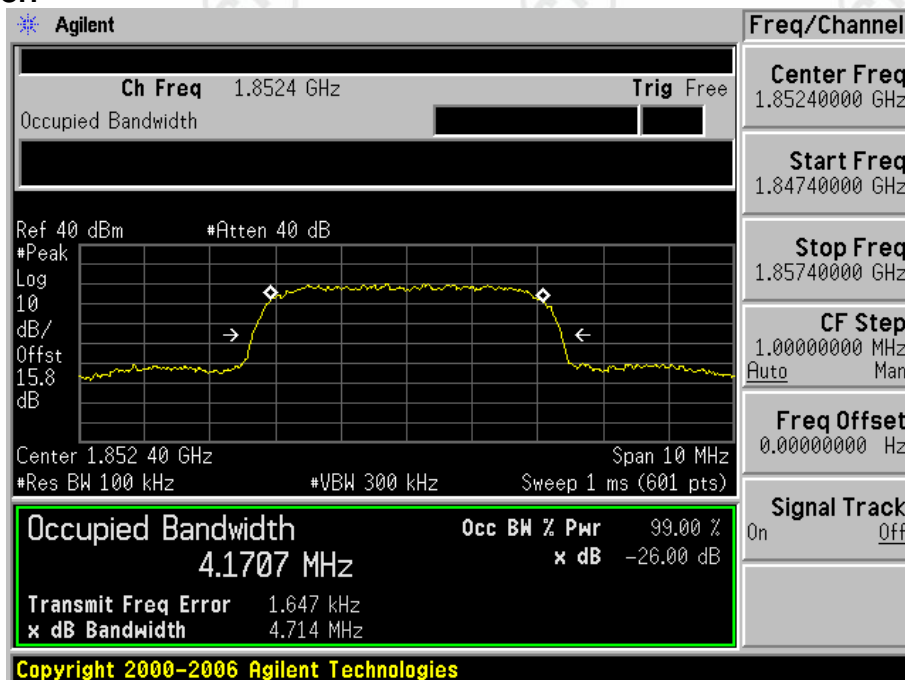
Test Channel=HCH



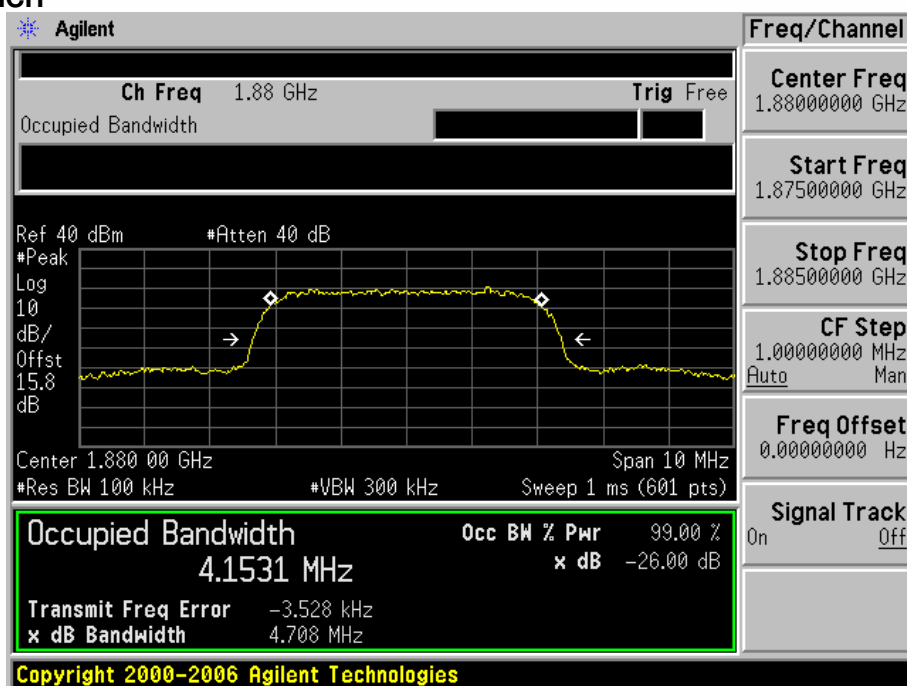
Test Band=WCDMA1900

Test Mode=UMTS/TM2

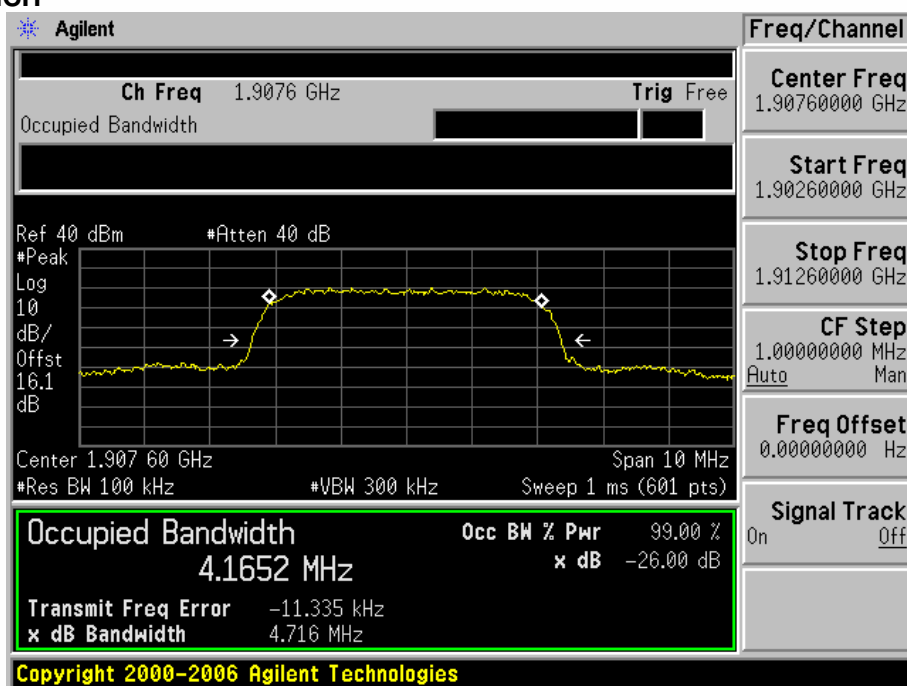
Test Channel=LCH



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+10log(P)
	GSM/GPRS/EDGE/WCDMA 1900	Below 1850 and above 1910	Attenuated at least 43+10log(P)
Instruments Used:	Refer to section 7 for details		
Test Results:	Pass		

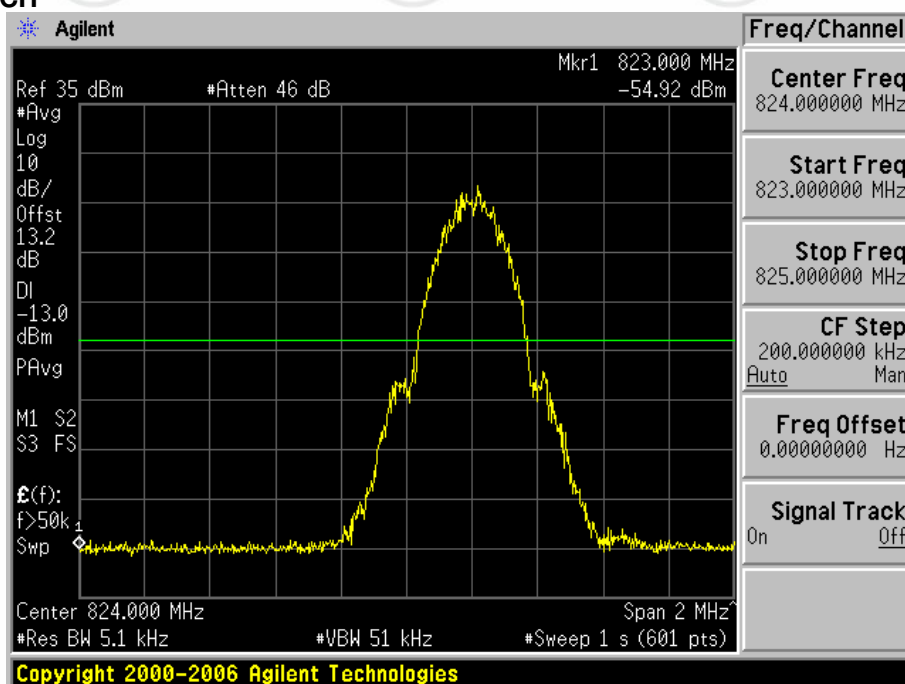
Test Graphs:

For GSM

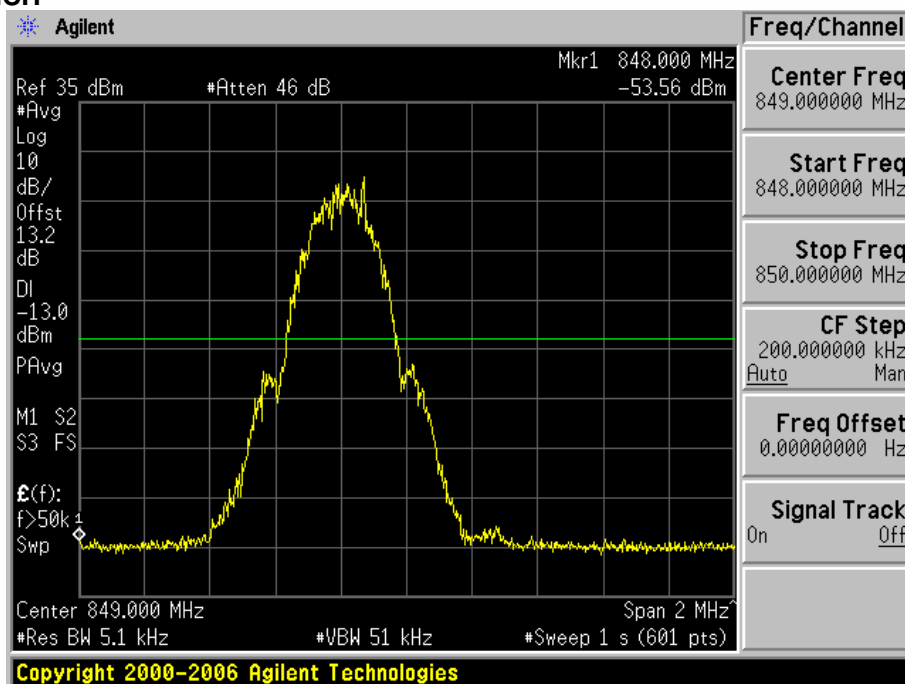
Test Band=GSM850

Test Mode=GSM/TM1

Test Channel=LCH

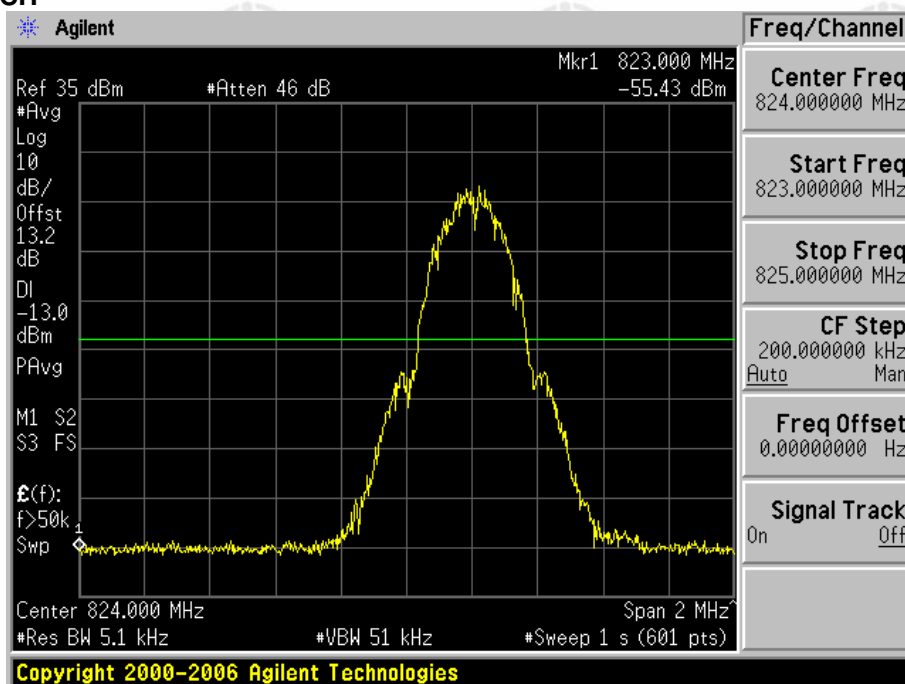


Test Channel=HCH

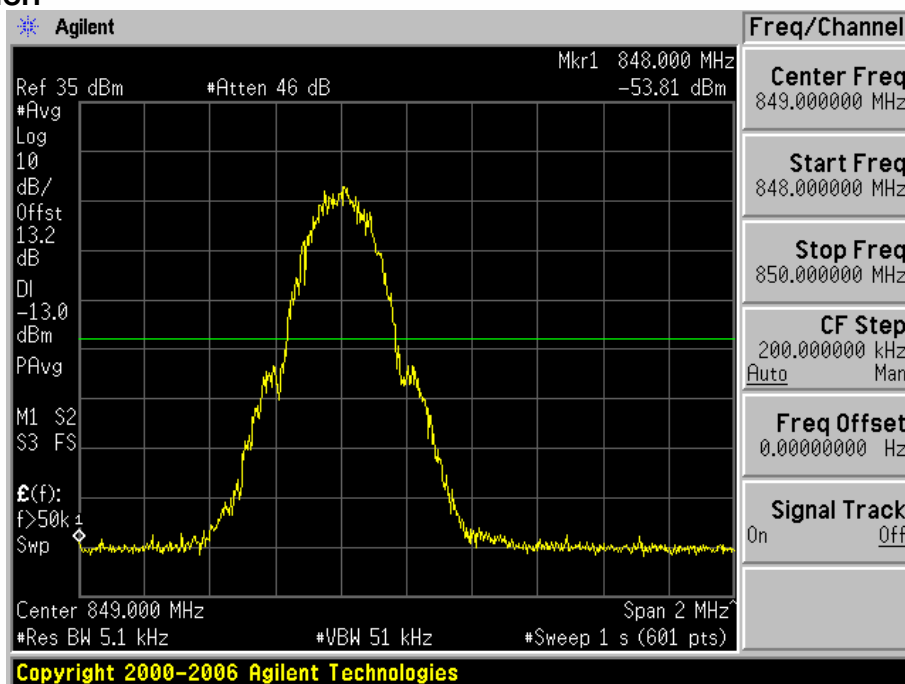


Test Mode=GSM/TM2

Test Channel=LCH

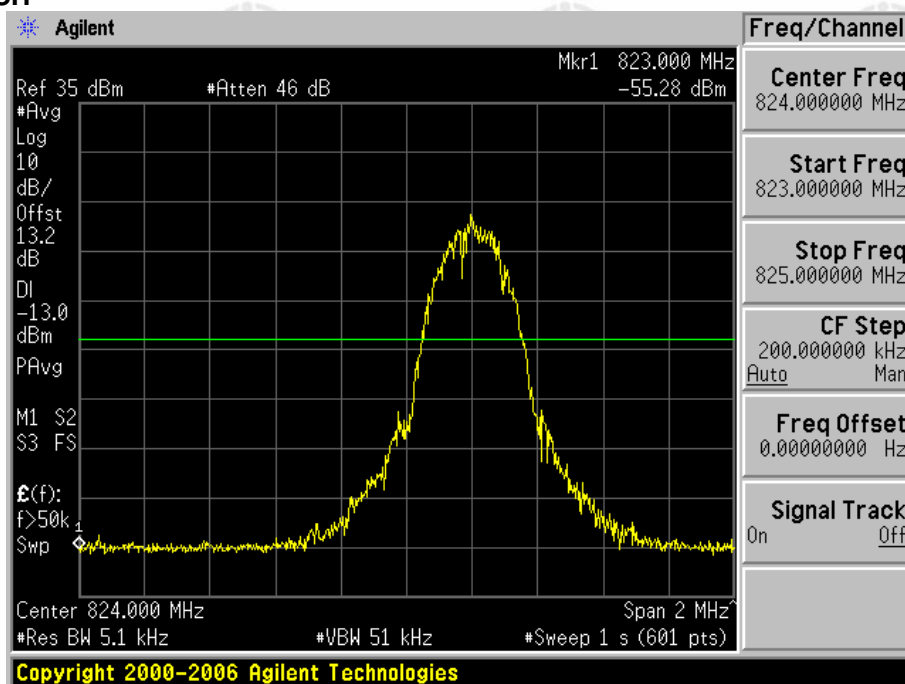


Test Channel=HCH

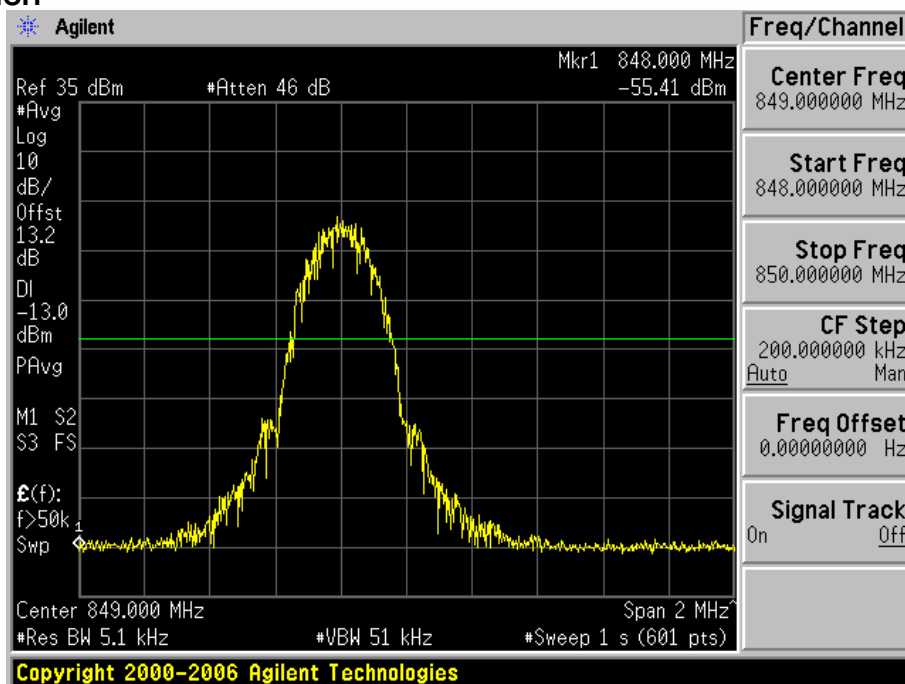


Test Mode=GSM/TM3

TestChannel=LCH



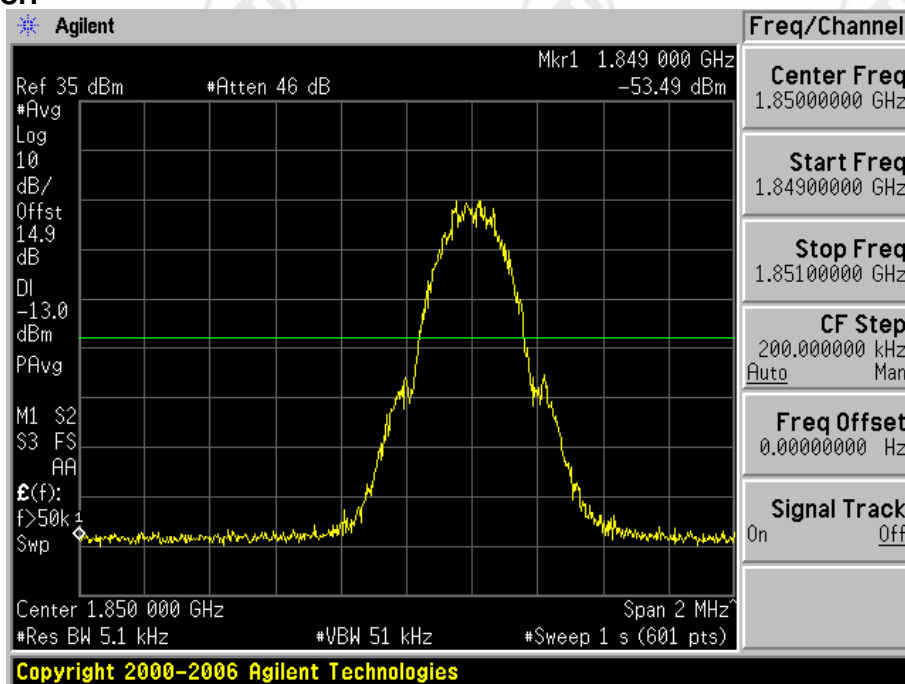
Test Channel=HCH



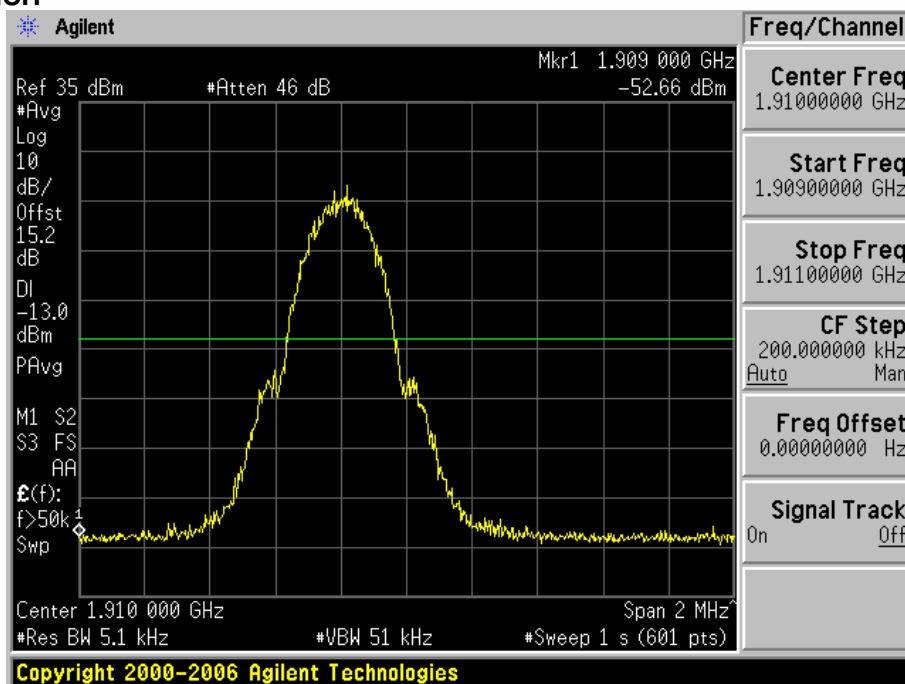
Test Band=GSM1900

Test Mode=GSM/TM1

Test Channel=LCH

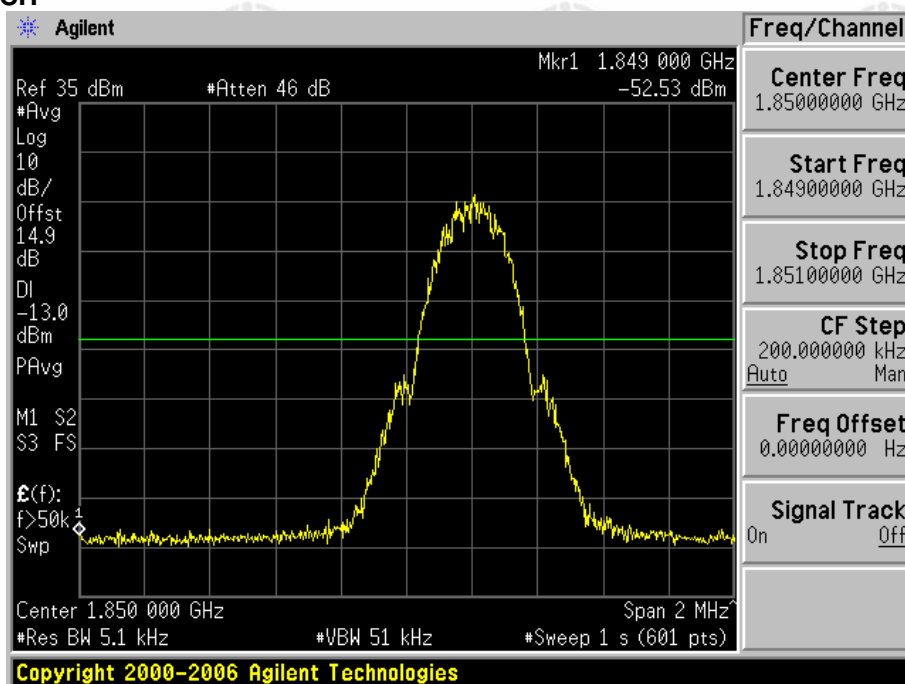


Test Channel=HCH

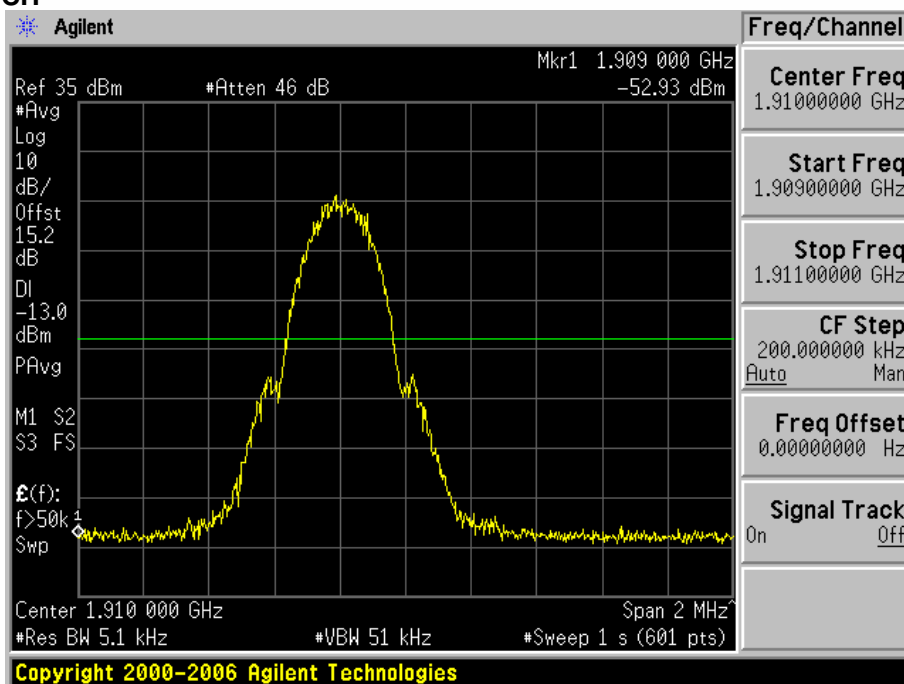


Test Mode=GSM/TM2

Test Channel=LCH

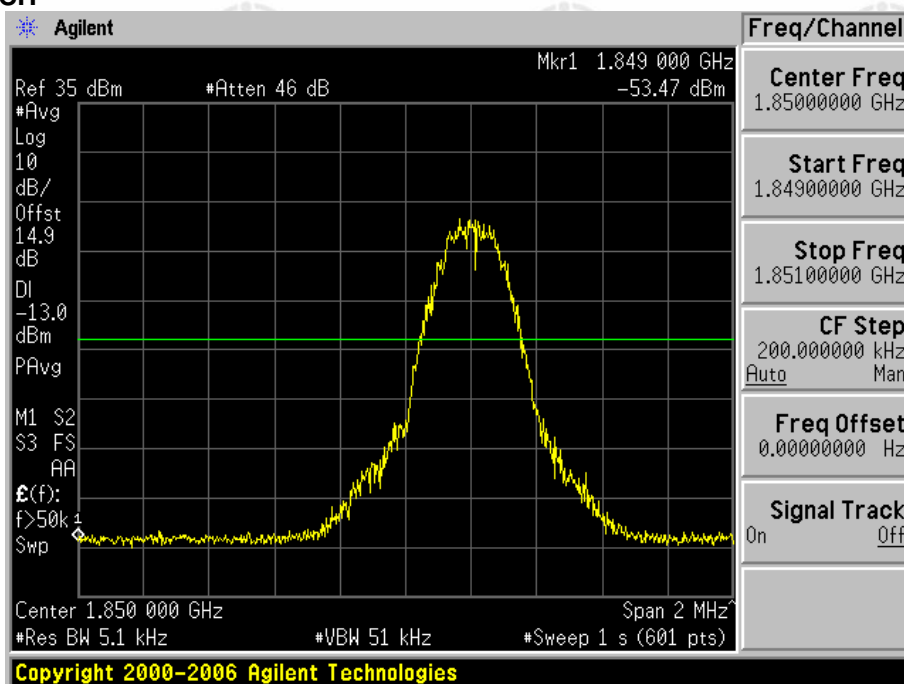


Test Channel=HCH

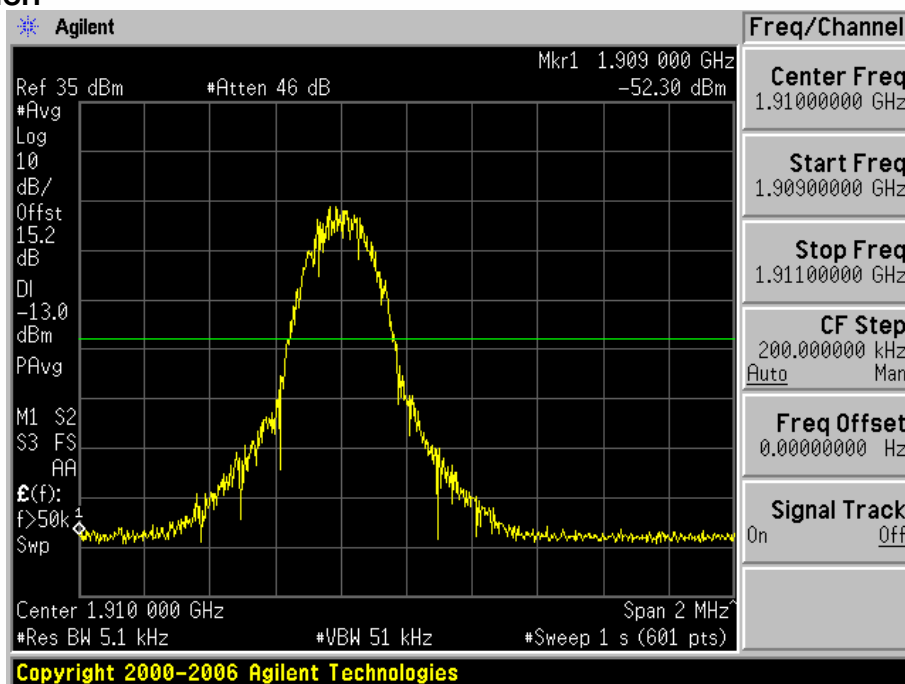


Test Mode=GSM/TM3

Test Channel=LCH



Test Channel=HCH

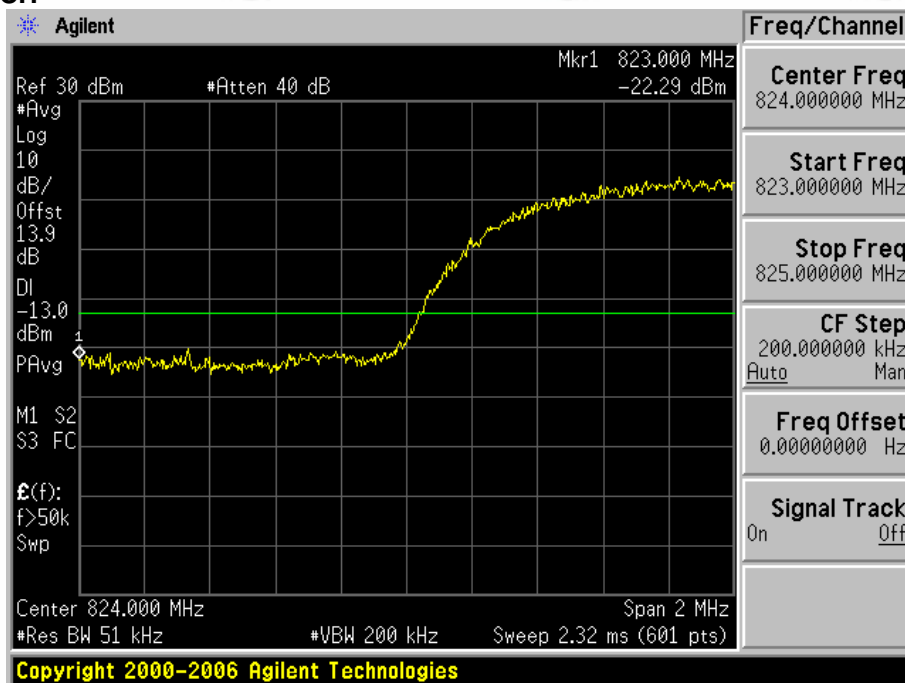


For WCDMA

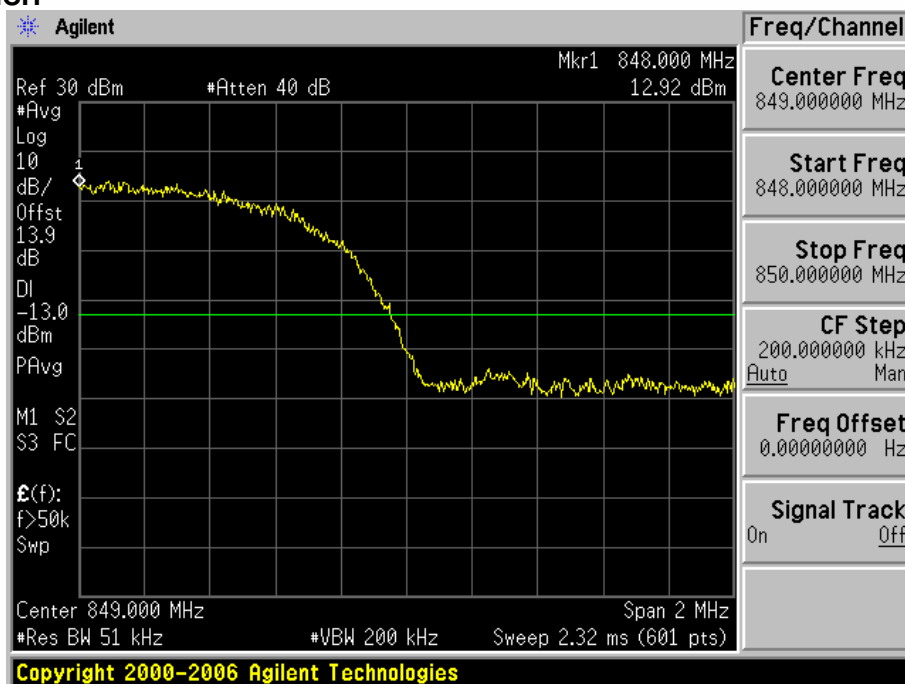
Test Band=WCDMA850

Test Mode=UMTS/TM1

Test Channel=LCH



Test Channel=HCH

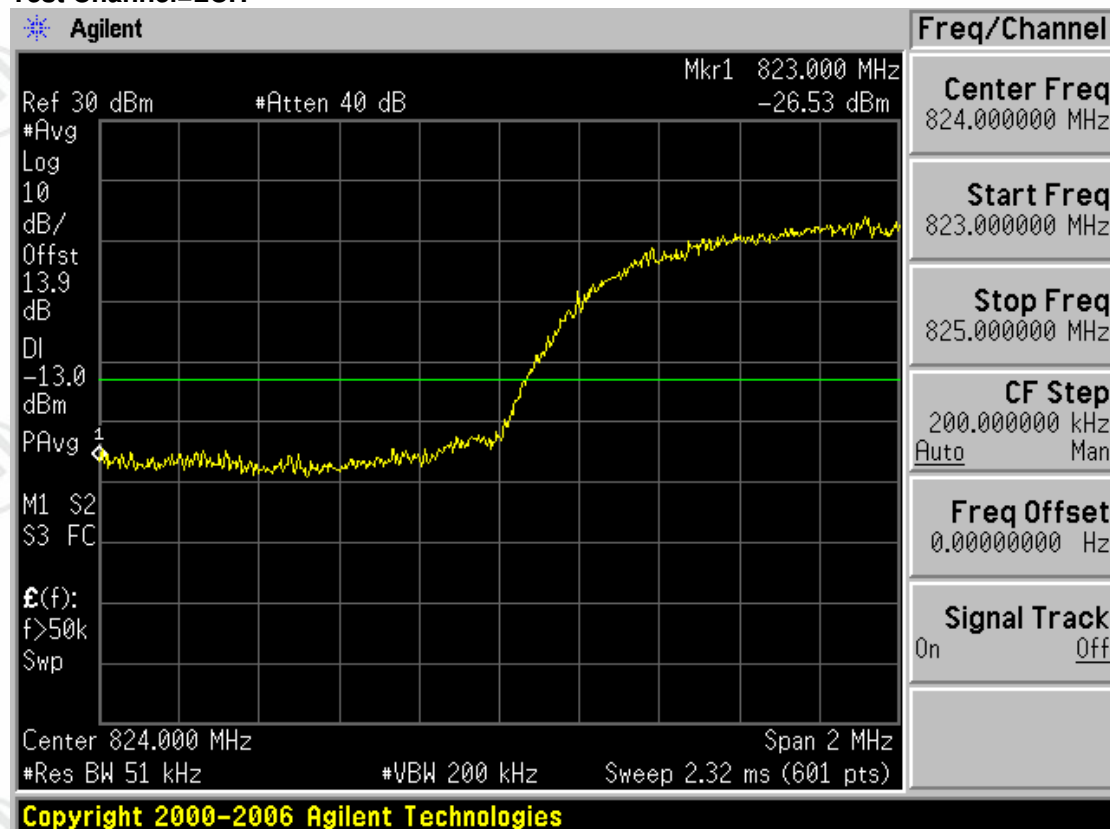


For WCDMA

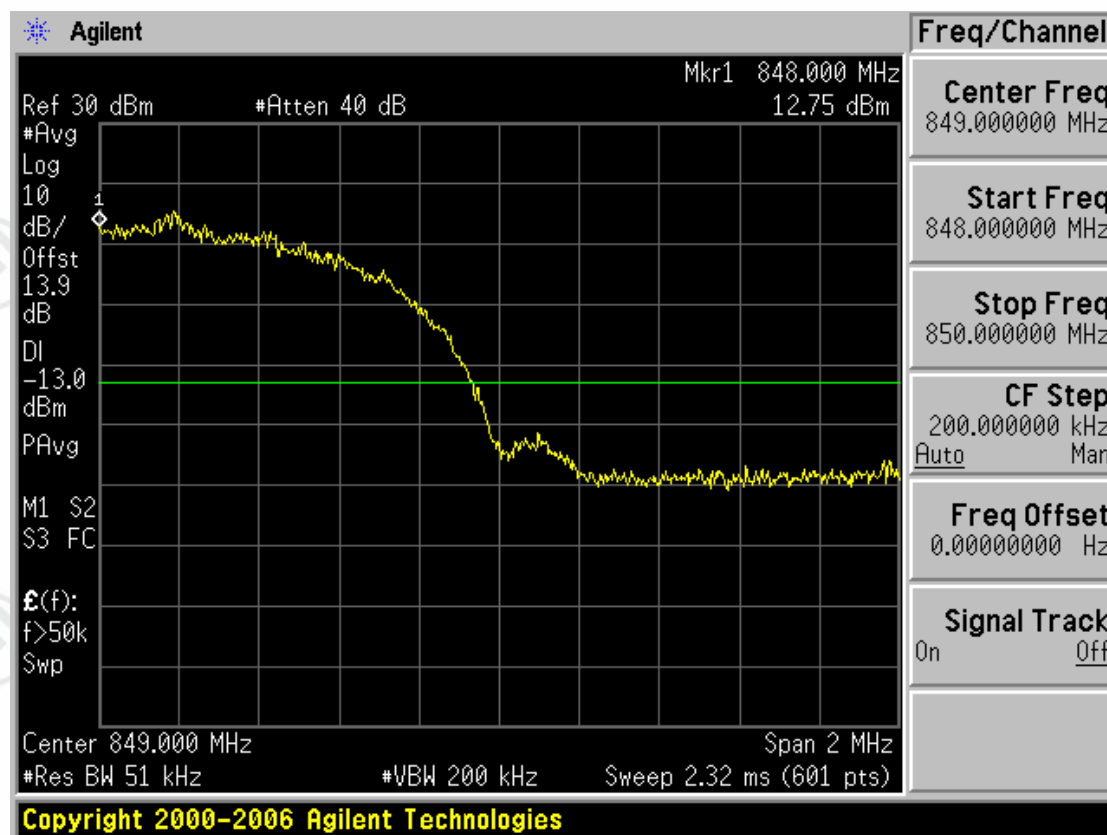
Test Band=WCDMA850

Test Mode=UMTS/TM2

Test Channel=LCH



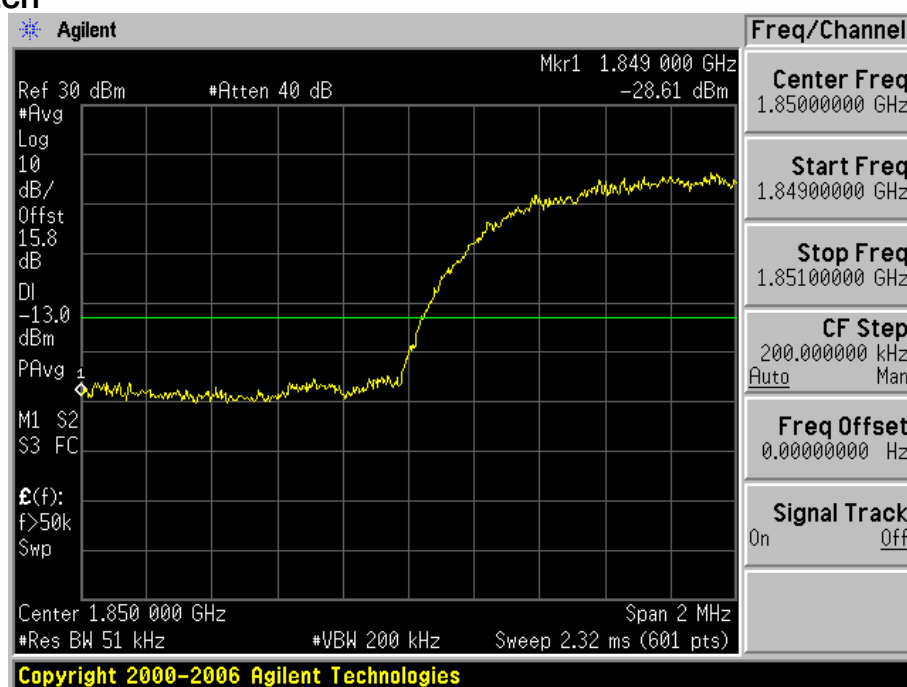
Test Channel=HCH



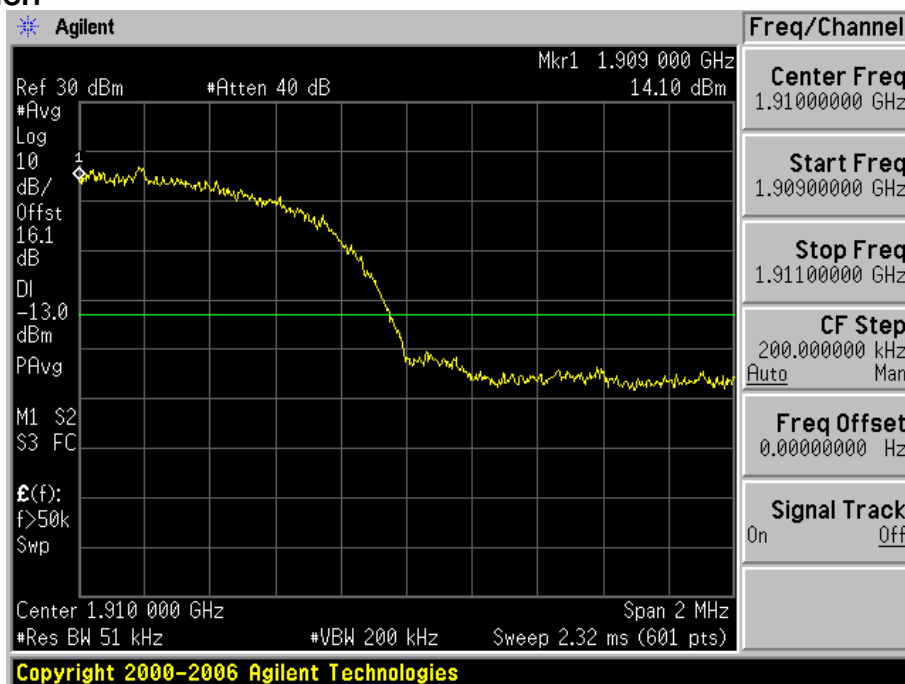
Test Band=WCDMA1900

Test Mode=UMTSTM1

Test Channel=LCH



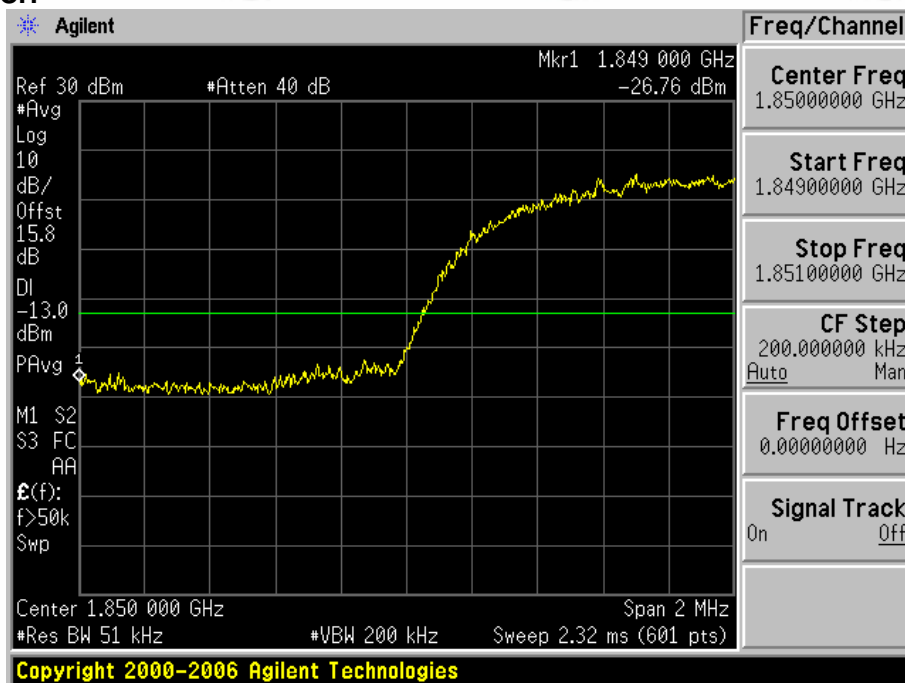
Test Channel=HCH



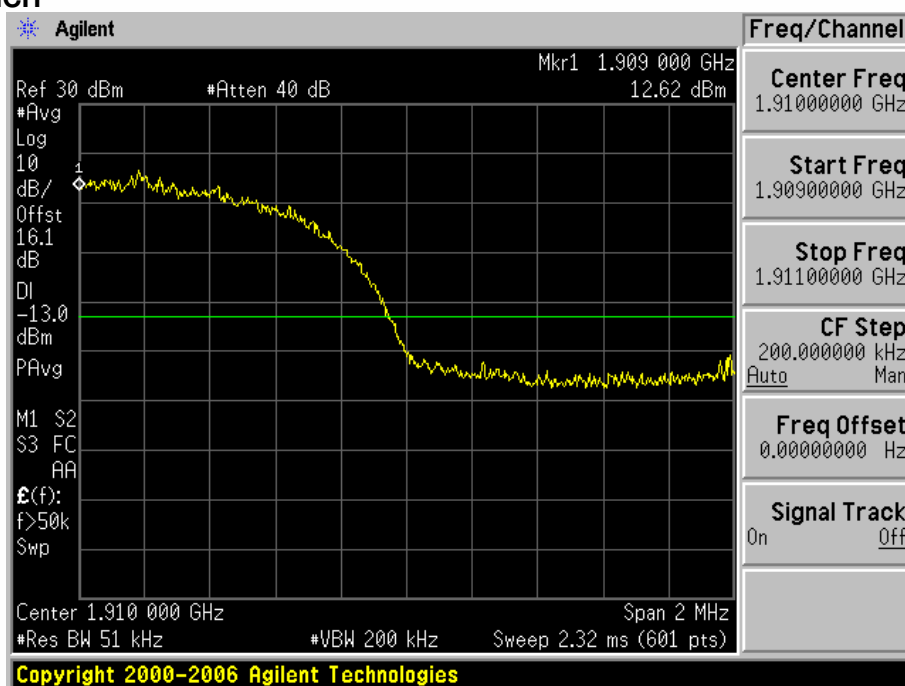
Test Band=WCDMA1900

Test Mode=UMTSTM2

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-D-2010 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

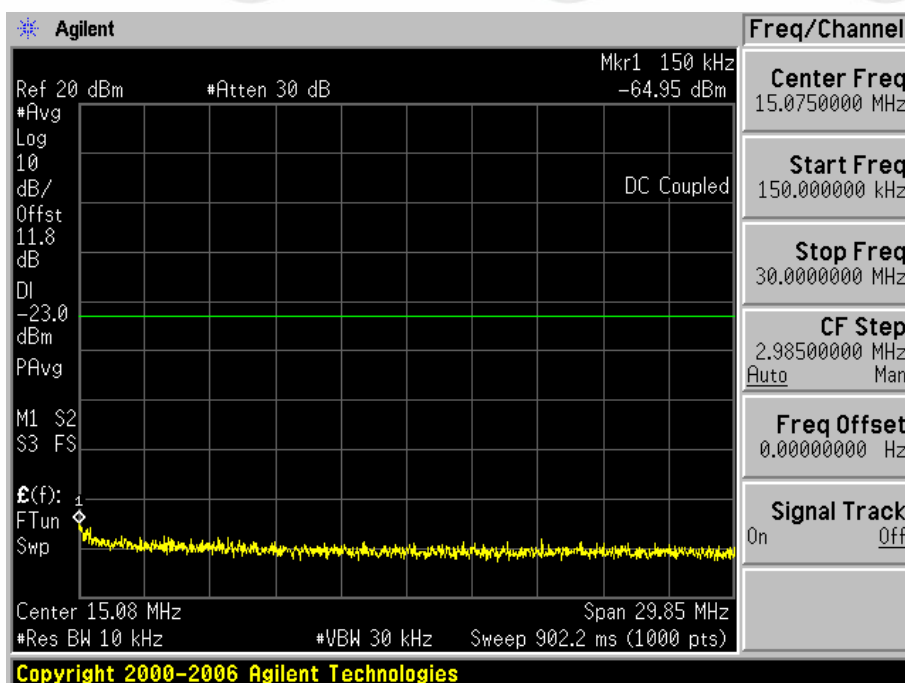
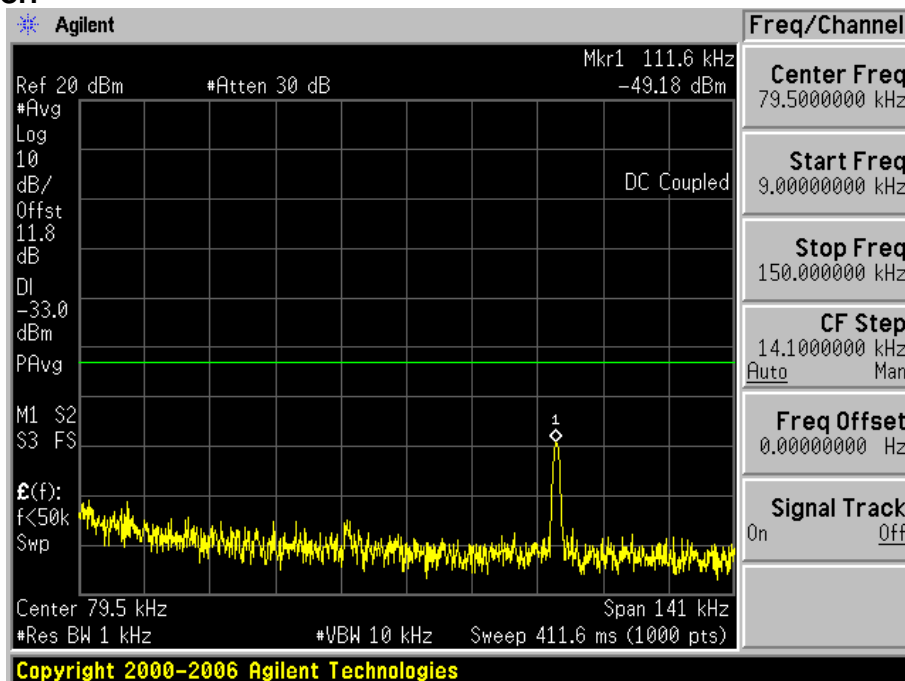
Test Graphs:

