

## TEST REPORT

**Product** : 7"Tablet PC  
**Trade mark** : DragonTouch, KINGPAD, KINGSLIM, AKASO  
**Model/Type reference** : S7, S70, S7 PLUS, S7 PRO, S7X, S7 KIDS  
**Serial Number** : N/A  
**Report Number** : EED32I00225104  
**FCC ID** : S5V-D07S70  
**Date of Issue** : Oct. 27, 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:

**PROEXPRESS DISTRIBUTOR LLC**

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Date:

Oct. 27, 2016

Check No.: 2496558845



## 2 Version

| Version No. | Date          | Description |
|-------------|---------------|-------------|
| 00          | Oct. 27, 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<br>D01v02r02 | PASS   |
| Effective Radiated Power of Transmitter(ERP)  | Part 2.1046(a)/Part 22.913(a)                   | TIA-603-D-2010 &KDB 971168<br>D01v02r02 | PASS   |
| 99%&26dB Occupied Bandwidth                   | Part 2.1049(h)                                  | Part 22.917(b) &KDB 971168<br>D01v02r02 | PASS   |
| Band Edge at antenna terminals                | Part 2.1051/Part 22.917(a)                      | Part 22.917(b) &KDB 971168<br>D01v02r02 | PASS   |
| Spurious emissions at antenna terminals       | Part 2.1051/ Part 2.1057/<br>Part 22.917(a)(b)  | TIA-603-D-2010 &KDB 971168<br>D01v02r02 | PASS   |
| Field strength of spurious radiation          | Part 2.1053/ Part 2.1057/<br>Part 22.917(a)(b)  | TIA-603-D-2010 &KDB 971168<br>D01v02r02 | PASS   |
| Frequency stability                           | Part 2.1055/ Part 22.355                        | TIA-603-D-2010 &KDB 971168<br>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<br>D01v02r02  | PASS   |
| Effective Radiated Power of Transmitter(EIRP) | Part 2.1046(a) / Part 24.232(c)                 | TIA-603-D-2010 &KDB 971168<br>D01v02r02 | PASS   |
| peak-to-average ratio                         | Part 24.232(d)                                  | KDB 971168 D01v02r02                    | PASS   |
| 99% &26dB Occupied Bandwidth                  | Part 2.1049(h)                                  | Part 24.238(b) &KDB 971168<br>D01v02r02 | PASS   |
| Band Edge at antenna terminals                | Part 2.1051/ Part 24.238(a)                     | Part 24.238(b) &KDB 971168<br>D01v02r02 | PASS   |
| Spurious emissions at antenna terminals       | Part 2.1051/ Part 2.1057/<br>Part 24.238(a)(b)  | TIA-603-D-2010 &KDB 971168<br>D01v02r02 | PASS   |
| Field strength of spurious radiation          | Part 2.1053 /Part 2.1057 /<br>Part 24.238(a)(b) | TIA-603-D-2010 &KDB 971168<br>D01v02r02 | PASS   |
| Frequency stability                           | Part 2.1055/Part 24.235                         | TIA-603-D-2010 &KDB 971168<br>D01v02r02 | PASS   |

Remark:

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

Model No.: S7, S70, S7 PLUS, S7 PRO, S7X, S7 KIDS

Only the model S7 was tested, the PCB, Schematic, Hardware etc were identical for the above models, Only different model name due to difference agent and marketing purposes.