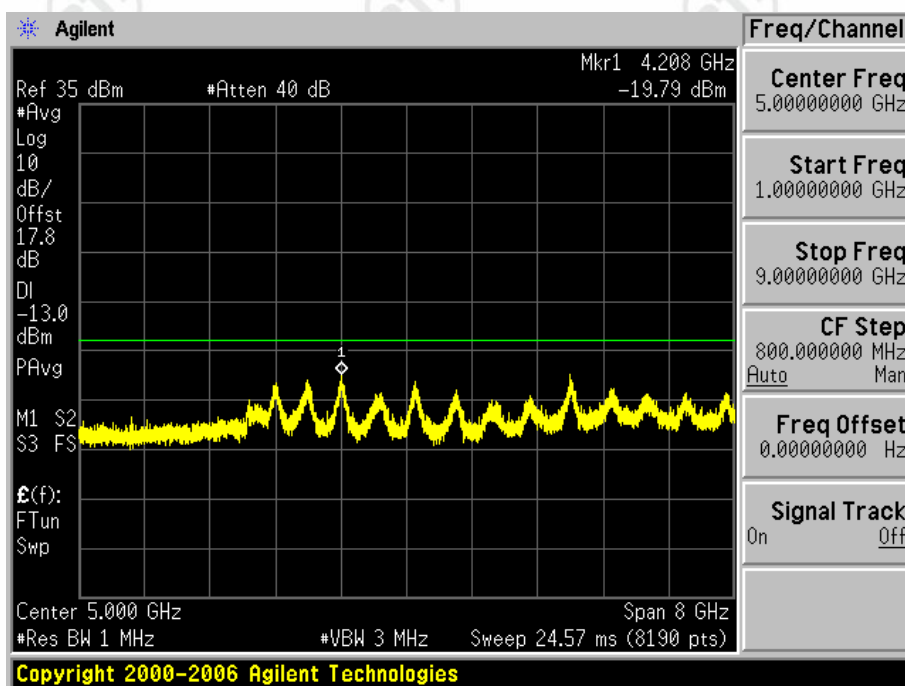
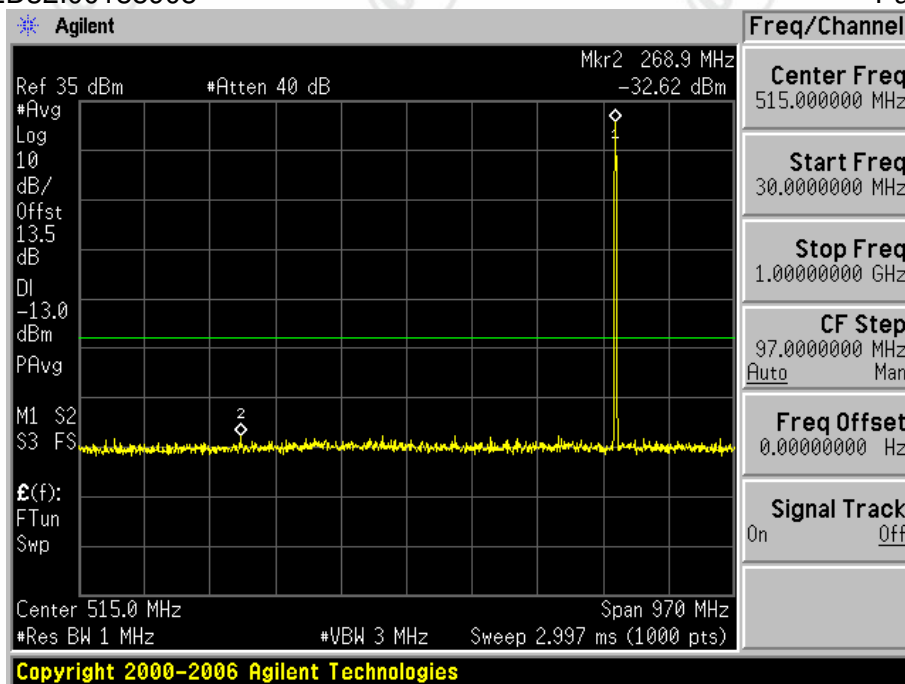
For GSM

Test Band=GSM850

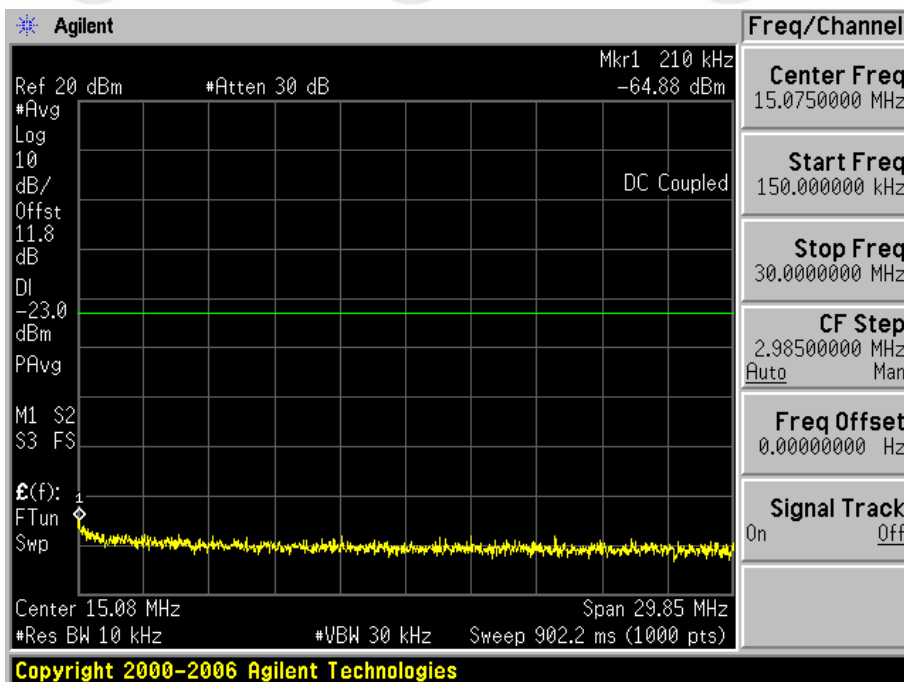
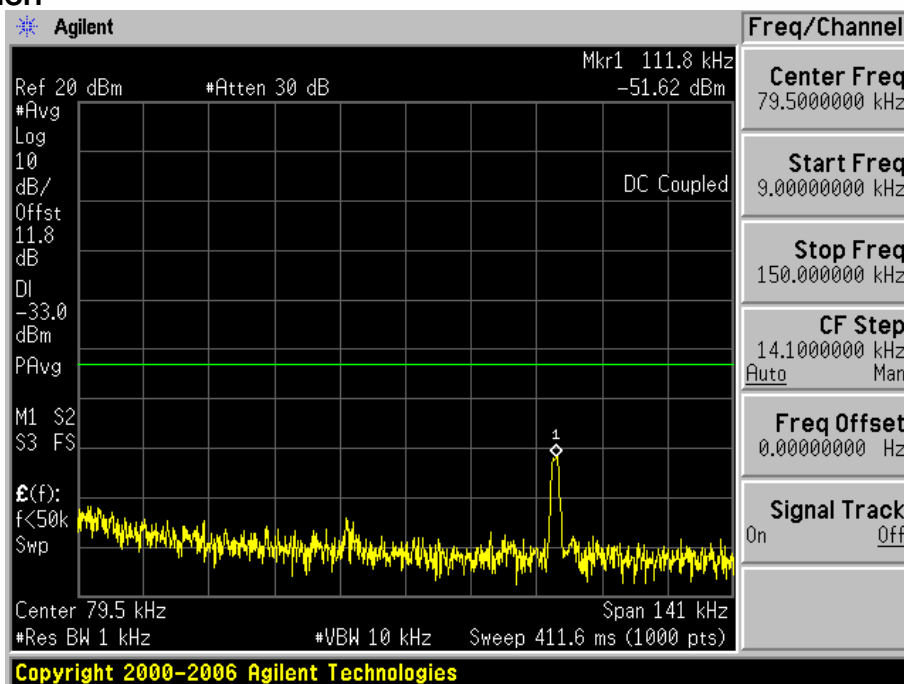
Test Mode=GSM/TM1

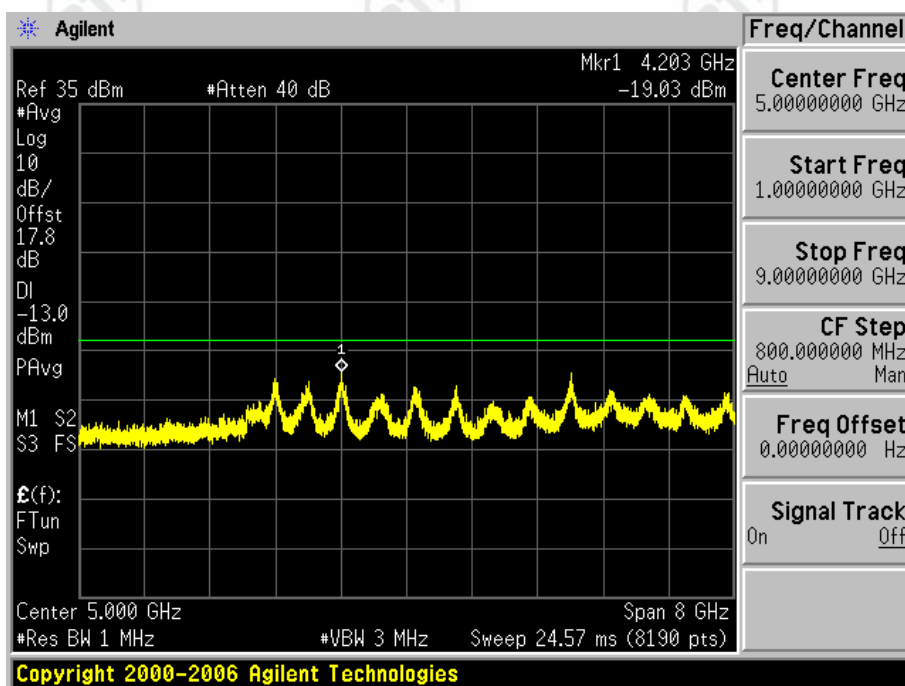
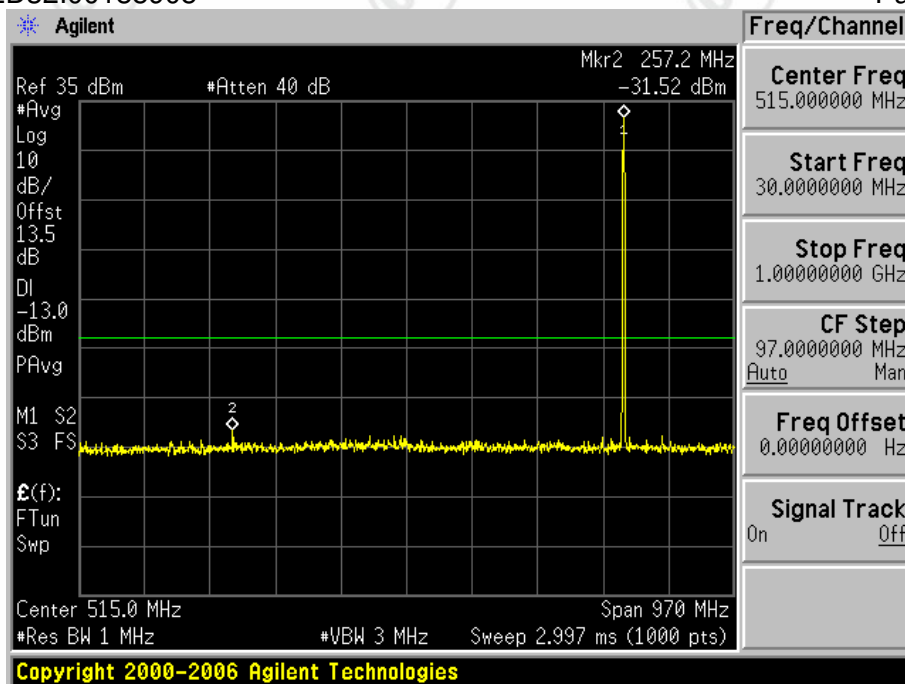
Test Channel=LCH



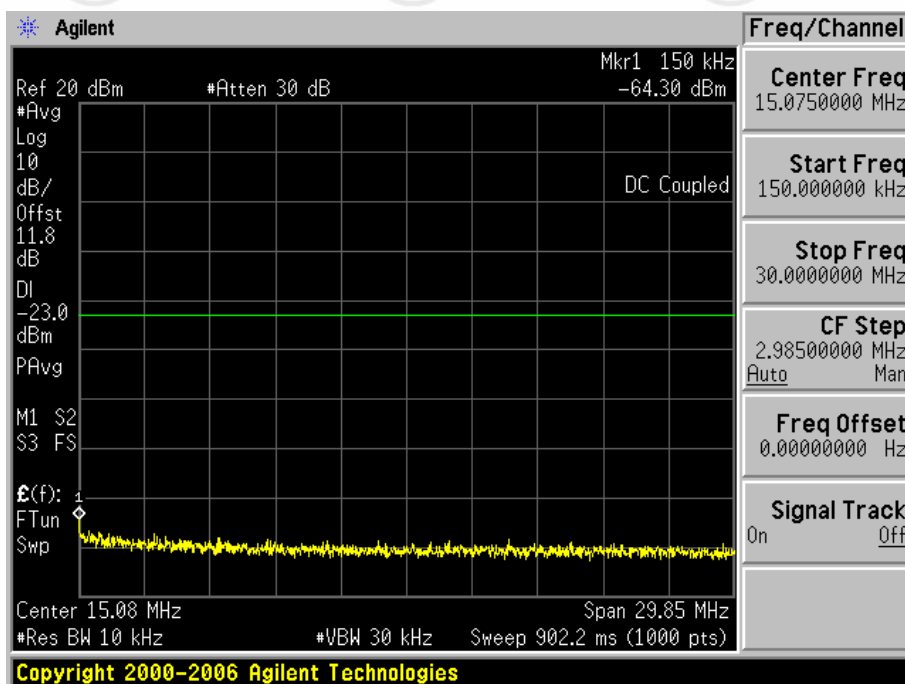
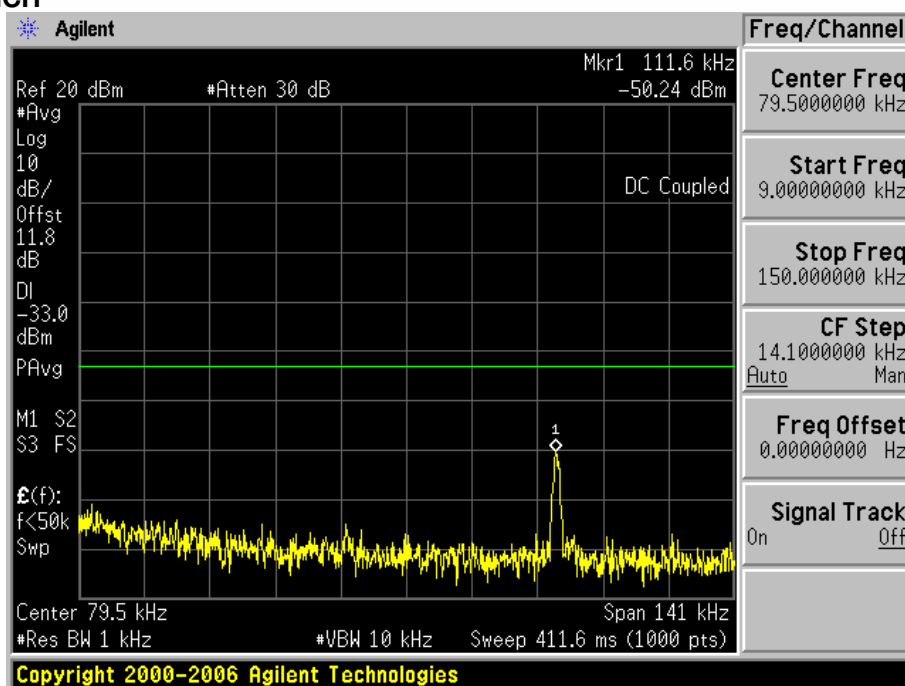


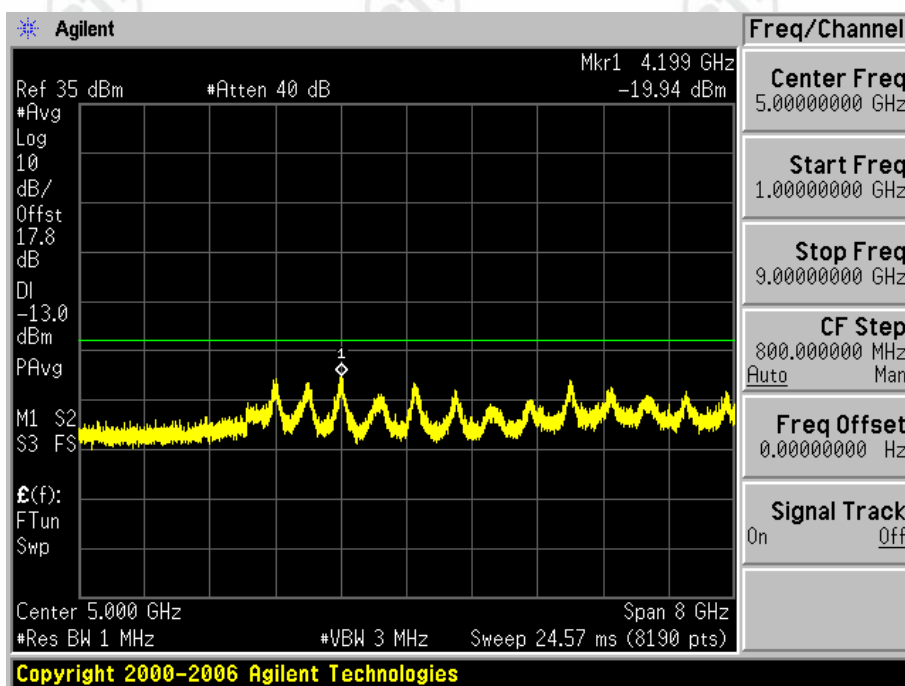
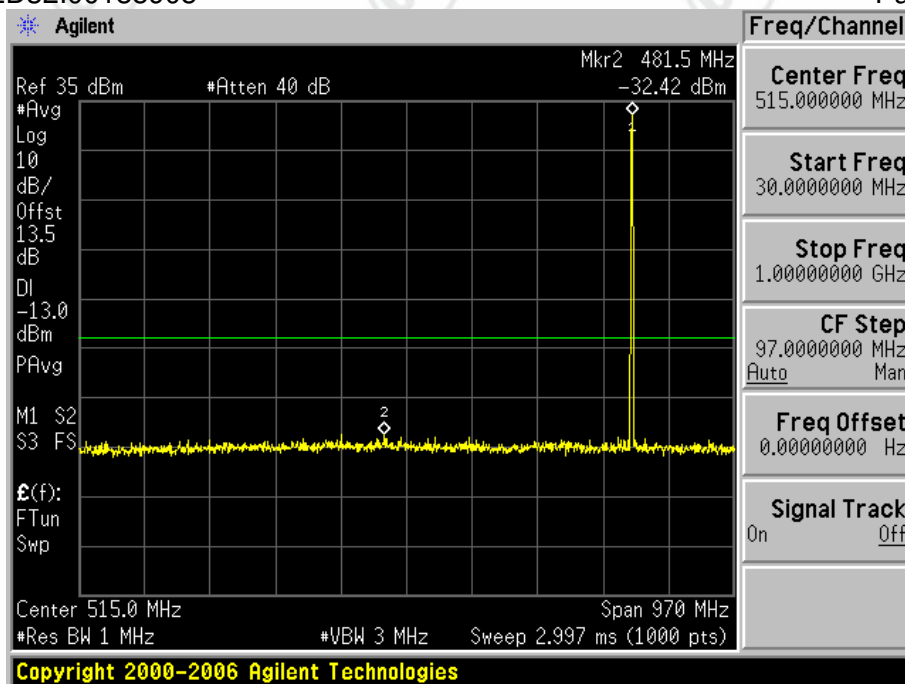
Test Channel=MCH





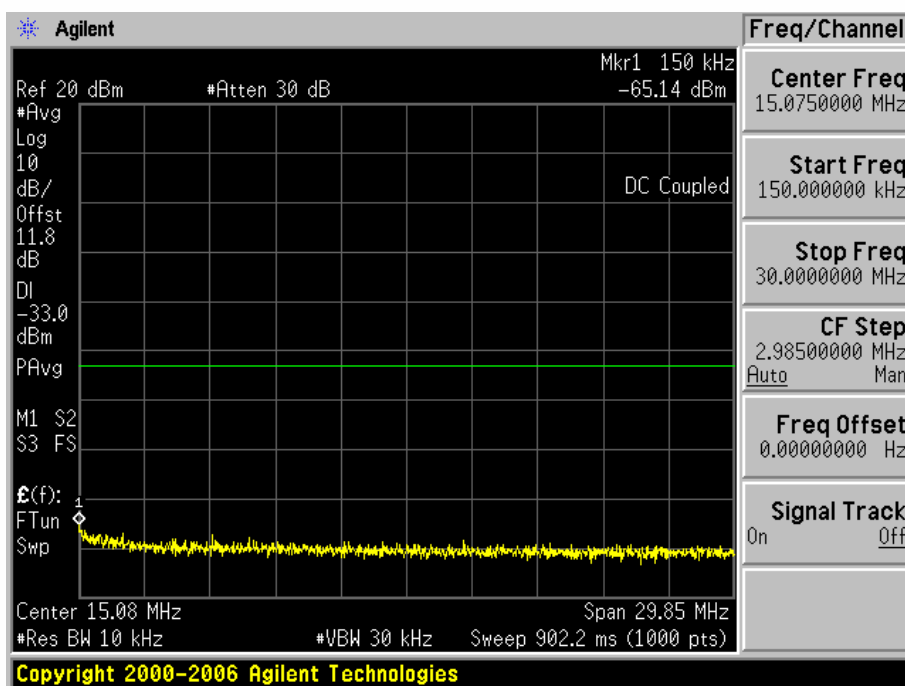
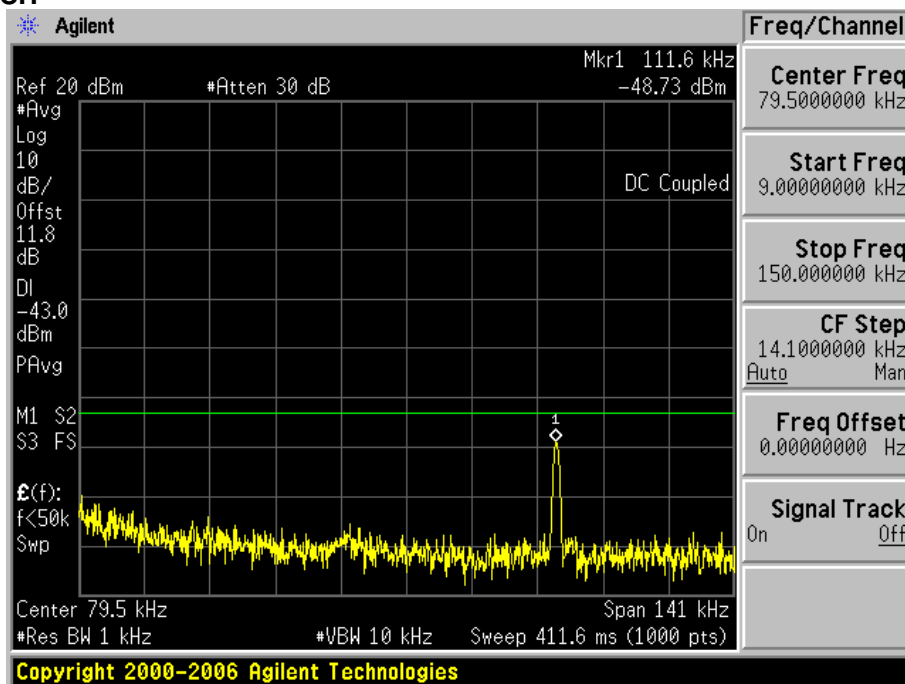
Test Channel=HCH

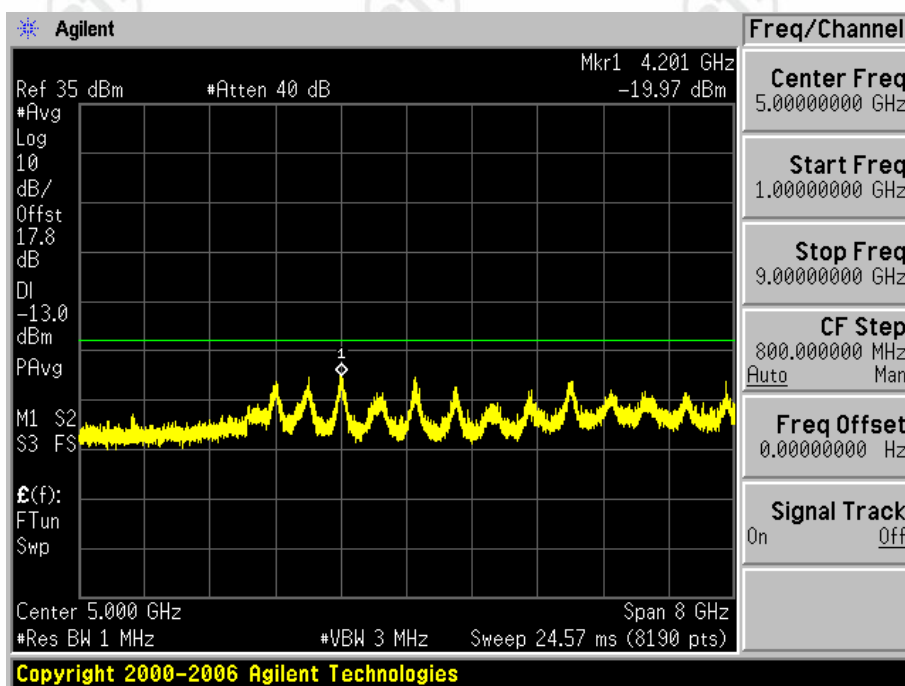
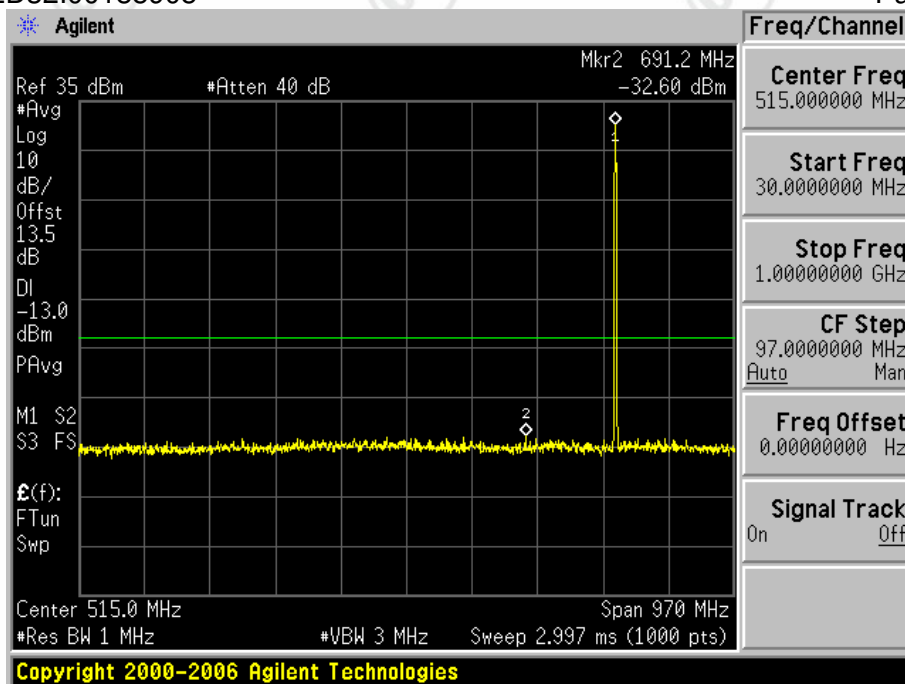




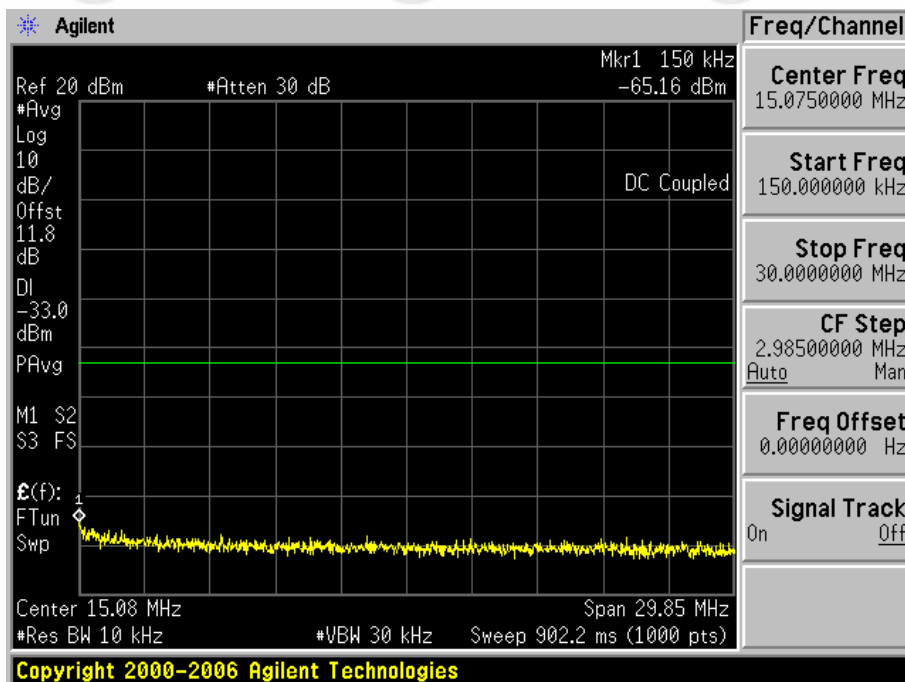
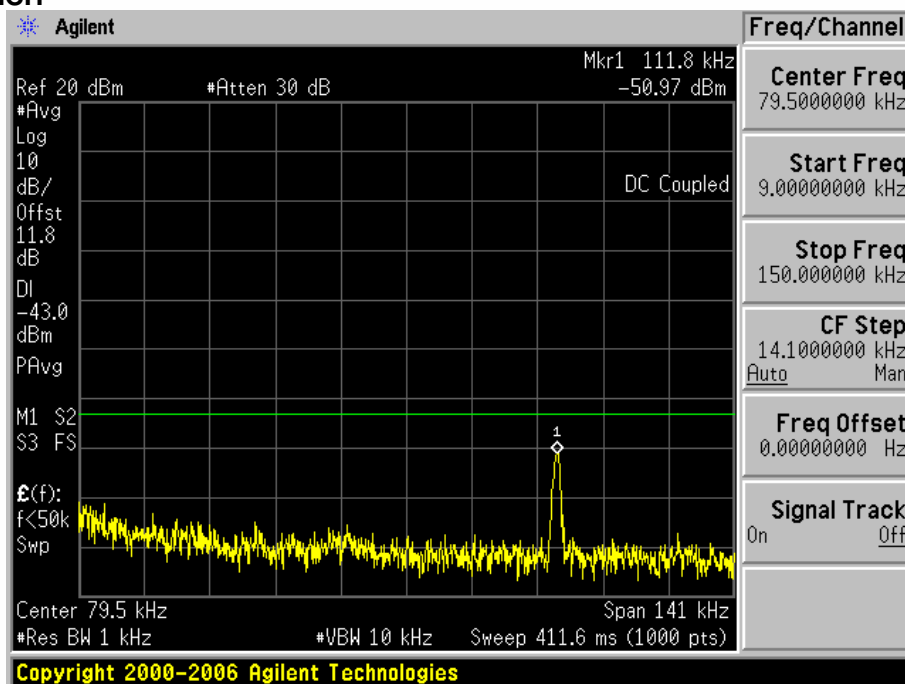
Test Mode=GSM/TM2

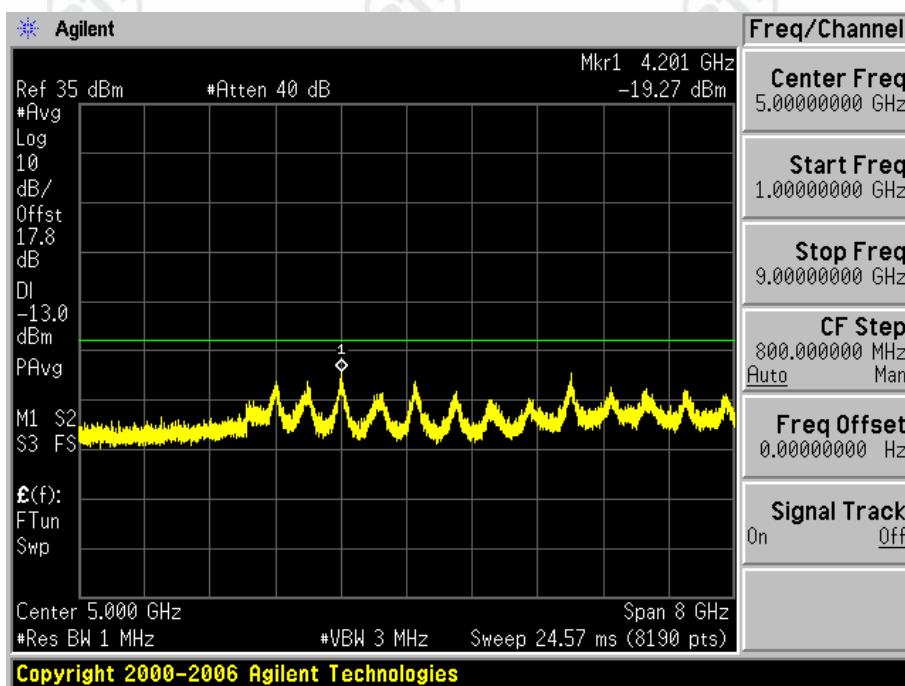
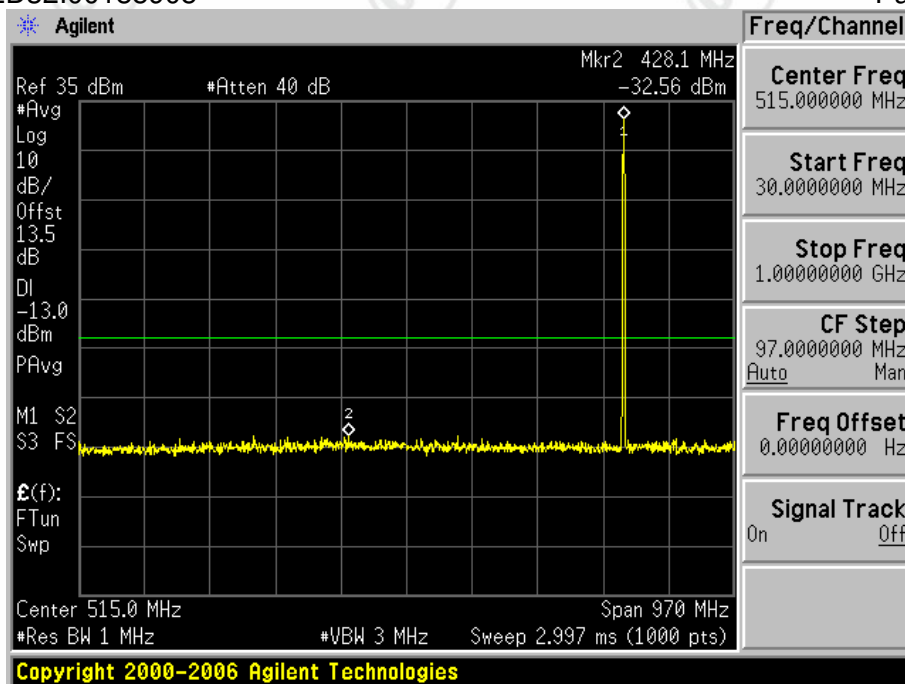
Test Channel=LCH



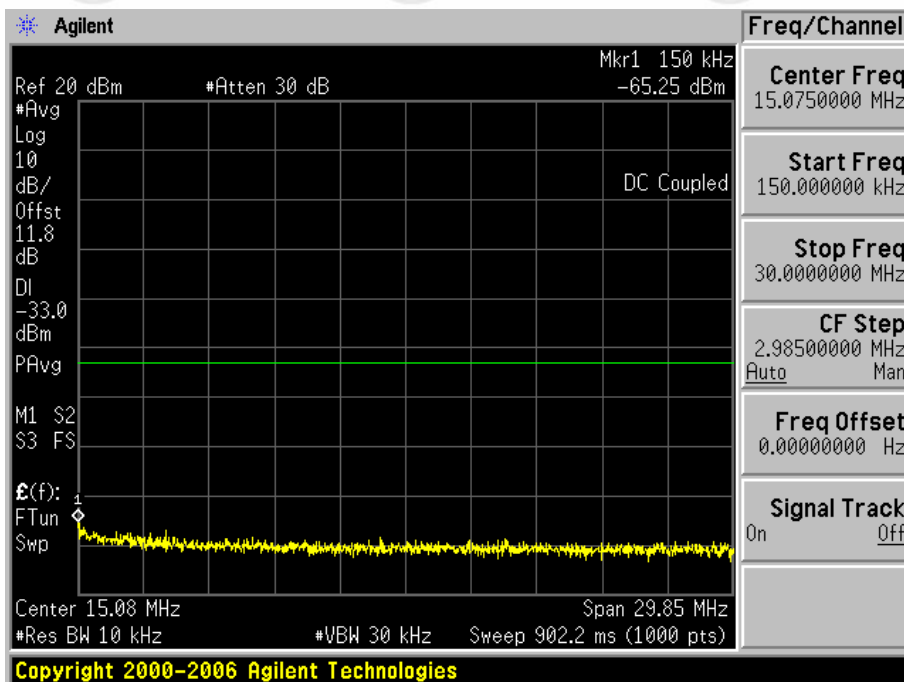
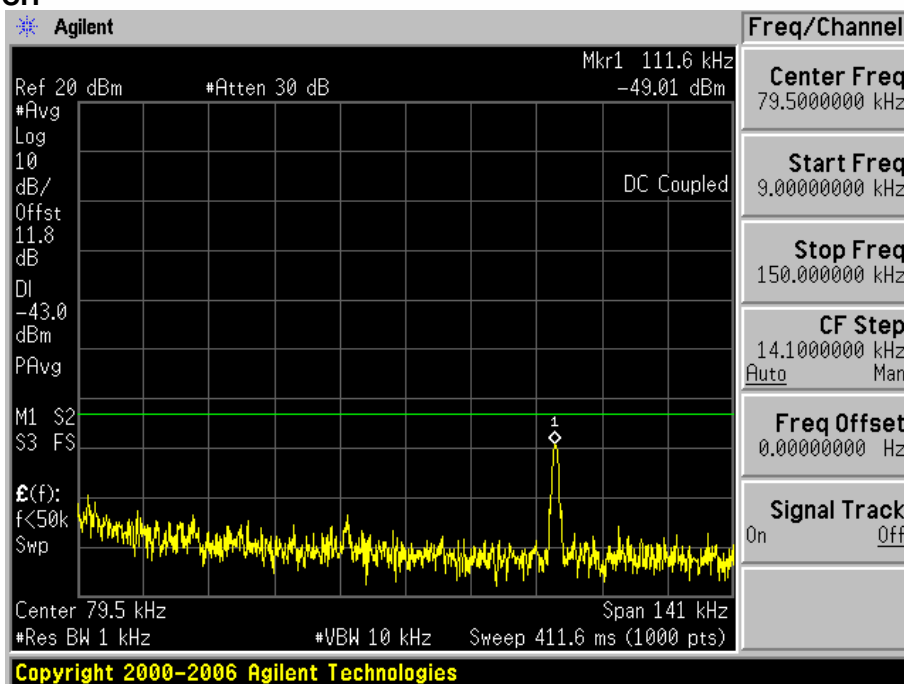


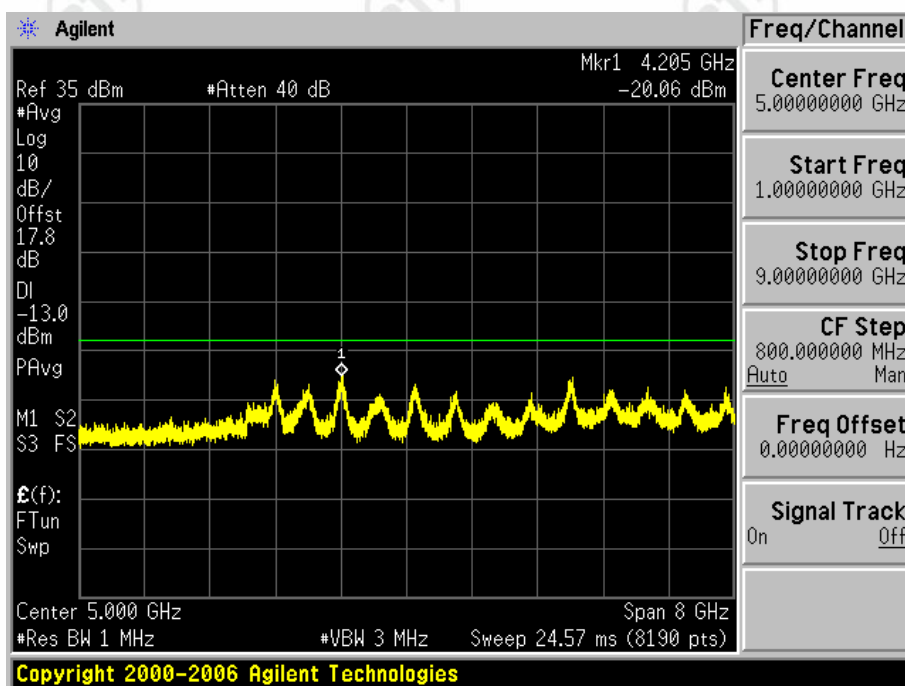
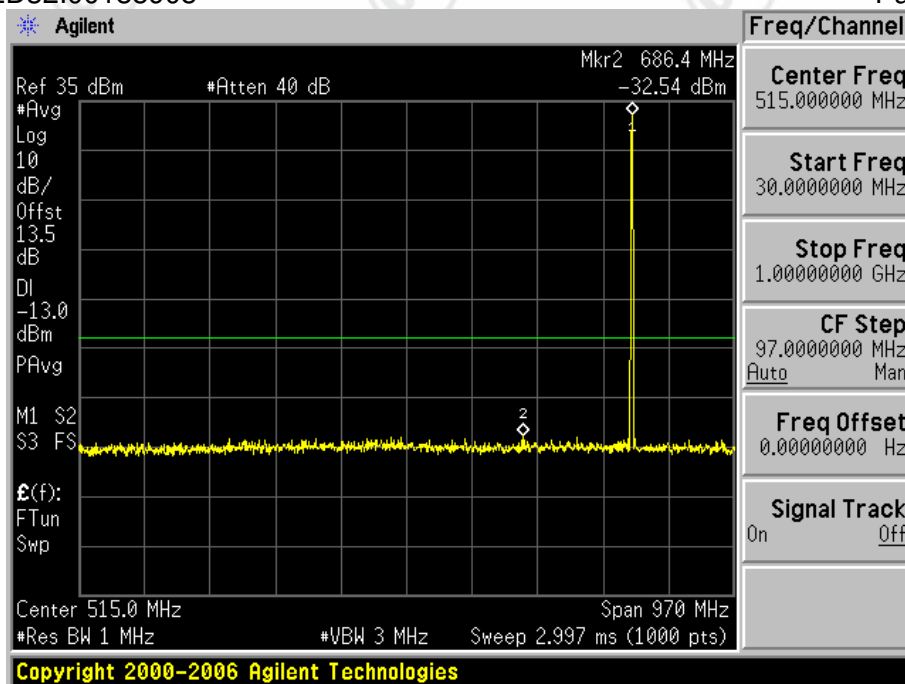
Test Channel=MCH





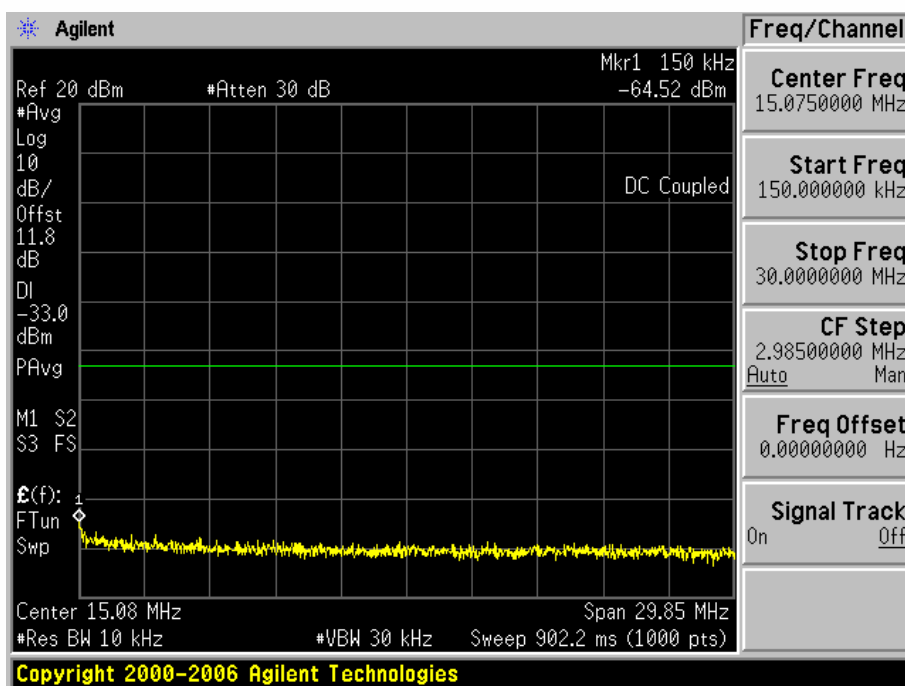
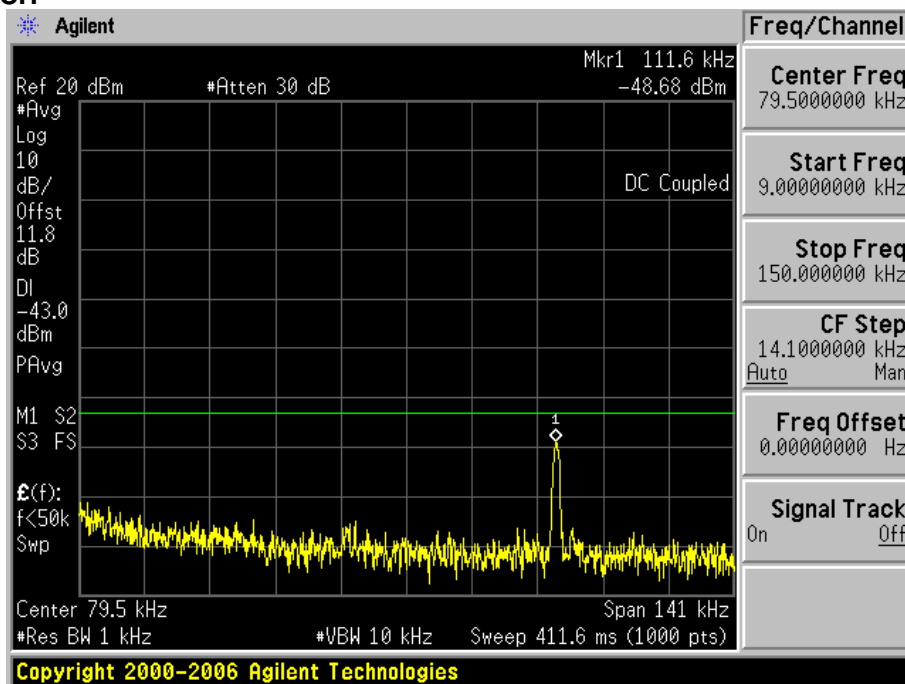
Test Channel=HCH

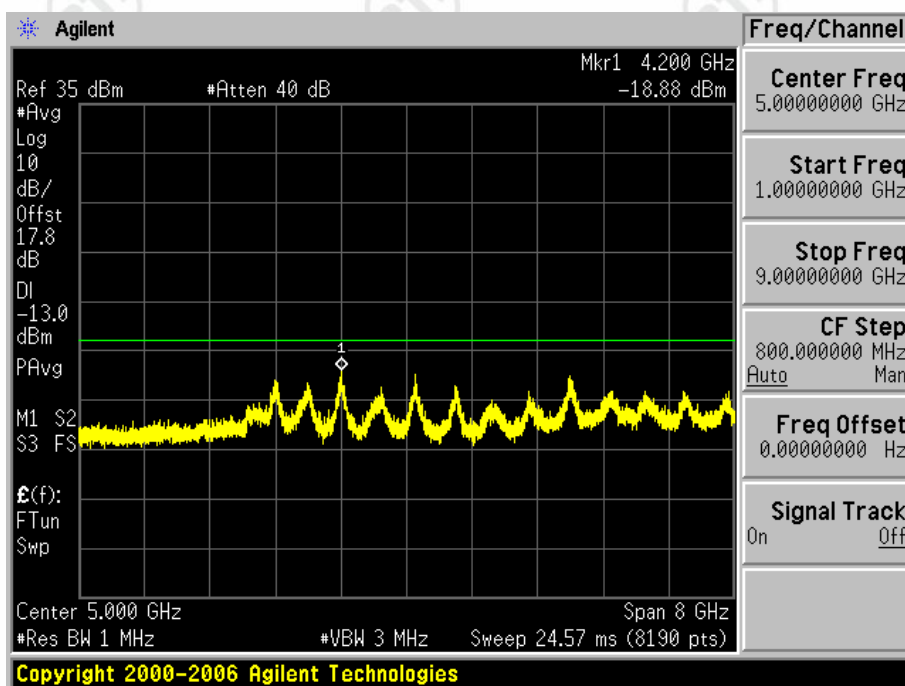
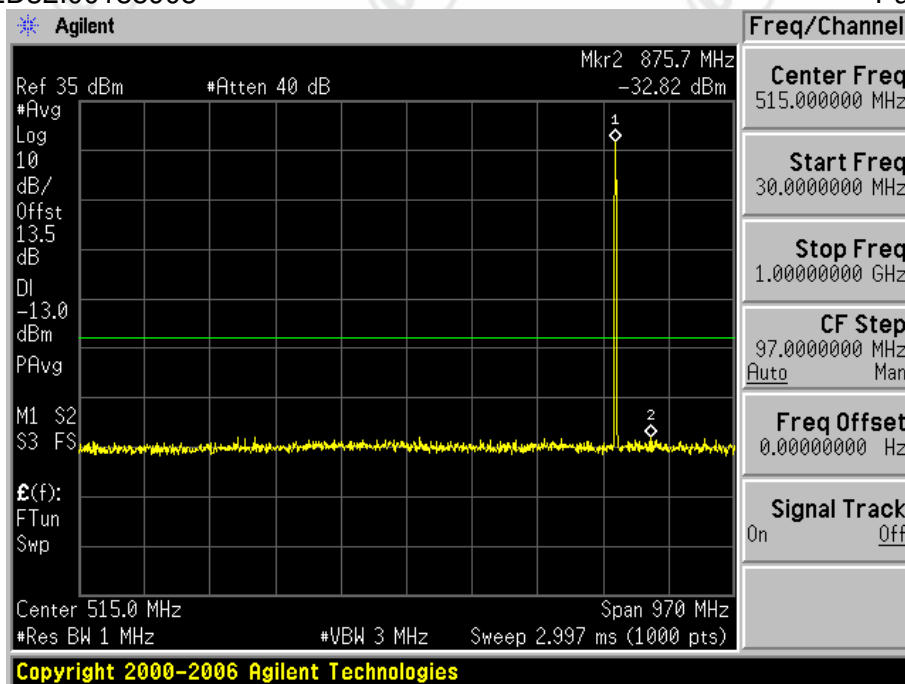




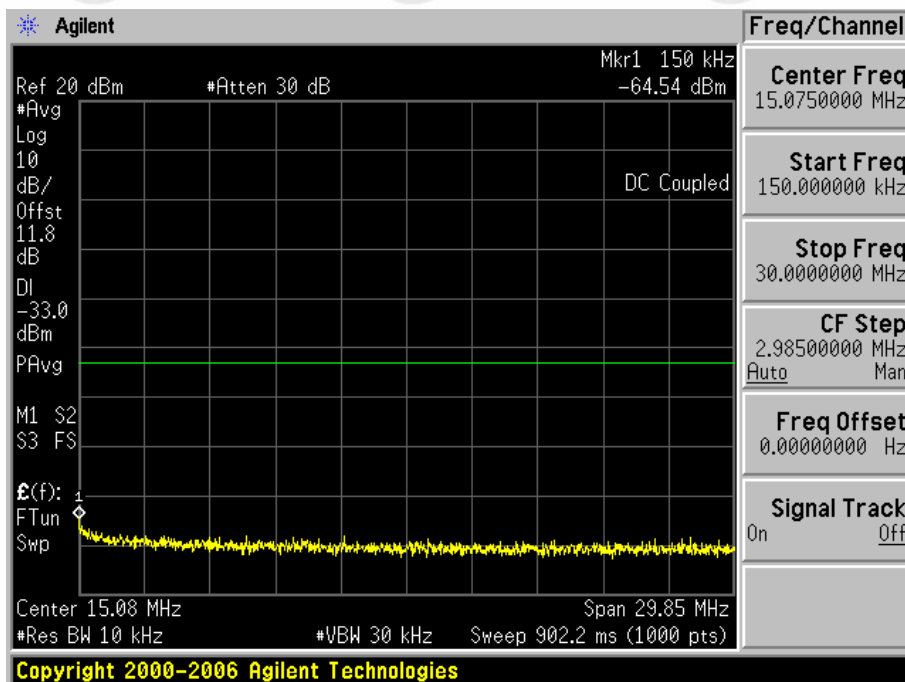
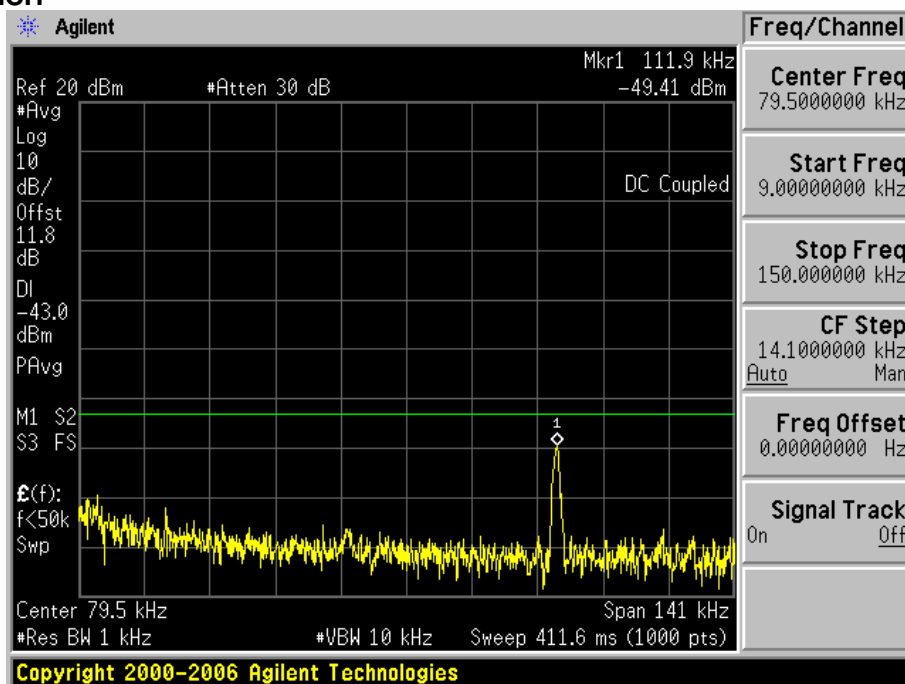
Test Mode=GSM/TM3

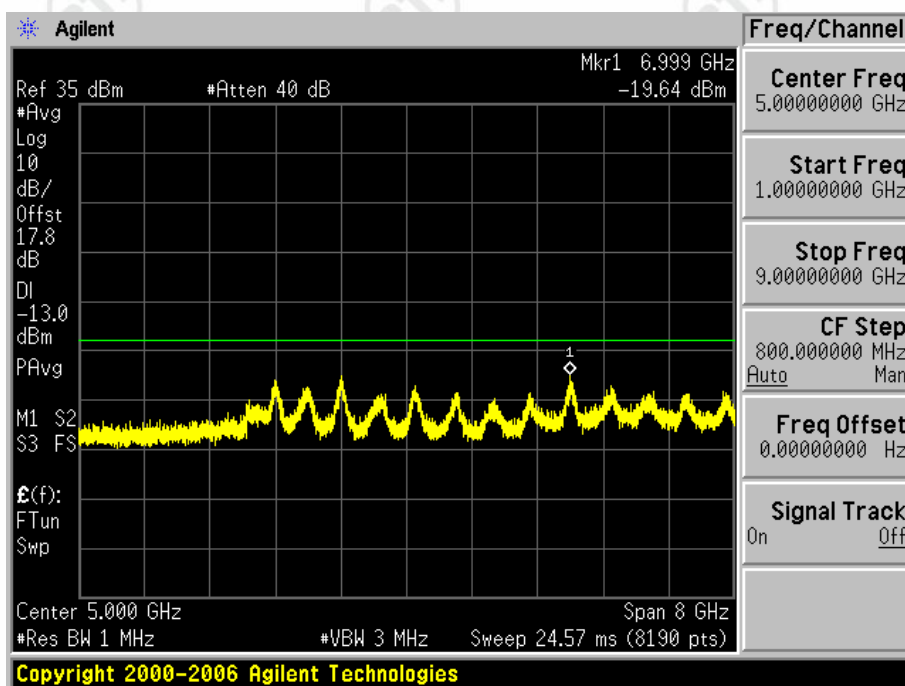
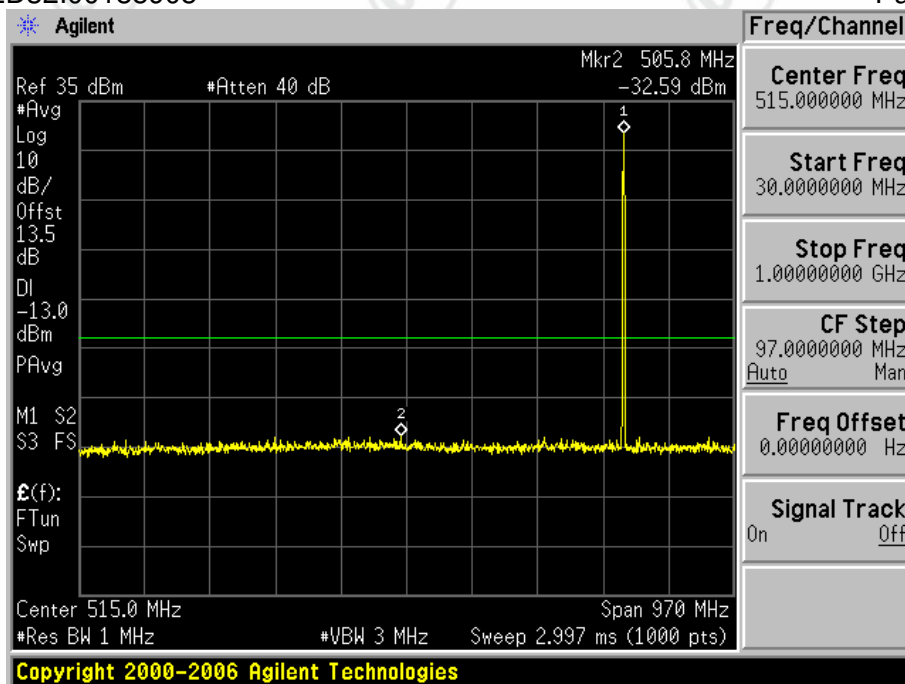
Test Channel=LCH



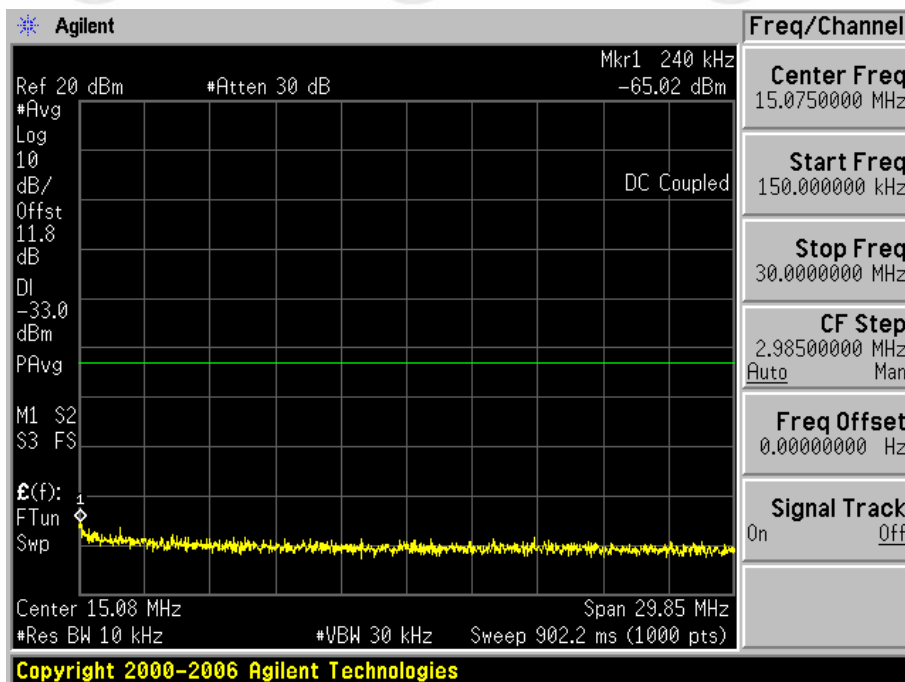
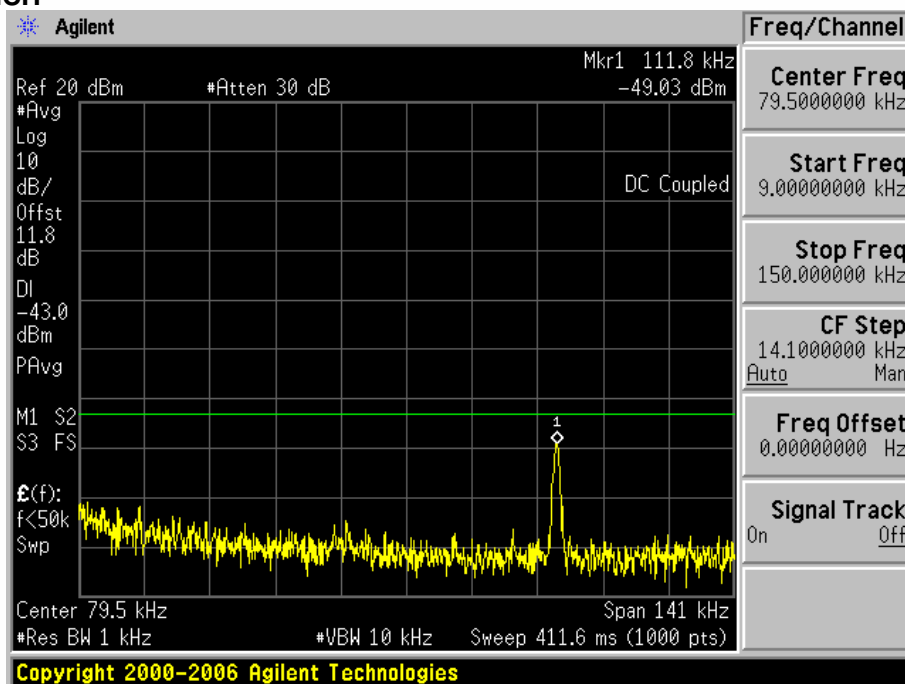


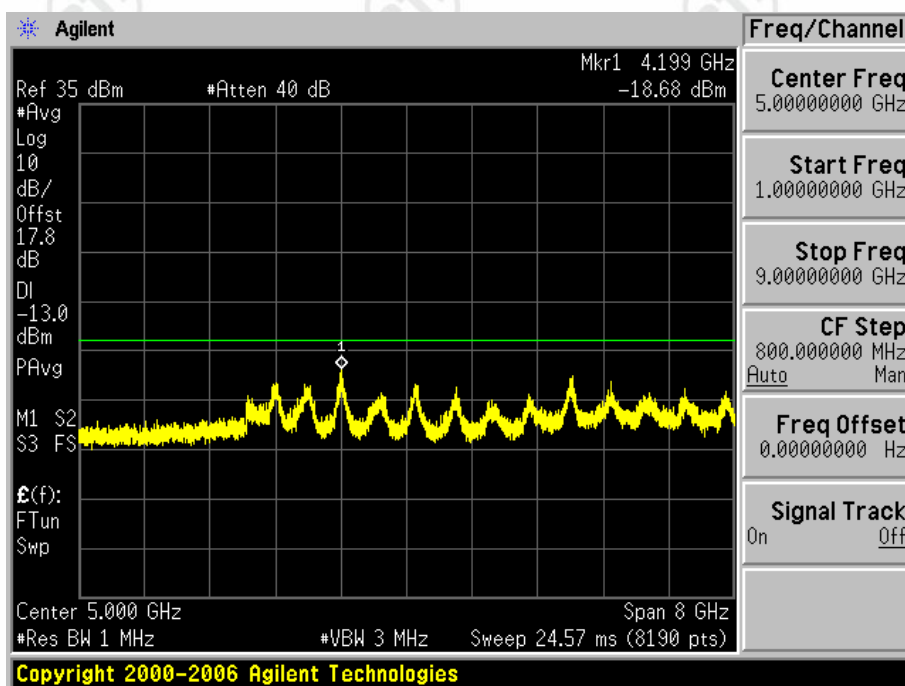
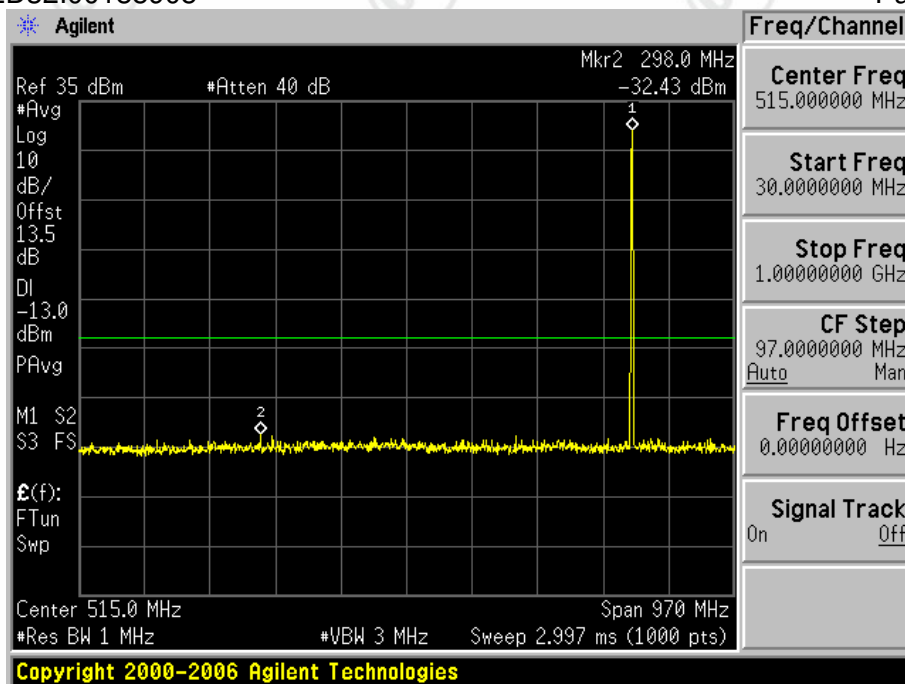
Test Channel=MCH





Test Channel=HCH

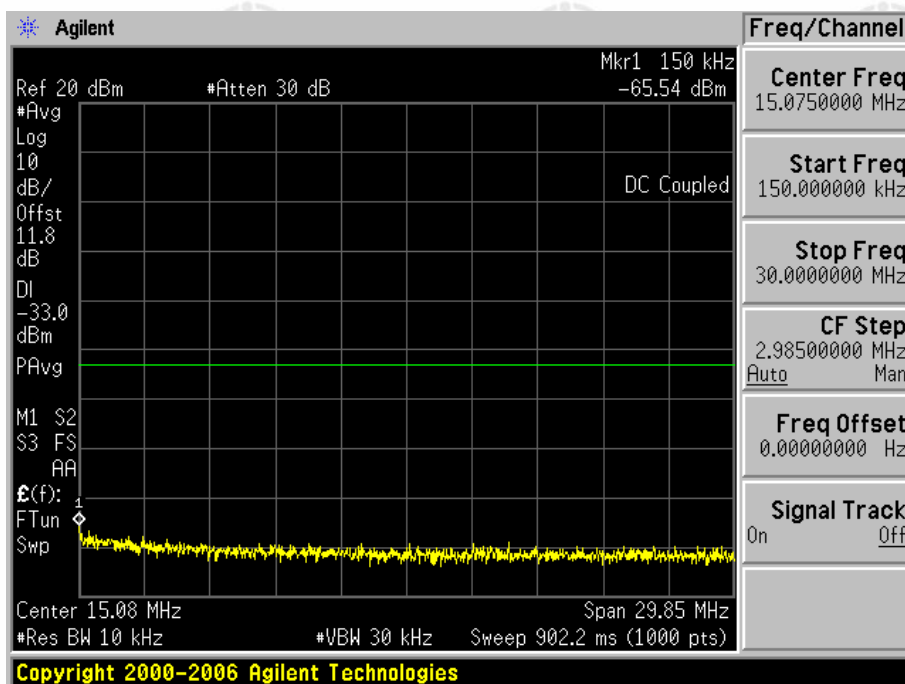
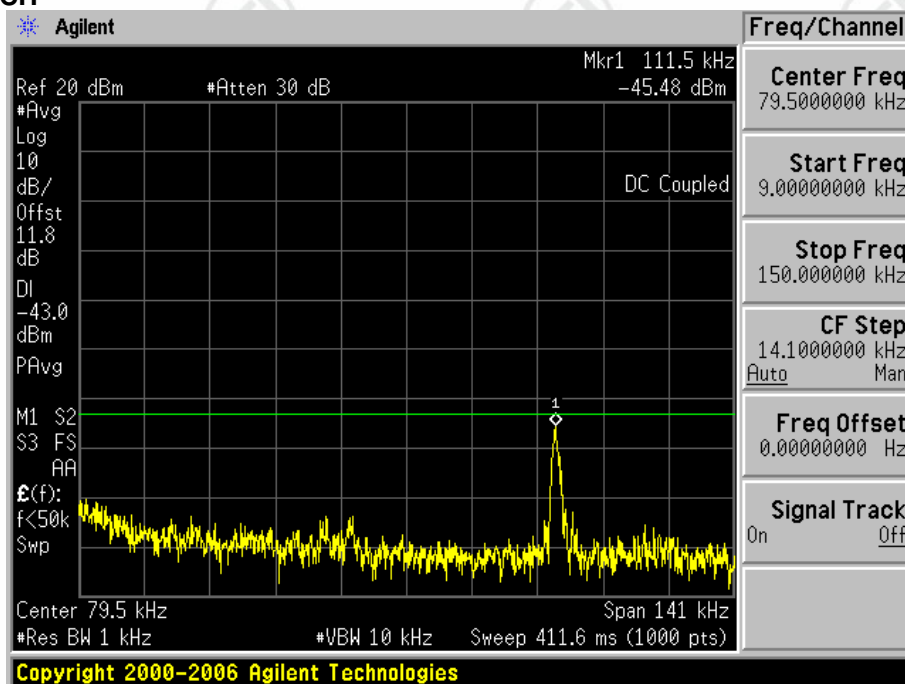


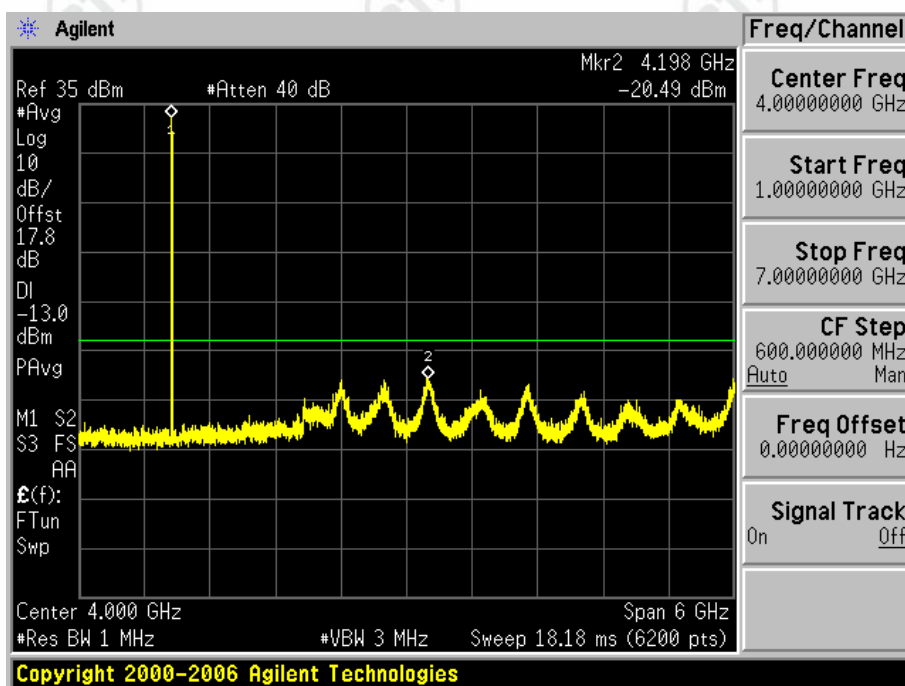
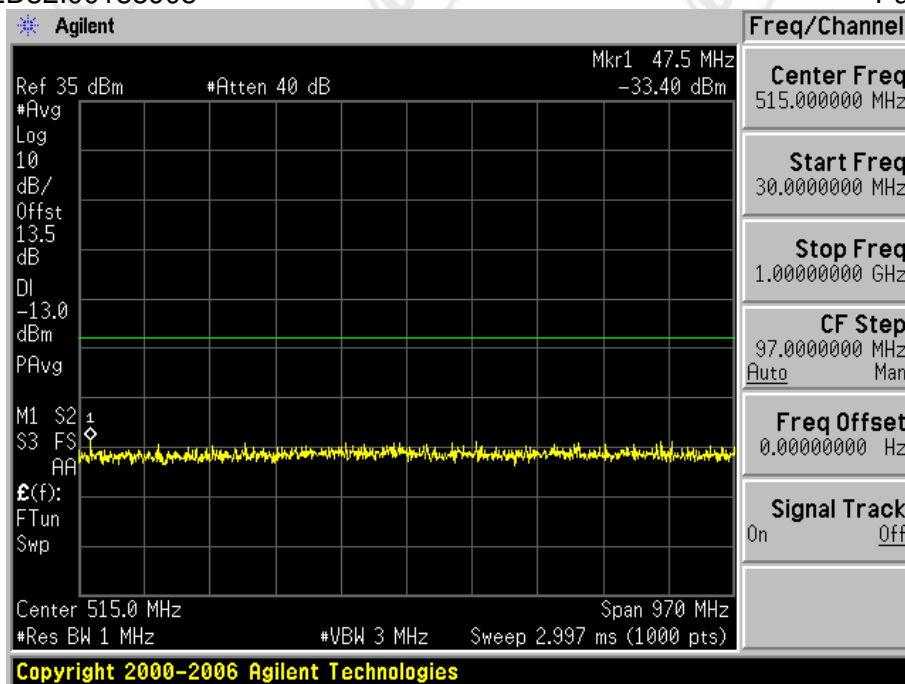


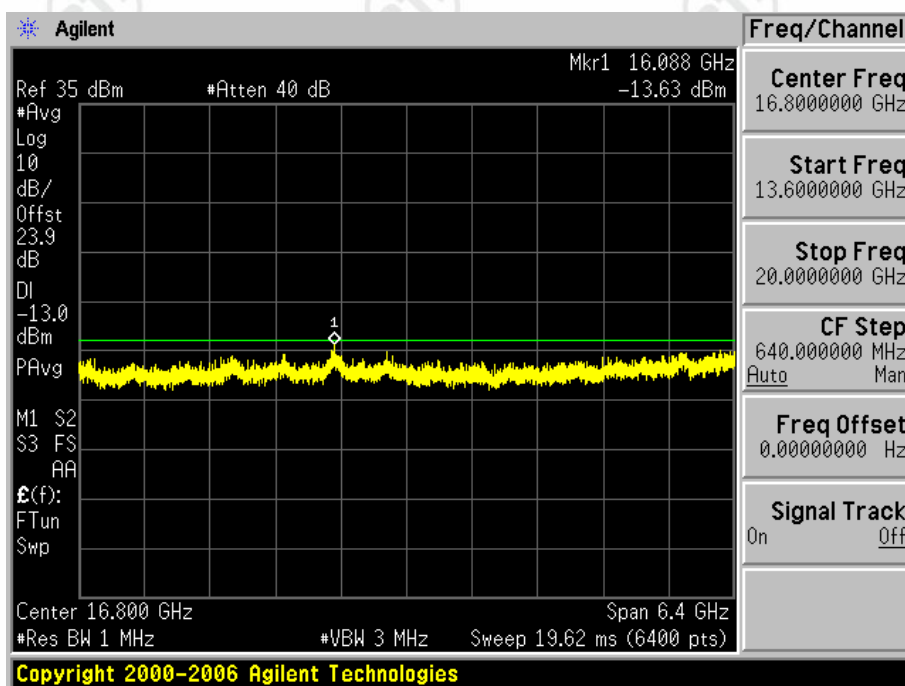
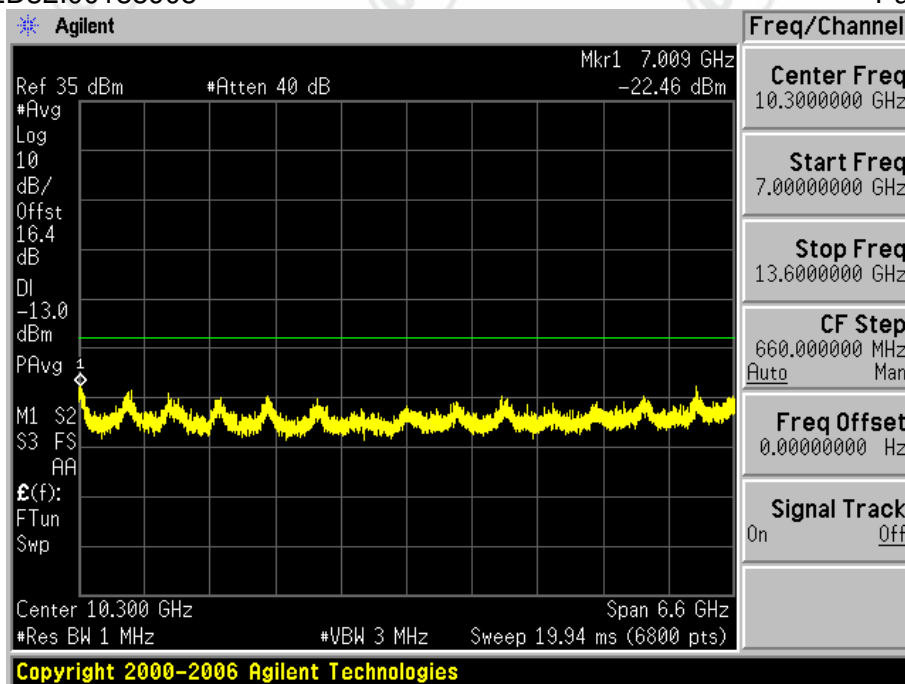
Test Band=GSM1900

Test Mode=GSM/TM1

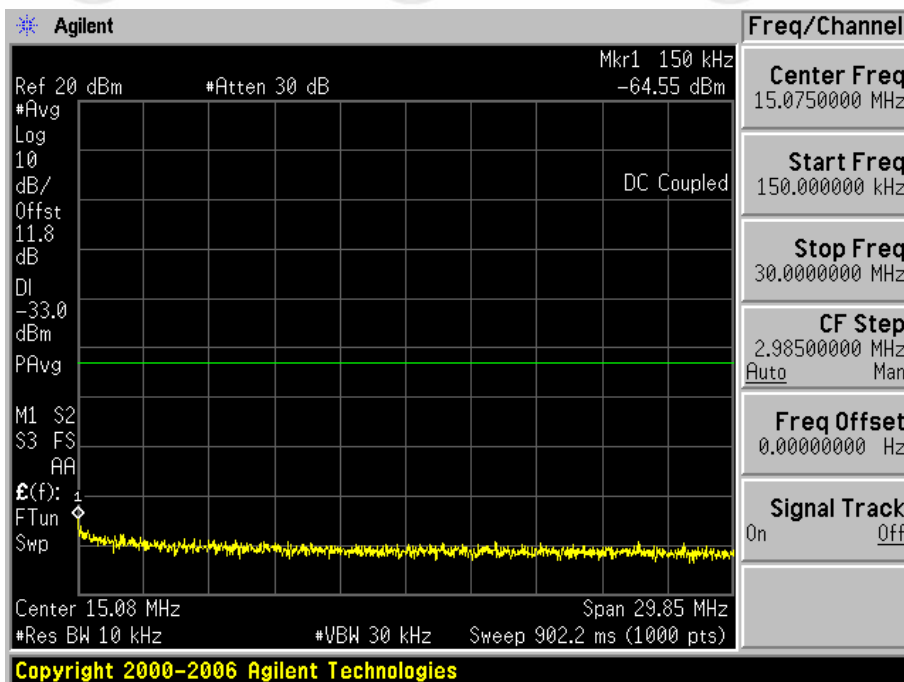
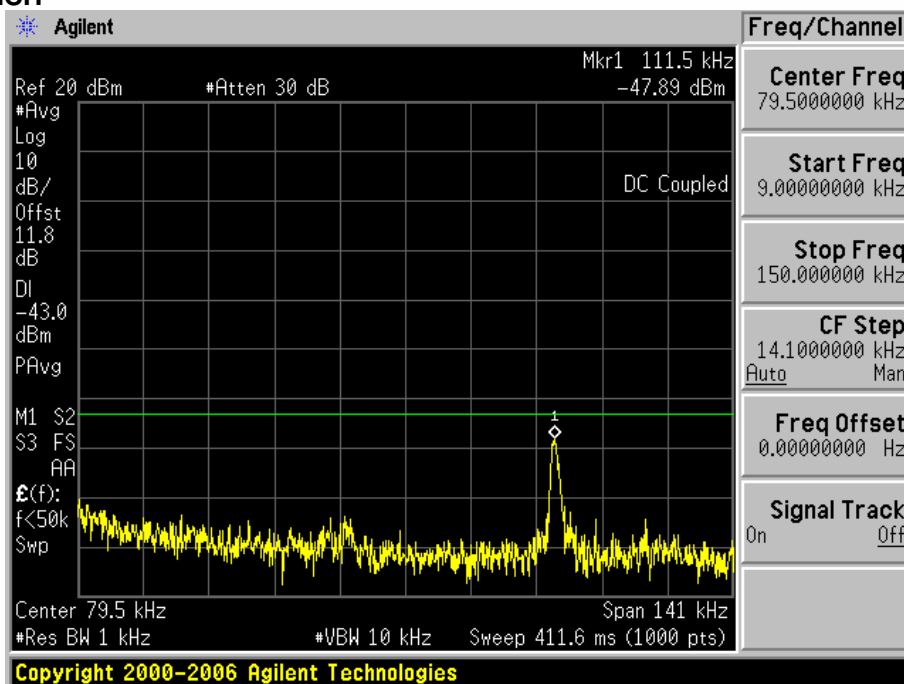
Test Channel=LCH

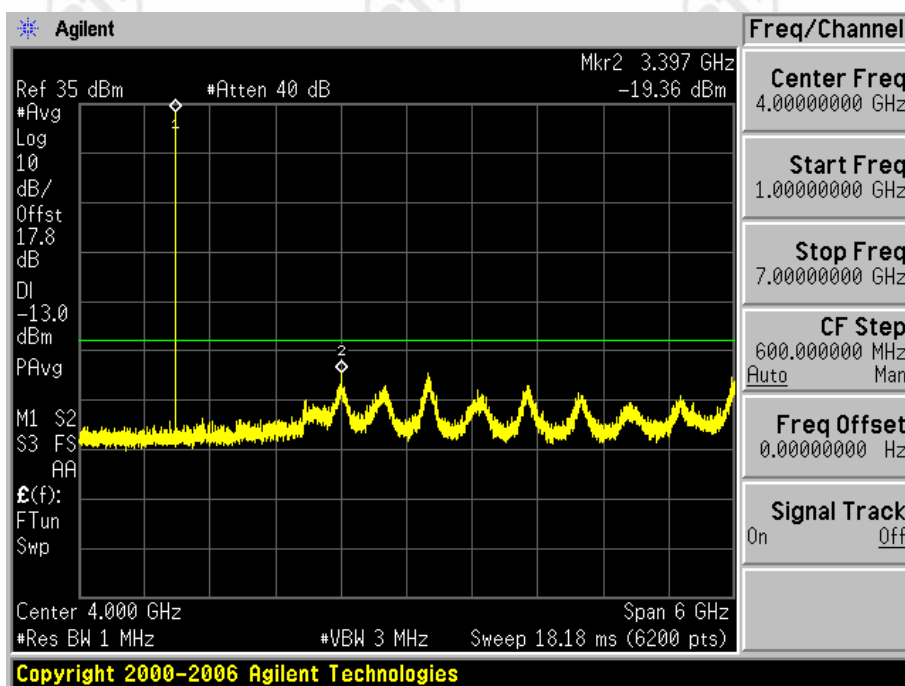
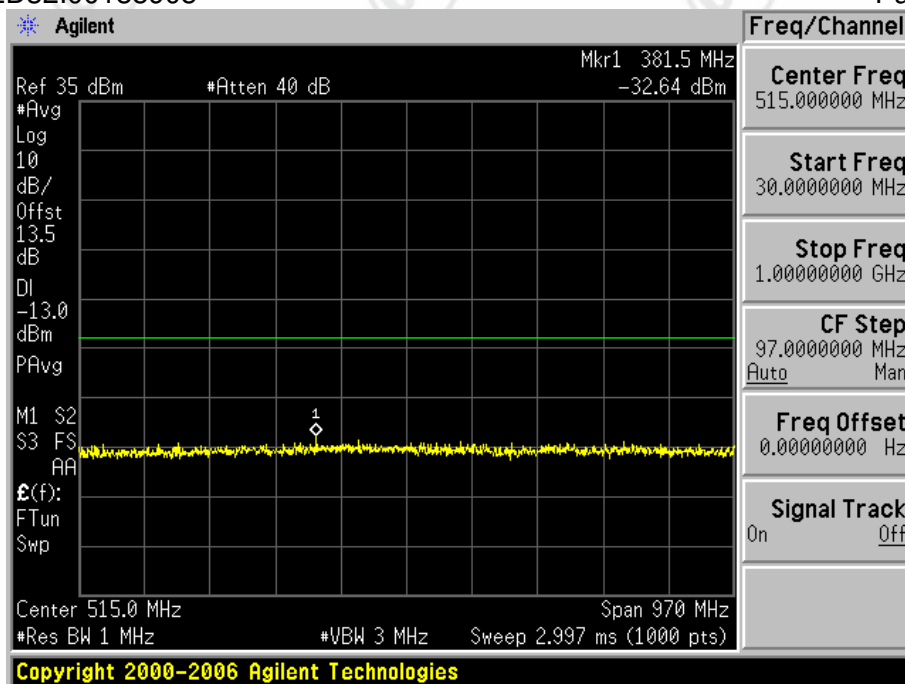


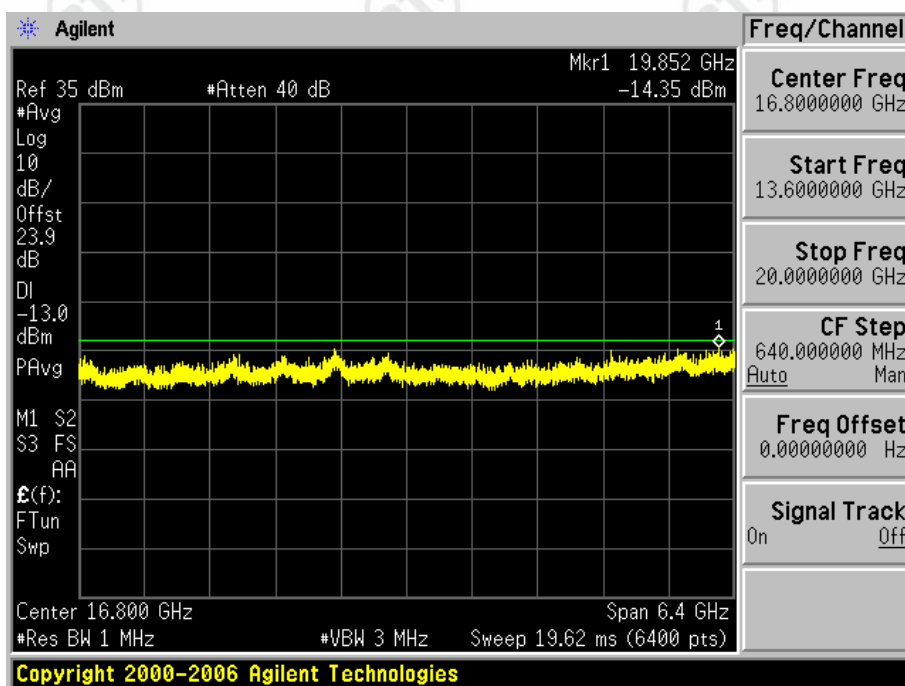
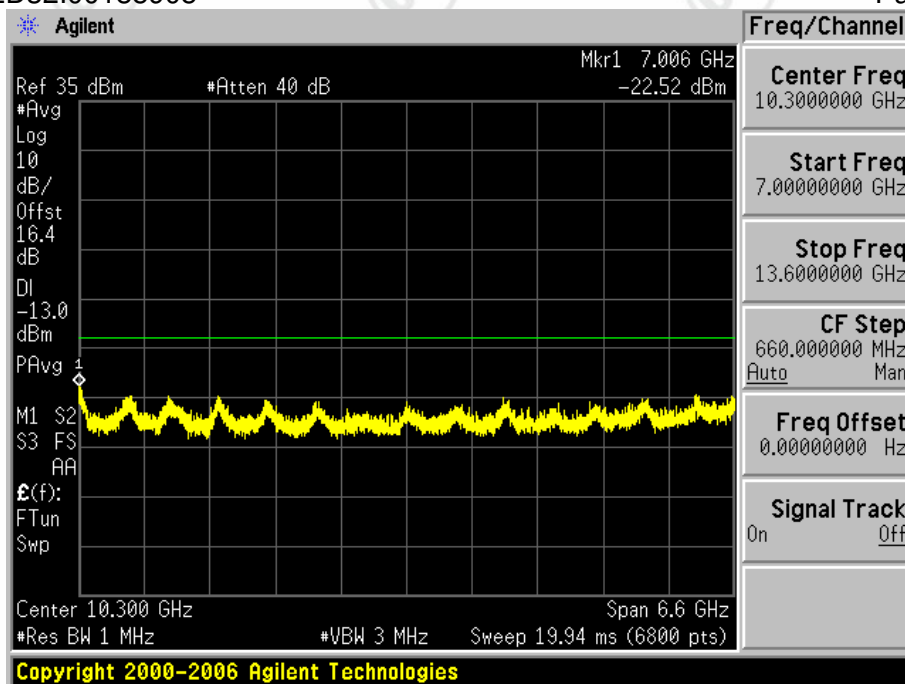




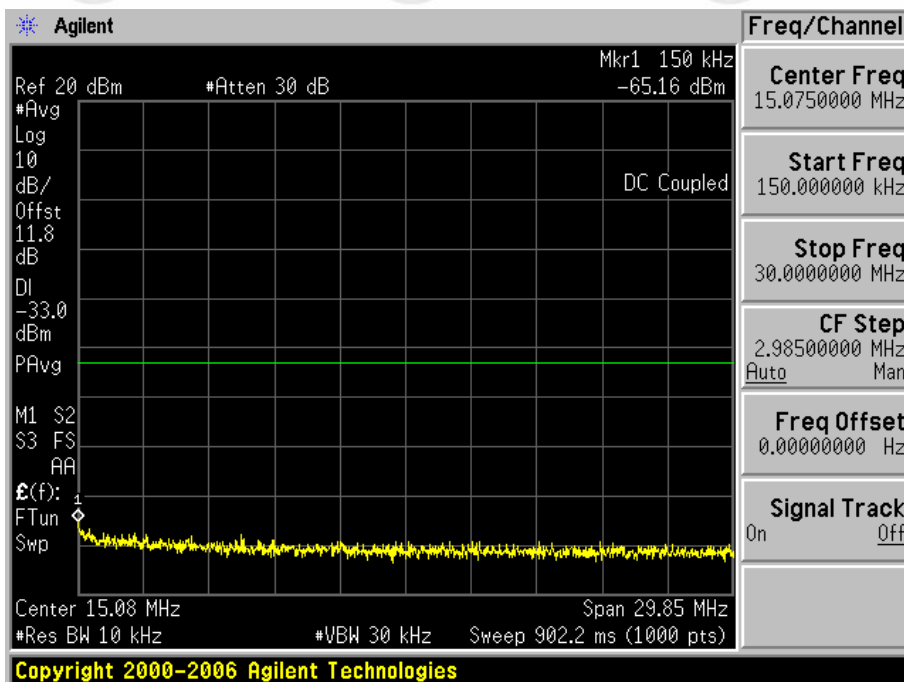
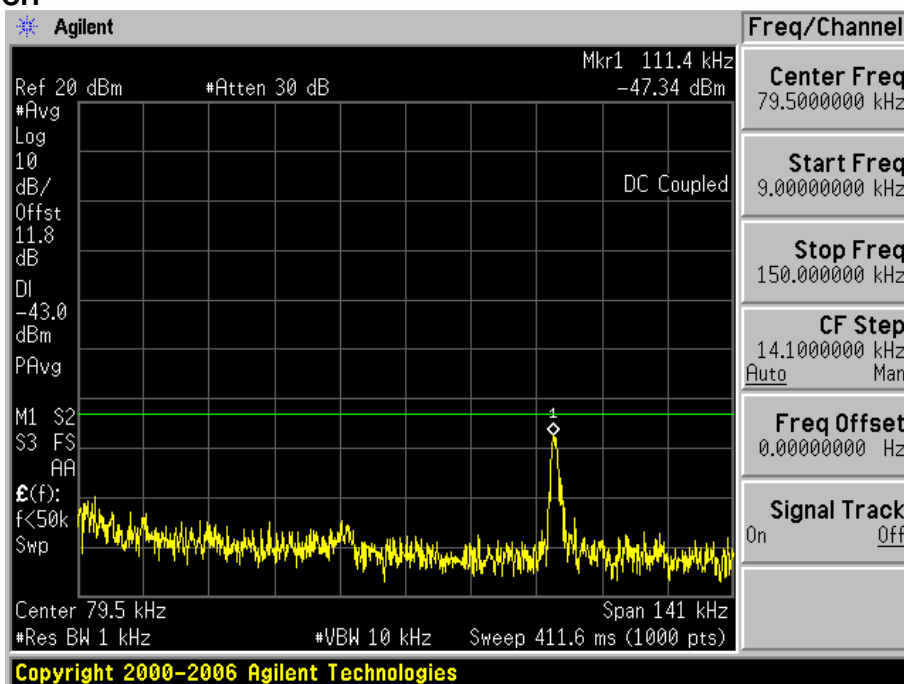
Test Channel=MCH

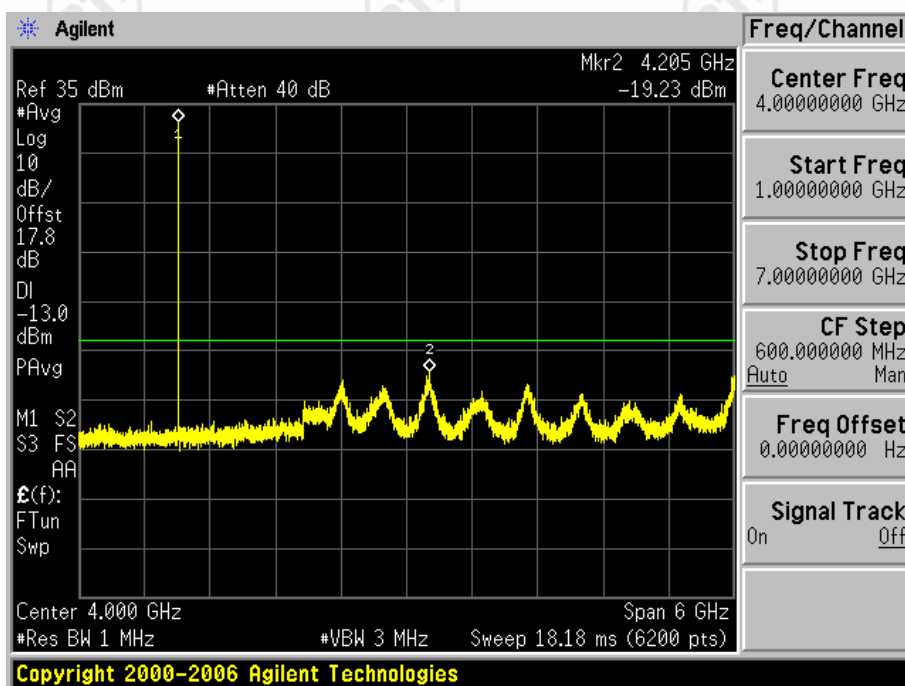
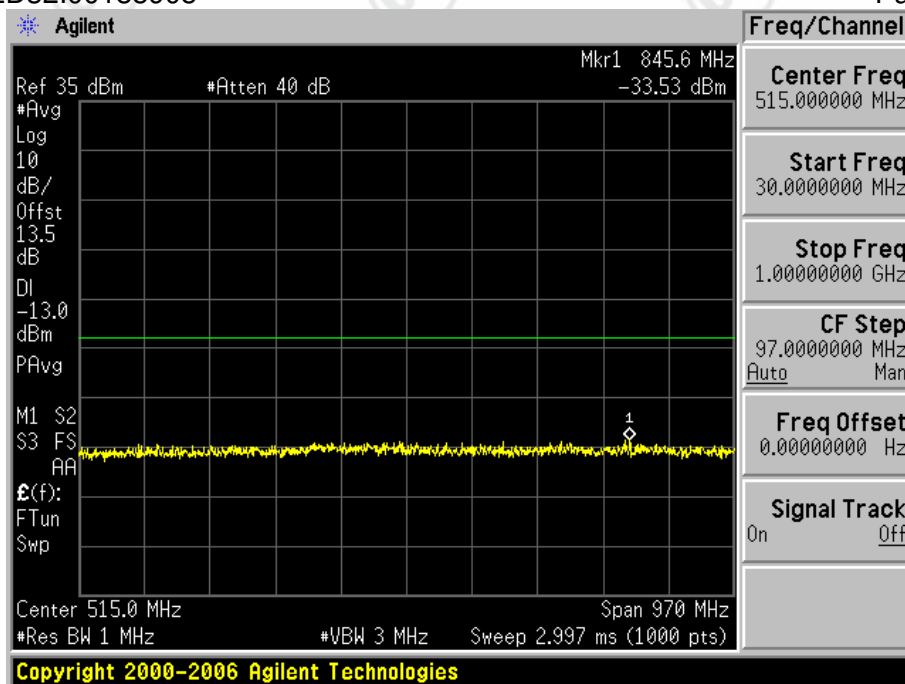


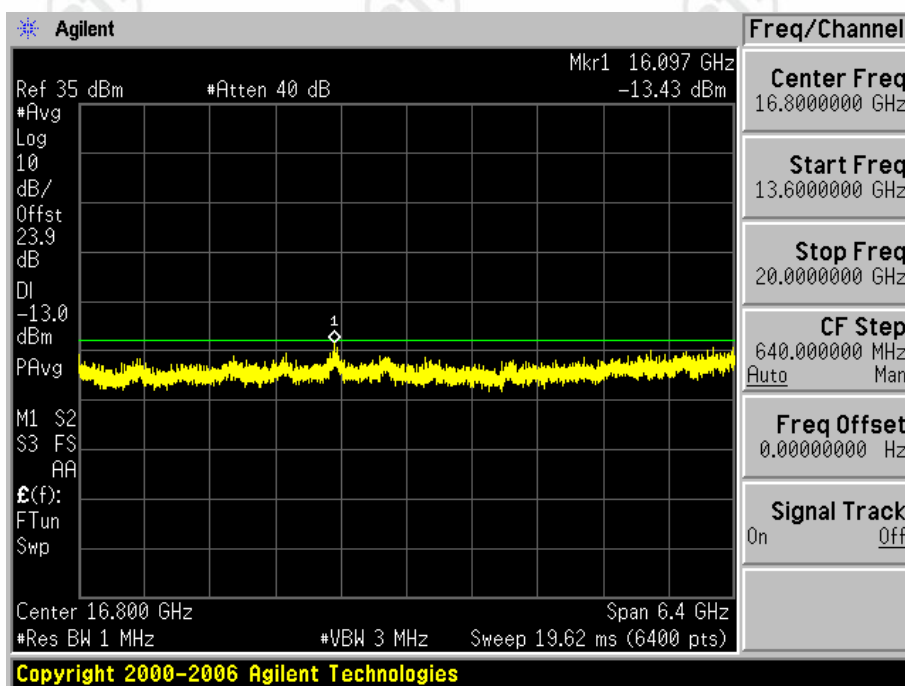
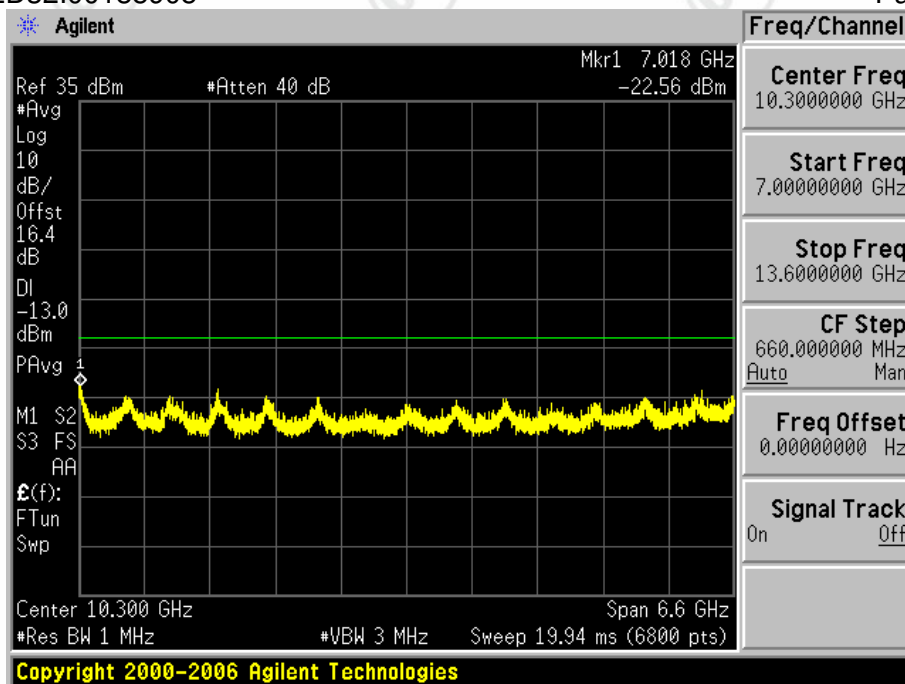




Test Channel=HCH

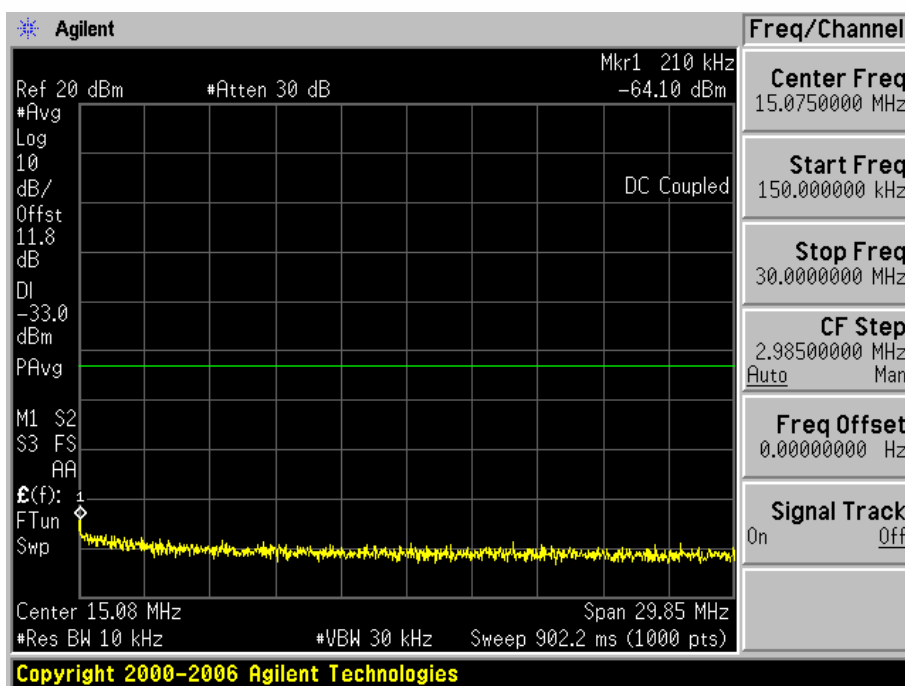
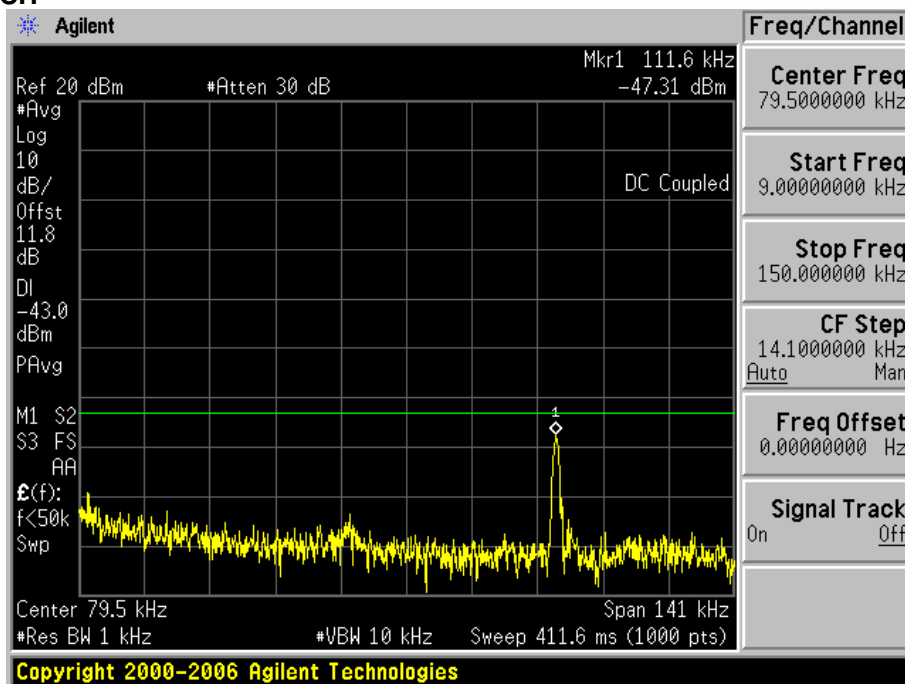