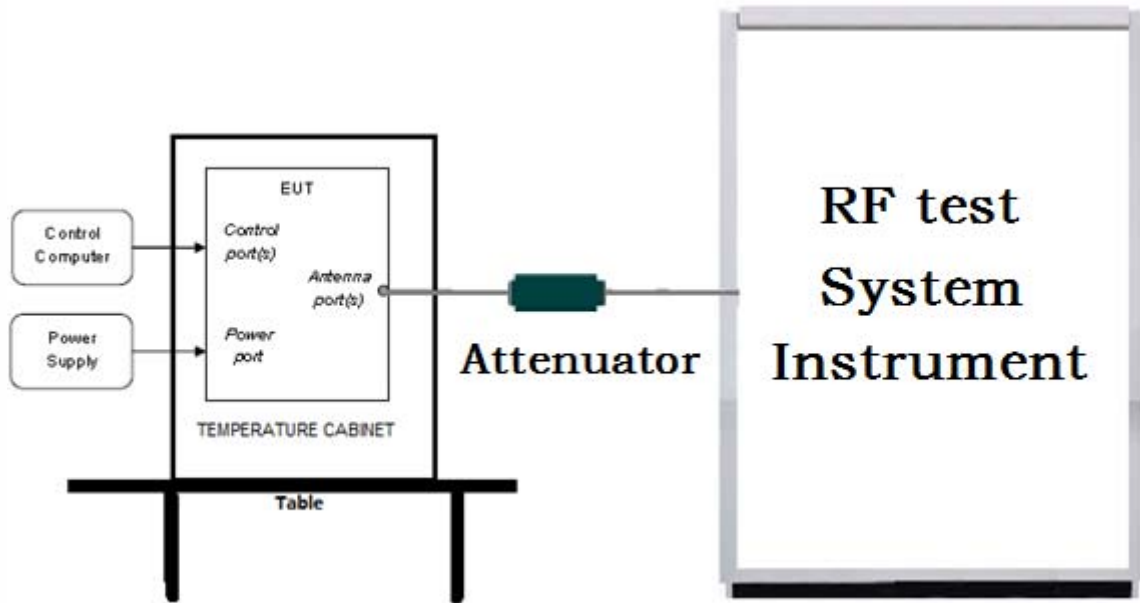
## 4 Content

|                                                                      |            |
|----------------------------------------------------------------------|------------|
| <b>1 COVER PAGE.....</b>                                             | <b>1</b>   |
| <b>2 VERSION.....</b>                                                | <b>2</b>   |
| <b>3 TEST SUMMARY.....</b>                                           | <b>3</b>   |
| <b>4 CONTENT.....</b>                                                | <b>4</b>   |
| <b>5 TEST REQUIREMENT.....</b>                                       | <b>5</b>   |
| 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          |
| <b>6 GENERAL INFORMATION.....</b>                                    | <b>9</b>   |
| 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         |
| <b>7 EQUIPMENT LIST.....</b>                                         | <b>12</b>  |
| <b>8 RADIO TECHNICAL REQUIREMENTS SPECIFICATION.....</b>             | <b>14</b>  |
| 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)..... | 144        |
| Appendix H): Field strength of spurious radiation.....               | 148        |
| <b>PHOTOGRAPHS OF TEST SETUP.....</b>                                | <b>163</b> |
| <b>PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS.....</b>                | <b>164</b> |