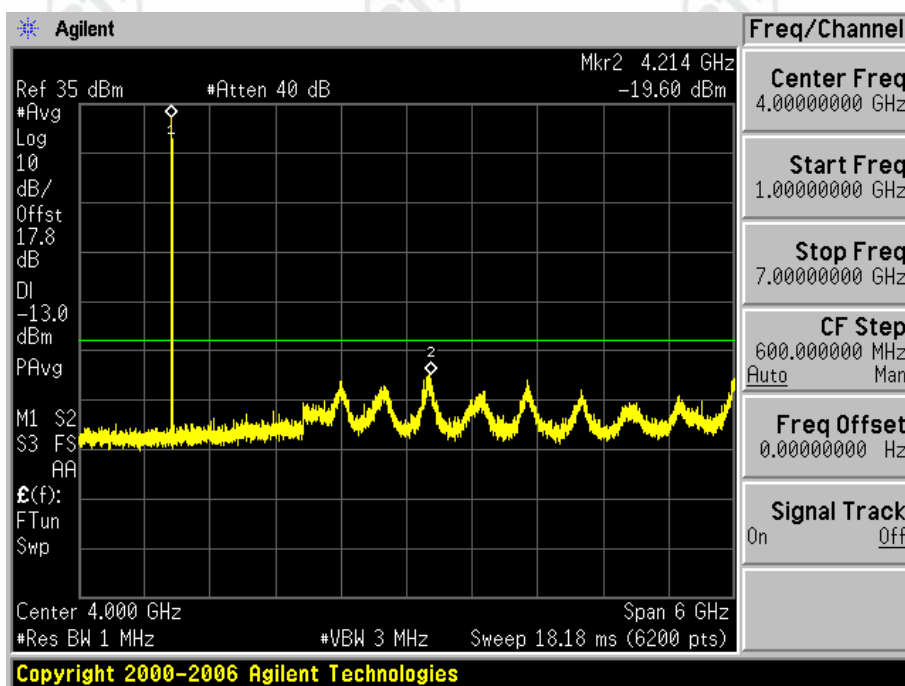
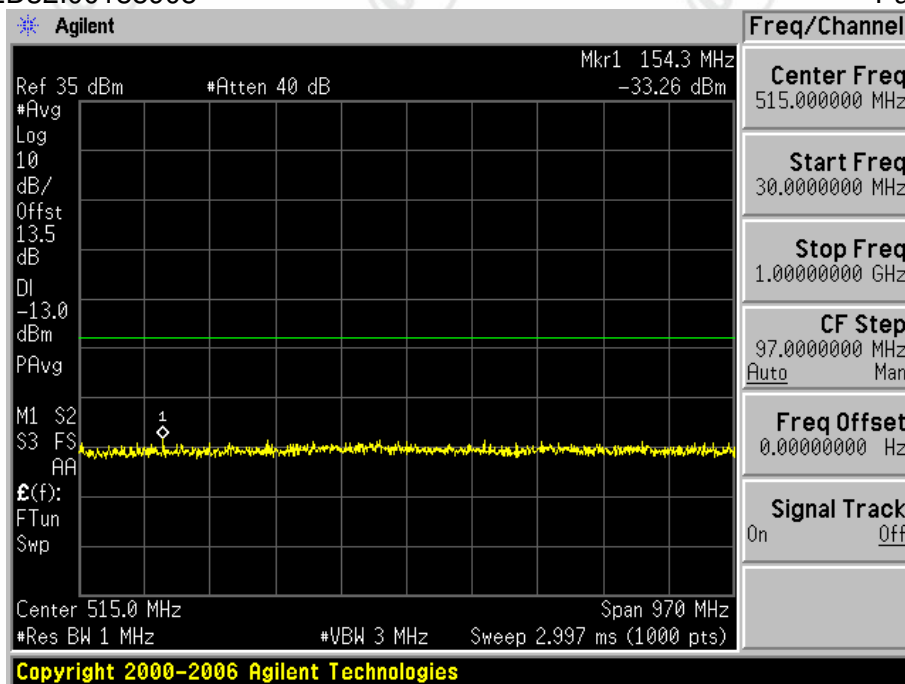


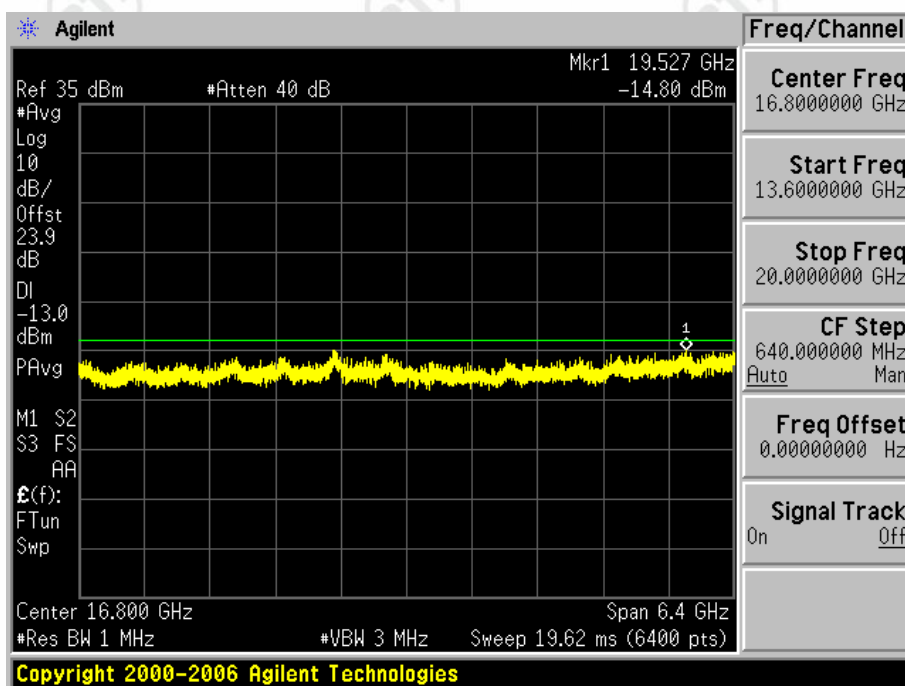
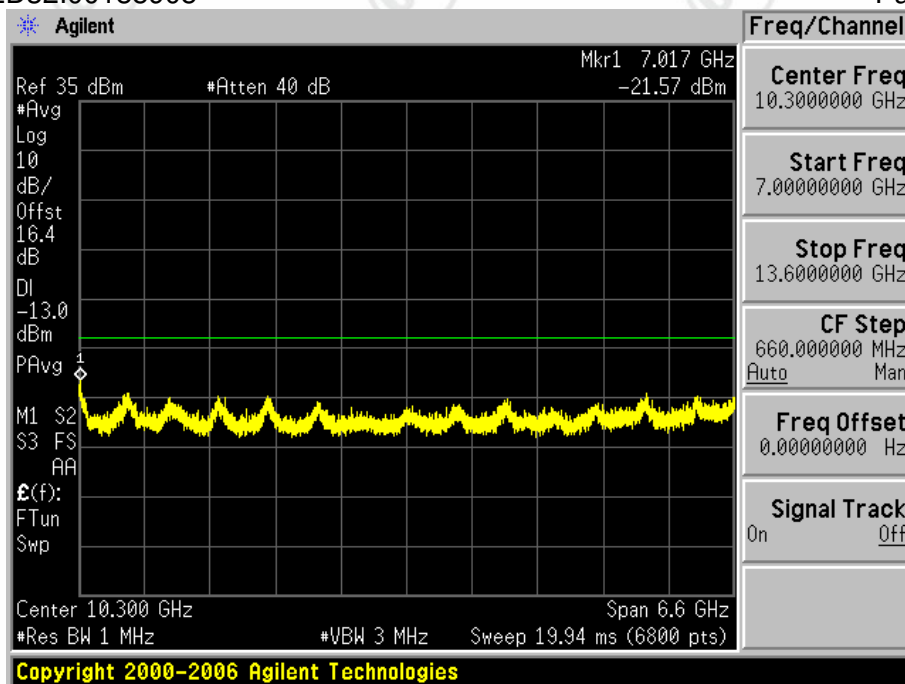


Test Mode=GSM/TM2

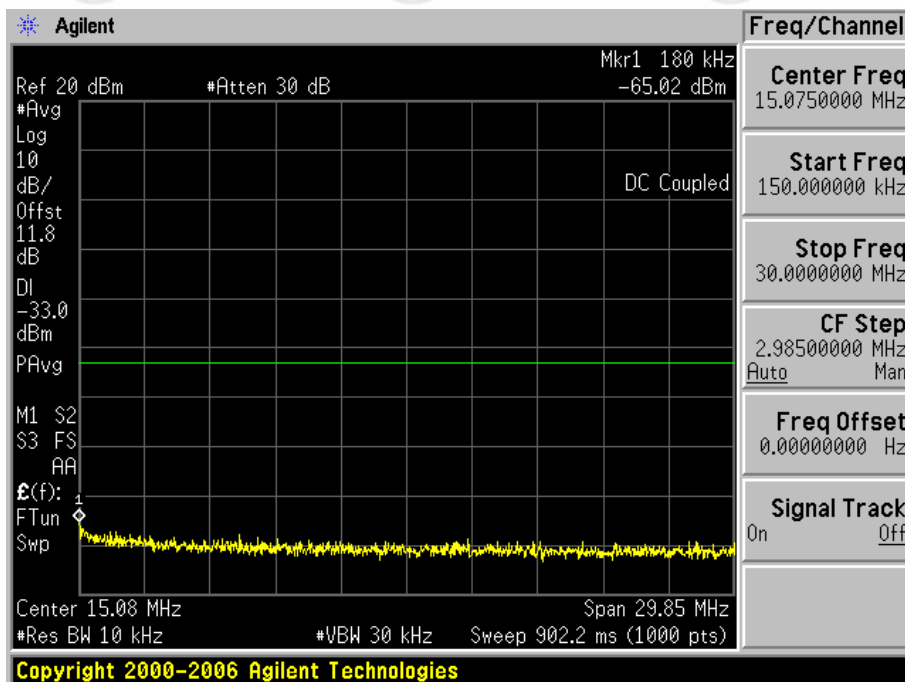
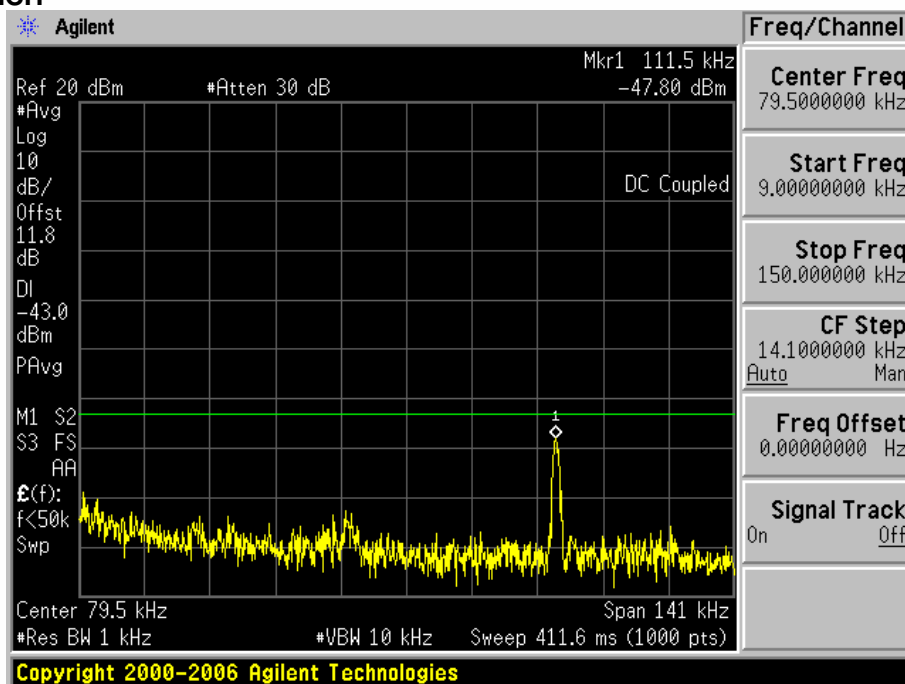
Test Channel=LCH

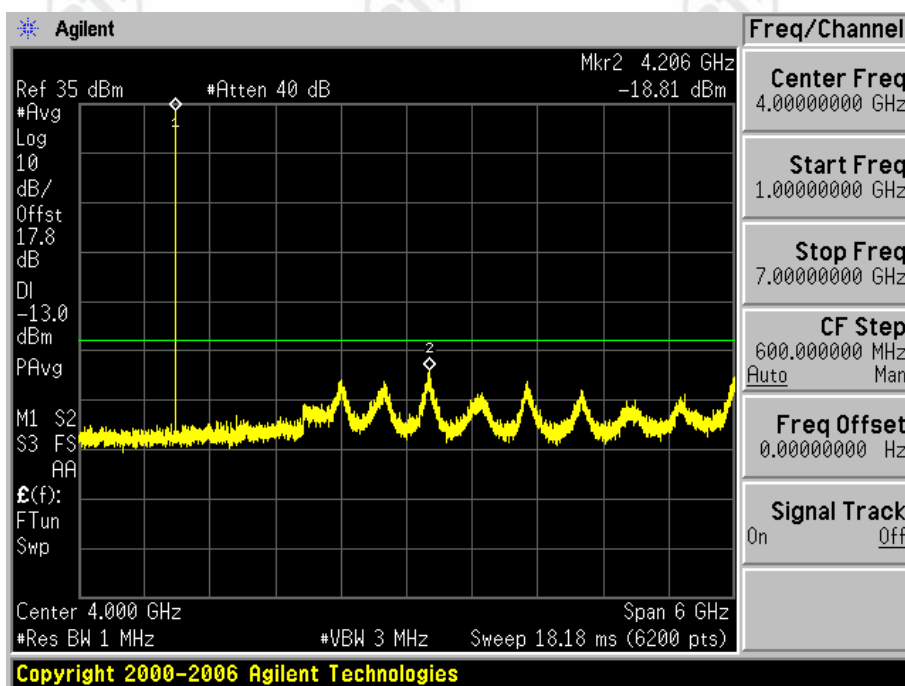
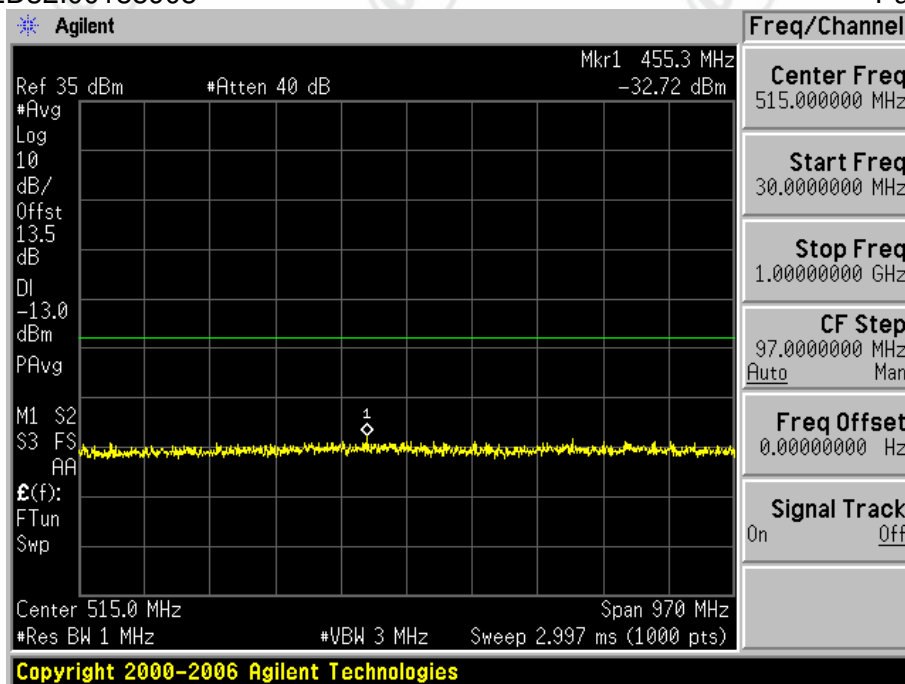


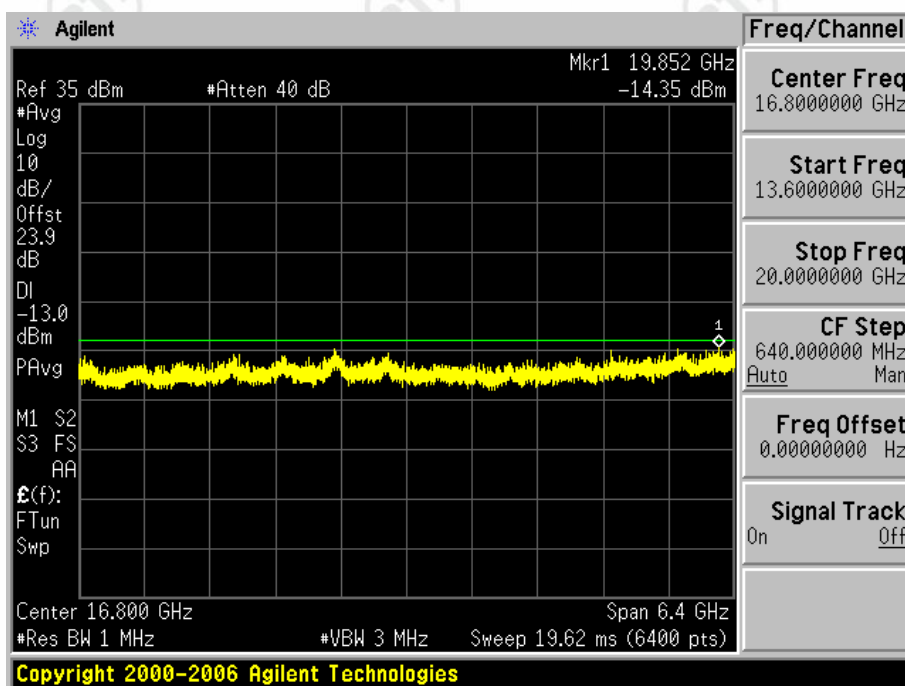
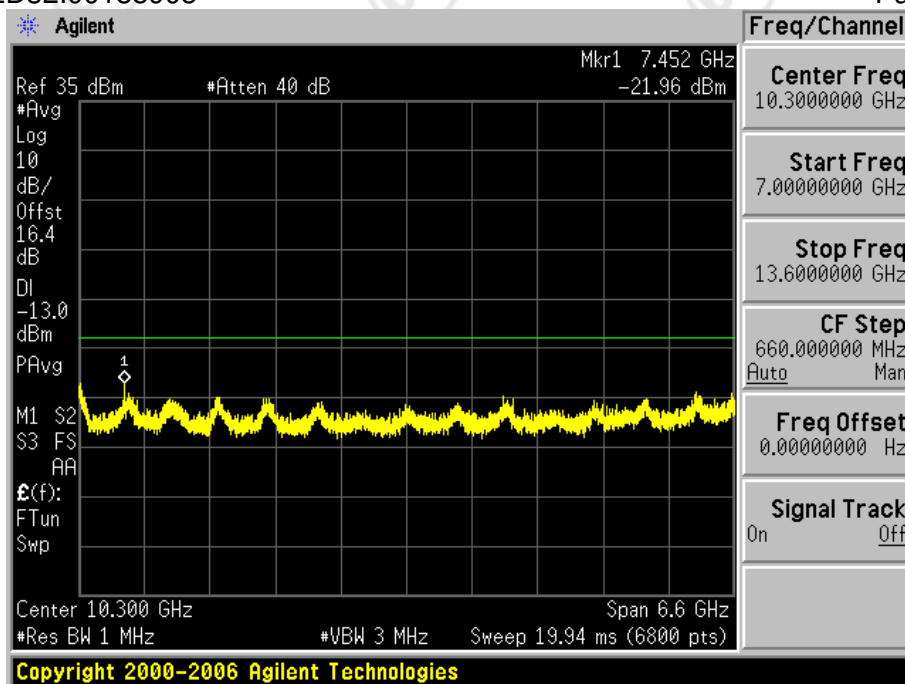




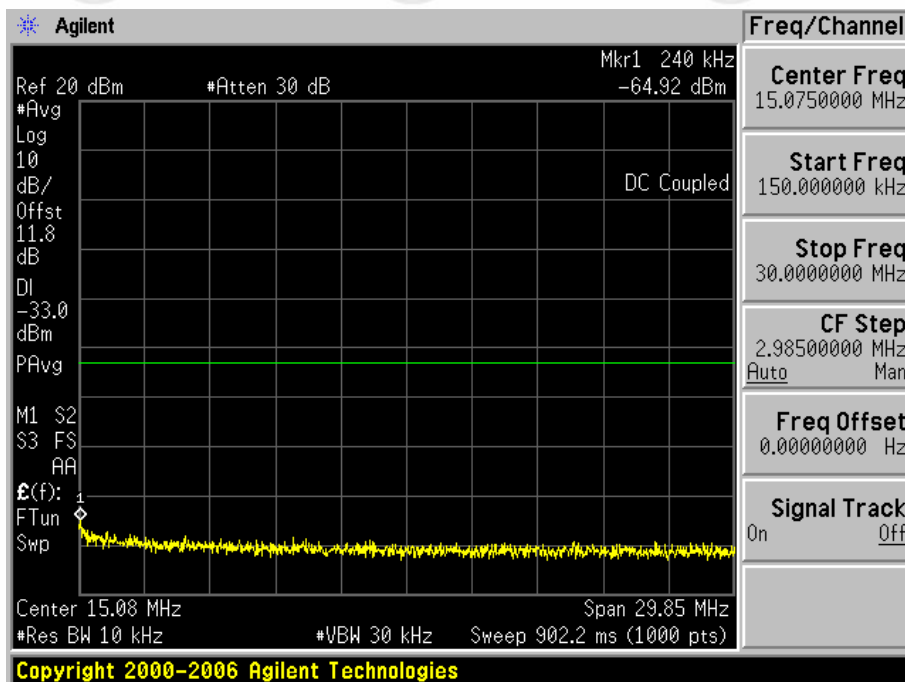
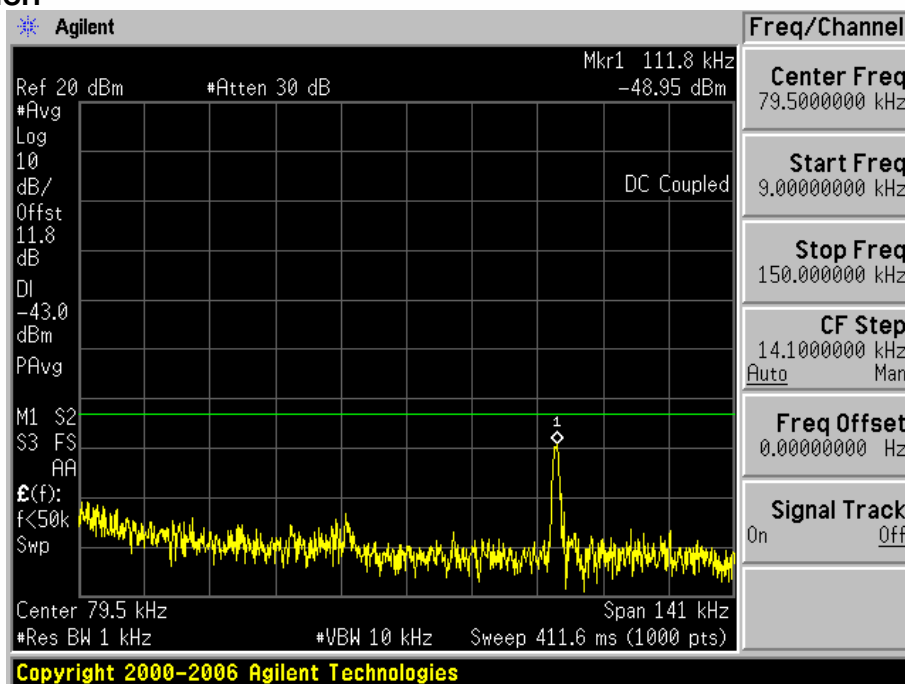
Test Channel=MCH

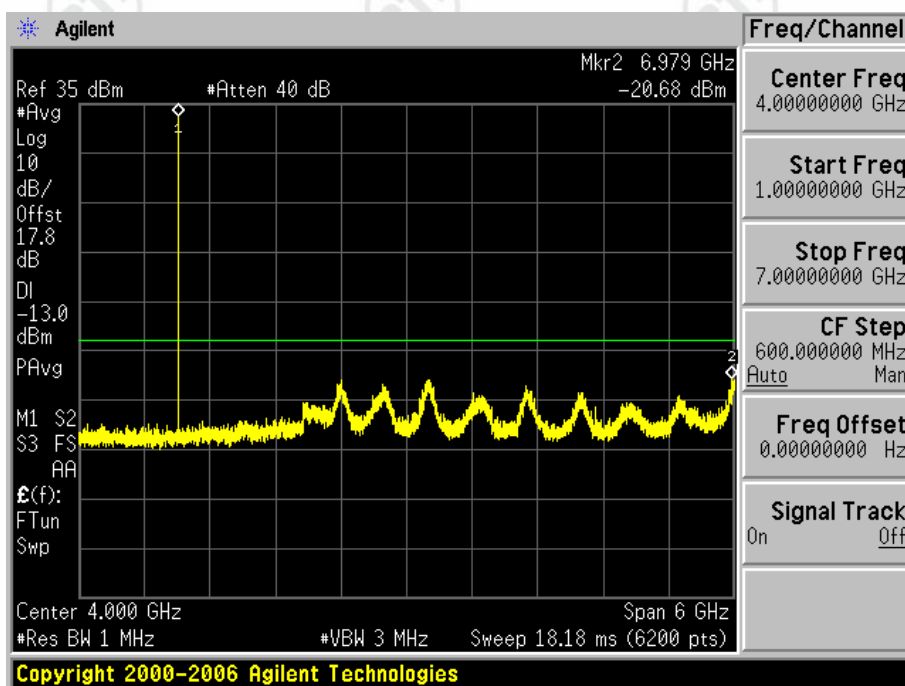
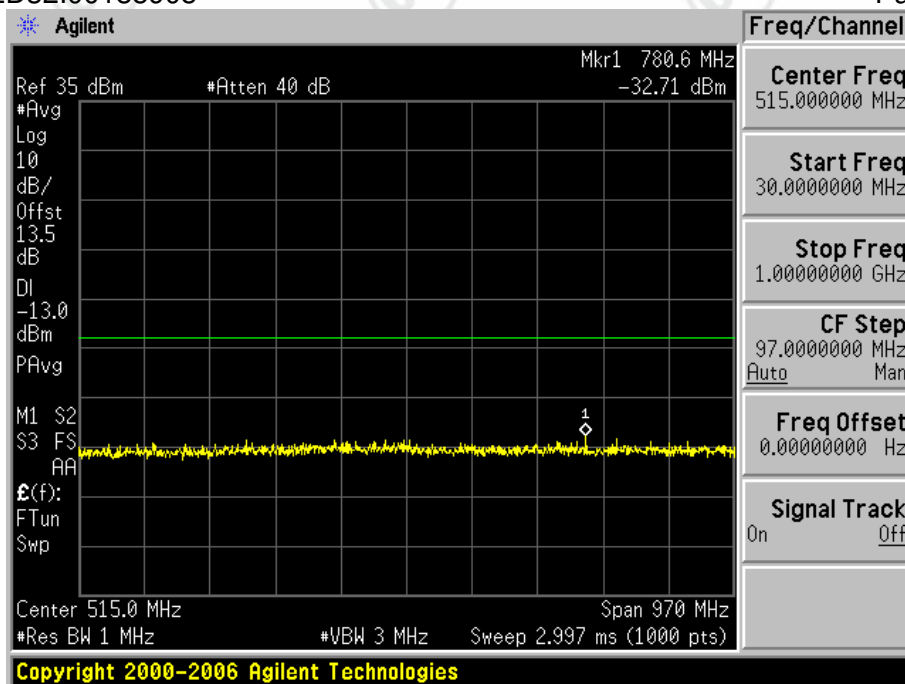


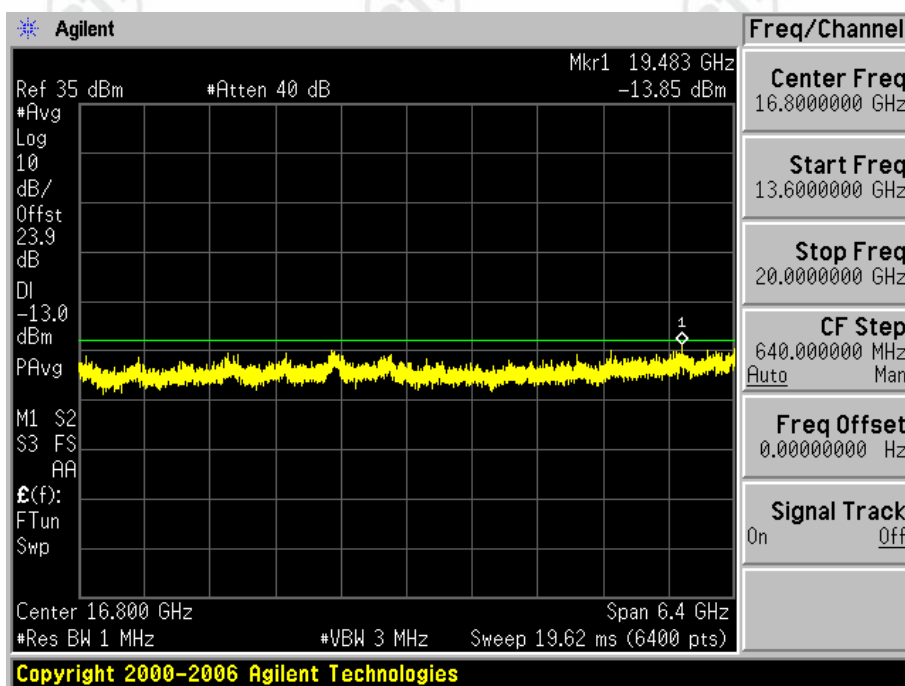
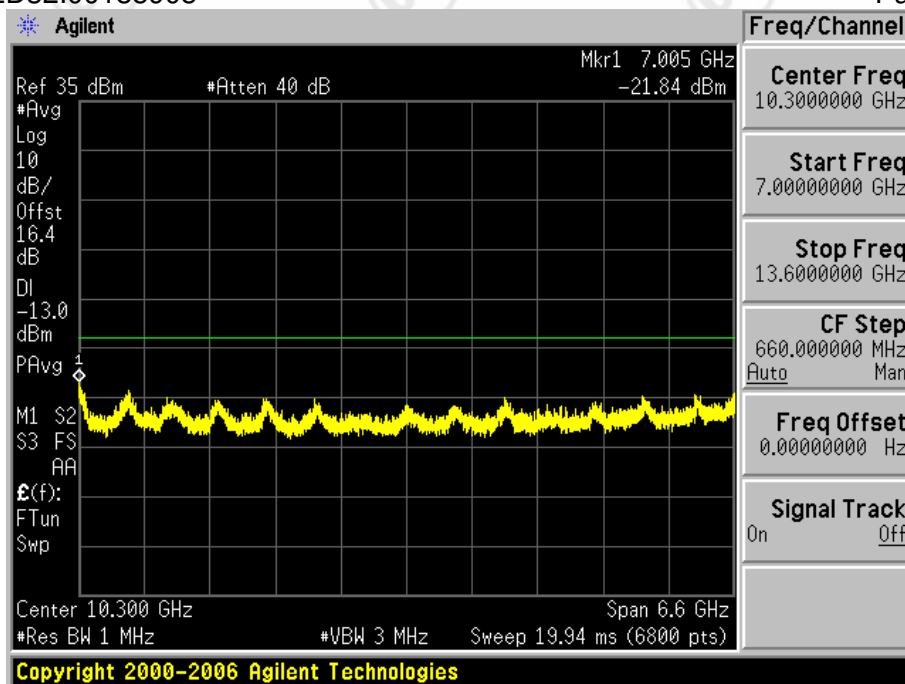




Test Channel=HCH

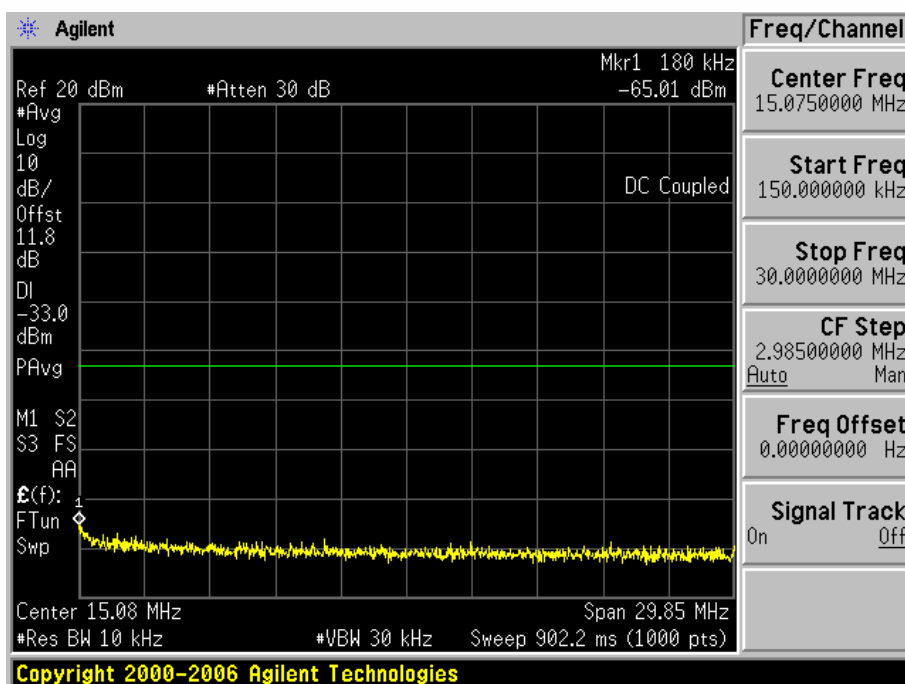
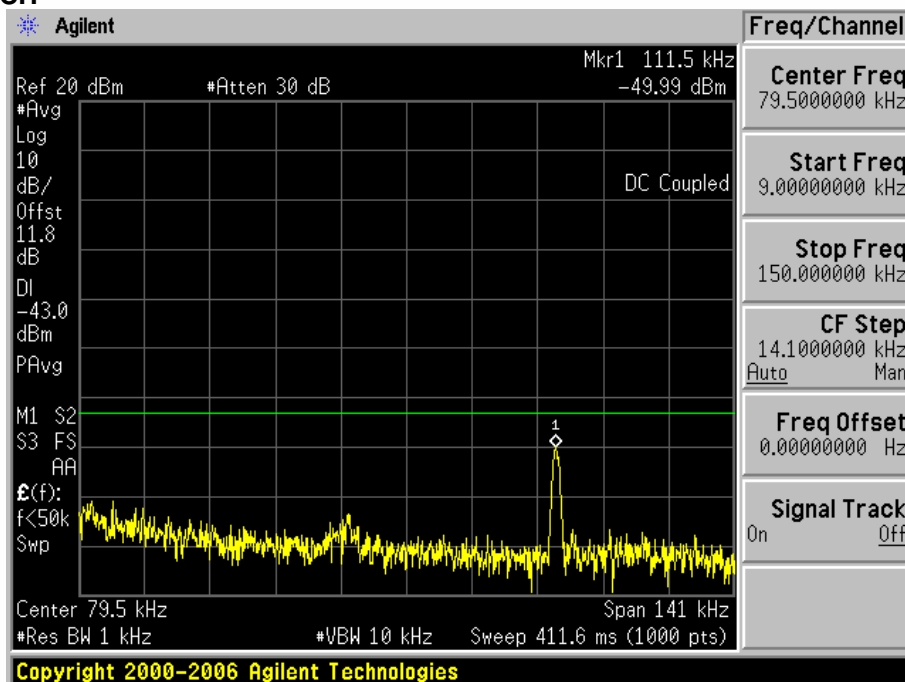


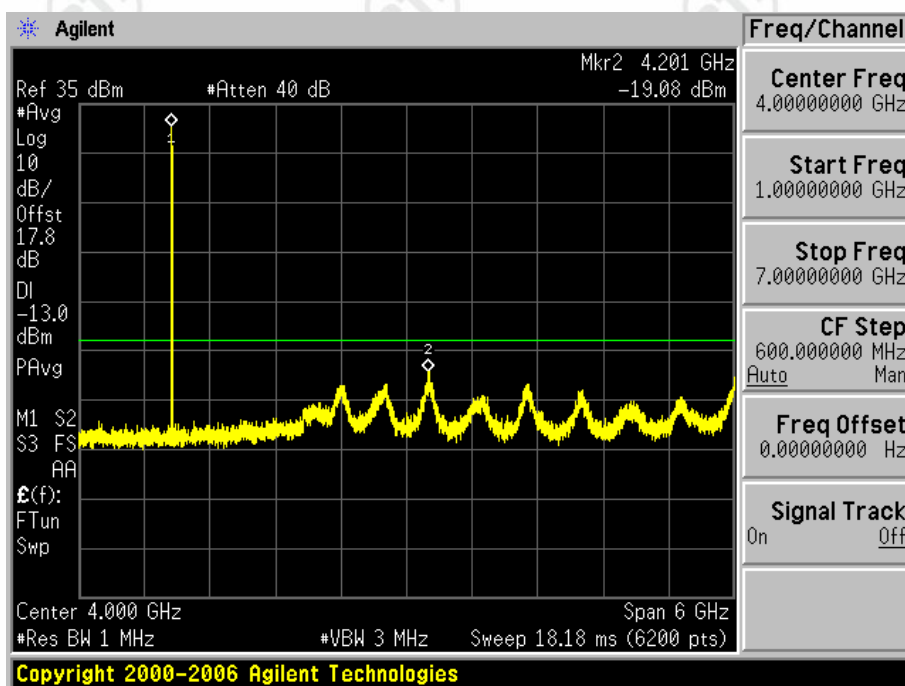
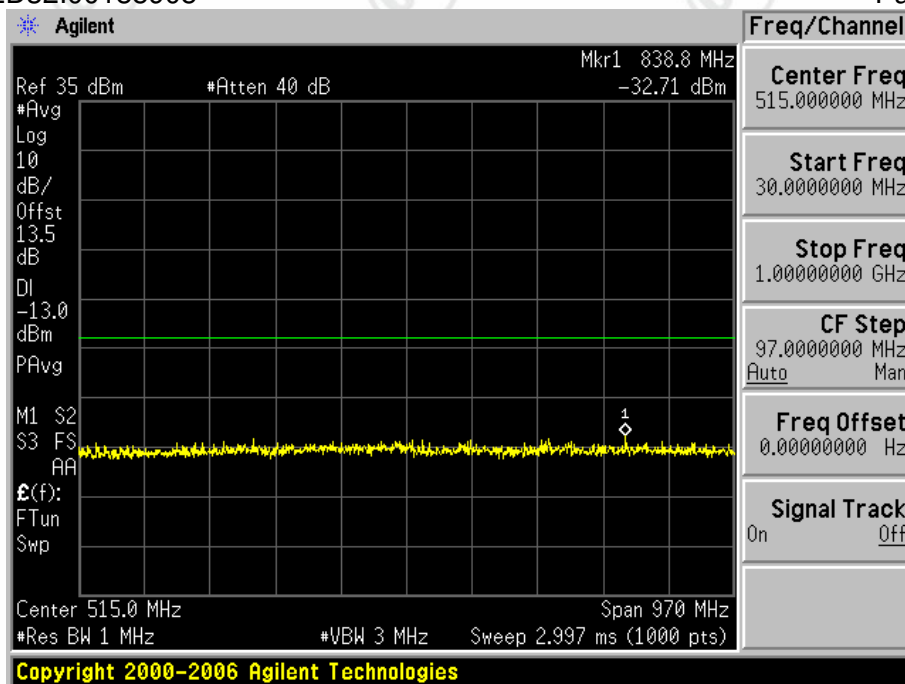


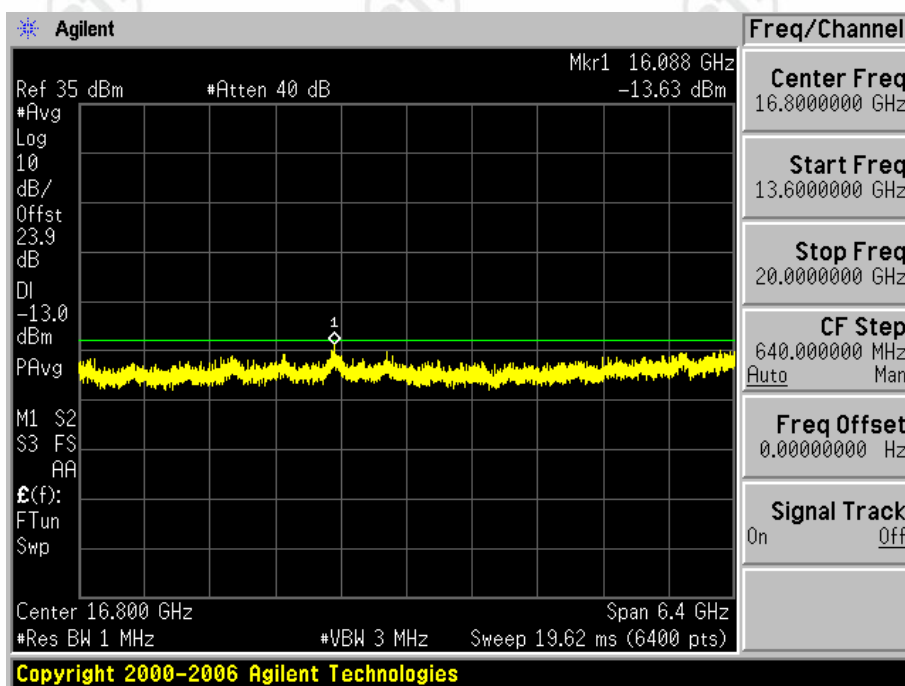
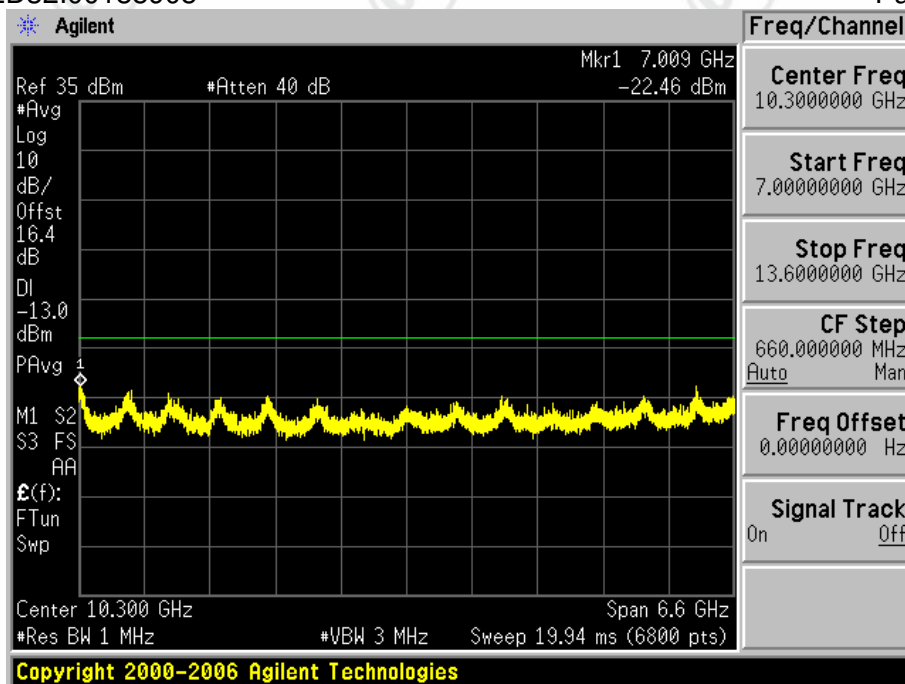


Test Mode=GSM/TM3

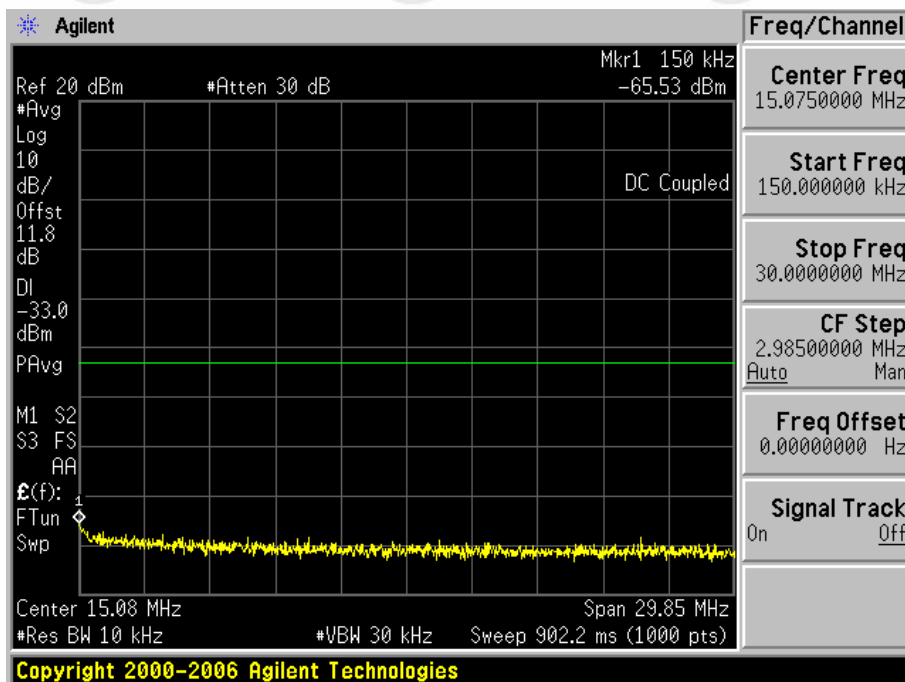
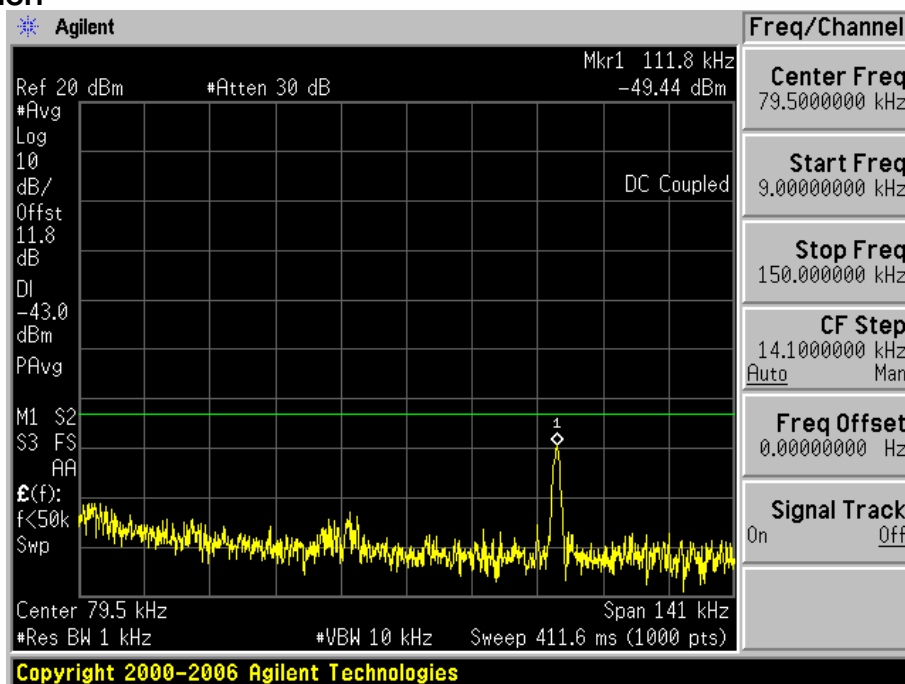
Test Channel=LCH

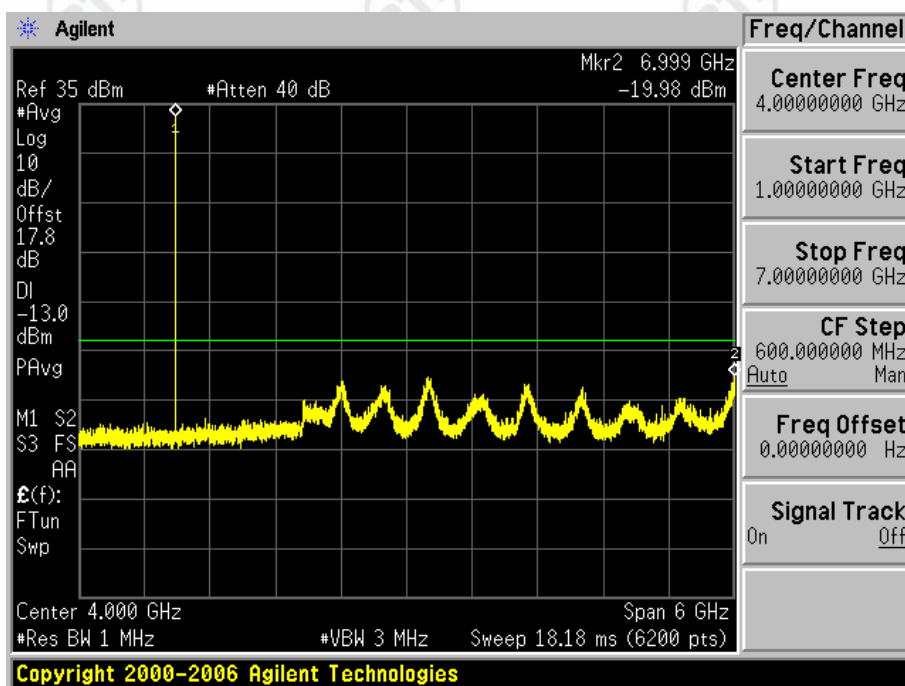
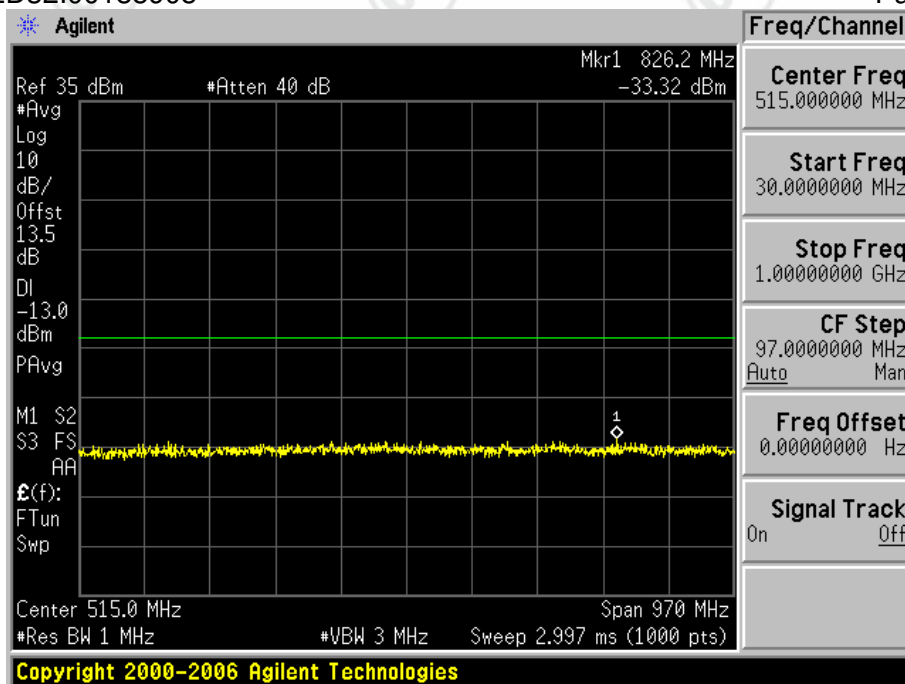


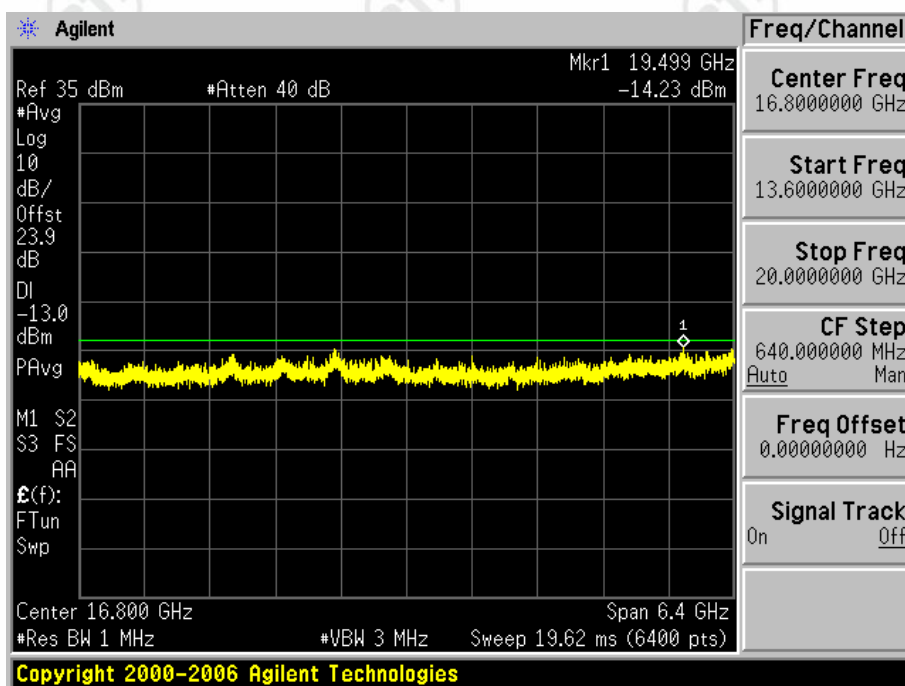
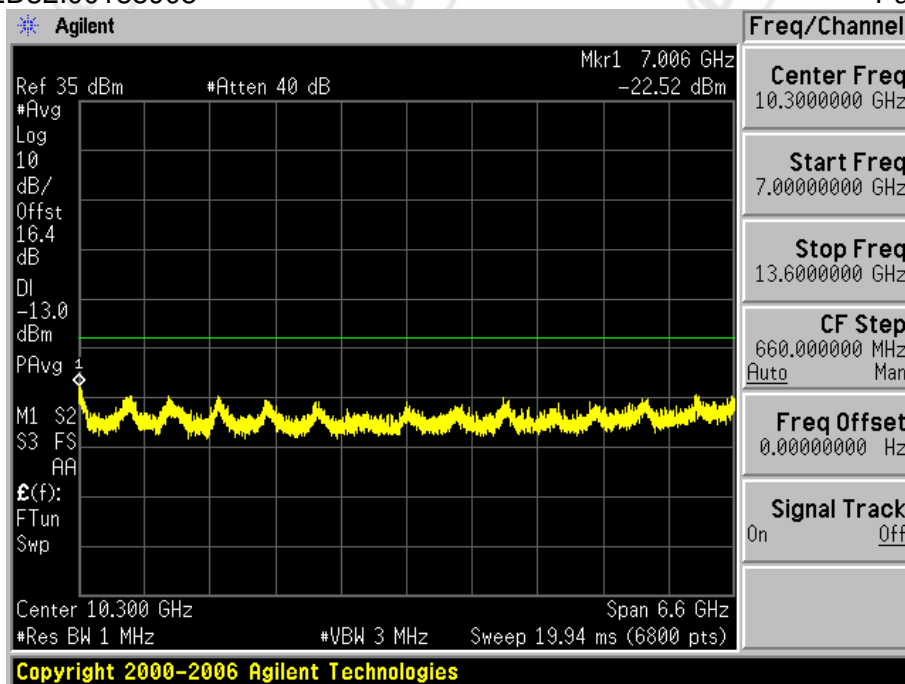




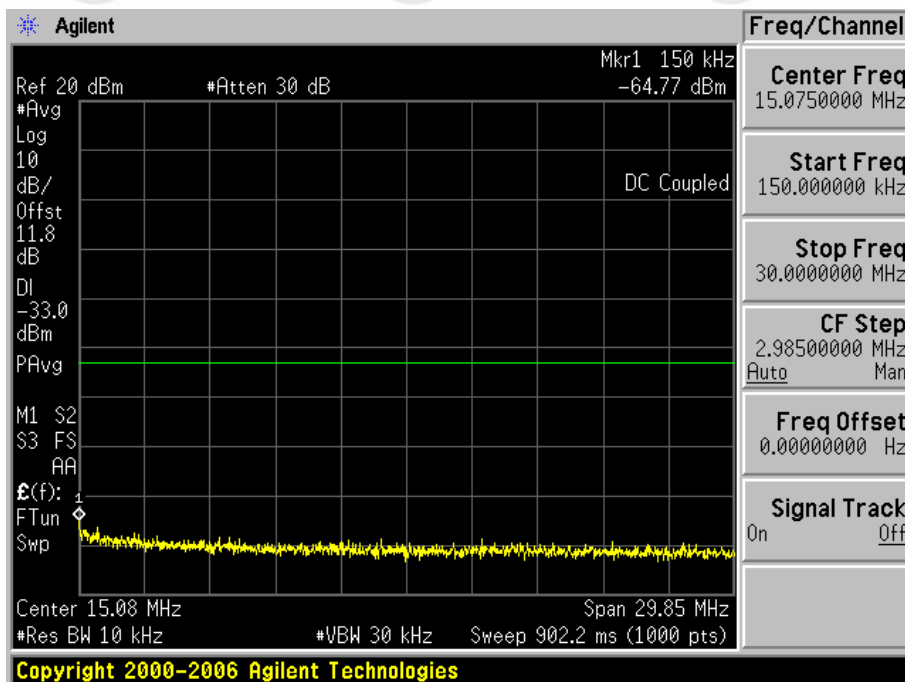
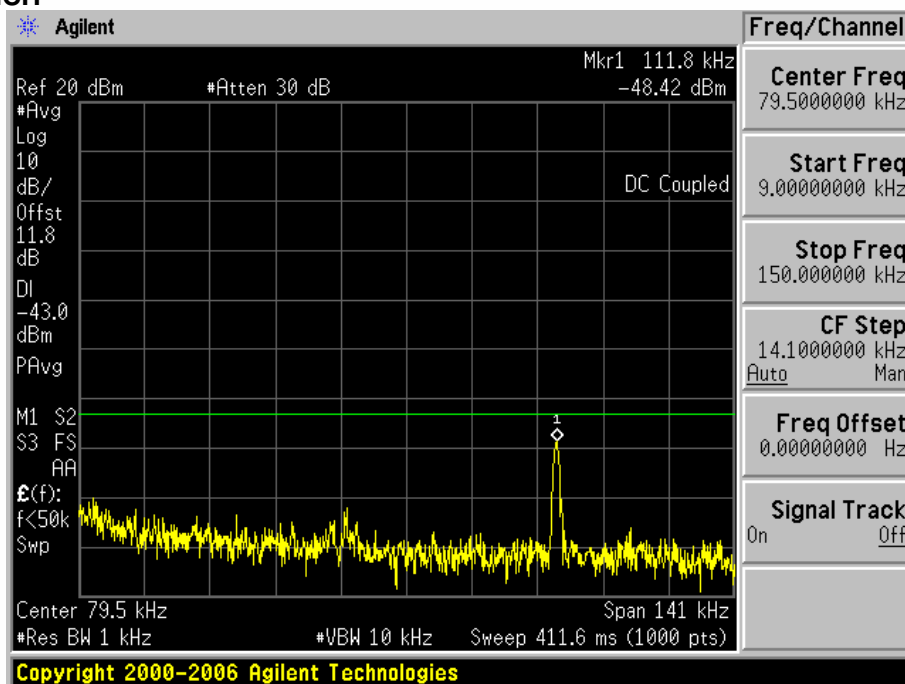
Test Channel=MCH

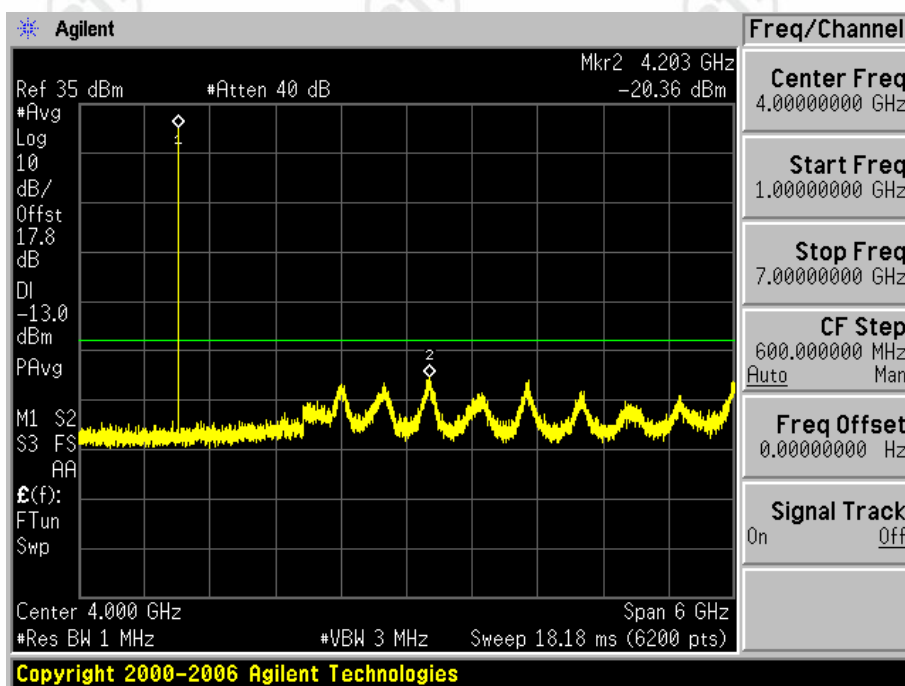
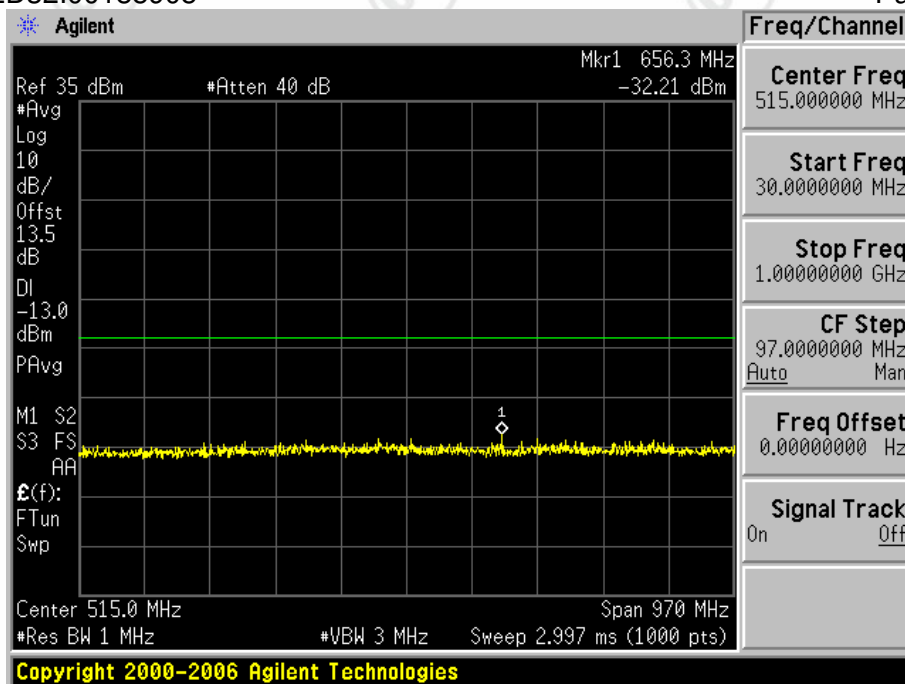


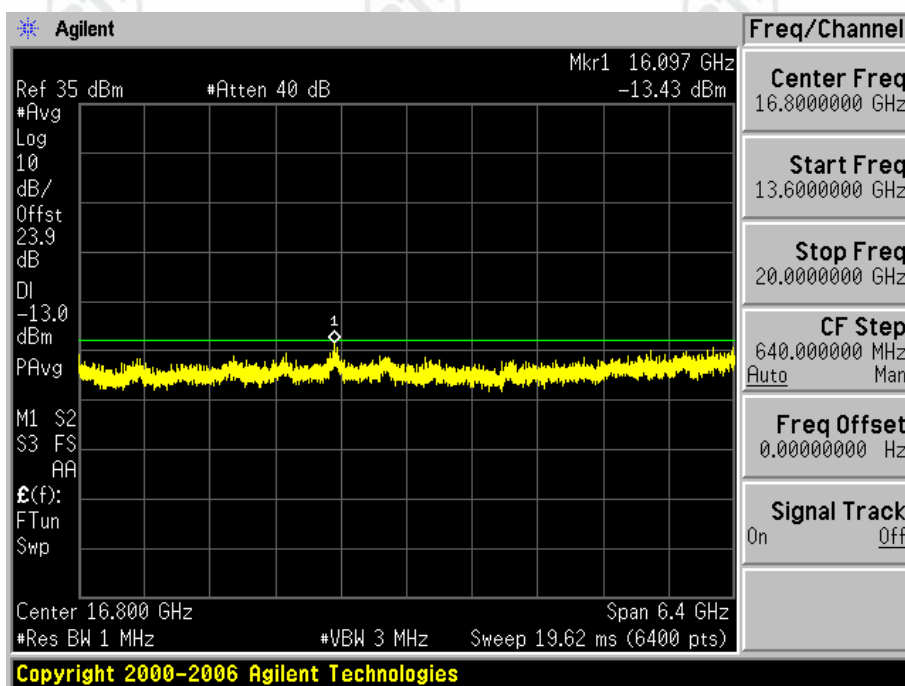
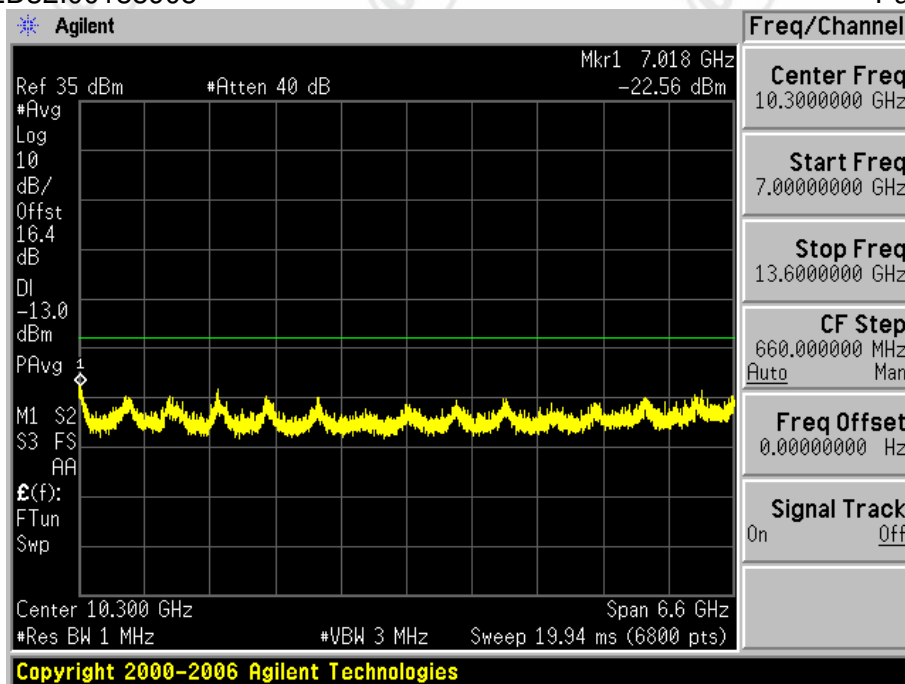




Test Channel=HCH





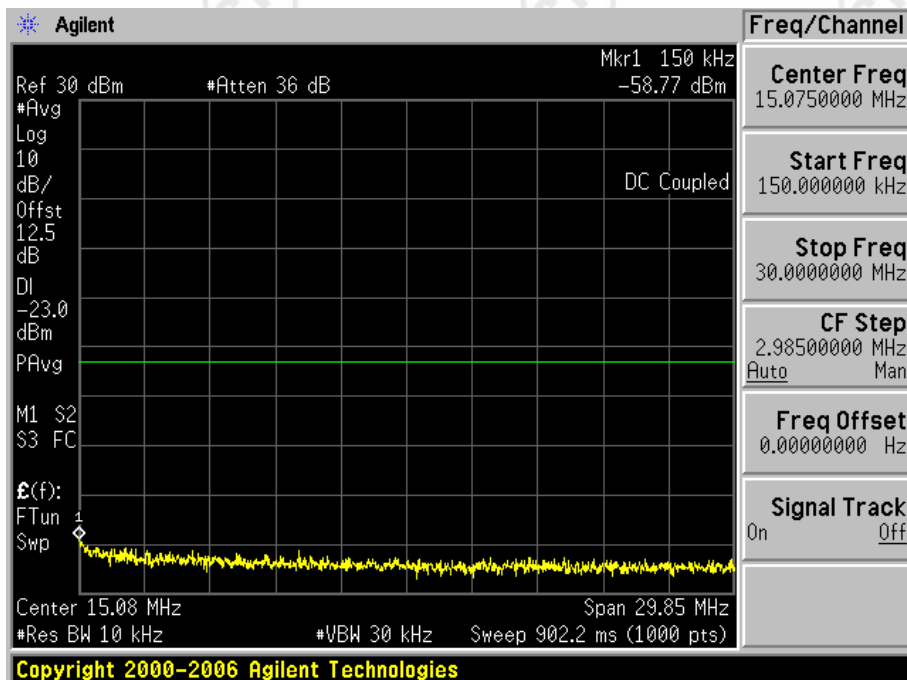
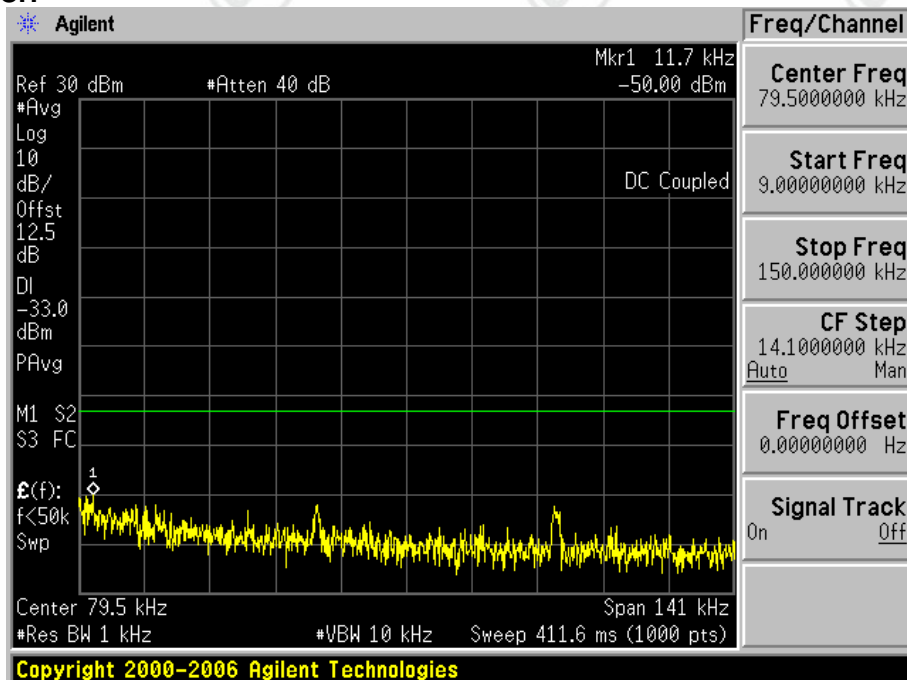


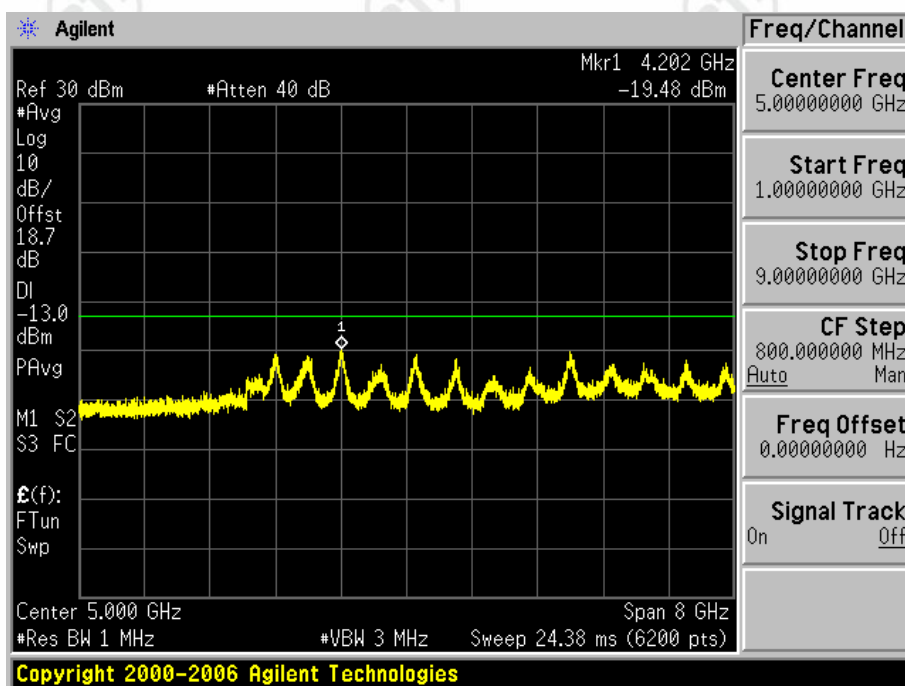
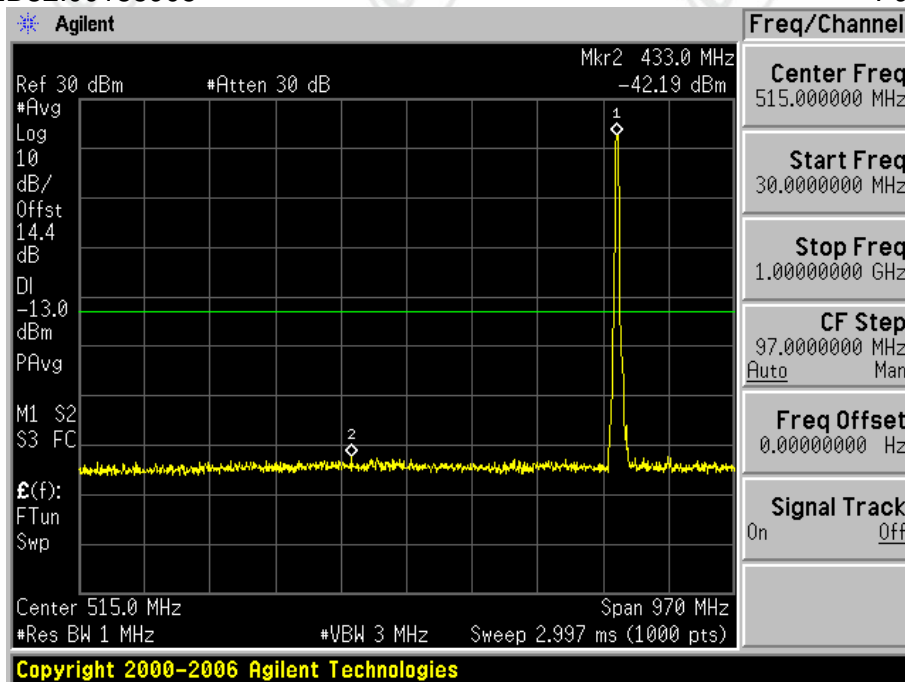
For WCDMA

Test Band=WCDMA850

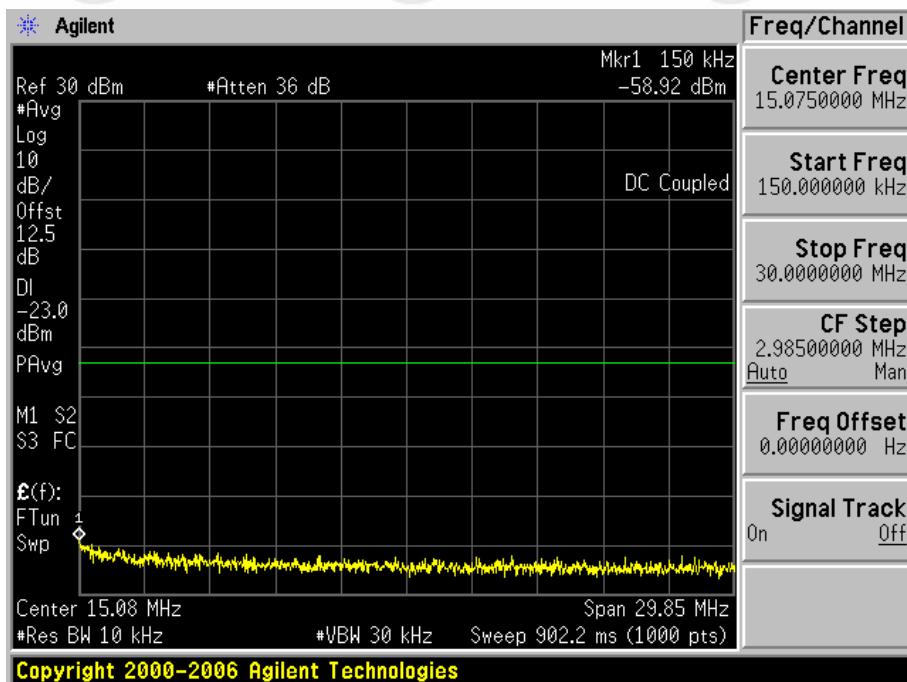
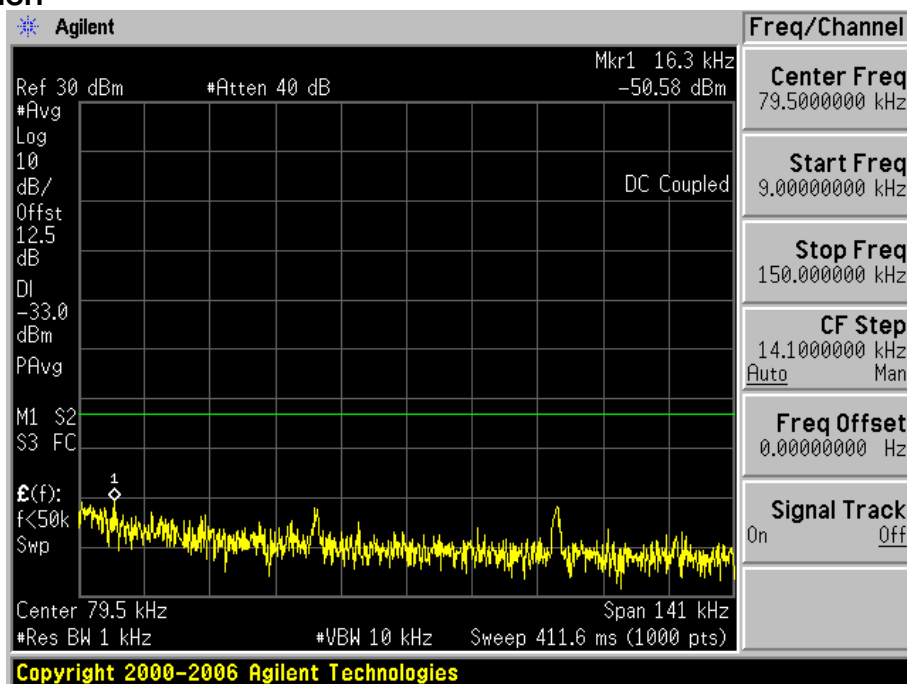
Test Mode=UMTS/TM1

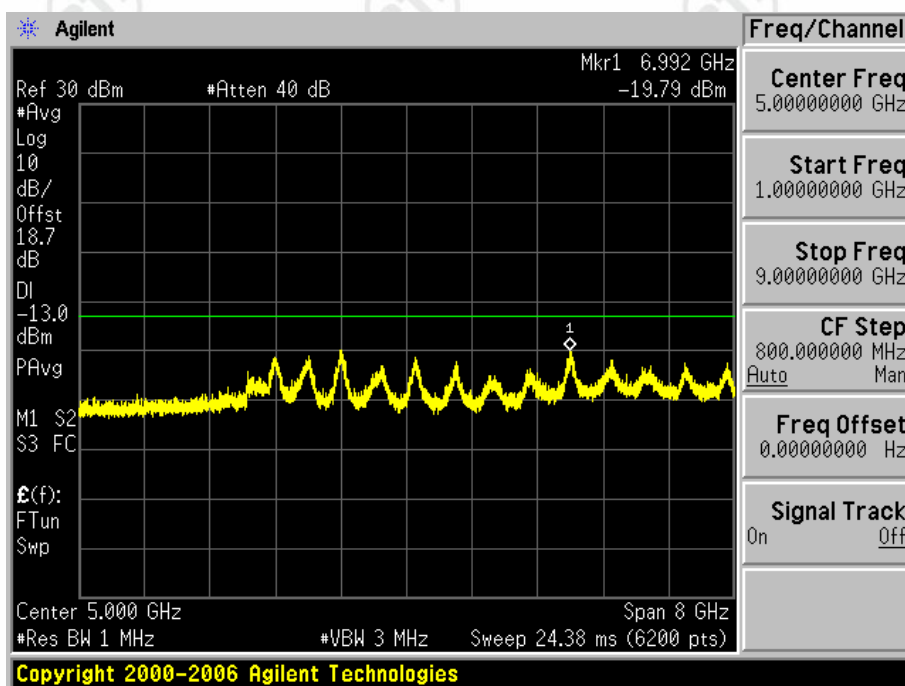
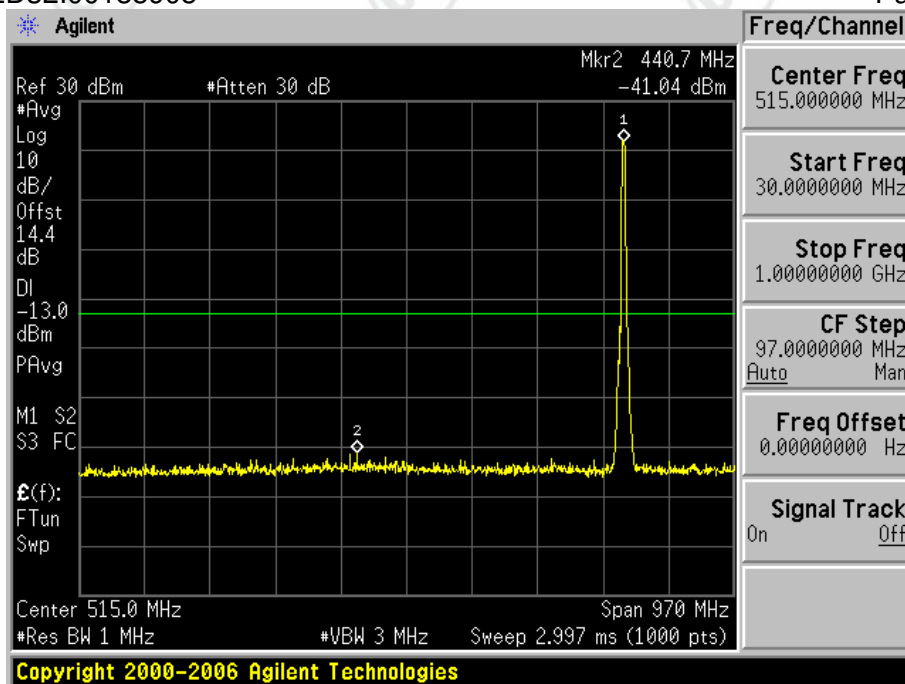
Test Channel=LCH



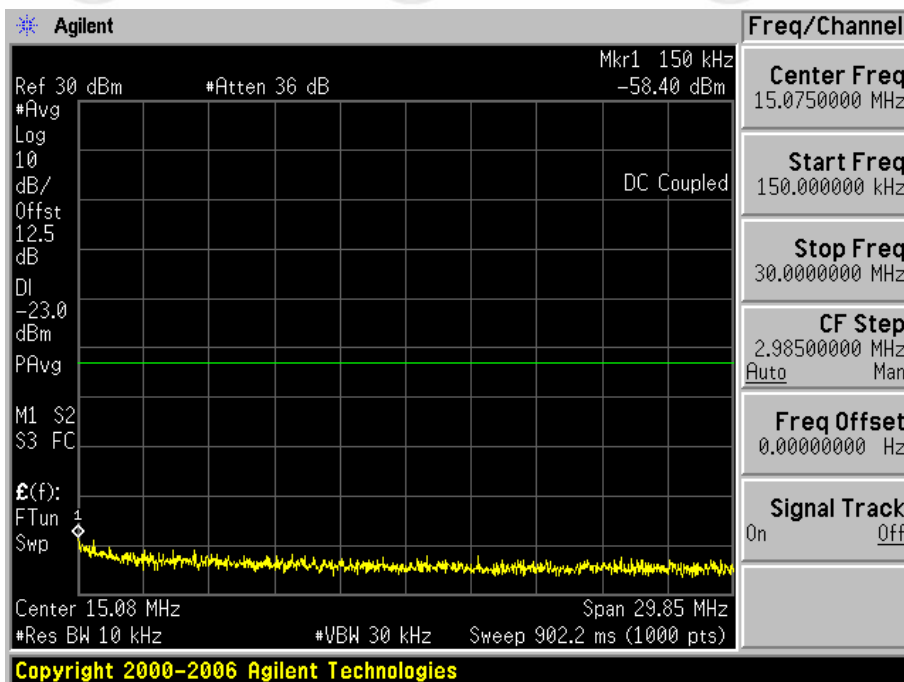
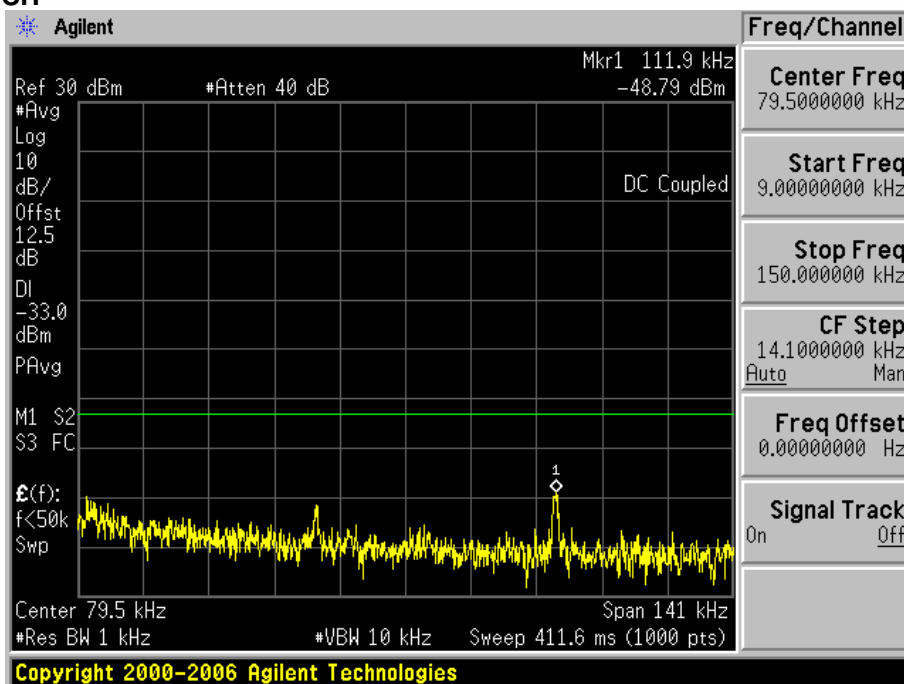


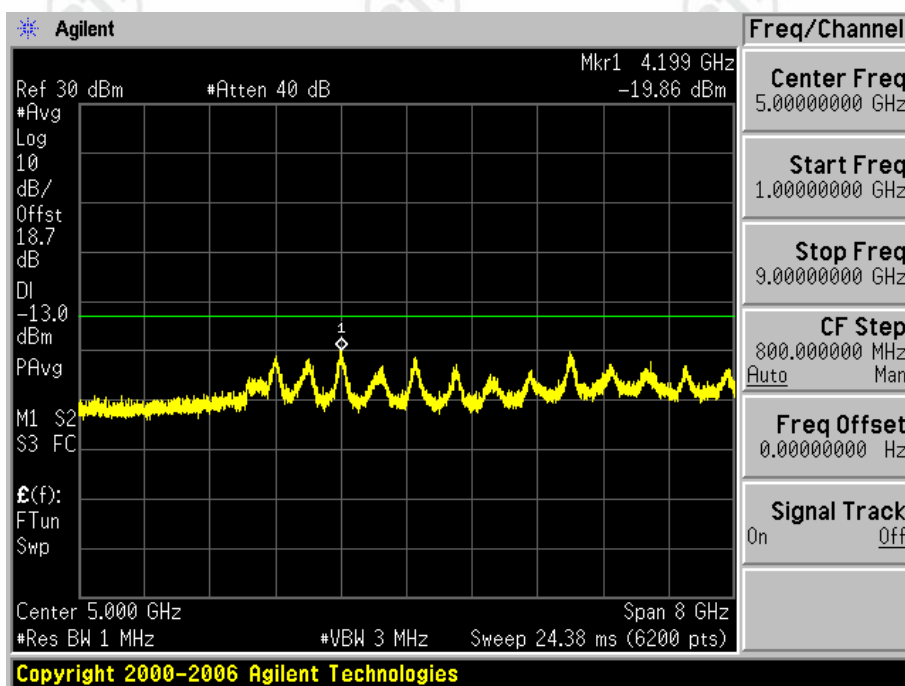
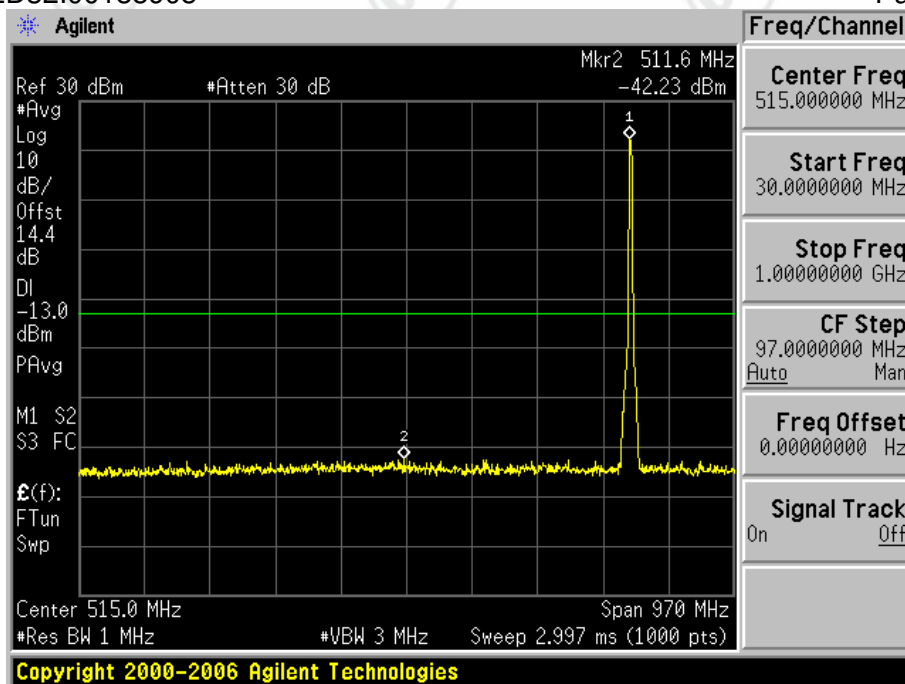
Test Channel=MCH





Test Channel=HCH



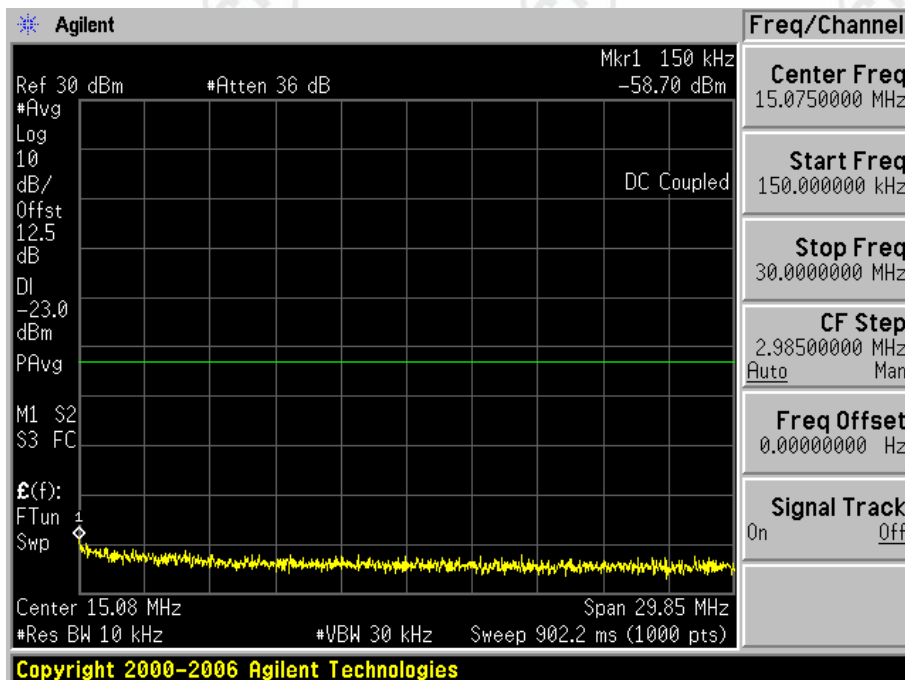
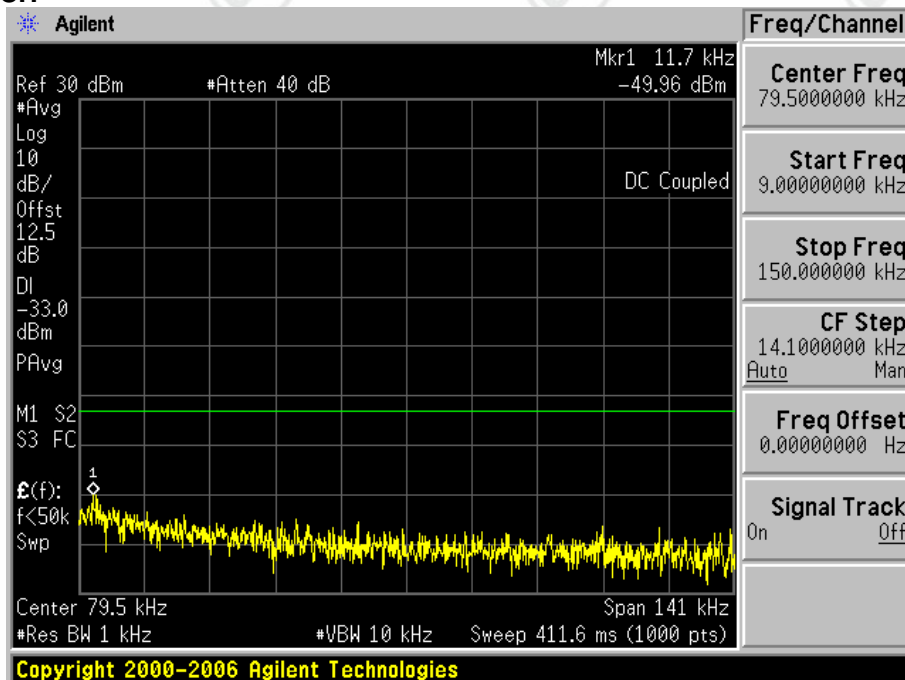


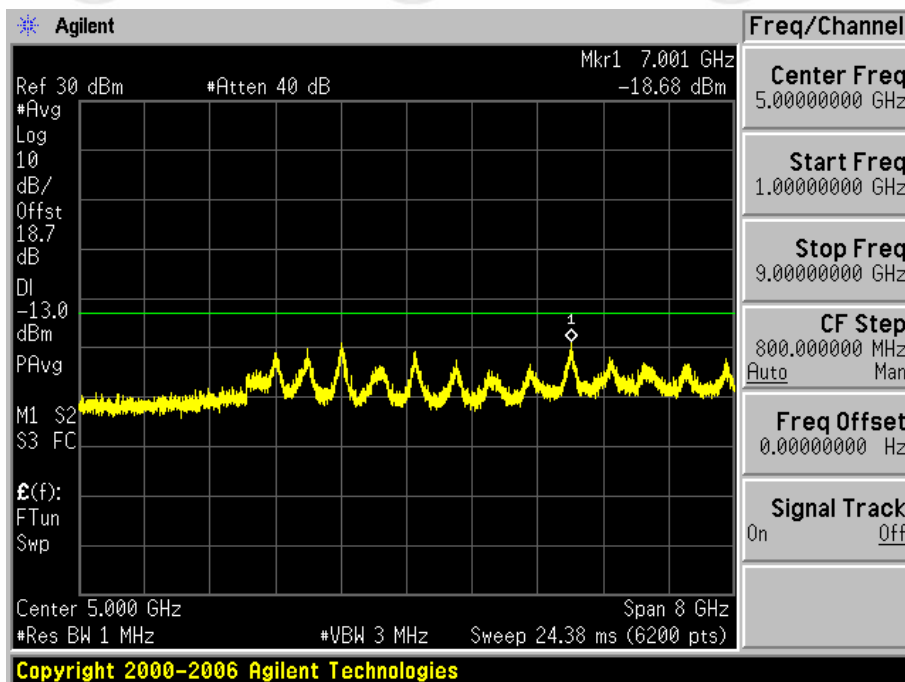
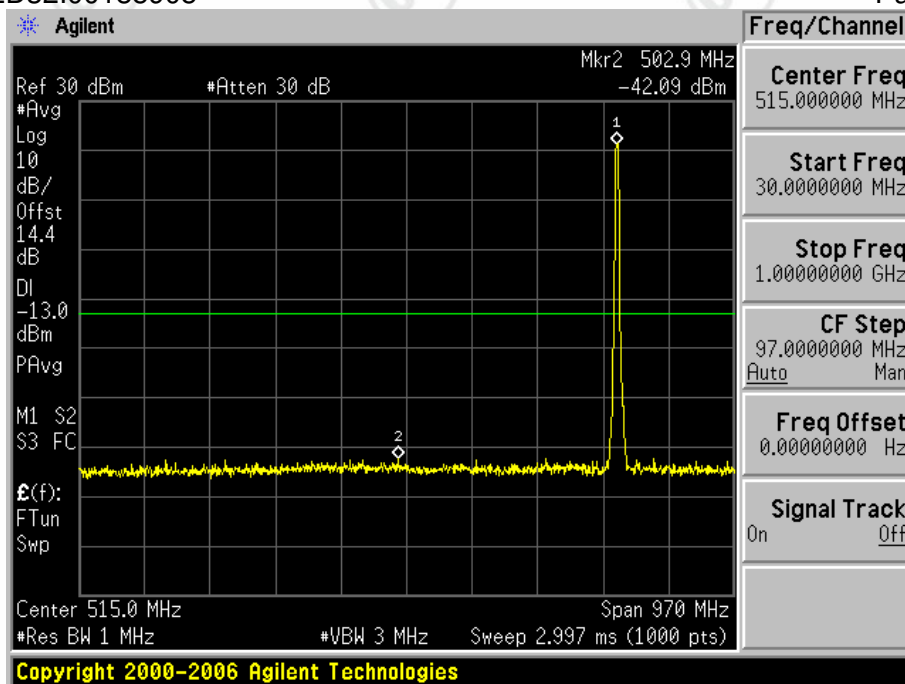
For WCDMA

Test Band=WCDMA850

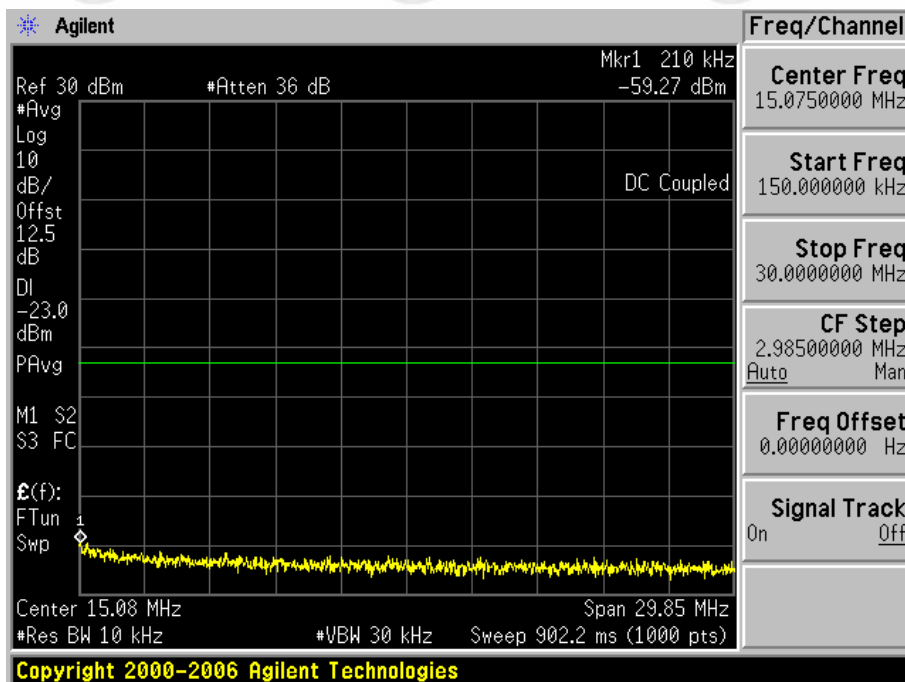
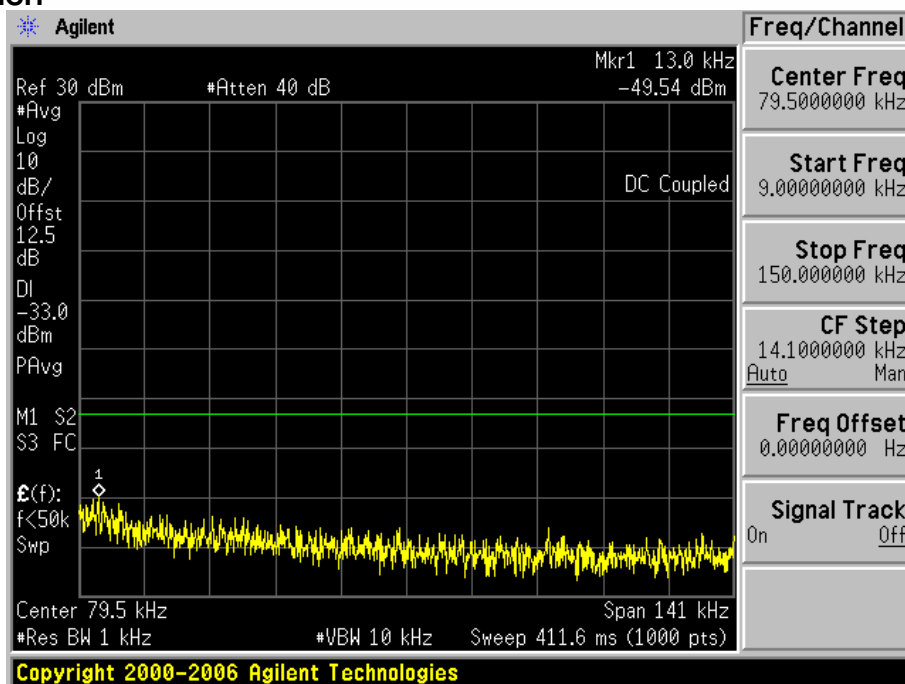
Test Mode=UMTS/TM2

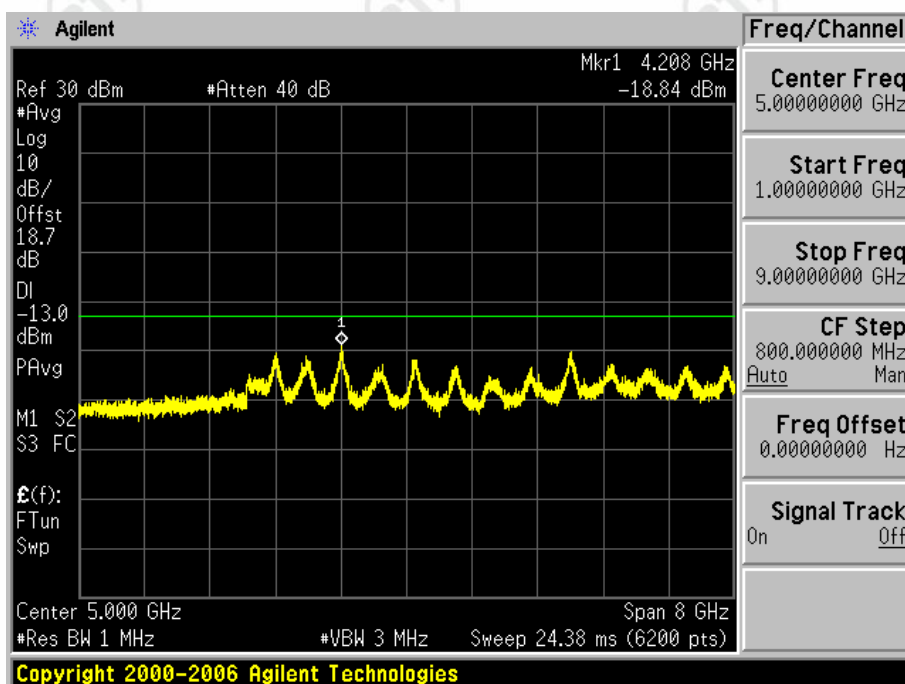
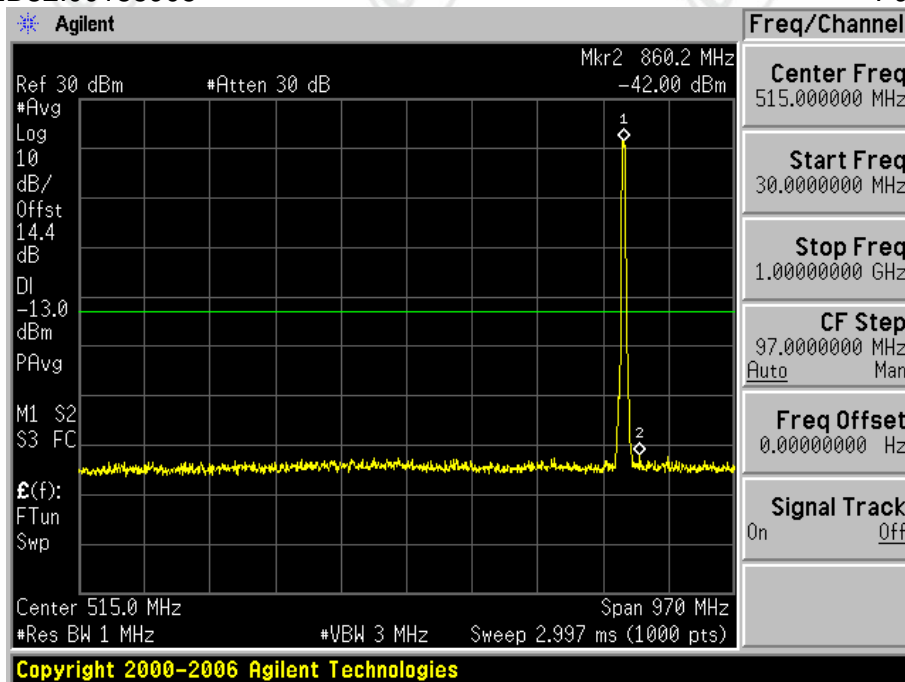
Test Channel=LCH