## 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:

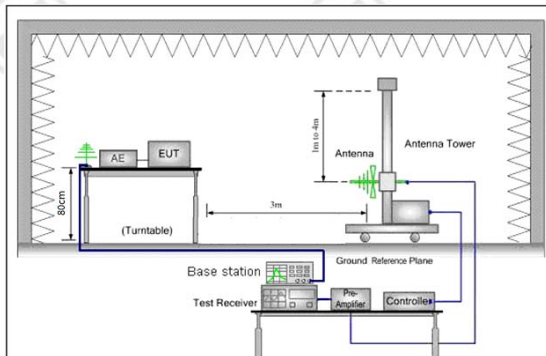


Figure 1.30MHz to 1GHz

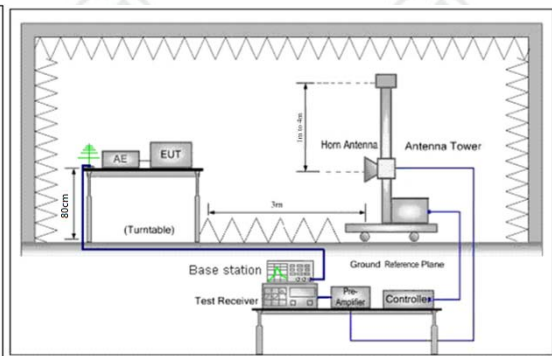


Figure 2. above 1GHz

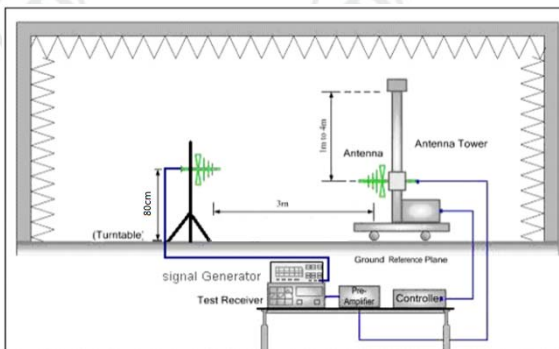


Figure 1. 30MHz to 1GHz

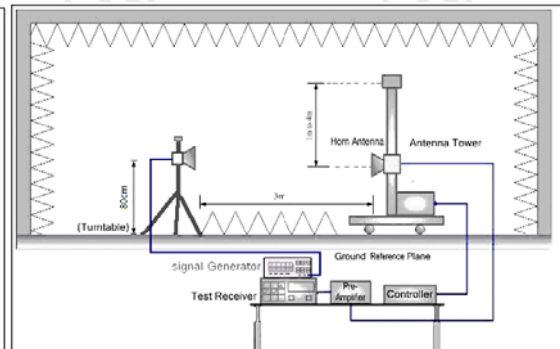


Figure 2. above 1GHz

## 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<br>850                  | Tx<br>(824 MHz ~849 MHz)   | Channel 128  | Channel 190  | Channel 251  |
|                                  |                            | 824.2MHz     | 836.6 MHz    | 848.8 MHz    |
|                                  | Rx<br>(869 MHz ~894 MHz)   | Channel 128  | Channel 190  | Channel 251  |
|                                  |                            | 869.2 MHz    | 881.6 MHz    | 893.8 MHz    |
| WCDMA/HSD<br>PA HSUPA<br>band V  | Tx<br>(824 MHz ~849 MHz)   | Channel 4132 | Channel 4182 | Channel 4233 |
|                                  |                            | 826.4 MHz    | 836.4 MHz    | 846.6 MHz    |
|                                  | Rx<br>(869 MHz ~894 MHz)   | Channel 4357 | Channel 4407 | Channel 4458 |
|                                  |                            | 871.4 MHz    | 881.4 MHz    | 891.6 MHz    |
| GSM/GPRS/<br>1900                | Tx<br>(1850 MHz ~1910 MHz) | Channel 512  | Channel 661  | Channel 810  |
|                                  |                            | 1850.2MHz    | 1880.0 MHz   | 1909.8 MHz   |
|                                  | Rx<br>(1930 MHz ~1990 MHz) | Channel 512  | Channel 661  | Channel 810  |
|                                  |                            | 1930.2 MHz   | 1960.0 MHz   | 1989.8 MHz   |
| WCDMA/HSD<br>PA HSUPA<br>Band II | Tx<br>(1850 MHz ~1910 MHz) | Channel 9262 | Channel 9400 | Channel 9538 |
|                                  |                            | 1852.4 MHz   | 1880.0 MHz   | 1907.6 MHz   |
|                                  | Rx<br>(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            | 33.30        | 33.67    | 33.76    | 31.32         | 31.31   | 31.46     |
| GPRS Class 8   | 33.27        | 33.72    | 33.70    | 31.31         | 31.24   | 31.45     |

| 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      | 23.98              | 24.23    | 23.99    | 24.13               | 24.58   | 24.86     |
| HSDPA          | 23.93              | 24.16    | 23.98    | 24.51               | 24.63   | 24.89     |
| HSUPA          | 22.90              | 23.06    | 23.01    | 23.72               | 23.78   | 24.05     |