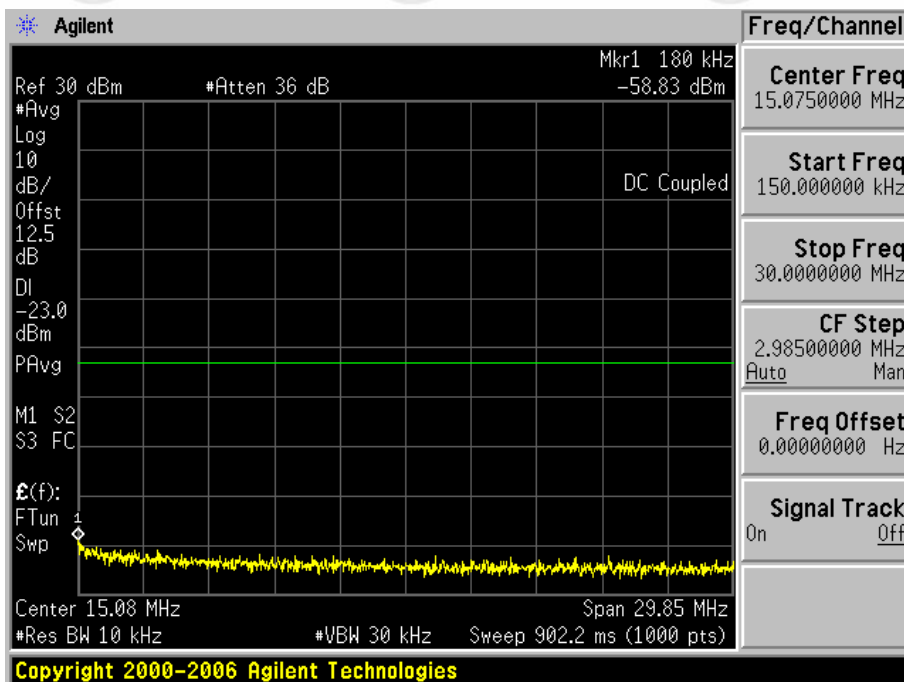
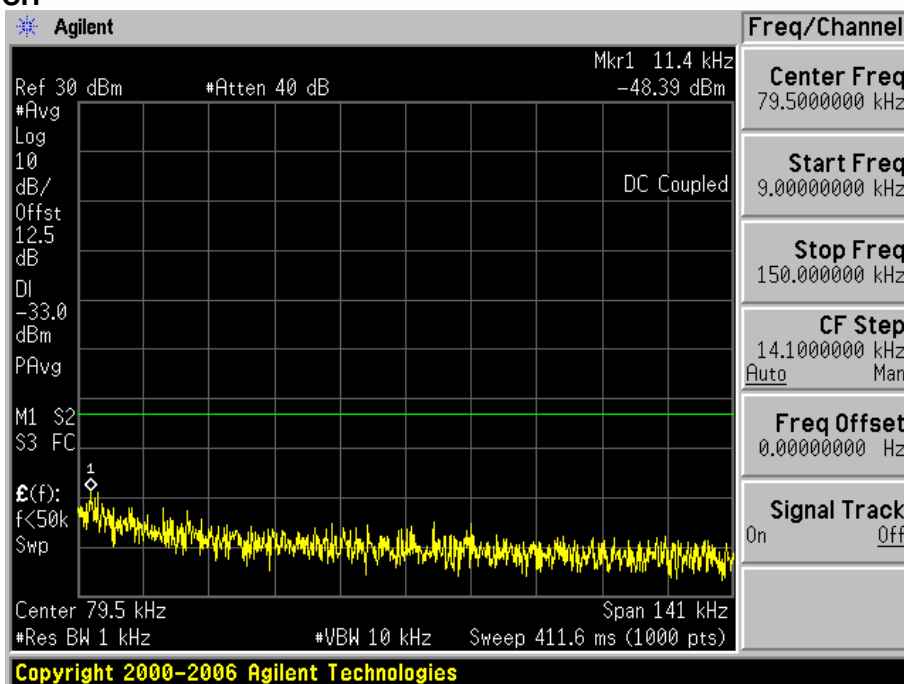


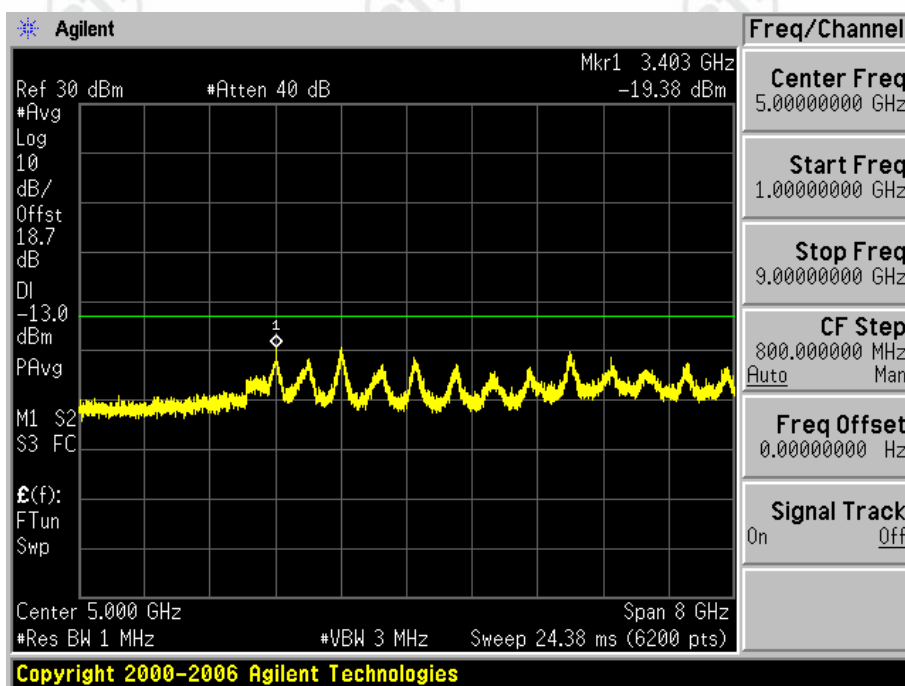
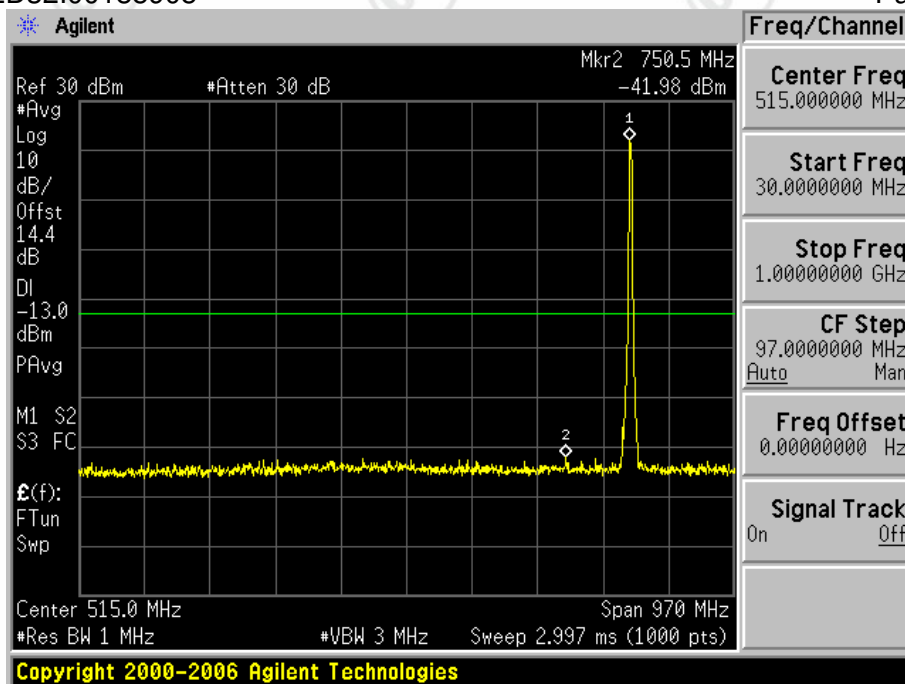
Test Channel=MCH





Test Channel=HCH

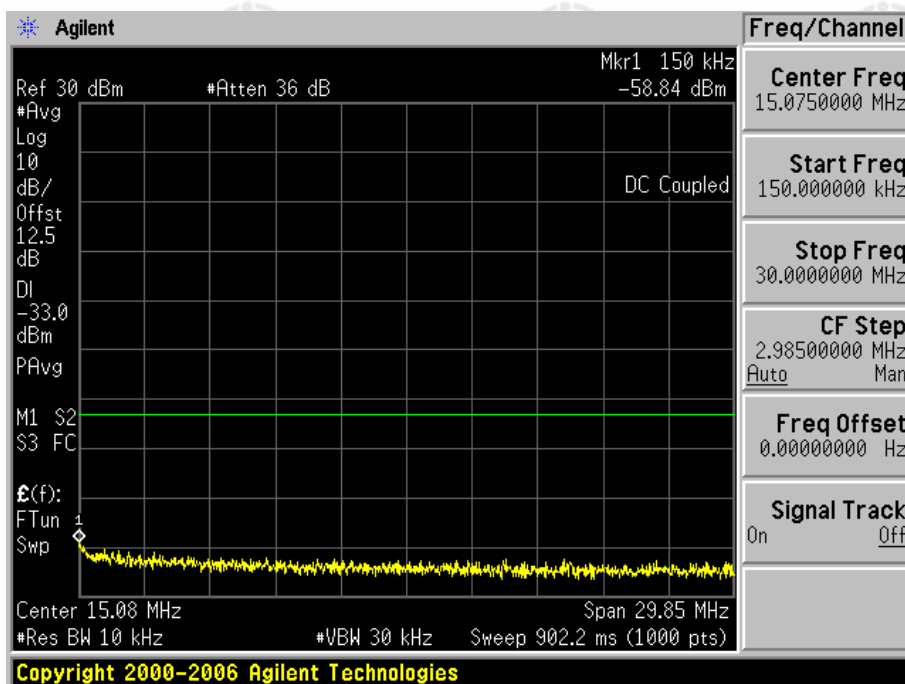
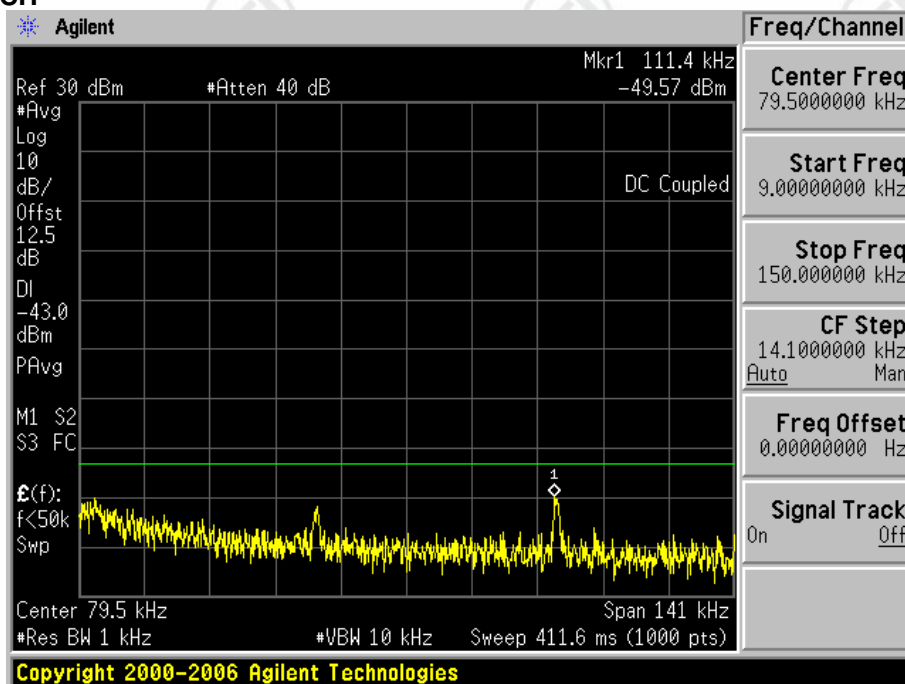


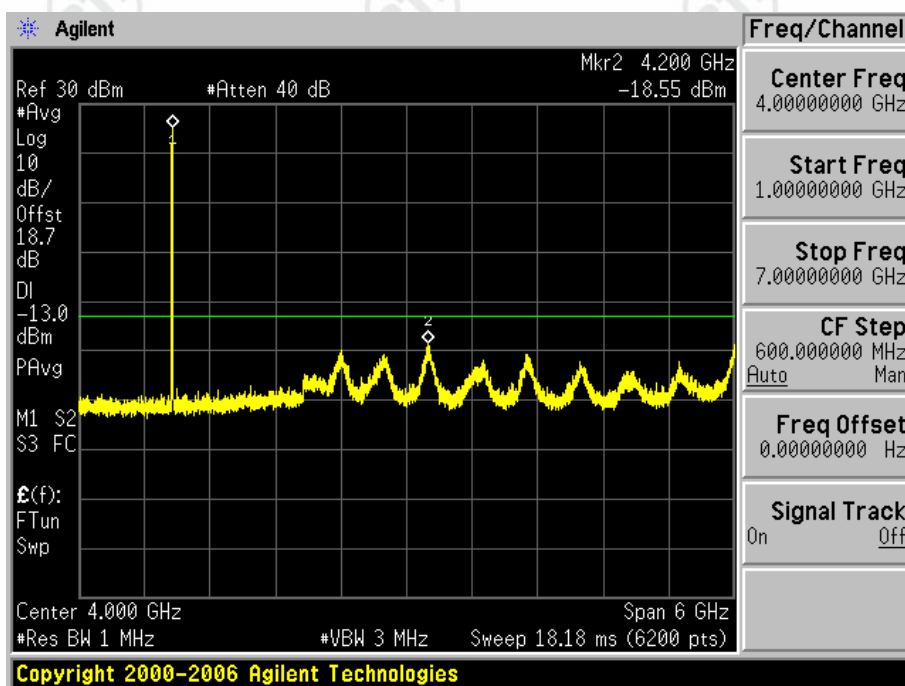
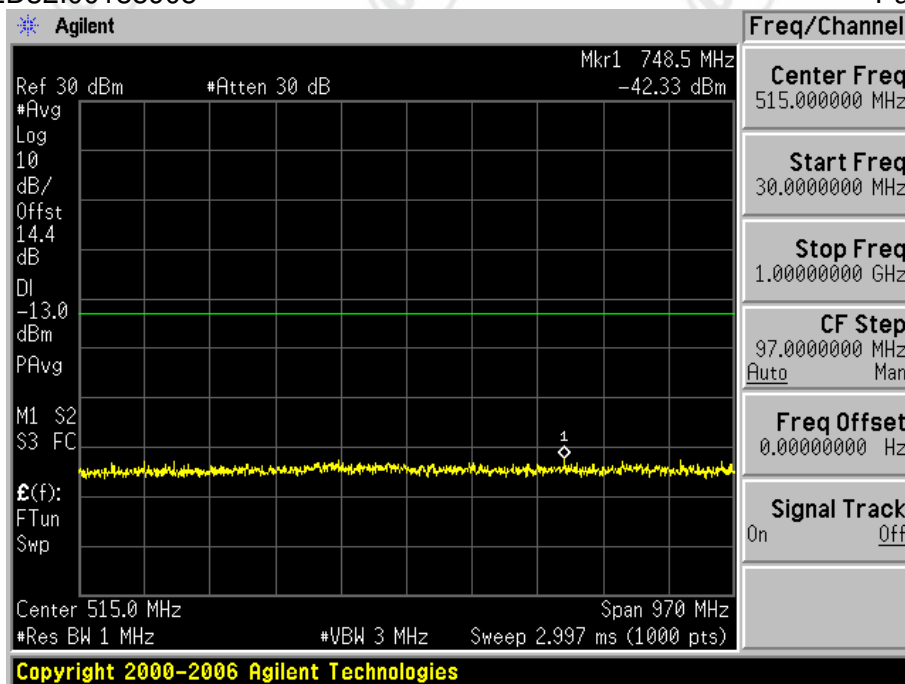


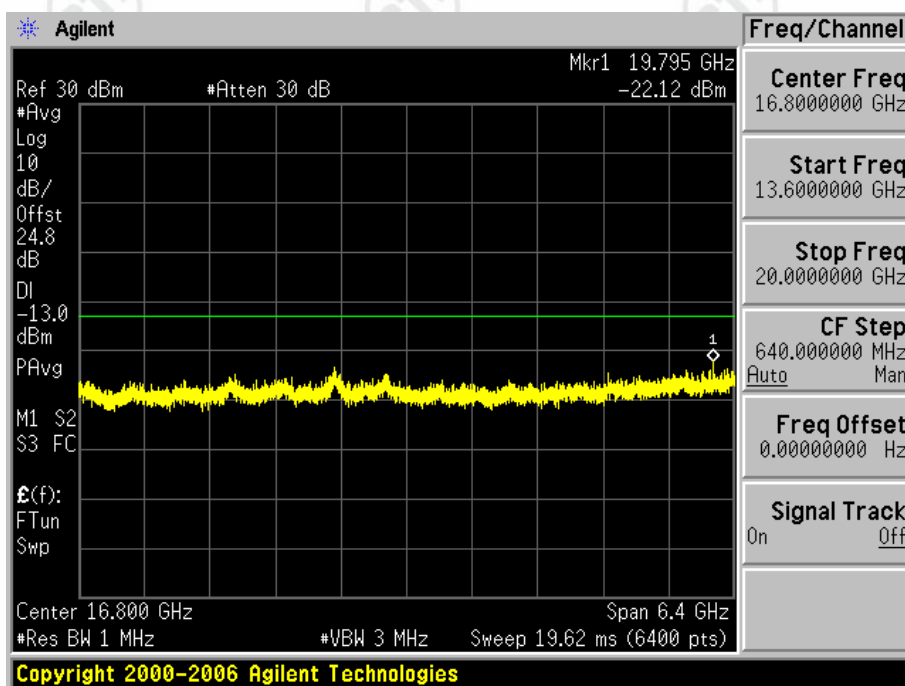
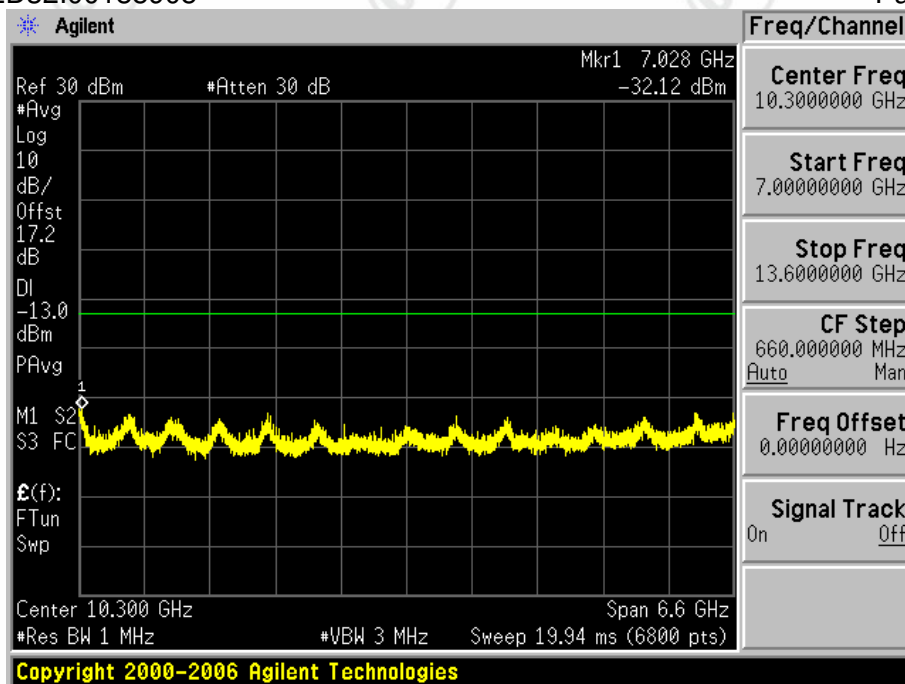
Test Band=WCDMA1900

Test Mode=UMTS/TM1

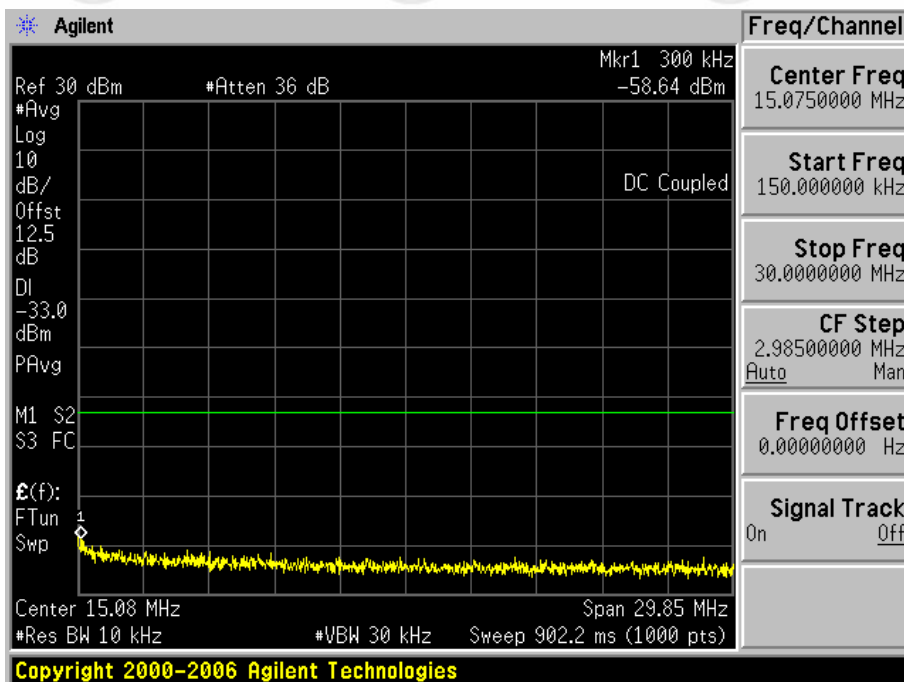
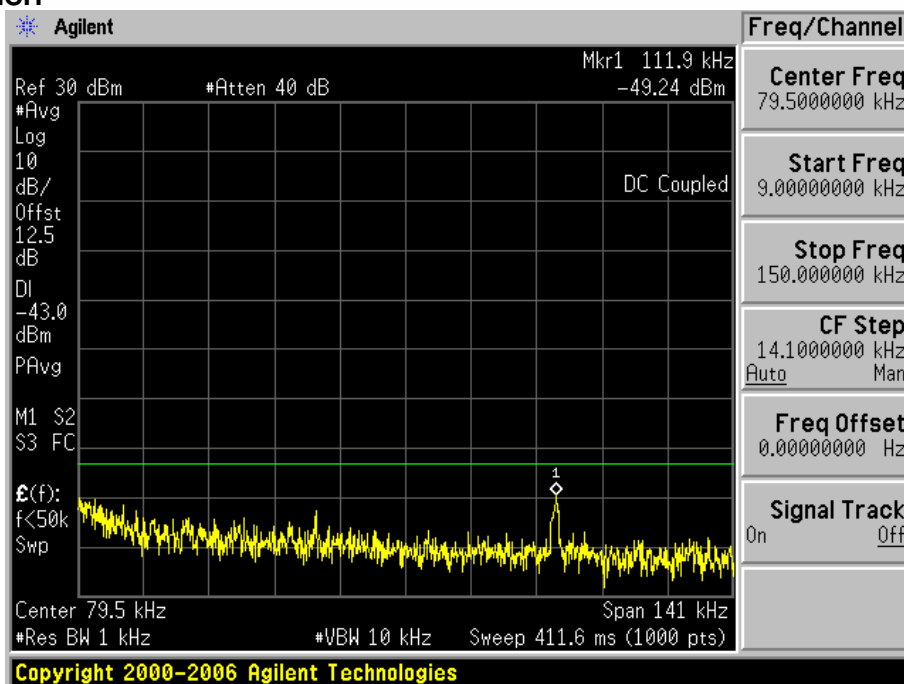
Test Channel=LCH

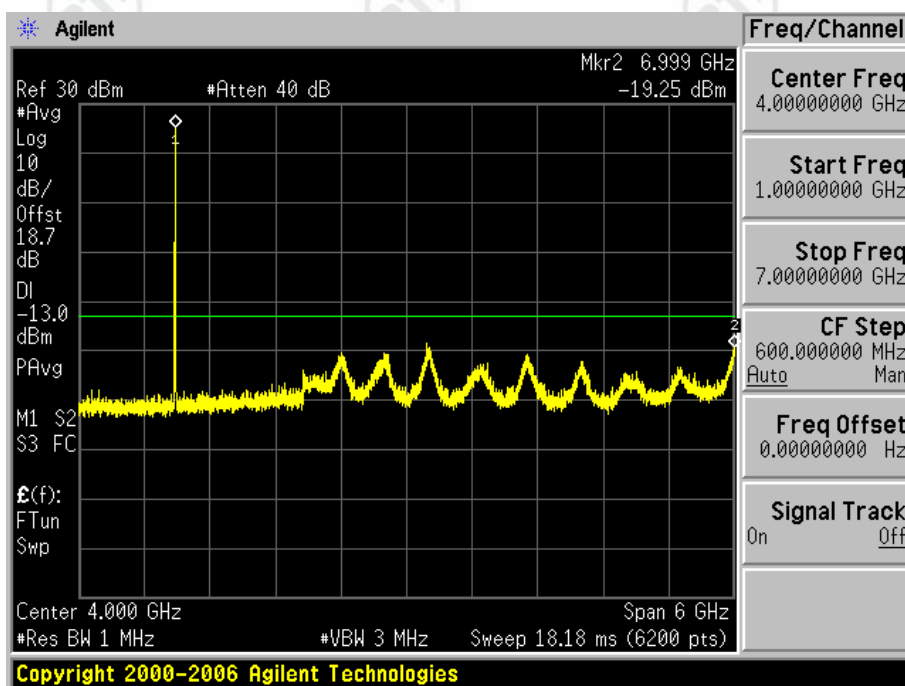
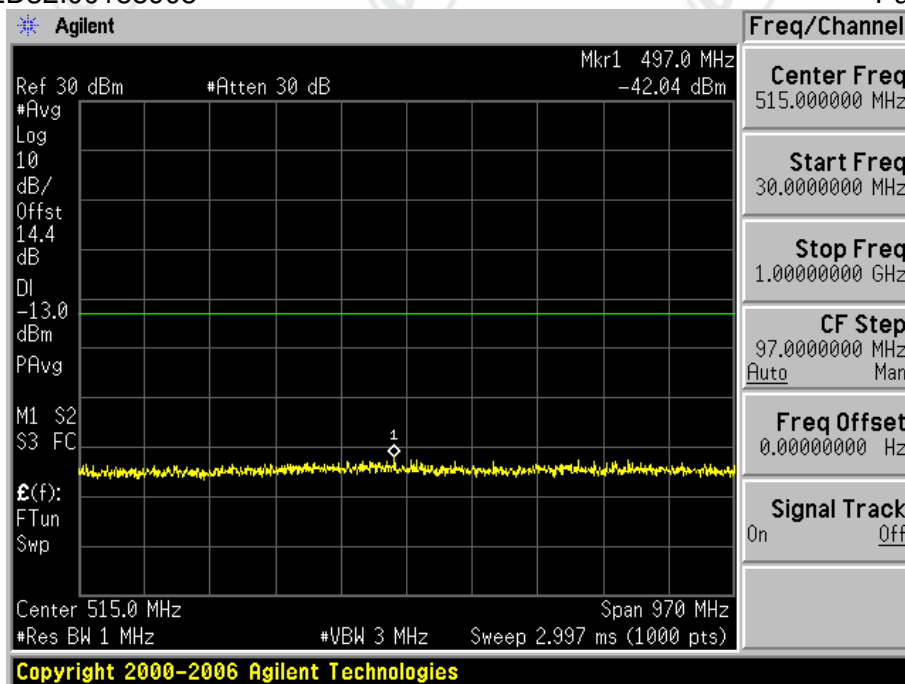


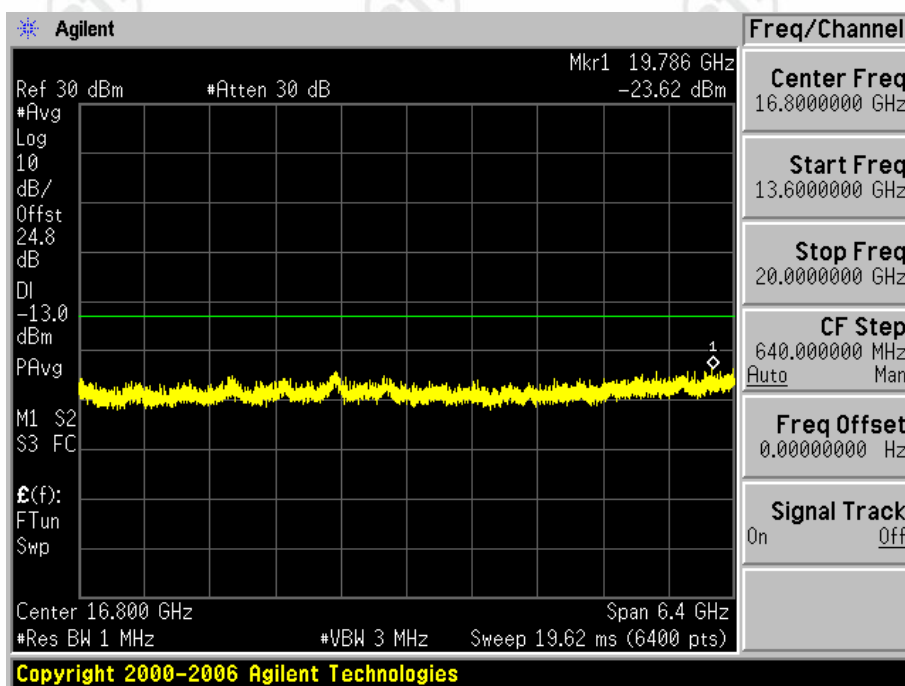
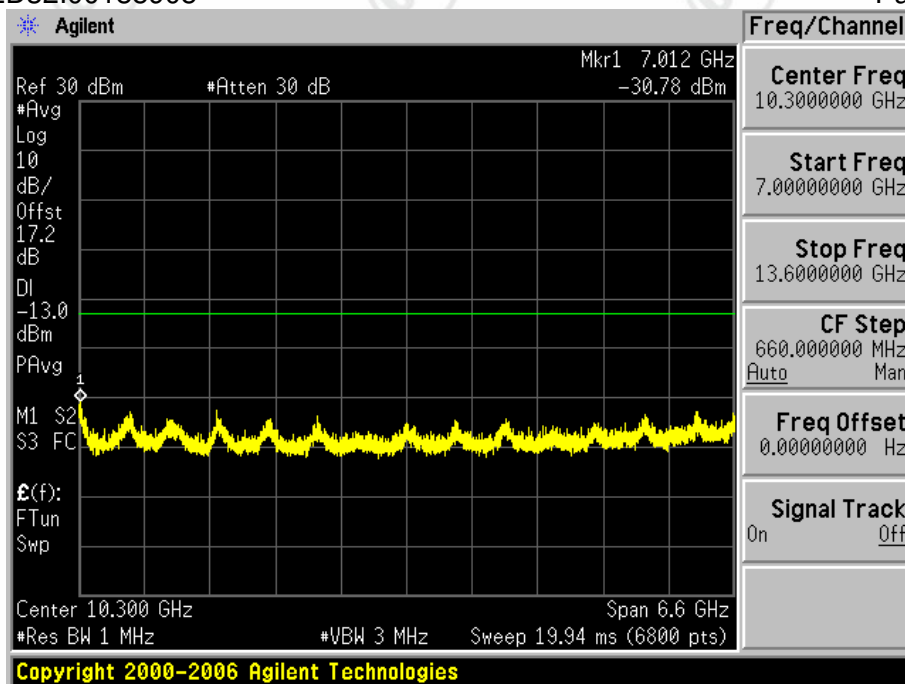




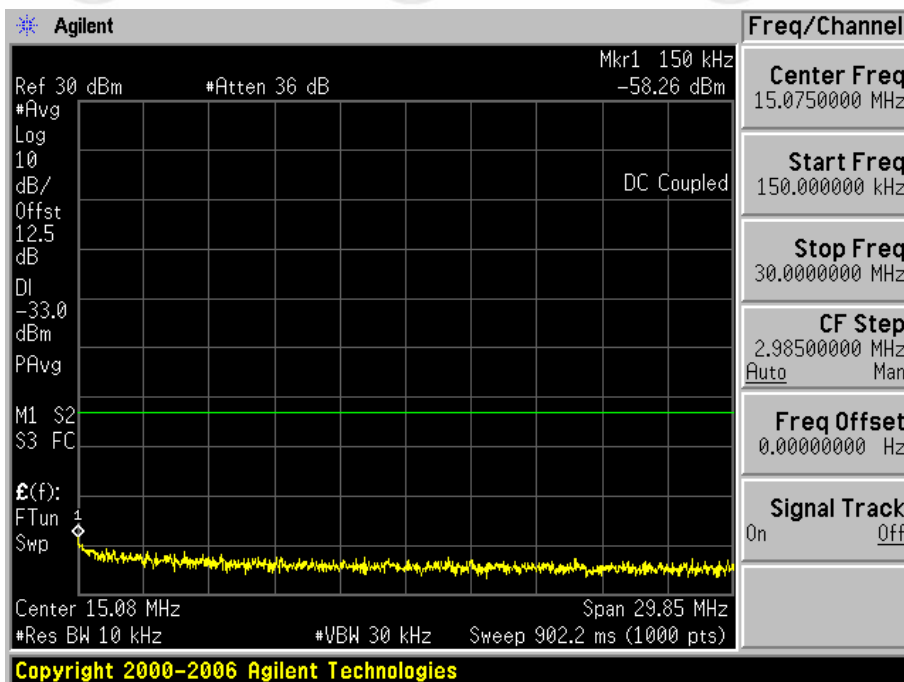
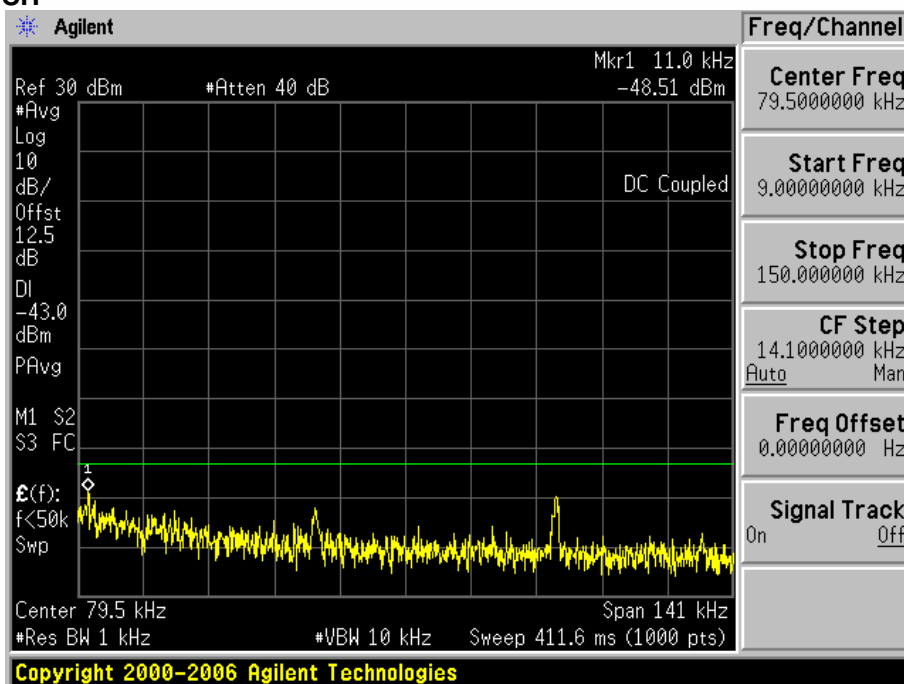
Test Channel=MCH

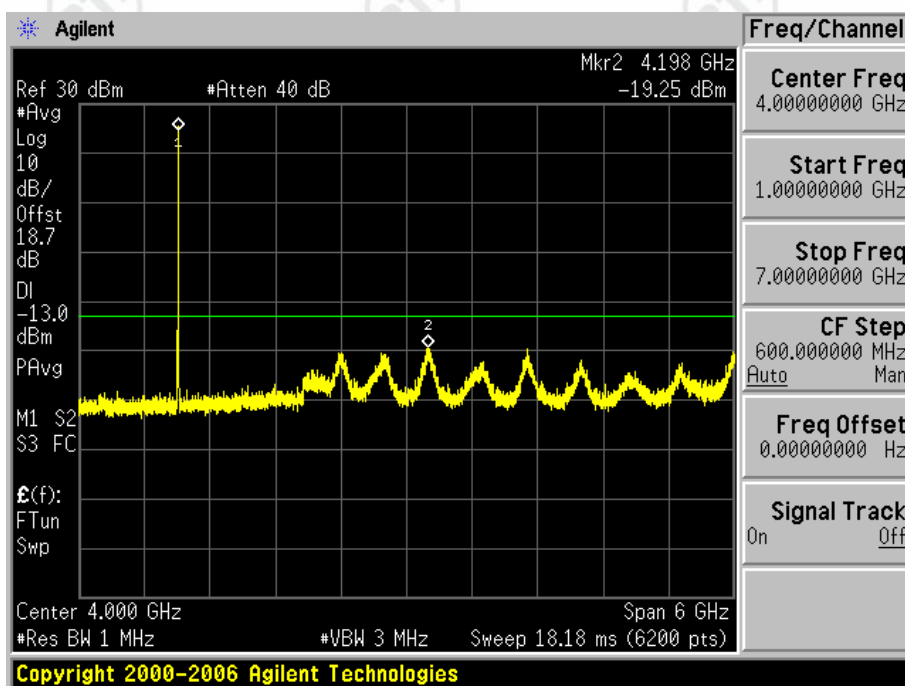
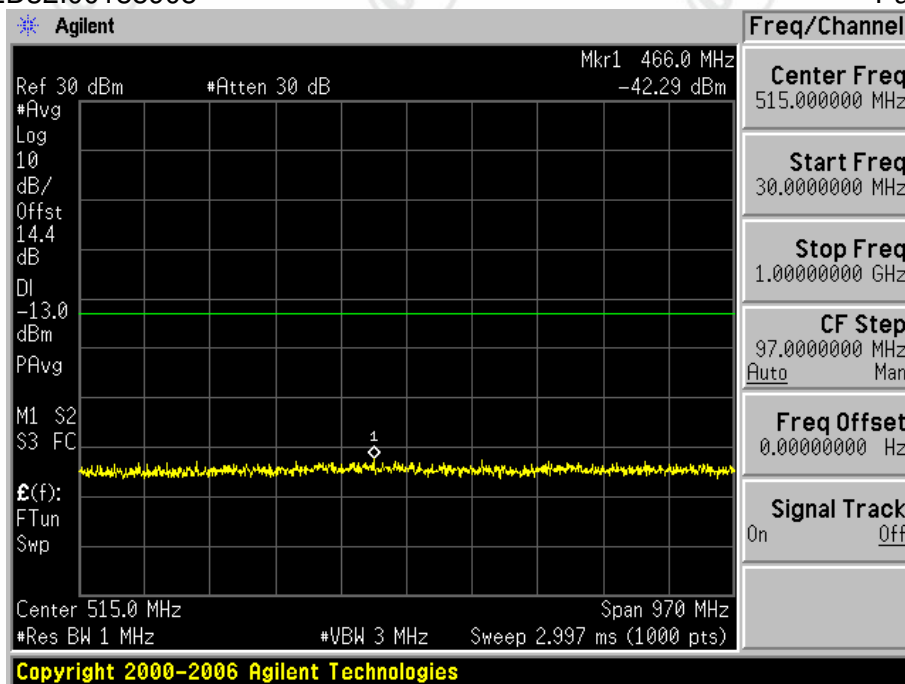


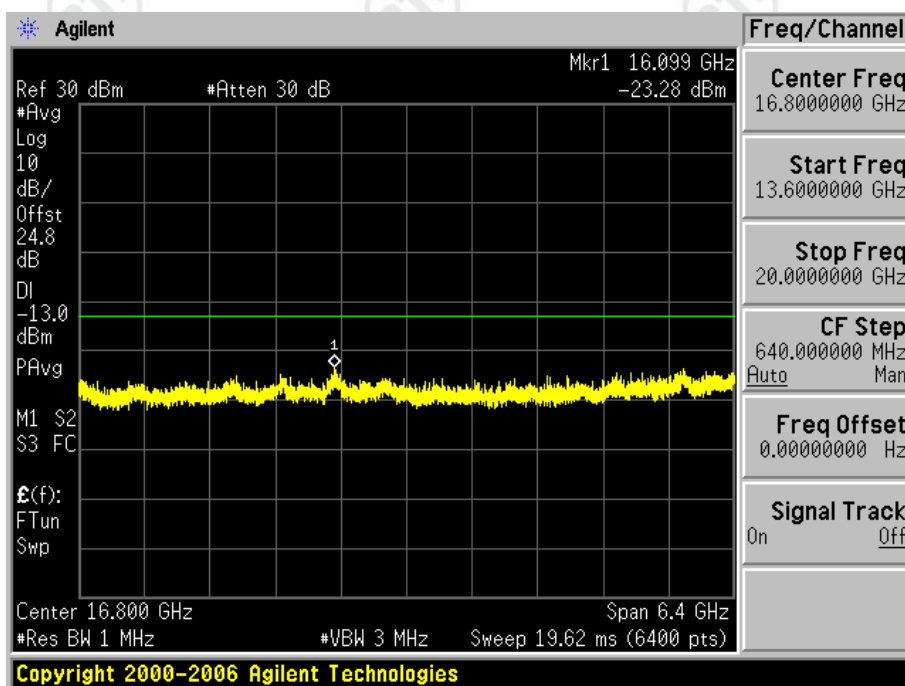
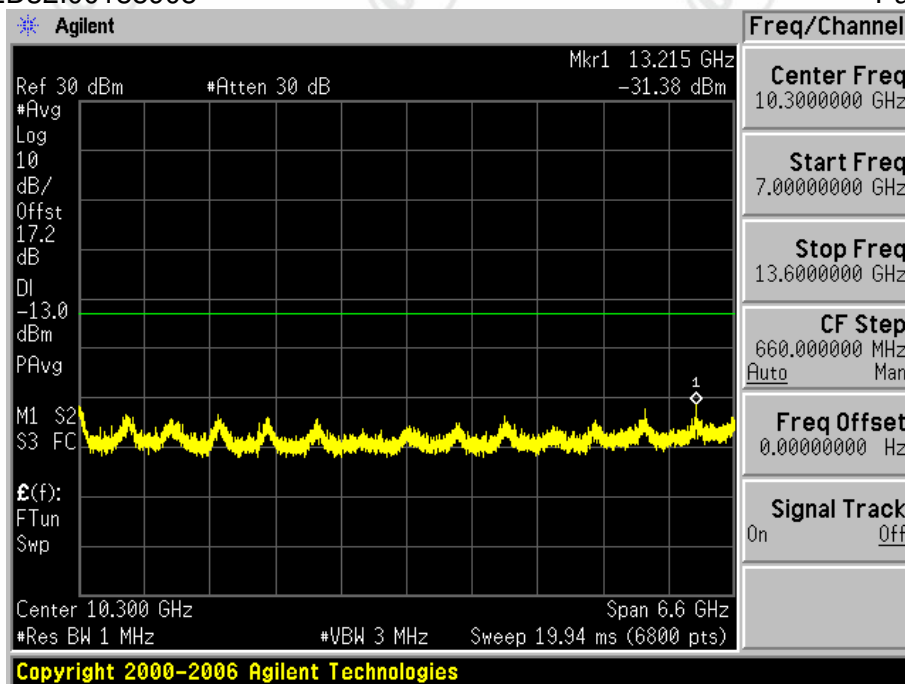




Test Channel=HCH



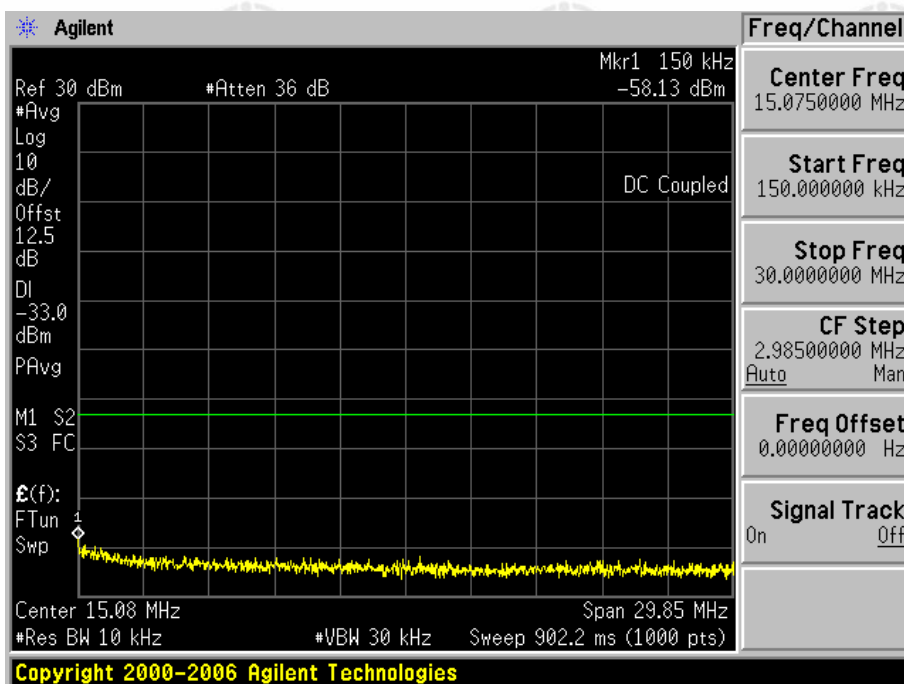
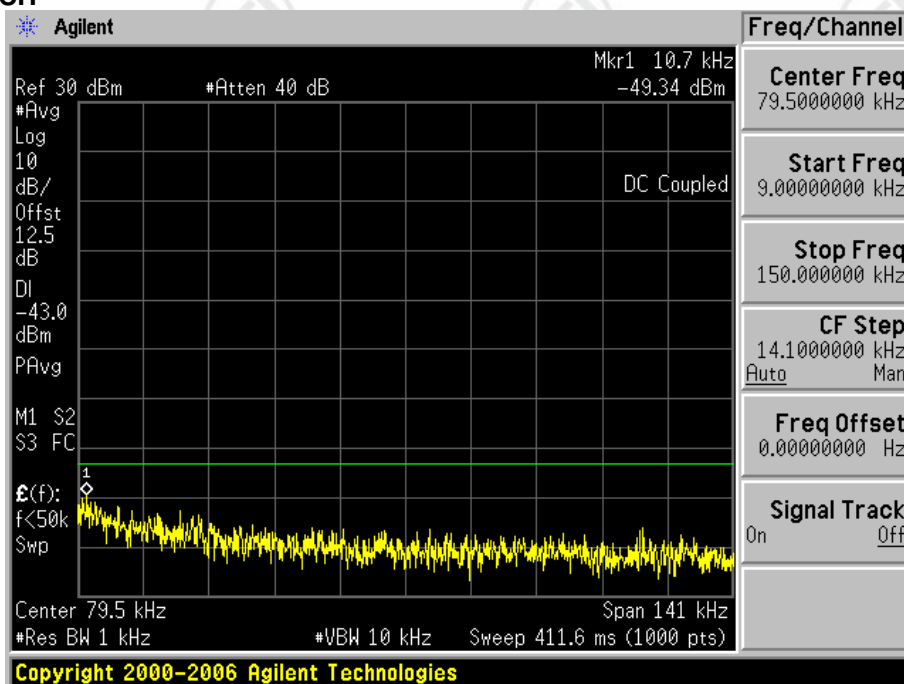


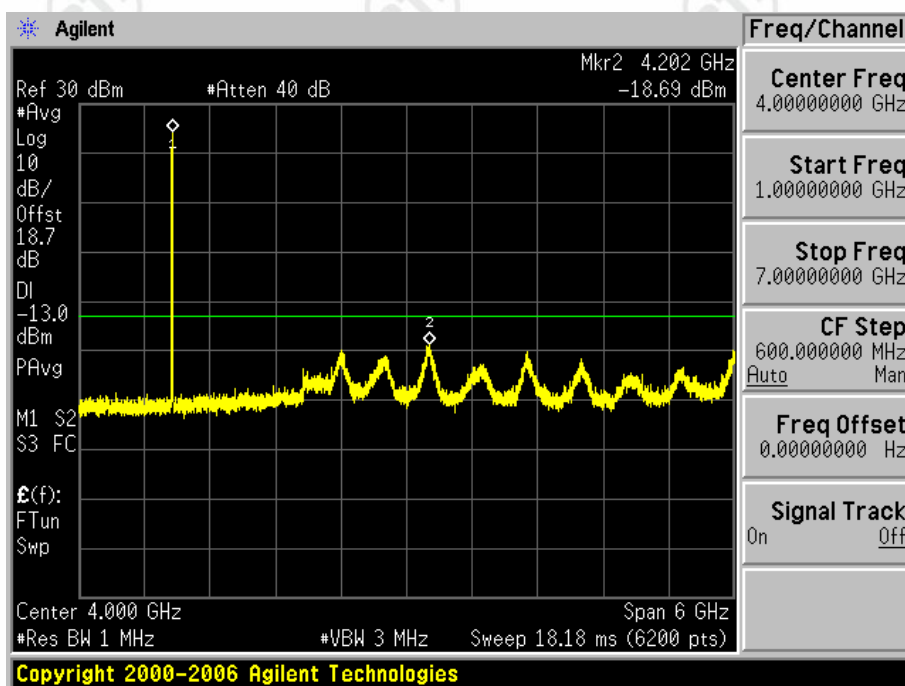
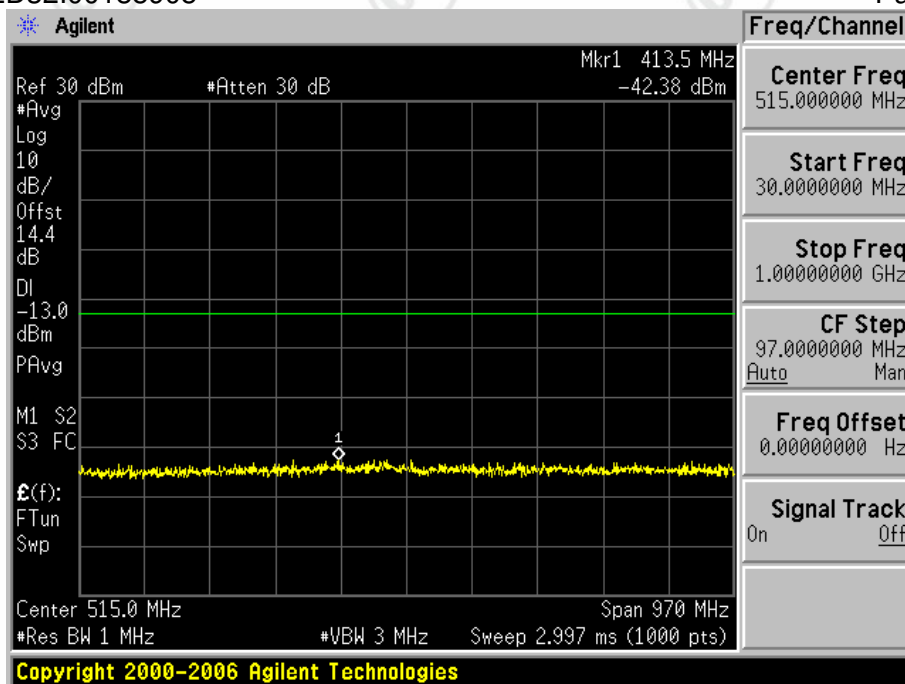


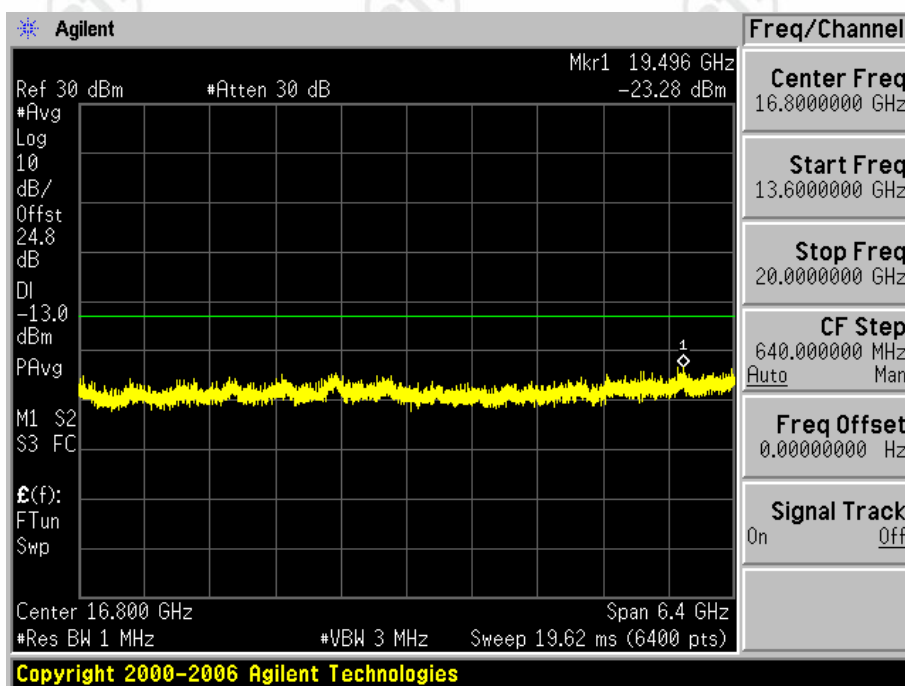
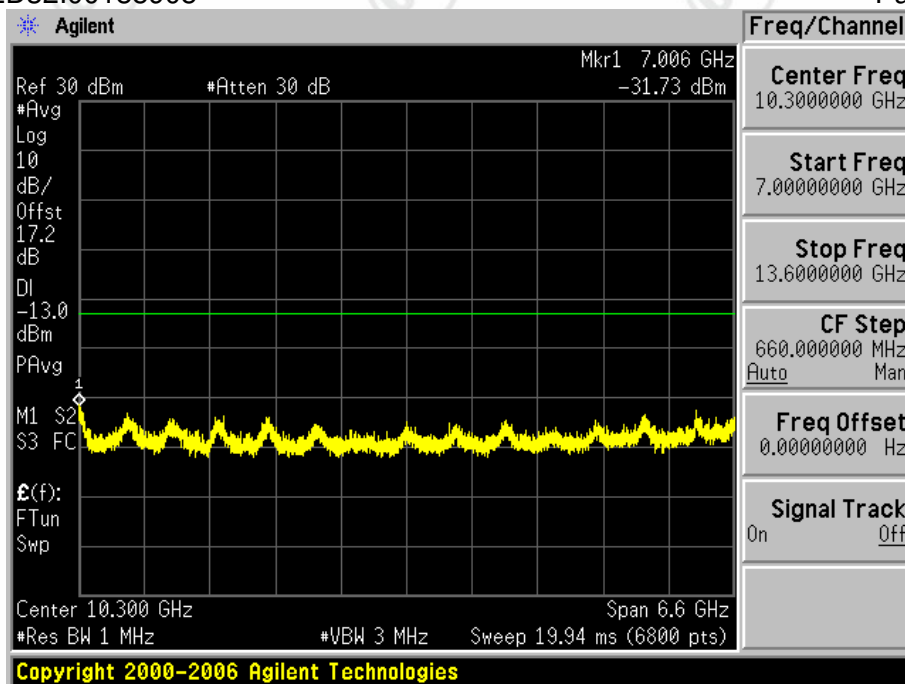
Test Band=WCDMA1900