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            | 33.25        | 33.61    | 33.25    | 31.29         | 31.30   | 31.42     |
| GPRS Class 8   | 33.14        | 33.70    | 33.69    | 31.28         | 31.21   | 31.38     |

| 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      | 23.35              | 24.20    | 23.91    | 24.13               | 24.58   | 24.83     |
| HSDPA          | 23.85              | 24.13    | 23.92    | 24.50               | 24.61   | 24.87     |
| HSUPA          | 22.72              | 23.01    | 22.95    | 23.85               | 23.71   | 24.03     |

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 850  | 1)GSM Link<br>2)GPRS 8 Link               | 1)GSM Link<br>2)GPRS 8 Link               |
| GSM/GPRS 1900 | 1)GSM Link<br>2)GPRS 8 Link               | 1)GSM Link<br>2)GPRS 8 Link               |
| WCDMA Band V  | 1)RMC 12.2Kbps Link<br>2)HSDPA<br>3)HSUPA | 1)RMC 12.2Kbps Link<br>2)HSDPA<br>3)HSUPA |
| WCDMA Band II | 1)RMC 12.2Kbps Link<br>2)HSDPA<br>3)HSUPA | 1)RMC 12.2Kbps Link<br>2)HSDPA<br>3)HSUPA |

**Test mode:**

| Test Mode | Test Modes description            |
|-----------|-----------------------------------|
| GSM/TM1   | GSM system, GSM, GMSK modulation  |
| GSM/TM2   | GSM system, GPRS, GMSK modulation |
| Test Mode | Test Modes description            |
| UMTS/TM1  | WCDMA system, QPSK modulation     |
| UMTS/TM2  | HSDPA system, QPSK modulation     |
| UMTS/TM3  | HSUPA system, QPSK modulation     |

## 6 General Information

### 6.1 Client Information

|                          |                                                                                  |
|--------------------------|----------------------------------------------------------------------------------|
| Applicant:               | PROEXPRESS DISTRIBUTOR LLC                                                       |
| Address of Applicant:    | 11011 Greenwood Ave N 11011 Greenwood Ave N, Seattle Washington<br>United States |
| Manufacturer:            | PROEXPRESS DISTRIBUTOR LLC                                                       |
| Address of Manufacturer: | 11011 Greenwood Ave N 11011 Greenwood Ave N, Seattle Washington<br>United States |
| Factory:                 | PROEXPRESS DISTRIBUTOR LLC                                                       |
| Address of Factory:      | 11011 Greenwood Ave N 11011 Greenwood Ave N, Seattle Washington<br>United States |

### 6.2 General Description of EUT

|                                  |                                                                                                                 |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Product Name:                    | 7"Tablet PC                                                                                                     |
| Model No.(EUT):                  | S7, S70, S7 PLUS, S7 PRO, S7X, S7 KIDS                                                                          |
| Test Model No.:                  | S7                                                                                                              |
| Trade Mark:                      | DragonTouch, KINGPAD, KINGSLIM, AKASO                                                                           |
| EUT Supports Radios application: | Bluetooth V3.0+EDR, Bluetooth V4.0 BLE, WiFi b/g/n(HT20),<br>GSM/GPRS/EDGE 850/1900, WCDMA/HSDPA HSUPA 850/1900 |
| Power Supply:                    | Model: UBP-623-052000<br>Input: 100-240V~ 50/60Hz<br>Output: 5.0V 2000mA                                        |
| Battery                          | Li-ion 3.7V 2700mAh                                                                                             |
| Sample Received Date:            | Aug. 11, 2016                                                                                                   |
| Sample tested Date:              | Aug. 11, 2016 to Oct. 27, 2016                                                                                  |

### 6.3 Product Specification subjective to this standard

|                  |                                                                                                                                                                                                                                                                                                                                |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Frequency Band:  | <b>GSM/GPRS 850:</b><br>Tx:824.20 -848.80MHz; Rx: 869.20 – 893.80MHz<br><b>GSM/GPRS 1900:</b><br>Tx:1850.20 – 1909.80MHz; Rx:1930.20 – 1989.80MHz<br><b>WCDMA/HSDPA/HSUPA Band V:</b><br>Tx:826.40 -846.60MHz; Rx: 871.40 – 891.60MHz<br><b>WCDMA/HSDPA/HSUPA Band II:</b><br>Tx:1852.40 – 1907.60MHz; Rx:1932.40 – 1987.60MHz |
| Modulation Type: | GSM/GPRS Mode with GMSK Modulation<br>WCDMA Mode with QPSK Modulation                                                                                                                                                                                                                                                          |
| Sample Type:     | Portable production                                                                                                                                                                                                                                                                                                            |
| Antenna Type:    | Integral                                                                                                                                                                                                                                                                                                                       |
| Antenna Gain:    | GSM 850: 0.82dBi, GSM 1900: 1.1dBi, WCDMA Band II: 1.51dBi,<br>WCDMA Band V: 0.34dBi                                                                                                                                                                                                                                           |
| 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

## 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                 | $7.9 \times 10^{-8}$    |
| 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/070/10711112         | ---           | 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     | FL3CX03WG18NM12-0398-002 | ---           | 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     | FL5CX01CA09CL12-0395-001 | ---           | 01-12-2016             | 01-11-2017                 |
| band rejection filter                          | Sinoscite     | FL5CX01CA08CL12-0393-001 | ---           | 01-12-2016             | 01-11-2017                 |
| band rejection filter                          | Sinoscite     | FL5CX02CA04CL12-0396-002 | ---           | 01-12-2016             | 01-11-2017                 |
| band rejection filter                          | Sinoscite     | FL5CX02CA03CL12-0394-001 | ---           | 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<br>Subpart H – Cellular Radiotelephone Service       |
| 2   | PART 24 (2015) | PART 24 – PERSONAL COMMUNICATIONS SERVICES<br>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)/<br>part 24.232(c)                     | TIA-603-D&KDB<br>971168 D01v02r02                          | Conducted output<br>power                          | PASS    | Appendix A) |
| Part 24.232(d)                                                       | KDB 971168<br>D01v02r02                                    | peak-to-average ratio                              | PASS    | Appendix B) |
| Part 2.1049(h)                                                       | Part 22.917(b)/ Part<br>24.238(b) &KDB<br>971168 D01v02r02 | 99%<br>&26dB Occupied<br>Bandwidth                 | PASS    | Appendix C) |
| Part 2.1051/Part 22.917(a)/<br>Part 24.238(a)                        | Part 22.917(b)/ Part<br>24.238(b) &KDB<br>971168 D01v02r02 | Band Edge at<br>antenna terminals                  | PASS    | Appendix D) |
| Part 2.1051/ Part 2.1057/<br>Part 22.917(a)(b)/<br>Part 24.238(a)(b) | TIA-603-D &KDB<br>971168 D01v02r02                         | Spurious emissions<br>at antenna<br>terminals      | PASS    | Appendix E) |
| Part 2.1055/ Part 22.355/<br>Part 24.235                             | TIA-603-D &KDB<br>971168 D01v02r02                         | Frequency stability                                | PASS    | Appendix F) |
| Part 2.1053/ Part 2.1057/<br>Part 22.917(a)(b)/<br>Part 24.238(a)(b) | TIA-603-D &KDB<br>971168 D01v02r02                         | Field strength of<br>spurious radiation            | PASS    | Appendix G) |
| Part 2.1046(a)/Part 22.913(a)/<br>Part 24.232(c)                     | TIA-603-D &KDB<br>971168 D01v02r02                         | Effective Radiated<br>Power of<br>Transmitter(ERP) | PASS    | Appendix H) |