Test Mode=UMTS/TM2

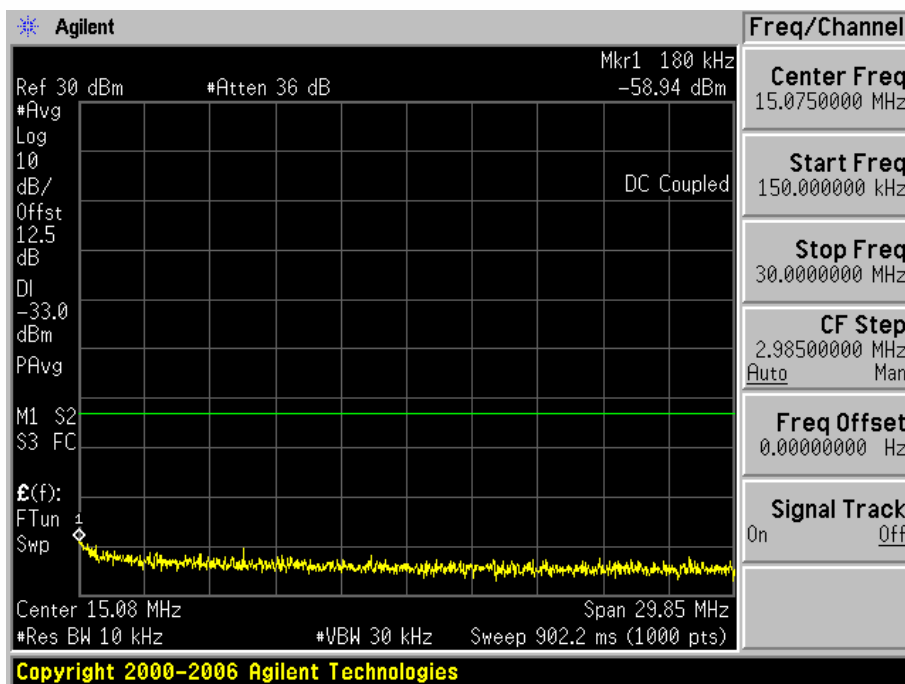
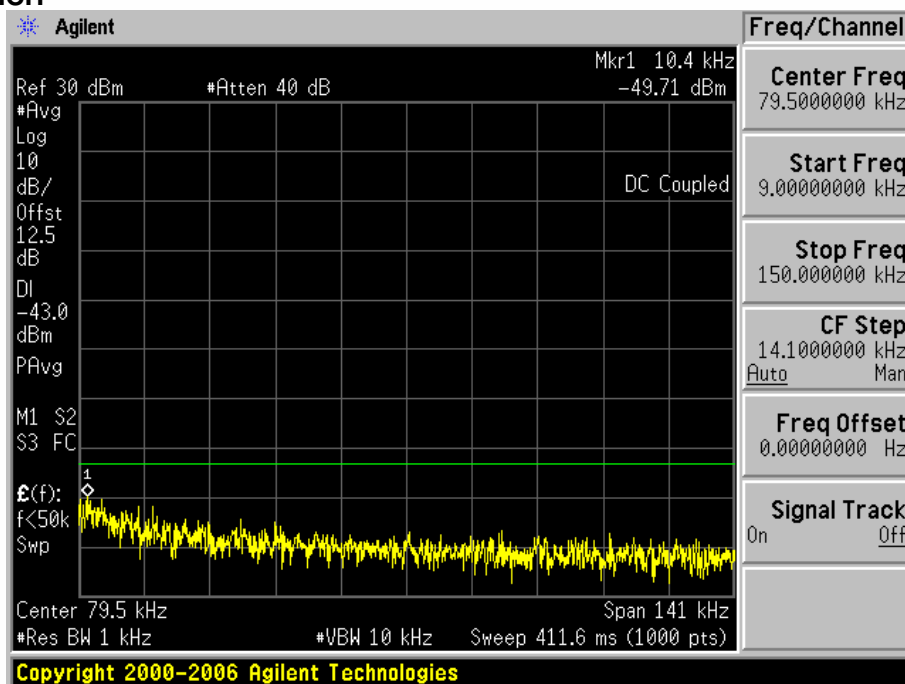
Test Channel=LCH

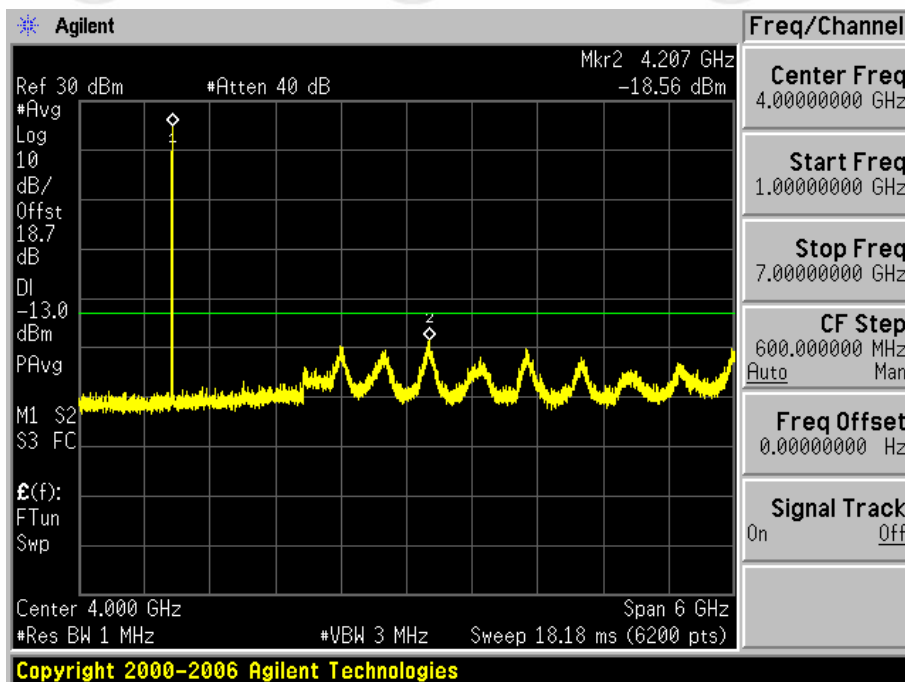
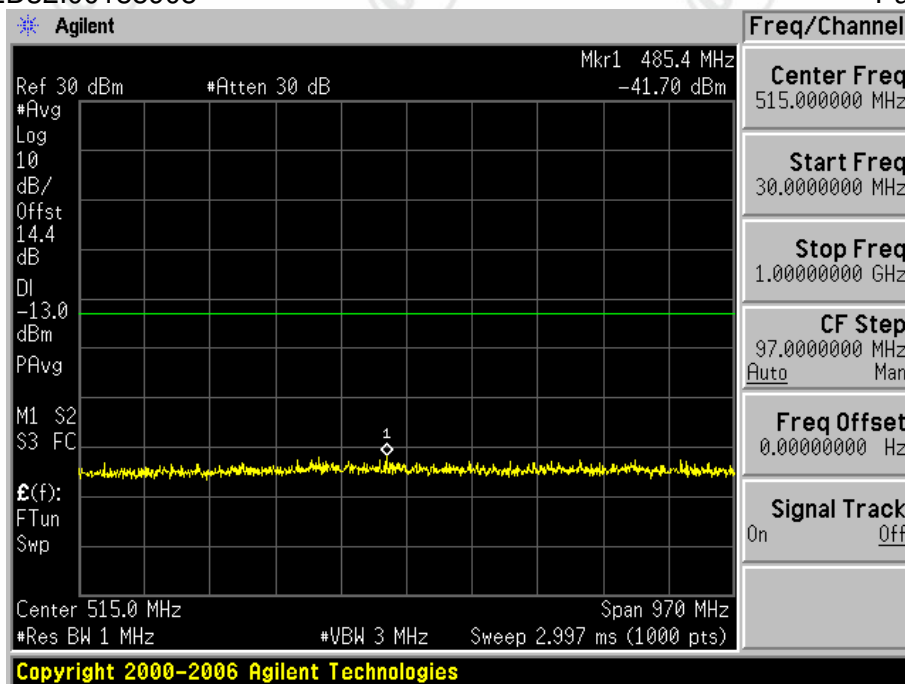


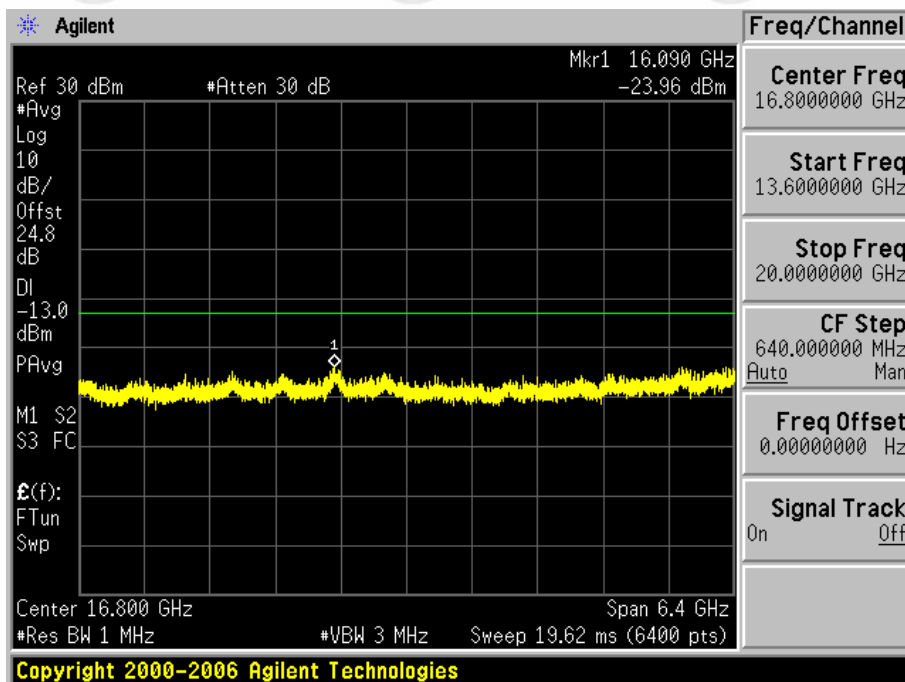
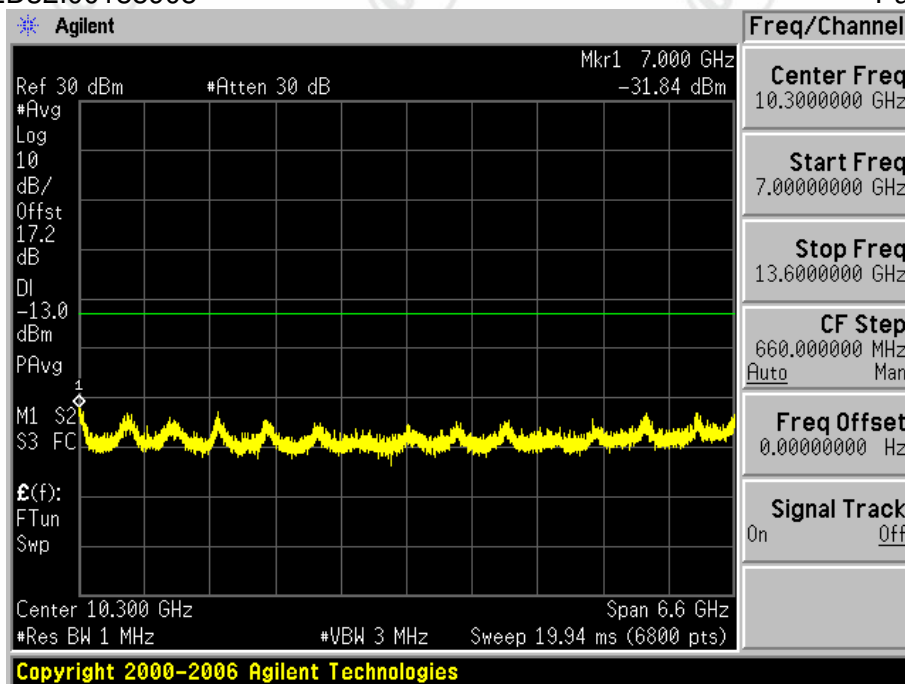




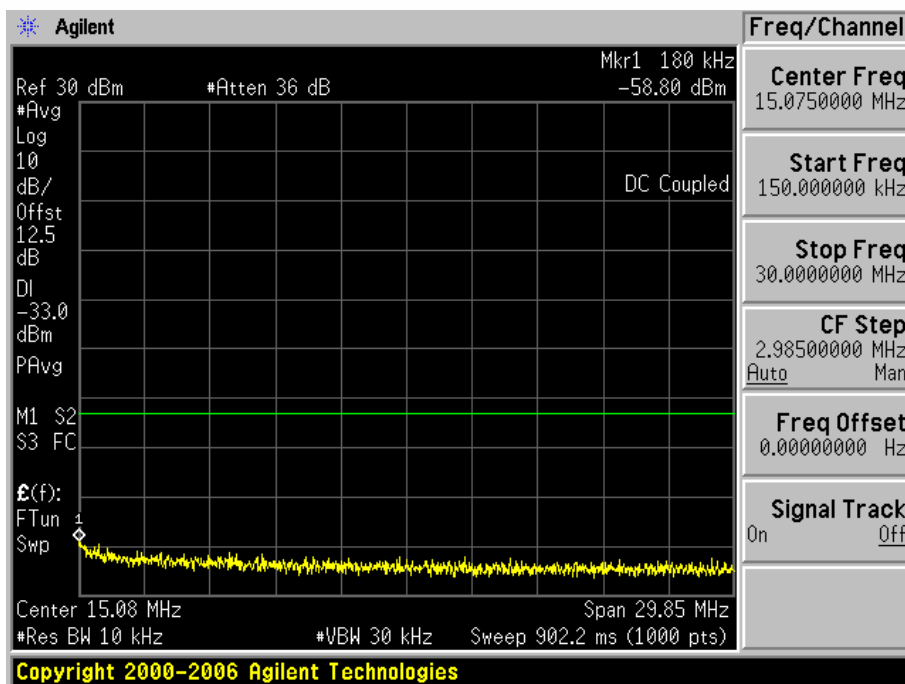
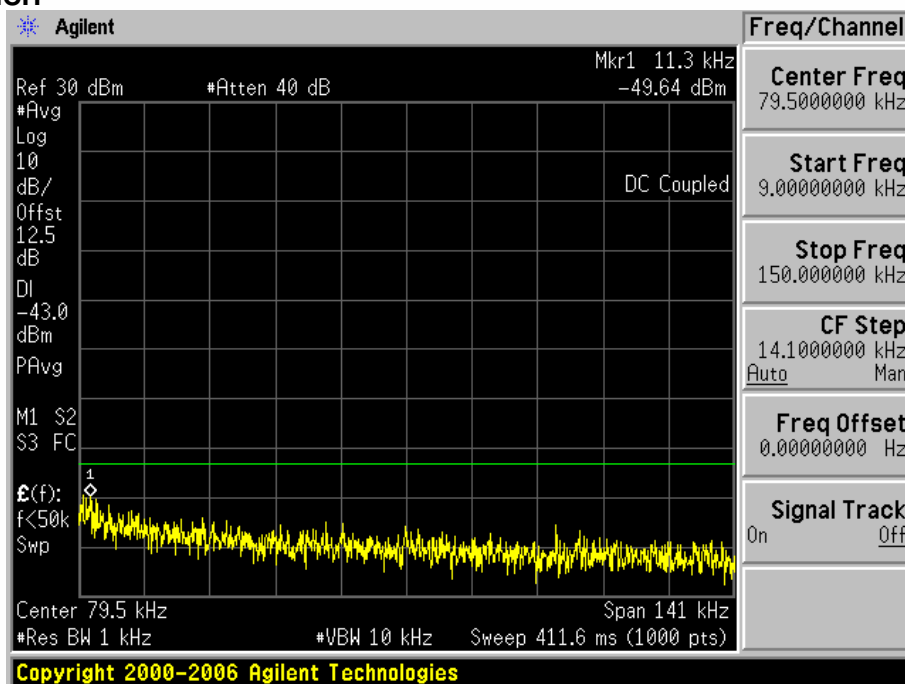
Test Channel=MCH

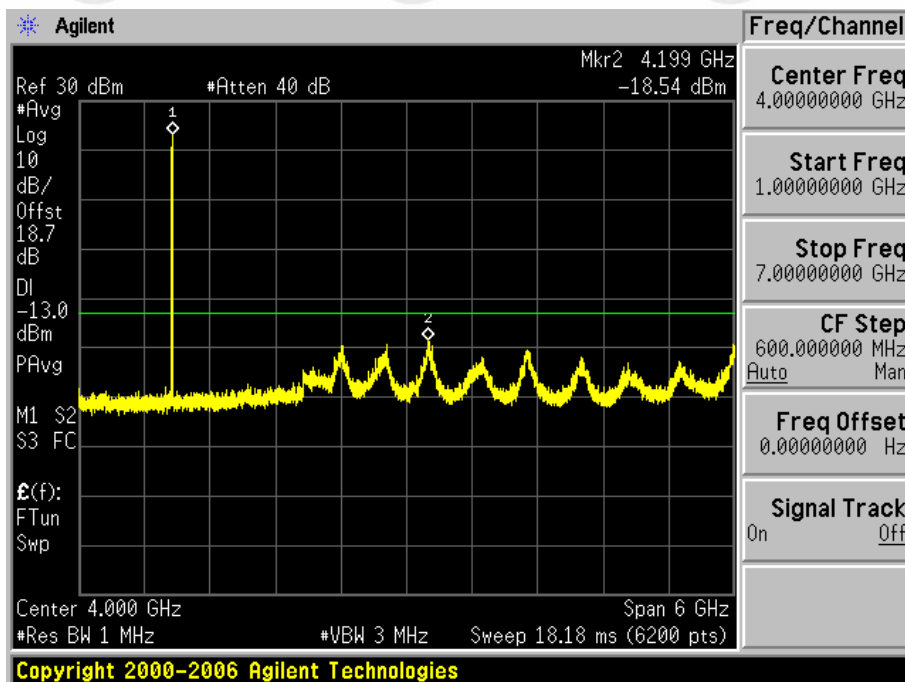
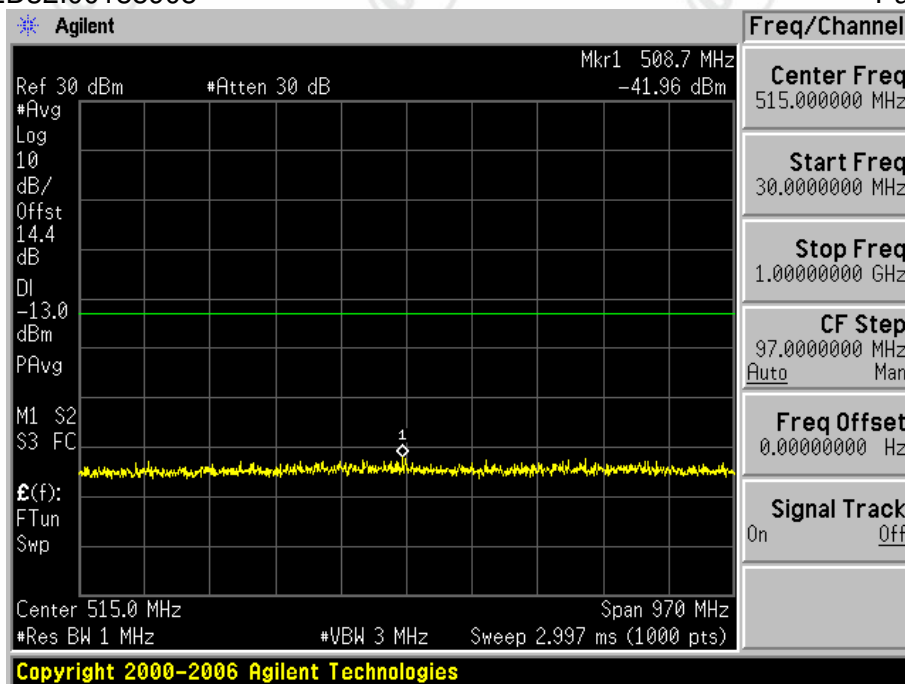


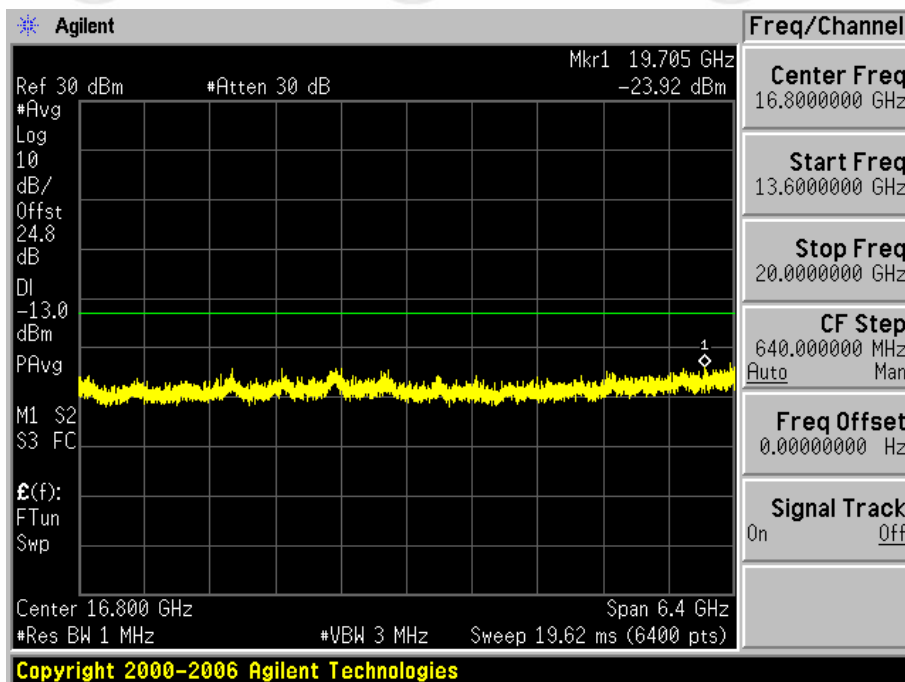
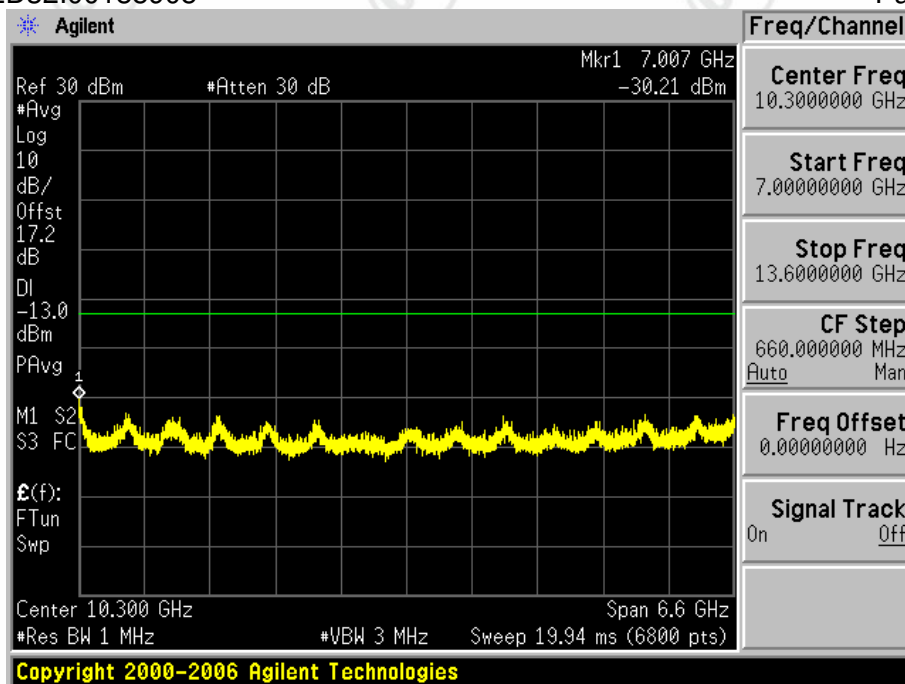




Test Channel=HCH







Appendix F): Frequency Stability

Test Requirement:	Part 2.1055	
Test Method:	TIA-603-D-2010 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:

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM850	TM1	LCH	TN	VL	-7.10	-0.01	±2.5	PASS
			TN	VN	-3.42	0.00	±2.5	PASS
			TN	VH	-2.84	0.00	±2.5	PASS
		MCH	TN	VL	0.32	0.00	±2.5	PASS
			TN	VN	-0.65	0.00	±2.5	PASS
			TN	VH	0.19	0.00	±2.5	PASS
		HCH	TN	VL	-0.45	0.00	±2.5	PASS
			TN	VN	-0.77	0.00	±2.5	PASS
			TN	VH	-0.32	0.00	±2.5	PASS

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	3.23	0.00	±2.5	PASS
			TN	VN	-3.36	0.00	±2.5	PASS
			TN	VH	-2.97	0.00	±2.5	PASS
		MCH	TN	VL	-3.29	0.00	±2.5	PASS
			TN	VN	-3.23	0.00	±2.5	PASS
			TN	VH	-3.03	0.00	±2.5	PASS
		HCH	TN	VL	-3.10	0.00	±2.5	PASS
			TN	VN	-4.46	-0.01	±2.5	PASS
			TN	VH	-4.33	-0.01	±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	5.10	0.01	±2.5	PASS
			TN	VN	-1.68	0.00	±2.5	PASS
			TN	VH	0.42	0.00	±2.5	PASS
		MCH	TN	VL	-0.32	0.00	±2.5	PASS
			TN	VN	-0.16	0.00	±2.5	PASS
			TN	VH	-1.19	0.00	±2.5	PASS
		HCH	TN	VL	-1.87	0.00	±2.5	PASS
			TN	VN	-1.29	0.00	±2.5	PASS
			TN	VH	-0.77	0.00	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM1900	TM1	LCH	TN	VL	20.99	0.01	±2.5	PASS
			TN	VN	21.31	0.01	±2.5	PASS
			TN	VH	22.21	0.01	±2.5	PASS
		MCH	TN	VL	21.83	0.01	±2.5	PASS
			TN	VN	25.31	0.01	±2.5	PASS
			TN	VH	20.21	0.01	±2.5	PASS
		HCH	TN	VL	25.31	0.01	±2.5	PASS
			TN	VN	27.44	0.01	±2.5	PASS
			TN	VH	22.73	0.01	±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	17.24	0.01	±2.5	PASS
			TN	VN	21.37	0.01	±2.5	PASS
			TN	VH	16.53	0.01	±2.5	PASS
		MCH	TN	VL	18.79	0.01	±2.5	PASS
			TN	VN	14.53	0.01	±2.5	PASS
			TN	VH	18.92	0.01	±2.5	PASS
		HCH	TN	VL	19.44	0.01	±2.5	PASS
			TN	VN	18.14	0.01	±2.5	PASS
			TN	VH	20.79	0.01	±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	12.33	0.01	±2.5	PASS
			TN	VN	17.27	0.01	±2.5	PASS
			TN	VH	19.34	0.01	±2.5	PASS
		MCH	TN	VL	22.37	0.01	±2.5	PASS
			TN	VN	19.24	0.01	±2.5	PASS
			TN	VH	23.12	0.01	±2.5	PASS
		HCH	TN	VL	23.12	0.01	±2.5	PASS
			TN	VN	24.92	0.01	±2.5	PASS
			TN	VH	24.31	0.01	±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	TM1	LCH	VN	-30	-2.00	0.00	±2.5	PASS
			VN	-20	-2.13	0.00	±2.5	PASS
			VN	-10	-0.77	0.00	±2.5	PASS
			VN	0	1.94	0.00	±2.5	PASS
			VN	10	-3.68	0.00	±2.5	PASS
			VN	20	-0.45	0.00	±2.5	PASS
			VN	30	-2.20	0.00	±2.5	PASS
			VN	40	-4.46	-0.01	±2.5	PASS
			VN	50	-3.75	0.00	±2.5	PASS
GSM850	TM1	MCH	VN	-30	-1.36	0.00	±2.5	PASS
			VN	-20	0.58	0.00	±2.5	PASS
			VN	-10	0.77	0.00	±2.5	PASS
			VN	0	-0.19	0.00	±2.5	PASS
			VN	10	0.26	0.00	±2.5	PASS
			VN	20	-0.65	0.00	±2.5	PASS
			VN	30	1.23	0.00	±2.5	PASS
			VN	40	-1.29	0.00	±2.5	PASS
			VN	50	1.49	0.00	±2.5	PASS
GSM850	TM1	HCH	VN	-30	-0.45	0.00	±2.5	PASS
			VN	-20	-2.07	0.00	±2.5	PASS
			VN	-10	0.45	0.00	±2.5	PASS
			VN	0	-1.81	0.00	±2.5	PASS
			VN	10	-2.78	0.00	±2.5	PASS
			VN	20	-1.16	0.00	±2.5	PASS
			VN	30	-3.55	0.00	±2.5	PASS
			VN	40	-2.00	0.00	±2.5	PASS
			VN	50	-2.97	0.00	±2.5	PASS

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	-1.42	0.00	±2.5	PASS
			VN	-20	-2.07	0.00	±2.5	PASS
			VN	-10	4.00	0.00	±2.5	PASS
			VN	0	2.84	0.00	±2.5	PASS
			VN	10	0.52	0.00	±2.5	PASS
			VN	20	-0.45	0.00	±2.5	PASS
			VN	30	-8.14	-0.01	±2.5	PASS
			VN	40	-3.42	0.00	±2.5	PASS
			VN	50	-6.65	-0.01	±2.5	PASS
GSM850	TM2	MCH	VN	-30	-2.07	0.00	±2.5	PASS
			VN	-20	-1.03	0.00	±2.5	PASS
			VN	-10	-4.07	0.00	±2.5	PASS
			VN	0	-6.72	-0.01	±2.5	PASS
			VN	10	-2.45	0.00	±2.5	PASS
			VN	20	-6.91	-0.01	±2.5	PASS
			VN	30	-3.75	0.00	±2.5	PASS
			VN	40	-7.75	-0.01	±2.5	PASS
			VN	50	-5.75	-0.01	±2.5	PASS
GSM850	TM2	HCH	VN	-30	-0.06	0.00	±2.5	PASS
			VN	-20	-5.23	-0.01	±2.5	PASS
			VN	-10	-11.36	-0.01	±2.5	PASS
			VN	0	-6.97	-0.01	±2.5	PASS
			VN	10	-8.91	-0.01	±2.5	PASS
			VN	20	-3.49	0.00	±2.5	PASS
			VN	30	-6.59	-0.01	±2.5	PASS
			VN	40	-5.55	-0.01	±2.5	PASS
			VN	50	-12.59	-0.01	±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	11.14	0.01	±2.5	PASS
			VN	-20	5.17	0.01	±2.5	PASS
			VN	-10	3.91	0.00	±2.5	PASS
			VN	0	2.87	0.00	±2.5	PASS
			VN	10	3.62	0.00	±2.5	PASS
			VN	20	1.94	0.00	±2.5	PASS
			VN	30	-2.78	0.00	±2.5	PASS
			VN	40	-1.71	0.00	±2.5	PASS
			VN	50	-2.39	0.00	±2.5	PASS
GSM850	TM3	MCH	VN	-30	-0.74	0.00	±2.5	PASS
			VN	-20	-4.33	-0.01	±2.5	PASS
			VN	-10	5.71	0.01	±2.5	PASS
			VN	0	1.52	0.00	±2.5	PASS
			VN	10	0.39	0.00	±2.5	PASS
			VN	20	-1.58	0.00	±2.5	PASS
			VN	30	0.36	0.00	±2.5	PASS
			VN	40	-4.58	-0.01	±2.5	PASS
			VN	50	-2.16	0.00	±2.5	PASS
GSM850	TM3	HCH	VN	-30	-3.71	0.00	±2.5	PASS
			VN	-20	-2.91	0.00	±2.5	PASS
			VN	-10	-1.87	0.00	±2.5	PASS
			VN	0	-0.52	0.00	±2.5	PASS
			VN	10	0.48	0.00	±2.5	PASS
			VN	20	1.94	0.00	±2.5	PASS
			VN	30	3.42	0.00	±2.5	PASS
			VN	40	-1.90	0.00	±2.5	PASS
			VN	50	-0.39	0.00	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM1900	TM1	LCH	VN	-30	21.63	0.01	±2.5	PASS
			VN	-20	24.41	0.01	±2.5	PASS
			VN	-10	21.44	0.01	±2.5	PASS
			VN	0	24.09	0.01	±2.5	PASS
			VN	10	23.12	0.01	±2.5	PASS
			VN	20	22.47	0.01	±2.5	PASS
			VN	30	23.31	0.01	±2.5	PASS
			VN	40	23.18	0.01	±2.5	PASS
			VN	50	23.76	0.01	±2.5	PASS
GSM1900	TM1	MCH	VN	-30	20.86	0.01	±2.5	PASS
			VN	-20	22.60	0.01	±2.5	PASS
			VN	-10	21.11	0.01	±2.5	PASS
			VN	0	23.96	0.01	±2.5	PASS
			VN	10	20.92	0.01	±2.5	PASS
			VN	20	22.47	0.01	±2.5	PASS
			VN	30	20.40	0.01	±2.5	PASS
			VN	40	23.37	0.01	±2.5	PASS
			VN	50	20.40	0.01	±2.5	PASS
GSM1900	TM1	HCH	VN	-30	25.57	0.01	±2.5	PASS
			VN	-20	25.44	0.01	±2.5	PASS
			VN	-10	25.44	0.01	±2.5	PASS
			VN	0	25.31	0.01	±2.5	PASS
			VN	10	25.18	0.01	±2.5	PASS
			VN	20	25.96	0.01	±2.5	PASS
			VN	30	25.96	0.01	±2.5	PASS
			VN	40	24.86	0.01	±2.5	PASS
			VN	50	25.89	0.01	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM1900	TM2	LCH	VN	-30	17.24	0.01	±2.5	PASS
			VN	-20	7.10	0.00	±2.5	PASS
			VN	-10	-2.58	0.00	±2.5	PASS
			VN	0	12.33	0.01	±2.5	PASS
			VN	10	12.40	0.01	±2.5	PASS
			VN	20	3.68	0.00	±2.5	PASS
			VN	30	-2.78	0.00	±2.5	PASS
			VN	40	16.98	0.01	±2.5	PASS
			VN	50	14.33	0.01	±2.5	PASS
GSM1900	TM2	MCH	VN	-30	20.53	0.01	±2.5	PASS
			VN	-20	10.98	0.01	±2.5	PASS
			VN	-10	12.59	0.01	±2.5	PASS
			VN	0	14.85	0.01	±2.5	PASS
			VN	10	20.21	0.01	±2.5	PASS
			VN	20	7.88	0.00	±2.5	PASS
			VN	30	12.98	0.01	±2.5	PASS
			VN	40	21.05	0.01	±2.5	PASS
			VN	50	10.46	0.01	±2.5	PASS
GSM1900	TM2	HCH	VN	-30	22.02	0.01	±2.5	PASS
			VN	-20	12.59	0.01	±2.5	PASS
			VN	-10	20.47	0.01	±2.5	PASS
			VN	0	11.75	0.01	±2.5	PASS
			VN	10	23.25	0.01	±2.5	PASS
			VN	20	16.53	0.01	±2.5	PASS
			VN	30	10.27	0.01	±2.5	PASS
			VN	40	20.02	0.01	±2.5	PASS
			VN	50	13.50	0.01	±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	5.65	0.00	±2.5	PASS
			VN	-20	9.20	0.00	±2.5	PASS
			VN	-10	12.24	0.01	±2.5	PASS
			VN	0	18.89	0.01	±2.5	PASS
			VN	10	12.01	0.01	±2.5	PASS
			VN	20	13.14	0.01	±2.5	PASS
			VN	30	19.89	0.01	±2.5	PASS
			VN	40	11.11	0.01	±2.5	PASS
			VN	50	23.44	0.01	±2.5	PASS
GSM1900	TM3	MCH	VN	-30	24.96	0.01	±2.5	PASS
			VN	-20	25.02	0.01	±2.5	PASS
			VN	-10	25.76	0.01	±2.5	PASS
			VN	0	11.59	0.01	±2.5	PASS
			VN	10	14.85	0.01	±2.5	PASS
			VN	20	17.50	0.01	±2.5	PASS
			VN	30	23.86	0.01	±2.5	PASS
			VN	40	12.46	0.01	±2.5	PASS
			VN	50	18.85	0.01	±2.5	PASS
GSM1900	TM3	HCH	VN	-30	26.96	0.01	±2.5	PASS
			VN	-20	21.21	0.01	±2.5	PASS
			VN	-10	28.80	0.02	±2.5	PASS
			VN	0	19.92	0.01	±2.5	PASS
			VN	10	30.12	0.02	±2.5	PASS
			VN	20	21.44	0.01	±2.5	PASS
			VN	30	28.99	0.02	±2.5	PASS
			VN	40	21.76	0.01	±2.5	PASS
			VN	50	31.54	0.02	±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
WCDMA8 50	TM1	LCH	TN	VL	9.70	0.01	±2.5	PASS
			TN	VN	9.84	0.01	±2.5	PASS
			TN	VH	5.08	0.01	±2.5	PASS
		MCH	TN	VL	10.89	0.01	±2.5	PASS
			TN	VN	9.84	0.01	±2.5	PASS
			TN	VH	12.07	0.01	±2.5	PASS
		HCH	TN	VL	11.95	0.01	±2.5	PASS
			TN	VN	9.84	0.01	±2.5	PASS
			TN	VH	6.76	0.01	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA8 50	TM2	LCH	TN	VL	4.82	0.01	±2.5	PASS
			TN	VN	-72.92	0.09	±2.5	PASS
			TN	VH	-56.00	0.07	±2.5	PASS
		MCH	TN	VL	51.57	0.06	±2.5	PASS
			TN	VN	-136.31	0.16	±2.5	PASS
			TN	VH	80.69	0.10	±2.5	PASS
		HCH	TN	VL	12.95	0.02	±2.5	PASS
			TN	VN	25.38	0.03	±2.5	PASS
			TN	VH	-83.91	0.01	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA1 900	TM1	LCH	TN	VL	27.80	0.02	±2.5	PASS
			TN	VN	36.48	0.02	±2.5	PASS
			TN	VH	22.29	0.01	±2.5	PASS
		MCH	TN	VL	29.80	0.02	±2.5	PASS
			TN	VN	36.48	0.02	±2.5	PASS
			TN	VH	33.37	0.02	±2.5	PASS
		HCH	TN	VL	37.46	0.02	±2.5	PASS
			TN	VN	36.48	0.02	±2.5	PASS
			TN	VH	28.44	0.01	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA1 900	TM2	LCH	TN	VL	-38.36	0.02	±2.5	PASS
			TN	VN	19.06	0.01	±2.5	PASS
			TN	VH	-66.45	0.03	±2.5	PASS
		MCH	TN	VL	-20.78	0.01	±2.5	PASS
			TN	VN	-34.62	0.01	±2.5	PASS
			TN	VH	5.49	0.00	±2.5	PASS
		HCH	TN	VL	-33.75	0.01	±2.5	PASS
			TN	VN	16.17	0.00	±2.5	PASS
			TN	VH	46.33	0.02	±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
WCDMA8 50	TM1	LCH	VN	-30	6.50	0.01	±2.5	PASS
			VN	-20	10.76	0.01	±2.5	PASS
			VN	-10	5.86	0.01	±2.5	PASS
			VN	0	9.69	0.01	±2.5	PASS
			VN	10	12.13	0.01	±2.5	PASS
			VN	20	6.96	0.01	±2.5	PASS
			VN	30	9.28	0.01	±2.5	PASS
			VN	40	12.68	0.02	±2.5	PASS
			VN	50	10.07	0.01	±2.5	PASS
WCDMA8 50	TM1	MCH	VN	-30	10.27	0.01	±2.5	PASS
			VN	-20	13.29	0.02	±2.5	PASS
			VN	-10	11.17	0.01	±2.5	PASS
			VN	0	11.05	0.01	±2.5	PASS
			VN	10	10.10	0.01	±2.5	PASS
			VN	20	11.67	0.01	±2.5	PASS
			VN	30	9.61	0.01	±2.5	PASS
			VN	40	13.58	0.02	±2.5	PASS
			VN	50	11.87	0.01	±2.5	PASS
WCDMA8 50	TM1	HCH	VN	-30	12.13	0.01	±2.5	PASS
			VN	-20	14.01	0.02	±2.5	PASS
			VN	-10	13.53	0.02	±2.5	PASS
			VN	0	7.19	0.01	±2.5	PASS
			VN	10	13.96	0.02	±2.5	PASS
			VN	20	11.72	0.01	±2.5	PASS
			VN	30	10.85	0.01	±2.5	PASS
			VN	40	13.43	0.02	±2.5	PASS
			VN	50	11.96	0.01	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA8 50	TM2	LCH	VN	-30	-8.79	0.01	±2.5	PASS
			VN	-20	18.19	0.02	±2.5	PASS
			VN	-10	58.17	0.07	±2.5	PASS
			VN	0	16.46	0.02	±2.5	PASS
			VN	10	90.50	0.11	±2.5	PASS
			VN	20	-71.00	0.09	±2.5	PASS
			VN	30	7.52	0.01	±2.5	PASS
			VN	40	-124.33	0.15	±2.5	PASS
			VN	50	81.50	0.10	±2.5	PASS
WCDMA8 50	TM2	MCH	VN	-30	-132.06	0.15	±2.5	PASS
			VN	-20	65.06	0.08	±2.5	PASS
			VN	-10	-8.97	0.01	±2.5	PASS
			VN	0	-28.31	0.03	±2.5	PASS
			VN	10	59.42	0.07	±2.5	PASS
			VN	20	37.58	0.04	±2.5	PASS
			VN	30	27.97	0.03	±2.5	PASS
			VN	40	66.07	0.08	±2.5	PASS
			VN	50	-39.67	0.05	±2.5	PASS
WCDMA8 50	TM2	HCH	VN	-30	-38.42	0.04	±2.5	PASS
			VN	-20	-117.34	0.13	±2.5	PASS
			VN	-10	149.75	0.17	±2.5	PASS
			VN	0	57.97	0.06	±2.5	PASS
			VN	10	1.86	0.00	±2.5	PASS
			VN	20	0.12	0.00	±2.5	PASS
			VN	30	-102.81	0.12	±2.5	PASS
			VN	40	-23.12	0.02	±2.5	PASS
			VN	50	-49.16	0.05	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA1 900	TM1	LCH	VN	-30	28.09	0.02	±2.5	PASS
			VN	-20	29.88	0.02	±2.5	PASS
			VN	-10	25.24	0.01	±2.5	PASS
			VN	0	21.42	0.01	±2.5	PASS
			VN	10	24.00	0.01	±2.5	PASS
			VN	20	27.92	0.02	±2.5	PASS
			VN	30	36.00	0.02	±2.5	PASS
			VN	40	27.44	0.01	±2.5	PASS
WCDMA1 900	TM1	MCH	VN	50	33.37	0.02	±2.5	PASS
			VN	-30	32.35	0.02	±2.5	PASS
			VN	-20	32.46	0.02	±2.5	PASS
			VN	-10	34.52	0.02	±2.5	PASS
			VN	0	30.55	0.02	±2.5	PASS
			VN	10	35.00	0.02	±2.5	PASS
			VN	20	31.19	0.02	±2.5	PASS
			VN	30	36.41	0.02	±2.5	PASS
WCDMA1 900	TM1	HCH	VN	40	32.76	0.02	±2.5	PASS
			VN	50	28.26	0.02	±2.5	PASS
			VN	-30	34.06	0.02	±2.5	PASS
			VN	-20	37.16	0.02	±2.5	PASS
			VN	-10	40.33	0.02	±2.5	PASS
			VN	0	34.27	0.02	±2.5	PASS
			VN	10	30.73	0.02	±2.5	PASS
			VN	20	34.06	0.02	±2.5	PASS
			VN	30	36.99	0.02	±2.5	PASS
			VN	40	40.76	0.02	±2.5	PASS
			VN	50	40.48	0.02	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA1 900	TM2	LCH	VN	-30	-26.57	0.01	±2.5	PASS
			VN	-20	47.73	0.02	±2.5	PASS
			VN	-10	-8.24	0.00	±2.5	PASS
			VN	0	-24.28	0.01	±2.5	PASS
			VN	10	101.85	0.05	±2.5	PASS
			VN	20	-51.10	0.02	±2.5	PASS
			VN	30	60.56	0.03	±2.5	PASS
			VN	40	-48.63	0.02	±2.5	PASS
WCDMA1 900	TM2	MCH	VN	50	-35.23	0.02	±2.5	PASS
			VN	-30	-49.16	0.02	±2.5	PASS
			VN	-20	28.40	0.01	±2.5	PASS
			VN	-10	-98.08	0.05	±2.5	PASS
			VN	0	-39.61	0.02	±2.5	PASS
			VN	10	-96.31	0.05	±2.5	PASS
			VN	20	-55.39	0.03	±2.5	PASS
			VN	30	-57.05	0.03	±2.5	PASS
WCDMA1 900	TM2	HCH	VN	40	37.45	0.02	±2.5	PASS
			VN	50	47.82	0.02	±2.5	PASS
			VN	-30	-52.08	0.02	±2.5	PASS
			VN	-20	-57.36	0.03	±2.5	PASS
			VN	-10	2.72	0.00	±2.5	PASS
			VN	0	5.49	0.00	±2.5	PASS
			VN	10	35.13	0.01	±2.5	PASS
			VN	20	-59.25	0.03	±2.5	PASS
			VN	30	-16.89	0.01	±2.5	PASS
			VN	40	25.31	0.01	±2.5	PASS
			VN	50	53.15	0.02	±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

GSM 850 (Voice)							
Channel/fc (MHz)	Height (cm)	Azimuth (deg)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
128/824.2	150	102	22.26	38.45	-16.19	Pass	H
	150	84	27.56	38.45	-10.89	Pass	V
190/836.6	150	121	22.96	38.45	-15.49	Pass	H
	150	216	27.09	38.45	-11.36	Pass	V
251/848.8	150	10	21.08	38.45	-17.37	Pass	H
	150	341	26.41	38.45	-12.04	Pass	V

GPRS 850							
Channel/fc (MHz)	Height (cm)	Azimuth (deg)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
128/824.2	150	183	13.66	38.45	-24.79	Pass	H
	150	6	18.6	38.45	-19.85	Pass	V
190/836.6	150	124	14.09	38.45	-24.36	Pass	H
	150	76	17.62	38.45	-20.83	Pass	V
251/848.8	150	182	12.04	38.45	-26.41	Pass	H
	150	109	12.26	38.45	-26.19	Pass	V

EDGE 850							
Channel/fc (MHz)	Height (cm)	Azimuth (deg)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
128/824.2	150	215	13.45	38.45	-25.00	Pass	H
	150	31	18.03	38.45	-20.42	Pass	V
190/836.6	150	65	13.51	38.45	-24.94	Pass	H
	150	10	16.86	38.45	-21.59	Pass	V
251/848.8	150	63	15.64	38.45	-22.81	Pass	H
	150	343	15.78	38.45	-22.67	Pass	V

WCDMA band V							
Channel/fc (MHz)	Height (cm)	Azimuth (deg)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
4132/826.4	150	62	19.51	38.45	-18.94	Pass	H
	150	249	21.13	38.45	-17.32	Pass	V
4182/836.6	150	179	16.29	38.45	-22.16	Pass	H
	150	97	18.27	38.45	-20.18	Pass	V
4233/846.6	150	108	14.72	38.45	-23.73	Pass	H
	150	113	17.94	38.45	-20.51	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	150	35	17.66	38.45	-20.79	Pass	H
	150	120	21.16	38.45	-17.29	Pass	V
4182/836.6	150	251	17.12	38.45	-21.33	Pass	H
	150	240	19.16	38.45	-19.29	Pass	V
4233/846.6	150	302	15.41	38.45	-23.04	Pass	H
	150	275	18.18	38.45	-20.27	Pass	V

GSM 1900 (Voice)							
Channel/fc (MHz)	Height (cm)	Azimuth (deg)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
512/1850.2	150	39	25.86	33.01	-7.15	Pass	H
	150	167	25.41	33.01	-7.60	Pass	V
661/1880.0	150	85	25.87	33.01	-7.14	Pass	H
	150	215	25.1	33.01	-7.91	Pass	V
810/1909.8	150	272	24.37	33.01	-8.64	Pass	H
	150	39	25.4	33.01	-7.61	Pass	V

GPRS 1900							
Channel/fc (MHz)	Height (cm)	Azimuth (deg)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
512/1850.2	150	309	25.88	33.01	-7.13	Pass	H
	150	360	22.1	33.01	-10.91	Pass	V
661/1880.0	150	70	23.66	33.01	-9.35	Pass	H
	150	62	23.43	33.01	-9.58	Pass	V
810/1909.8	150	95	23.56	33.01	-9.45	Pass	H
	150	95	21.8	33.01	-11.21	Pass	V

EDGE1900							
Channel/fc (MHz)	Height (cm)	Azimuth (deg)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
512/1850.2	150	332	25.77	33.01	-7.24	Pass	H
	150	169	21.57	33.01	-11.44	Pass	V
661/1880.0	150	132	23.43	33.01	-9.58	Pass	H
	150	272	22.99	33.01	-10.02	Pass	V
810/1909.8	150	61	23.06	33.01	-9.95	Pass	H
	150	30	24.15	33.01	-8.86	Pass	V

WCDMA band II							
Channel/fc (MHz)	Height (cm)	Azimuth (deg)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
9262/1852.4	150	61	19.51	33.01	-13.50	Pass	H
	150	332	13.92	33.01	-19.09	Pass	V
9400/1880.0	150	95	19.48	33.01	-13.53	Pass	H
	150	286	19.48	33.01	-13.53	Pass	V
9538/1907.6	150	320	20.35	33.01	-12.66	Pass	H
	150	249	17.66	33.01	-15.35	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	150	84	17.81	33.01	-15.2	Pass	H
	150	35	18.11	33.01	-14.9	Pass	V
9400/1880.0	150	127	18.23	33.01	-14.78	Pass	H
	150	245	17.24	33.01	-15.77	Pass	V
9538/1907.6	150	320	18.14	33.01	-14.87	Pass	H
	150	198	18.39	33.01	-14.62	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: $\text{ERP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dBd)}$ $\text{EIRP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dBi)}$ $\text{EIRP} = \text{ERP} + 2.15\text{dB}$ 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+10log(P)				

Test Data:

GSM 850 128channel/824.2MHz(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1646.948	150	32	-38.62	-13	-25.62	Pass	H
2474.923	150	100	-32.54	-13	-19.54	Pass	H
4117.785	150	360	-44.40	-13	-31.40	Pass	H
7432.622	150	79	-38.97	-13	-25.97	Pass	H
10374.420	150	247	-44.13	-13	-31.13	Pass	H
11872.880	150	254	-43.02	-13	-30.02	Pass	H
1646.948	150	100	-30.43	-13	-17.43	Pass	V
2468.631	150	246	-38.14	-13	-25.14	Pass	V
4388.352	150	10	-47.26	-13	-34.26	Pass	V
6594.518	150	154	-40.60	-13	-27.60	Pass	V
9322.501	150	187	-44.49	-13	-31.49	Pass	V
11370.050	150	10	-43.94	-13	-30.94	Pass	V

GSM 850 190channel/836.6MHz(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1110.008	150	315	-56.89	-13	-43.89	Pass	H
1672.296	150	10	-39.37	-13	-26.37	Pass	H
2506.624	150	245	-39.20	-13	-26.20	Pass	H
5022.194	150	100	-47.78	-13	-34.78	Pass	H
7527.826	150	110	-46.11	-13	-33.11	Pass	H
10374.420	150	79	-44.48	-13	-31.48	Pass	H
1672.296	150	360	-30.01	-13	-17.01	Pass	V
2506.624	150	70	-28.76	-13	-15.76	Pass	V
3350.560	150	47	-44.08	-13	-31.08	Pass	V
5574.673	150	10	-48.03	-13	-35.03	Pass	V
7527.826	150	100	-37.50	-13	-24.50	Pass	V
11140.850	150	164	-43.64	-13	-30.64	Pass	V