## Appendix A): RF Power Output

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                       |                                          |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------------------------------------------|
| <b>Test Requirement:</b>      | Part 2.1046(a)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                       |                                          |
| <b>Test Method:</b>           | TIA-603-D-2010 Clause 2.2.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                       |                                          |
| <b>Test Setup:</b>            | Refer to section 5 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                       |                                          |
| <b>Limit:</b>                 | 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 )                        |
| <b>Measurement Procedure:</b> | 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. |                                       |                                          |
| <b>Instruments Used:</b>      | Refer to section 7 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                       |                                          |
| <b>Test Results:</b>          | Pass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                       |                                          |

### Test Data:

| Test Band | Test Mode | Test Channel | Measured(dbm) | Limit(dbm) | Verdict |
|-----------|-----------|--------------|---------------|------------|---------|
| GSM850    | GSM/TM1   | LCH          | 33.30         | 38.5       | PASS    |
|           |           | MCH          | 33.67         | 38.5       | PASS    |
|           |           | HCH          | 33.76         | 38.5       | PASS    |
|           | GSM/TM2   | LCH          | 33.27         | 38.5       | PASS    |
|           |           | MCH          | 33.72         | 38.5       | PASS    |
|           |           | HCH          | 33.70         | 38.5       | PASS    |
| Test Band | Test Mode | Test Channel | Measured(dbm) | Limit(dbm) | Verdict |
| GSM1900   | GSM/TM1   | LCH          | 31.32         | 33         | PASS    |
|           |           | MCH          | 31.31         | 33         | PASS    |
|           |           | HCH          | 31.46         | 33         | PASS    |
|           | GSM/TM2   | LCH          | 31.31         | 33         | PASS    |
|           |           | MCH          | 31.24         | 33         | PASS    |
|           |           | HCH          | 31.45         | 33         | PASS    |

| Test Band | Test Mode | Test Channel | Measured(dbm) | Limit(dbm) | Verdict |
|-----------|-----------|--------------|---------------|------------|---------|
| WCDMA850  | UMTS/TM1  | LCH          | 23.98         | 38.5       | PASS    |
|           |           | MCH          | 24.23         | 38.5       | PASS    |
|           |           | HCH          | 23.99         | 38.5       | PASS    |
| Test Band | Test Mode | Test Channel | Measured(dbm) | Limit(dbm) | Verdict |
| WCDMA850  | UMTS/TM2  | LCH          | 23.93         | 38.5       | PASS    |
|           |           | MCH          | 24.16         | 38.5       | PASS    |
|           |           | HCH          | 23.98         | 38.5       | PASS    |
| Test Band | Test Mode | Test Channel | Measured(dbm) | Limit(dbm) | Verdict |
| WCDMA850  | UMTS/TM3  | LCH          | 22.90         | 38.5       | PASS    |
|           |           | MCH          | 23.06         | 38.5       | PASS    |
|           |           | HCH          | 23.01         | 38.5       | PASS    |

| Test Band | Test Mode | Test Channel | Measured(dbm) | Limit(dbm) | Verdict |
|-----------|-----------|--------------|---------------|------------|---------|
| WCDMA1900 | UMTS/TM1  | LCH          | 24.13         | 33         | PASS    |
|           |           | MCH          | 24.58         | 33         | PASS    |
|           |           | HCH          | 24.86         | 33         | PASS    |
| Test Band | Test Mode | Test Channel | Measured(dbm) | Limit(dbm) | Verdict |
| WCDMA1900 | UMTS/TM2  | LCH          | 24.51         | 33         | PASS    |
|           |           | MCH          | 24.63         | 33         | PASS    |
|           |           | HCH          | 24.89         | 33         | PASS    |
| Test Band | Test Mode | Test Channel | Measured(dbm) | Limit(dbm) | Verdict |
| WCDMA1900 | UMTS/TM3  | LCH          | 23.72         | 33         | PASS    |
|           |           | MCH          | 23.78         | 33         | PASS    |
|           |           | HCH          | 24.05         | 33         | PASS    |