GSM 850 251channel/848.8MHz(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1698.033	150	10	-42.43	-13	-29.43	Pass	H
2545.202	150	360	-36.70	-13	-23.70	Pass	H
5099.487	150	70	-43.57	-13	-30.57	Pass	H
6799.064	150	89	-45.20	-13	-32.20	Pass	H
9884.602	150	254	-45.06	-13	-32.06	Pass	H
11872.880	150	142	-43.29	-13	-30.29	Pass	H
1228.984	150	100	-56.25	-13	-43.25	Pass	V
1698.033	150	20	-29.24	-13	-16.24	Pass	V
2545.202	150	36	-35.63	-13	-22.63	Pass	V
5099.487	150	47	-42.41	-13	-29.41	Pass	V
6799.064	150	100	-42.69	-13	-29.69	Pass	V
11169.240	150	97	-43.70	-13	-30.70	Pass	V

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.
1646.948	150	14	-44.61	-13	-31.61	Pass	H
2474.923	150	124	-43.78	-13	-30.78	Pass	H
4605.811	150	360	-49.46	-13	-36.46	Pass	H
7432.622	150	359	-44.87	-13	-31.87	Pass	H
9465.979	150	147	-45.57	-13	-32.57	Pass	H
11633.540	150	124	-43.69	-13	-30.69	Pass	H
1646.948	150	78	-44.97	-13	-31.97	Pass	V
2474.923	150	99	-40.45	-13	-27.45	Pass	V
4202.500	150	147	-48.47	-13	-35.47	Pass	V
7432.622	150	154	-41.87	-13	-28.87	Pass	V
10348.050	150	167	-44.32	-13	-31.32	Pass	V
12303.620	150	347	-42.05	-13	-29.05	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.
1672.296	150	226	-46.04	-13	-33.04	Pass	H
2506.624	150	21	-50.83	-13	-37.83	Pass	H
3607.257	150	360	-49.06	-13	-36.06	Pass	H
4724.558	150	70	-48.43	-13	-35.43	Pass	H
6331.329	150	148	-44.74	-13	-31.74	Pass	H
10560.940	150	97	-44.13	-13	-31.13	Pass	H
1672.296	150	27	-37.47	-13	-24.47	Pass	V
2506.624	150	100	-42.15	-13	-29.15	Pass	V
3350.560	150	359	-46.85	-13	-33.85	Pass	V
4736.600	150	20	-48.25	-13	-35.25	Pass	V
6527.712	150	147	-44.83	-13	-31.83	Pass	V
10087.960	150	100	-44.34	-13	-31.34	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.
1698.033	150	351	-44.52	-13	-31.52	Pass	H
2545.202	150	200	-47.95	-13	-34.95	Pass	H
4223.950	150	316	-49.23	-13	-36.23	Pass	H
6511.117	150	100	-45.93	-13	-32.93	Pass	H
9784.466	150	79	-45.39	-13	-32.39	Pass	H
11963.890	150	10	-43.67	-13	-30.67	Pass	H
1698.033	150	47	-34.88	-13	-21.88	Pass	V
2545.202	150	100	-42.19	-13	-29.19	Pass	V
5099.487	150	360	-47.80	-13	-34.80	Pass	V
6799.064	150	70	-45.17	-13	-32.17	Pass	V
10036.730	150	27	-45.33	-13	-32.33	Pass	V
11140.850	150	210	-43.37	-13	-30.37	Pass	V

EDGE 850 128channel/824.2MHz(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1646.948	150	356	-42.61	-13	-29.61	Pass	H
2474.923	150	147	-45.63	-13	-32.63	Pass	H
3766.785	150	97	-48.91	-13	-35.91	Pass	H
4946.072	150	100	-46.90	-13	-33.90	Pass	H
7413.726	150	110	-43.74	-13	-30.74	Pass	H
11169.240	150	57	-44.12	-13	-31.12	Pass	H
1646.948	150	248	-33.81	-13	-20.81	Pass	V
2468.631	150	220	-36.14	-13	-23.14	Pass	V
4410.750	150	10	-47.90	-13	-34.90	Pass	V
7432.622	150	100	-39.92	-13	-26.92	Pass	V
10087.960	150	38	-43.55	-13	-30.55	Pass	V
12303.620	150	360	-43.22	-13	-30.22	Pass	V

EDGE 850 190channel/836.6MHz(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1129.964	150	352	-56.61	-13	-43.61	Pass	H
1672.296	150	167	-43.79	-13	-30.79	Pass	H
2506.624	150	91	-48.29	-13	-35.29	Pass	H
3766.785	150	211	-49.03	-13	-36.03	Pass	H
6494.564	150	100	-46.28	-13	-33.28	Pass	H
9228.060	150	360	-44.38	-13	-31.38	Pass	H
1672.296	150	79	-44.40	-13	-31.40	Pass	V
2506.624	150	70	-44.26	-13	-31.26	Pass	V
4444.562	150	254	-48.93	-13	-35.93	Pass	V
6511.117	150	100	-45.94	-13	-32.94	Pass	V
7527.826	150	10	-44.42	-13	-31.42	Pass	V
11197.710	150	78	-44.31	-13	-31.31	Pass	V

EDGE 850 251channel/848.8MHz(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1213.441	150	331	-57.87	-13	-44.87	Pass	H
1698.033	150	100	-35.88	-13	-22.88	Pass	H
2545.202	150	261	-40.19	-13	-27.19	Pass	H
3634.910	150	20	-49.87	-13	-36.87	Pass	H
5910.798	150	31	-46.50	-13	-33.50	Pass	H
8615.126	150	200	-46.34	-13	-33.34	Pass	H
1273.572	150	37	-57.42	-13	-44.42	Pass	V
1698.033	150	100	-45.52	-13	-32.52	Pass	V
2545.202	150	69	-48.95	-13	-35.95	Pass	V
3747.656	150	147	-48.97	-13	-35.97	Pass	V
4895.965	150	100	-49.54	-13	-36.54	Pass	V
7508.688	150	359	-46.39	-13	-33.39	Pass	V

GSM 1900 512channel/1850.2MHz(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1129.964	150	61	-56.77	-13	-43.77	Pass	H
2927.691	150	100	-52.21	-13	-39.21	Pass	H
3700.260	150	360	-39.93	-13	-26.93	Pass	H
5546.364	150	79	-43.59	-13	-30.59	Pass	H
9204.600	150	254	-45.04	-13	-32.04	Pass	H
11842.690	150	279	-44.67	-13	-31.67	Pass	H
1213.441	150	61	-56.97	-13	-43.97	Pass	V
2768.242	150	100	-52.05	-13	-39.05	Pass	V
3700.260	150	110	-40.80	-13	-27.80	Pass	V
6331.329	150	245	-45.51	-13	-32.51	Pass	V
9134.575	150	289	-45.51	-13	-32.51	Pass	V
11457.210	150	91	-44.29	-13	-31.29	Pass	V

GSM 1900 661channel/1880MHz(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1222.743	150	54	-57.92	-13	-44.92	Pass	H
2726.283	150	147	-52.22	-13	-39.22	Pass	H
3757.208	150	100	-37.97	-13	-24.97	Pass	H
6511.117	150	20	-45.71	-13	-32.71	Pass	H
10139.450	150	360	-45.26	-13	-32.26	Pass	H
12588.750	150	79	-44.20	-13	-31.20	Pass	H
1144.437	150	70	-57.84	-13	-44.84	Pass	V
2418.867	150	360	-49.75	-13	-36.75	Pass	V
3757.208	150	161	-32.36	-13	-19.36	Pass	V
6511.117	150	200	-45.62	-13	-32.62	Pass	V
9228.060	150	79	-45.34	-13	-32.34	Pass	V
11872.880	150	64	-44.57	-13	-31.57	Pass	V

GSM 1900 810channel/1909.8MHz(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1204.210	150	360	-56.73	-13	-43.73	Pass	H
2456.095	150	79	-52.86	-13	-39.86	Pass	H
3824.757	150	100	-39.90	-13	-26.90	Pass	H
6511.117	150	284	-45.32	-13	-32.32	Pass	H
9228.060	150	100	-45.54	-13	-32.54	Pass	H
11933.470	150	147	-43.49	-13	-30.49	Pass	H
1357.254	150	120	-57.17	-13	-44.17	Pass	V
2740.198	150	39	-51.86	-13	-38.86	Pass	V
3824.757	150	100	-33.29	-13	-20.29	Pass	V
6561.030	150	90	-44.60	-13	-31.60	Pass	V
8506.170	150	84	-45.90	-13	-32.90	Pass	V
10062.310	150	61	-44.98	-13	-31.98	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.
1110.008	150	360	-57.14	-13	-44.14	Pass	H
2558.193	150	121	-52.06	-13	-39.06	Pass	H
3700.260	150	110	-40.00	-13	-27.00	Pass	H
6527.712	150	11	-45.42	-13	-32.42	Pass	H
8659.098	150	169	-45.60	-13	-32.60	Pass	H
11399.030	150	64	-44.12	-13	-31.12	Pass	H
1112.837	150	278	-56.91	-13	-43.91	Pass	V
1510.402	150	200	-56.01	-13	-43.01	Pass	V
3700.260	150	220	-38.68	-13	-25.68	Pass	V
5560.500	150	360	-46.82	-13	-33.82	Pass	V
8615.126	149	359	-46.29	-13	-33.29	Pass	V
11872.880	150	341	-44.05	-13	-31.05	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.
1210.356	150	39	-56.91	-13	-43.91	Pass	H
2927.691	150	360	-52.54	-13	-39.54	Pass	H
3757.208	150	70	-38.36	-13	-25.36	Pass	H
6527.712	150	61	-45.24	-13	-32.24	Pass	H
9181.198	150	359	-44.96	-13	-31.96	Pass	H
12241.140	150	241	-43.50	-13	-30.50	Pass	H
1112.837	150	289	-56.77	-13	-43.77	Pass	V
2425.032	150	10	-51.52	-13	-38.52	Pass	V
3757.208	150	100	-33.84	-13	-20.84	Pass	V
6544.350	150	110	-45.19	-13	-32.19	Pass	V
9204.600	149	79	-44.36	-13	-31.36	Pass	V
11872.880	150	64	-43.85	-13	-30.85	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.
1115.673	150	79	-57.63	-13	-44.63	Pass	H
2630.837	150	146	-52.36	-13	-39.36	Pass	H
4288.958	150	100	-50.14	-13	-37.14	Pass	H
5574.673	150	255	-49.98	-13	-36.98	Pass	H
9370.083	150	10	-46.02	-13	-33.02	Pass	H
11663.190	150	360	-43.86	-13	-30.86	Pass	H
1195.049	150	79	-57.60	-13	-44.60	Pass	V
2698.665	150	51	-51.81	-13	-38.81	Pass	V
3824.757	150	200	-29.93	-13	-16.93	Pass	V
6283.164	150	249	-46.84	-13	-33.84	Pass	V
8637.084	149	78	-45.35	-13	-32.35	Pass	V
11056.090	150	100	-43.90	-13	-30.90	Pass	V

EDGE1900 512channel/1850.2MHz(lowest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1127.091	150	10	-57.73	-13	-44.73	Pass	H
1663.803	150	179	-54.92	-13	-41.92	Pass	H
3824.757	150	141	-33.59	-13	-20.59	Pass	H
5732.974	150	200	-47.12	-13	-34.12	Pass	H
9088.188	150	201	-45.98	-13	-32.98	Pass	H
11084.270	150	360	-43.96	-13	-30.96	Pass	H
1127.091	150	70	-57.23	-13	-44.23	Pass	V
1668.044	150	89	-55.93	-13	-42.93	Pass	V
3824.757	150	100	-28.62	-13	-15.62	Pass	V
6363.645	150	211	-45.24	-13	-32.24	Pass	V
8527.851	150	64	-45.98	-13	-32.98	Pass	V
11084.270	150	278	-44.77	-13	-31.77	Pass	V

EDGE1900 661channel/1880MHz(middle channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1192.011	150	81	-56.10	-13	-43.10	Pass	H
1663.803	150	64	-54.62	-13	-41.62	Pass	H
3757.208	150	79	-32.24	-13	-19.24	Pass	H
6544.350	150	100	-45.85	-13	-32.85	Pass	H
9441.913	150	360	-45.24	-13	-32.24	Pass	H
12303.620	150	70	-43.70	-13	-30.70	Pass	H
1374.639	150	10	-56.95	-13	-43.95	Pass	V
2698.665	150	61	-52.02	-13	-39.02	Pass	V
3757.208	150	104	-39.91	-13	-26.91	Pass	V
6544.350	150	110	-46.15	-13	-33.15	Pass	V
9204.600	150	101	-44.00	-13	-31.00	Pass	V
11903.140	150	360	-43.51	-13	-30.51	Pass	V

EDGE1900 810channel/1909.8MHz(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1374.639	150	316	-58.20	-13	-45.20	Pass	H
2905.419	150	70	-52.51	-13	-39.51	Pass	H
3824.757	150	81	-31.42	-13	-18.42	Pass	H
6561.030	150	226	-45.59	-13	-32.59	Pass	H
8615.126	150	210	-45.58	-13	-32.58	Pass	H
10805.680	150	101	-44.34	-13	-31.34	Pass	H
1225.860	150	79	-57.44	-13	-44.44	Pass	V
2875.986	150	100	-53.84	-13	-40.84	Pass	V
3824.757	150	360	-32.73	-13	-19.73	Pass	V
6544.350	150	70	-45.46	-13	-32.46	Pass	V
8593.224	150	89	-46.01	-13	-33.01	Pass	V
11226.250	150	100	-44.65	-13	-31.65	Pass	V

WCDMA 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.
1659.574	150	38	-55.58	-13	-42.58	Pass	H
2322.330	150	161	-52.47	-13	-39.47	Pass	H
3607.257	150	79	-50.69	-13	-37.69	Pass	H
6396.125	150	271	-45.91	-13	-32.91	Pass	H
7981.717	150	345	-46.19	-13	-33.19	Pass	H
10087.960	150	161	-46.54	-13	-33.54	Pass	H
1663.803	150	332	-49.49	-13	-36.49	Pass	V
2519.418	150	100	-50.24	-13	-37.24	Pass	V
4213.211	150	147	-50.17	-13	-37.17	Pass	V
6331.329	150	10	-46.02	-13	-33.02	Pass	V
9490.104	150	360	-45.78	-13	-32.78	Pass	V
11084.270	150	14	-45.27	-13	-32.27	Pass	V

WCDMA 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.
1663.803	150	352	-55.35	-13	-42.35	Pass	H
2637.542	150	164	-53.57	-13	-40.57	Pass	H
3776.385	150	79	-51.00	-13	-38.00	Pass	H
6544.350	150	100	-45.72	-13	-32.72	Pass	H
9065.084	150	258	-46.90	-13	-33.90	Pass	H
12178.980	150	76	-45.57	-13	-32.57	Pass	H
1663.803	150	360	-55.11	-13	-42.11	Pass	V
2487.555	150	124	-52.43	-13	-39.43	Pass	V
3598.087	150	10	-50.61	-13	-37.61	Pass	V
6511.117	150	360	-47.08	-13	-34.08	Pass	V
9611.663	150	70	-46.11	-13	-33.11	Pass	V
12334.980	150	281	-45.88	-13	-32.88	Pass	V

WCDMA 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.
1659.574	150	332	-53.39	-13	-40.39	Pass	H
2310.537	150	161	-53.12	-13	-40.12	Pass	H
3757.208	150	316	-51.56	-13	-38.56	Pass	H
6363.645	150	100	-46.22	-13	-33.22	Pass	H
8747.716	150	24	-47.41	-13	-34.41	Pass	H
11994.38	150	144	-46.27	-13	-33.27	Pass	H
1663.803	150	179	-55.72	-13	-42.72	Pass	V
2519.418	150	10	-53.37	-13	-40.37	Pass	V
3607.257	150	46	-50.83	-13	-37.83	Pass	V
6611.326	150	147	-46.58	-13	-33.58	Pass	V
8022.456	150	100	-46.83	-13	-33.83	Pass	V
11112.520	150	50	-47.23	-13	-34.23	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.
1663.803	150	159	-54.28	-13	-41.28	Pass	H
2334.183	150	170	-53.96	-13	-40.96	Pass	H
3436.944	150	160	-51.21	-13	-38.21	Pass	H
6379.864	150	100	-46.65	-13	-33.65	Pass	H
8571.377	150	360	-46.88	-13	-33.88	Pass	H
11341.140	150	79	-46.84	-13	-33.84	Pass	H
1663.803	150	247	-54.86	-13	-41.86	Pass	V
2328.249	150	220	-54.20	-13	-41.20	Pass	V
3607.257	150	200	-51.33	-13	-38.33	Pass	V
6363.645	150	21	-46.58	-13	-33.58	Pass	V
9181.198	150	156	-47.02	-13	-34.02	Pass	V
11370.050	150	100	-46.20	-13	-33.20	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.
1663.803	150	39	-55.31	-13	-42.31	Pass	H
2334.183	150	161	-52.78	-13	-39.78	Pass	H
3747.656	150	78	-50.90	-13	-37.90	Pass	H
6461.583	150	351	-46.79	-13	-33.79	Pass	H
9157.857	150	349	-45.94	-13	-32.94	Pass	H
12272.340	150	217	-45.98	-13	-32.98	Pass	H
1668.044	150	100	-54.61	-13	-41.61	Pass	V
2500.251	150	145	-53.36	-13	-40.36	Pass	V
3757.208	150	360	-49.47	-13	-36.47	Pass	V
6428.771	150	54	-46.24	-13	-33.24	Pass	V
9134.575	150	100	-47.29	-13	-34.29	Pass	V
12272.340	150	246	-45.39	-13	-32.39	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.
1668.044	150	326	-55.65	-13	-42.65	Pass	H
2740.198	150	100	-52.58	-13	-39.58	Pass	H
4055.371	150	172	-51.23	-13	-38.23	Pass	H
6379.864	150	98	-46.53	-13	-33.53	Pass	H
8571.377	150	47	-46.27	-13	-33.27	Pass	H
10087.960	150	100	-46.82	-13	-33.82	Pass	H
1101.563	150	284	-57.37	-13	-44.37	Pass	V
1668.044	150	100	-54.61	-13	-41.61	Pass	V
2747.183	150	61	-53.72	-13	-40.72	Pass	V
5365.828	150	360	-51.05	-13	-38.05	Pass	V
8002.061	150	79	-47.49	-13	-34.49	Pass	V
11197.710	150	56	-46.93	-13	-33.93	Pass	V

WCDMA 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.
1289.885	150	351	-57.76	-13	-44.76	Pass	H
2927.691	150	200	-52.59	-13	-39.59	Pass	H
3709.691	150	217	-47.93	-13	-34.93	Pass	H
6331.329	150	96	-47.21	-13	-34.21	Pass	H
8681.168	150	100	-46.53	-13	-33.53	Pass	H
11226.250	150	351	-45.91	-13	-32.91	Pass	H
1210.356	150	70	-57.25	-13	-44.25	Pass	V
1510.402	150	151	-57.29	-13	-44.29	Pass	V
3709.691	150	100	-42.99	-13	-29.99	Pass	V
6577.752	150	21	-45.65	-13	-32.65	Pass	V
8462.975	150	10	-46.07	-13	-33.07	Pass	V
11197.710	150	360	-44.91	-13	-31.91	Pass	V

WCDMA 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.
1204.210	150	91	-57.44	-13	-44.44	Pass	H
1659.574	150	100	-58.09	-13	-45.09	Pass	H
3757.208	150	360	-46.29	-13	-33.29	Pass	H
6511.117	150	351	-45.75	-13	-32.75	Pass	H
9465.979	150	359	-45.93	-13	-32.93	Pass	H
11457.210	150	240	-45.29	-13	-32.29	Pass	H
1144.437	150	100	-58.60	-13	-45.60	Pass	V
1605.554	150	248	-57.59	-13	-44.59	Pass	V
3766.785	150	358	-44.88	-13	-31.88	Pass	V
6363.645	150	70	-46.91	-13	-33.91	Pass	V
9204.600	150	154	-46.57	-13	-33.57	Pass	V
10641.890	150	100	-46.77	-13	-33.77	Pass	V

WCDMA 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	150	331	-58.47	-13	-45.47	Pass	H
1581.218	150	100	-58.03	-13	-45.03	Pass	H
3815.033	150	147	-47.21	-13	-34.21	Pass	H
6363.645	150	154	-45.73	-13	-32.73	Pass	H
9204.600	150	121	-45.87	-13	-32.87	Pass	H
11341.140	150	76	-46.26	-13	-33.26	Pass	H
1147.354	150	49	-58.01	-13	-45.01	Pass	V
1374.639	150	100	-58.73	-13	-45.73	Pass	V
3815.033	150	67	-43.59	-13	-30.59	Pass	V
6511.117	150	100	-46.32	-13	-33.32	Pass	V
8615.126	150	360	-47.29	-13	-34.29	Pass	V
10139.450	150	40	-46.47	-13	-33.47	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.
1188.980	150	61	-58.19	-13	-45.19	Pass	H
1663.803	150	200	-56.49	-13	-43.49	Pass	H
3815.033	150	157	-45.40	-13	-32.40	Pass	H
6527.712	150	241	-47.14	-13	-34.14	Pass	H
9134.575	150	100	-46.77	-13	-33.77	Pass	H
12303.620	150	169	-45.25	-13	-32.25	Pass	H
1276.818	150	254	-56.67	-13	-43.67	Pass	V
2519.418	150	26	-49.16	-13	-36.16	Pass	V
3815.033	150	100	-41.53	-13	-28.53	Pass	V
6511.117	150	332	-44.13	-13	-31.13	Pass	V
9042.038	150	159	-45.66	-13	-32.66	Pass	V
11903.140	150	100	-44.52	-13	-31.52	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.
1112.837	150	151	-58.91	-13	-45.91	Pass	H
1388.708	150	79	-58.38	-13	-45.38	Pass	H
3766.785	150	360	-48.68	-13	-35.68	Pass	H
6445.156	150	200	-46.06	-13	-33.06	Pass	H
9157.857	150	157	-47.09	-13	-34.09	Pass	H
12303.620	150	149	-46.18	-13	-33.18	Pass	H
1323.141	150	217	-56.77	-13	-43.77	Pass	V
3757.208	150	360	-41.82	-13	-28.82	Pass	V
6527.712	150	100	-44.51	-13	-31.51	Pass	V
8002.061	150	243	-46.19	-13	-33.19	Pass	V
9710.030	150	100	-45.96	-13	-32.96	Pass	V
11872.880	150	100	-44.91	-13	-31.91	Pass	V

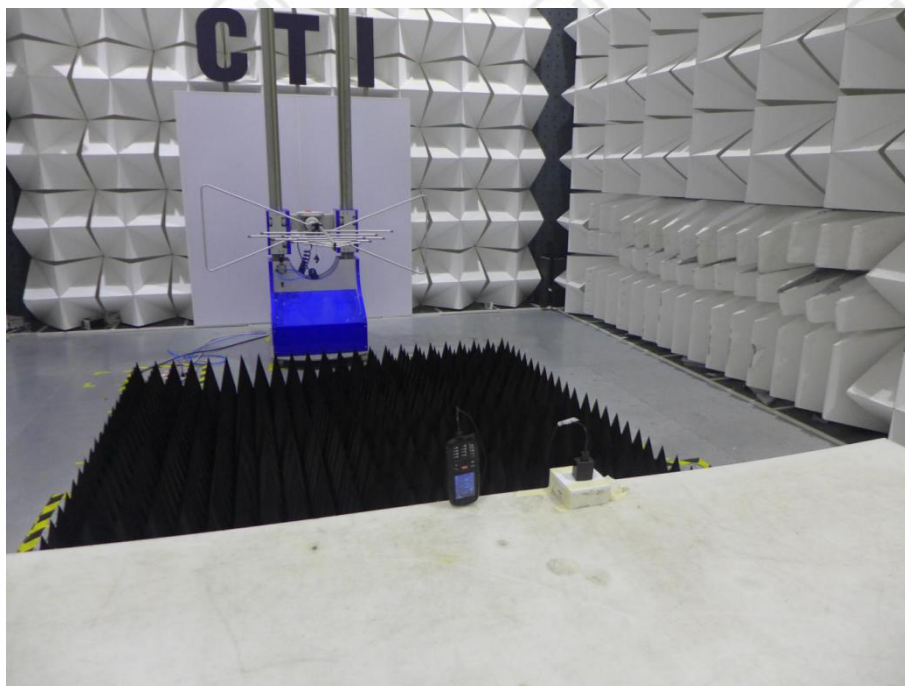
HSDPA band II 9538 channel/1907.6MHz(highest channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1192.011	150	37	-58.58	-13	-45.58	Pass	H
3184.250	150	60	-52.17	-13	-39.17	Pass	H
3815.033	150	360	-49.28	-13	-36.28	Pass	H
6511.117	150	79	-46.76	-13	-33.76	Pass	H
9065.084	150	151	-47.36	-13	-34.36	Pass	H
12334.980	150	247	-45.91	-13	-32.91	Pass	H
1124.226	150	291	-57.70	-13	-44.70	Pass	V
2733.232	150	200	-53.48	-13	-40.48	Pass	V
3815.033	150	147	-48.19	-13	-35.19	Pass	V
6511.117	150	10	-45.70	-13	-32.70	Pass	V
9111.353	150	36	-46.79	-13	-33.79	Pass	V
11933.470	150	111	-45.41	-13	-32.41	Pass	V

Note:

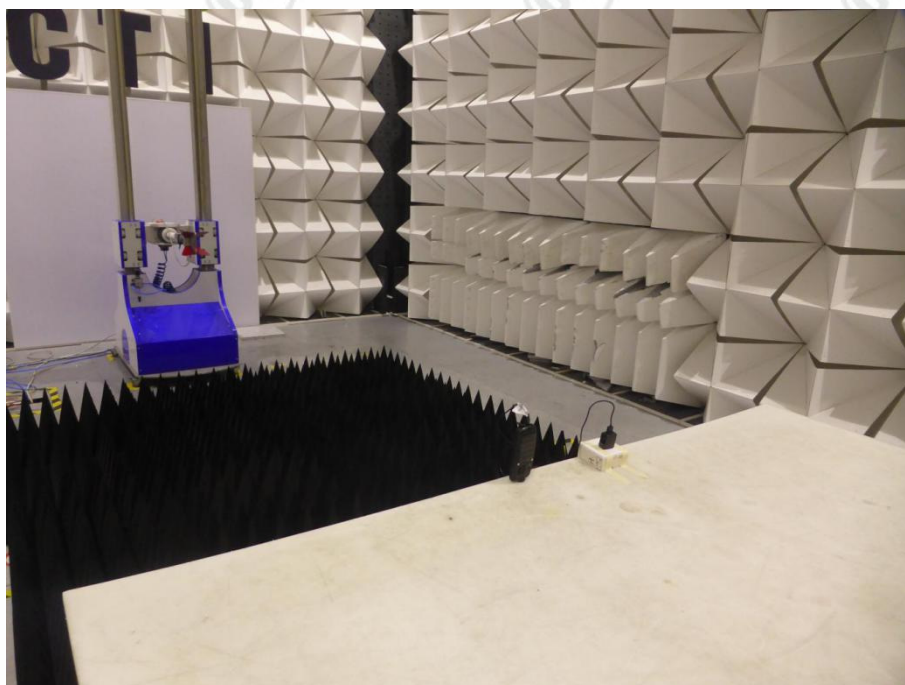
1) Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below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

PHOTOGRAPHS OF TEST SETUP

Test mode No.: RG310



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



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

PHOTOGRAPHS OF EUT Constructional Details

Test mode No.: RG310



View of Product-1



View of Product-2



View of Product-3



View of Product-4



View of Product-5



View of Product-6



View of Product-7



View of Product-8



View of Product-9



View of Product-10



View of Product-11



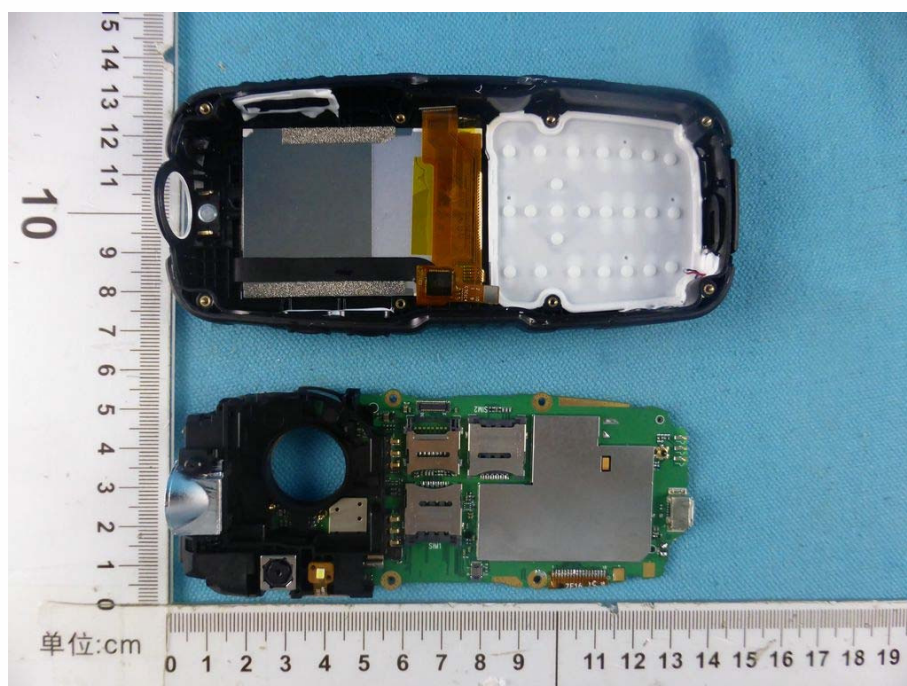
View of Product-12



View of Product-13



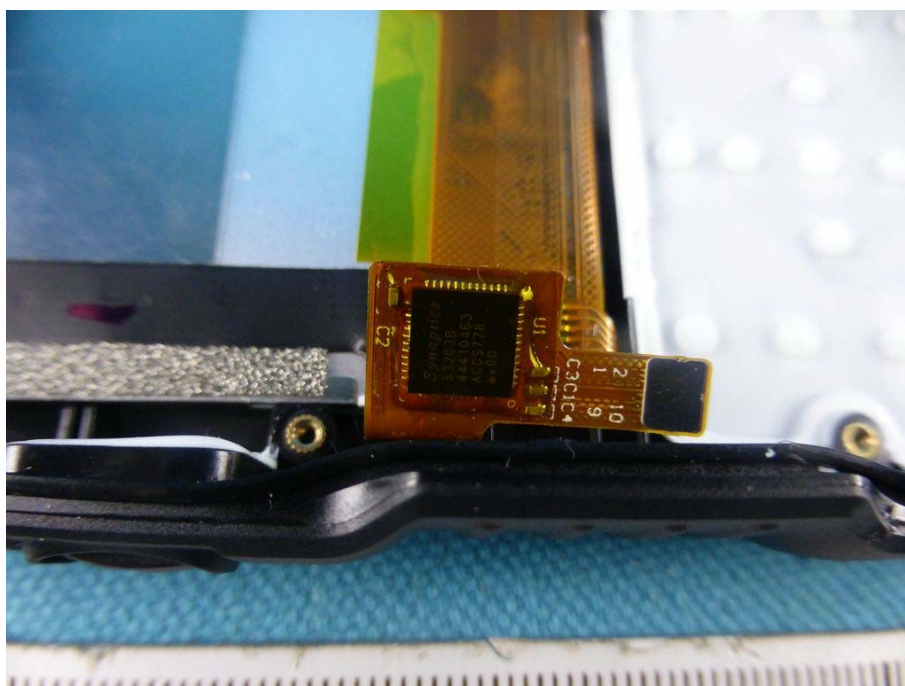
View of Product-14



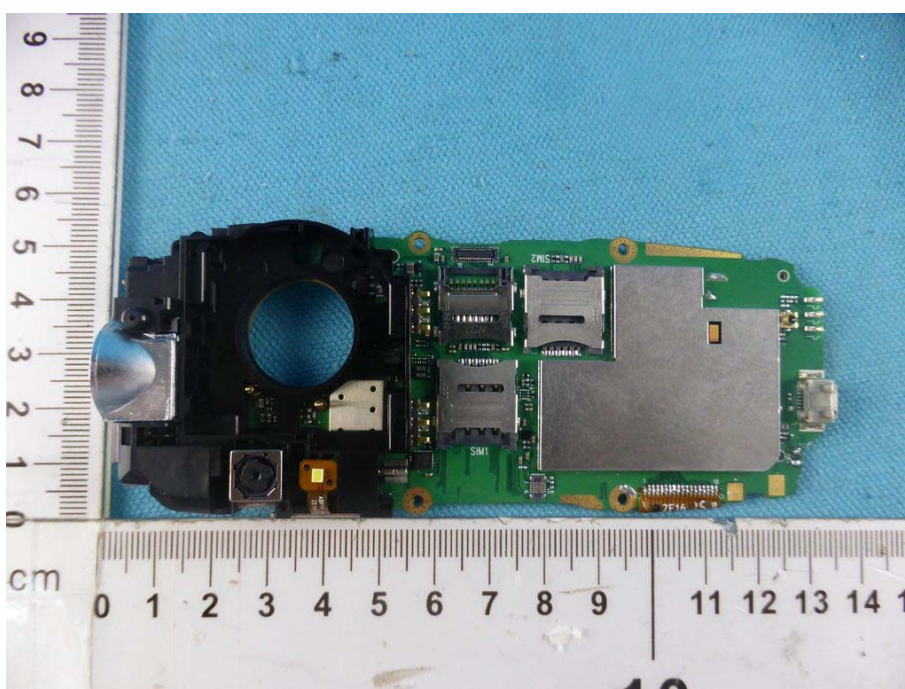
View of Product-15



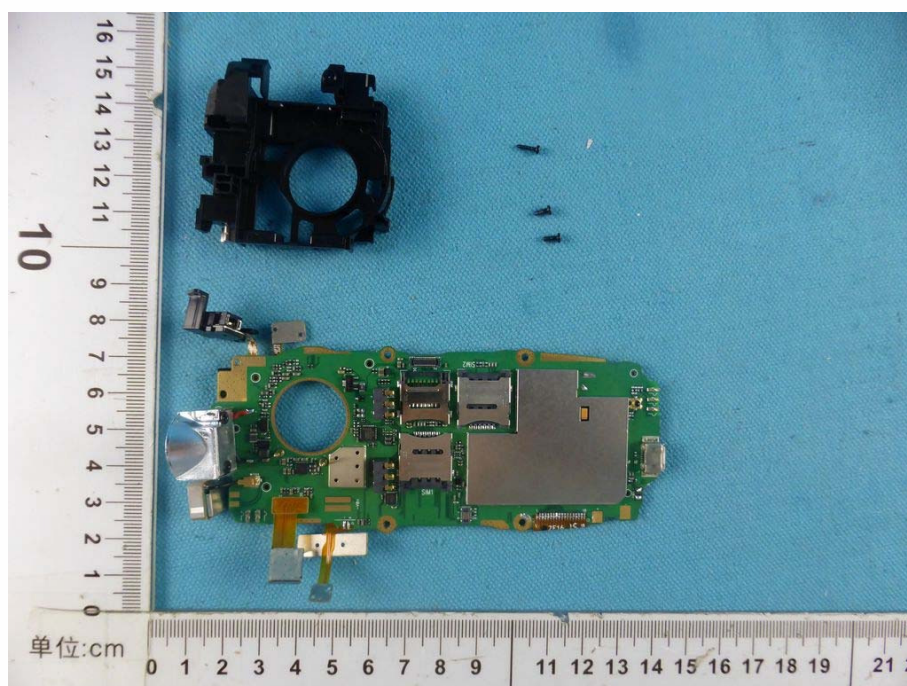
View of Product-16



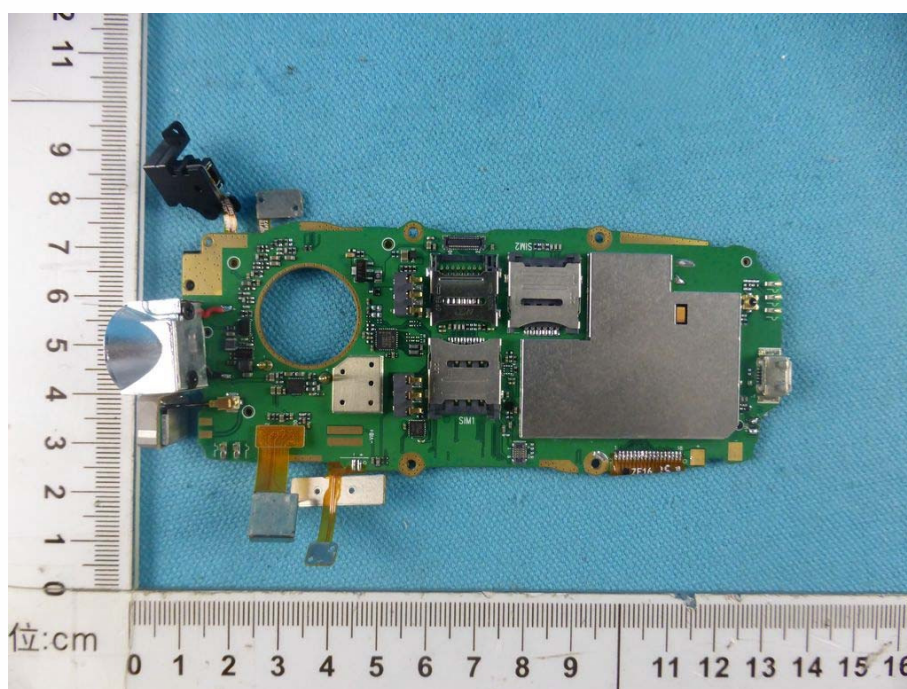
View of Product-17



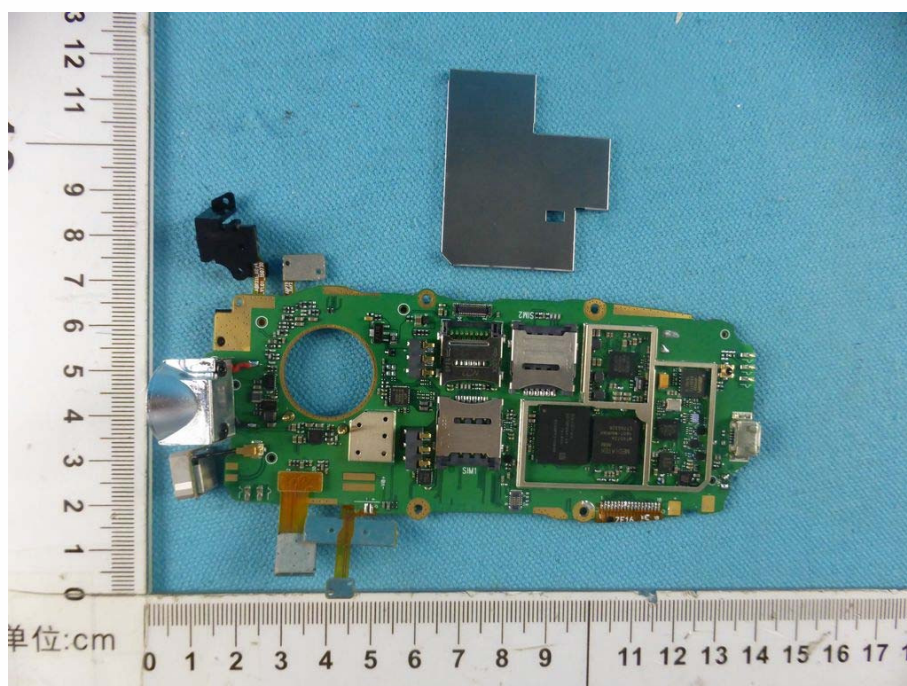
View of Product-18



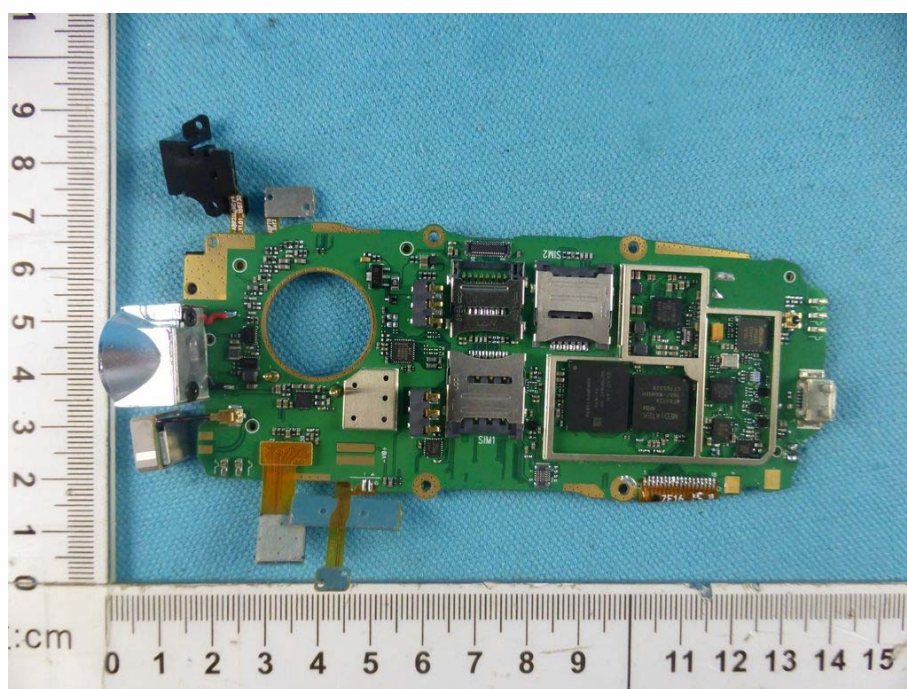
View of Product-19



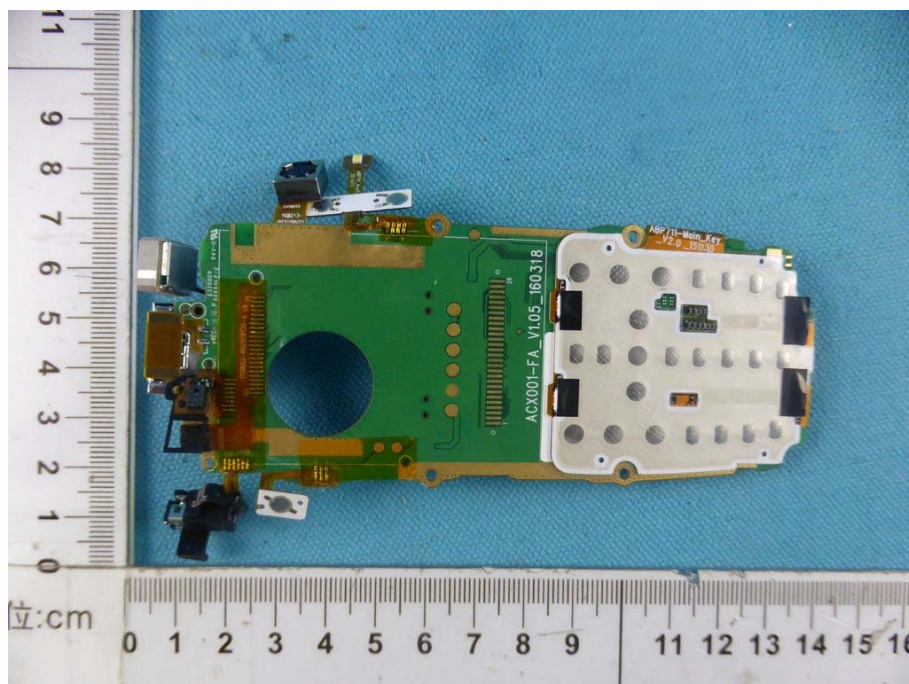
View of Product-20



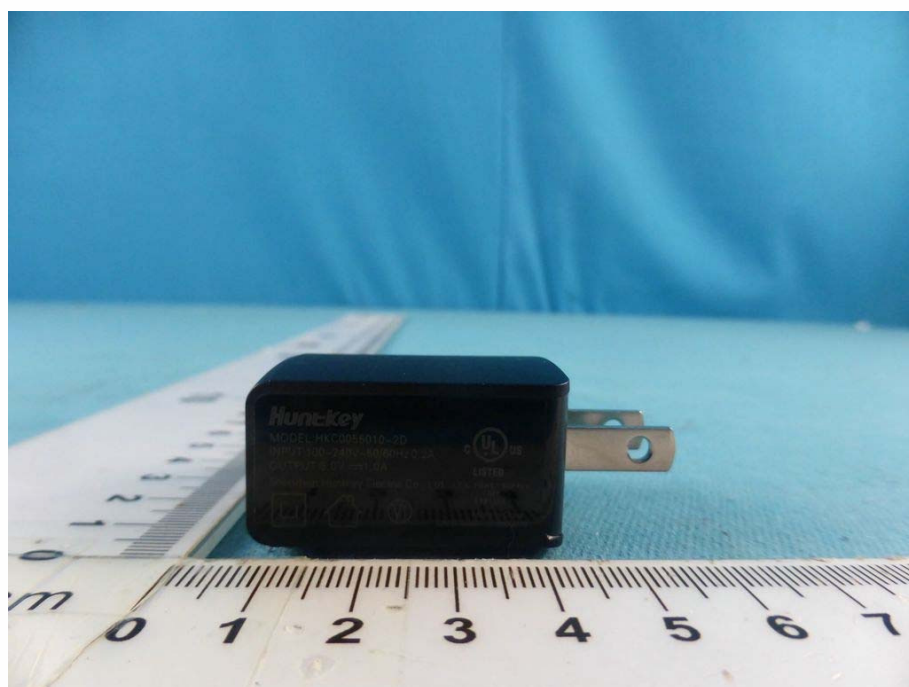
View of Product-21



View of Product-22



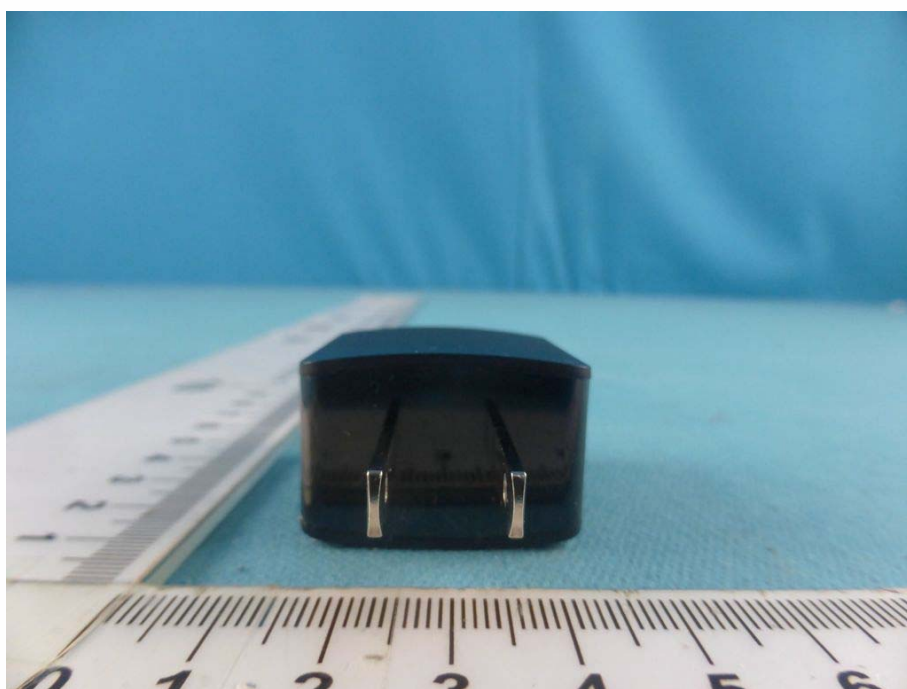
View of Product-23



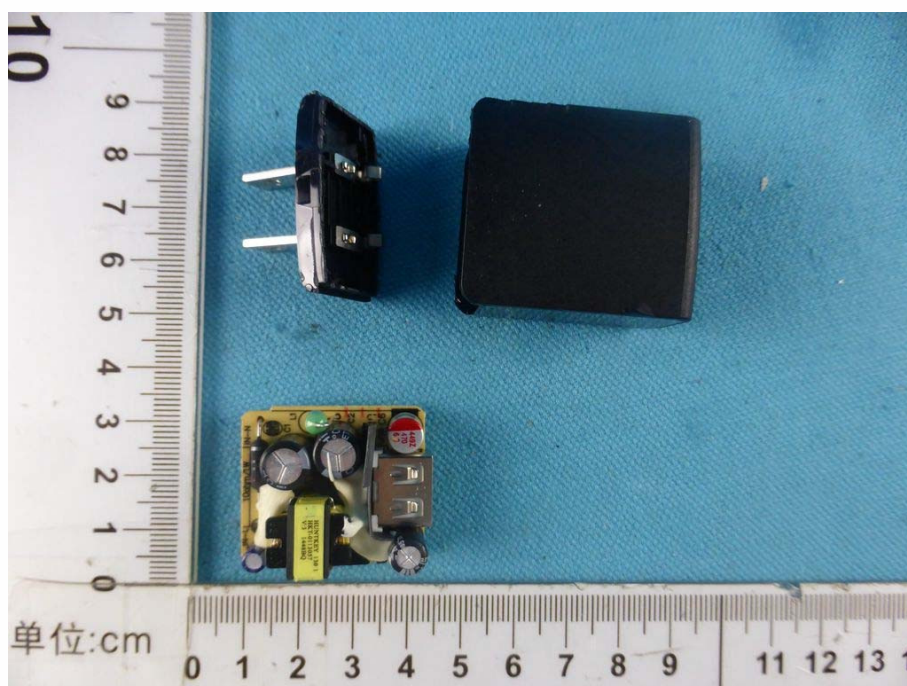
View of Product-24



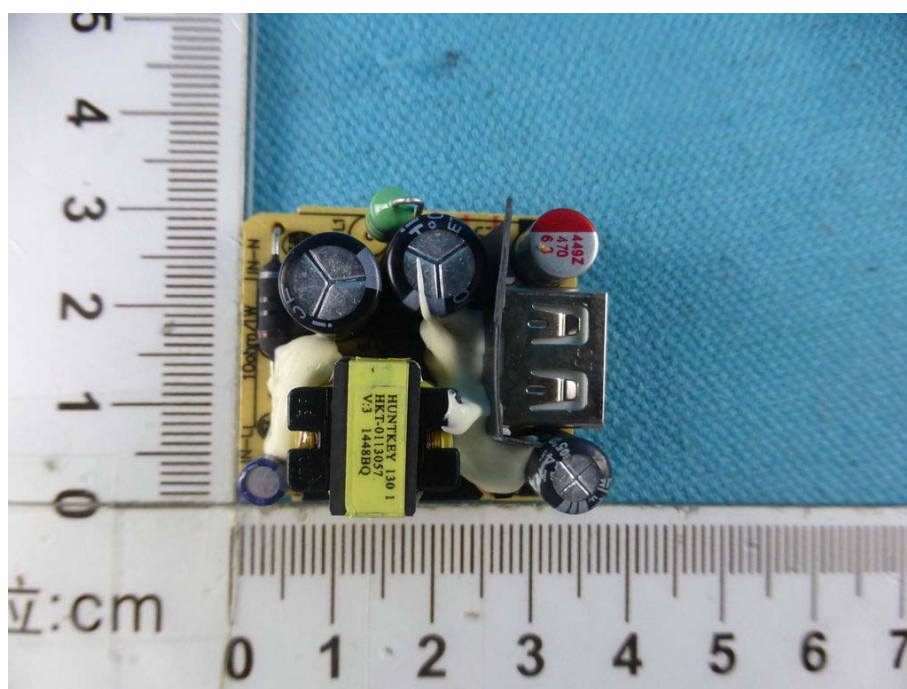
View of Product-25



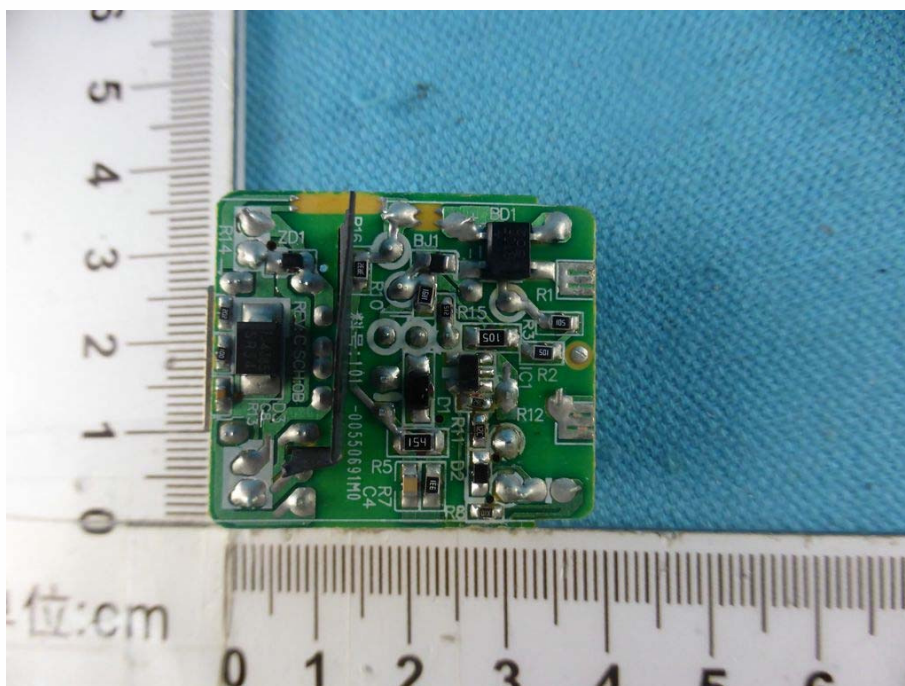
View of Product-26



View of Product-27



View of Product-28



View of Product-29

*** 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.