## Appendix B): Peak-to-Average Ratio

|                               |                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b>      | Part 24.232(d)                                                                                                                                                                                                                                                                                                                                  |
| <b>Test Method:</b>           | KDB 971168 D01                                                                                                                                                                                                                                                                                                                                  |
| <b>Test Setup:</b>            | Refer to section 5 for details                                                                                                                                                                                                                                                                                                                  |
| <b>Limit:</b>                 | 13dBm                                                                                                                                                                                                                                                                                                                                           |
| <b>Measurement Procedure:</b> | 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:<br>$PAPR (dB) = PPK (dBm) - PAvg (dBm)$ . |
| <b>Instruments Used:</b>      | Refer to section 7 for details                                                                                                                                                                                                                                                                                                                  |
| <b>Test Results:</b>          | Pass                                                                                                                                                                                                                                                                                                                                            |

### Test Data:

| Test Band | Test Mode | Test Channel | Measured(dbm) | Limit(dbm) | Verdict |
|-----------|-----------|--------------|---------------|------------|---------|
| GSM1900   | GSM/TM1   | LCH          | 2.68          | 13         | PASS    |
|           |           | MCH          | 2.66          | 13         | PASS    |
|           |           | HCH          | 2.66          | 13         | PASS    |
|           | GSM/TM2   | LCH          | 2.67          | 13         | PASS    |
|           |           | MCH          | 2.66          | 13         | PASS    |
|           |           | HCH          | 2.66          | 13         | PASS    |

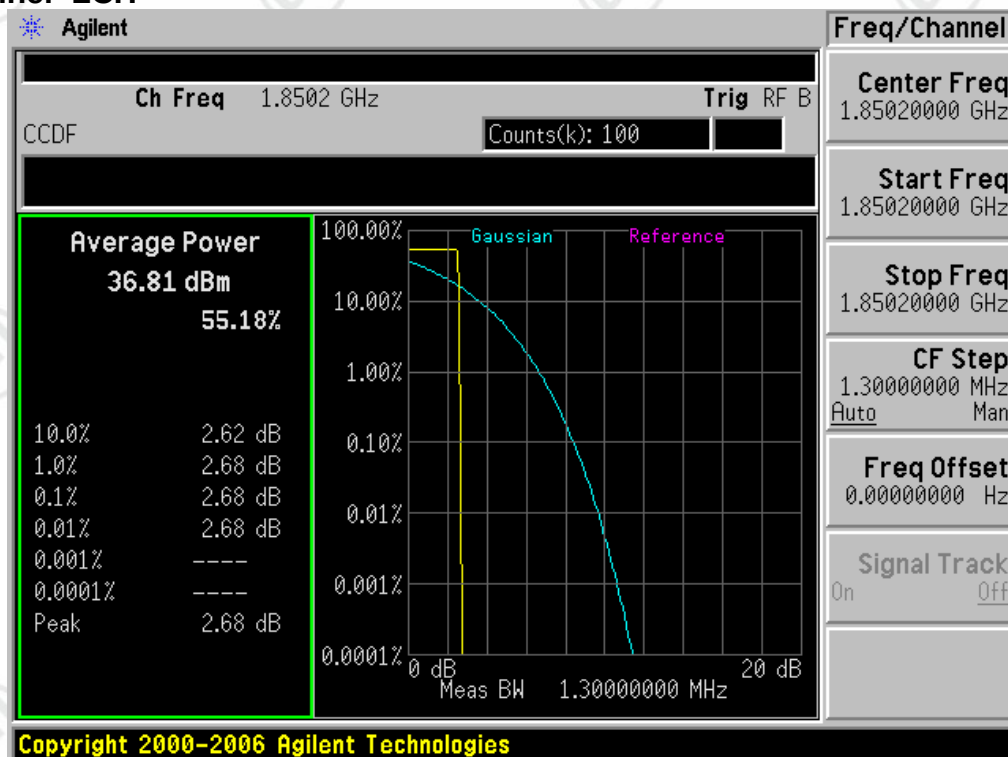
| Test Band | Test Mode | Test Channel | Measured (db) | Limit (db) | Verdict |
|-----------|-----------|--------------|---------------|------------|---------|
| WCDMA1900 | UMTS/TM1  | LCH          | 3.14          | 13         | PASS    |
|           |           | MCH          | 2.66          | 13         | PASS    |
|           |           | HCH          | 2.38          | 13         | PASS    |
|           | UMTS/TM2  | LCH          | 3.54          | 13         | PASS    |
|           |           | MCH          | 3.50          | 13         | PASS    |
|           |           | HCH          | 3.45          | 13         | PASS    |
|           | UMTS/TM3  | LCH          | 3.50          | 13         | PASS    |
|           |           | MCH          | 3.45          | 13         | PASS    |
|           |           | HCH          | 3.68          | 13         | PASS    |

For GSM

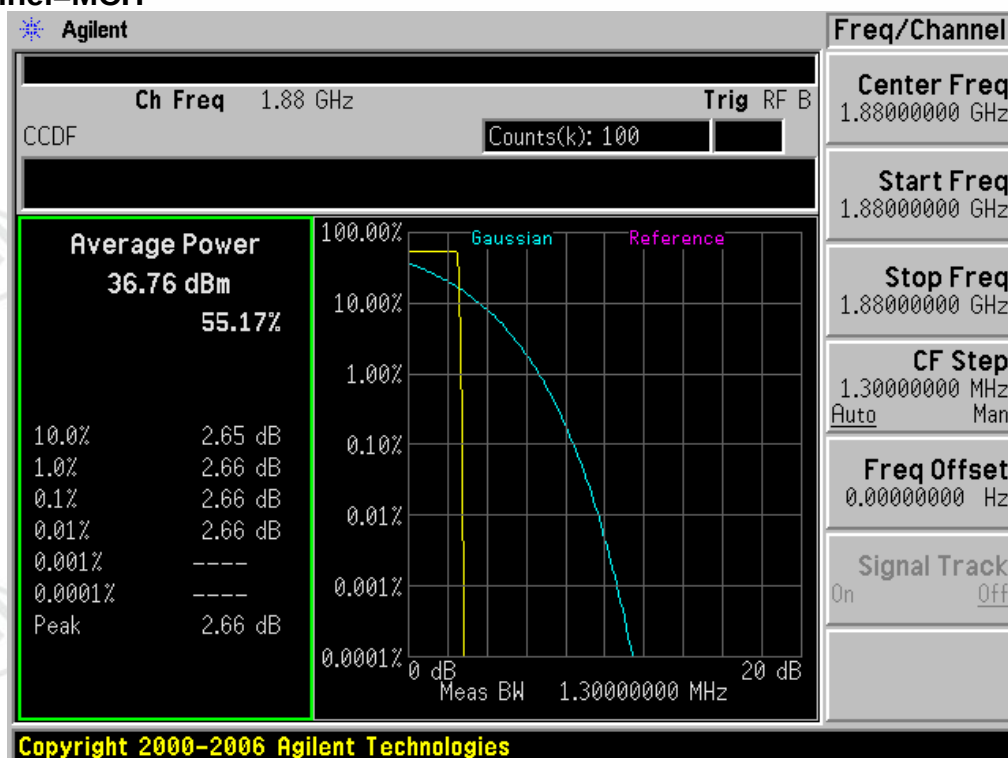
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Test Mode=TM1

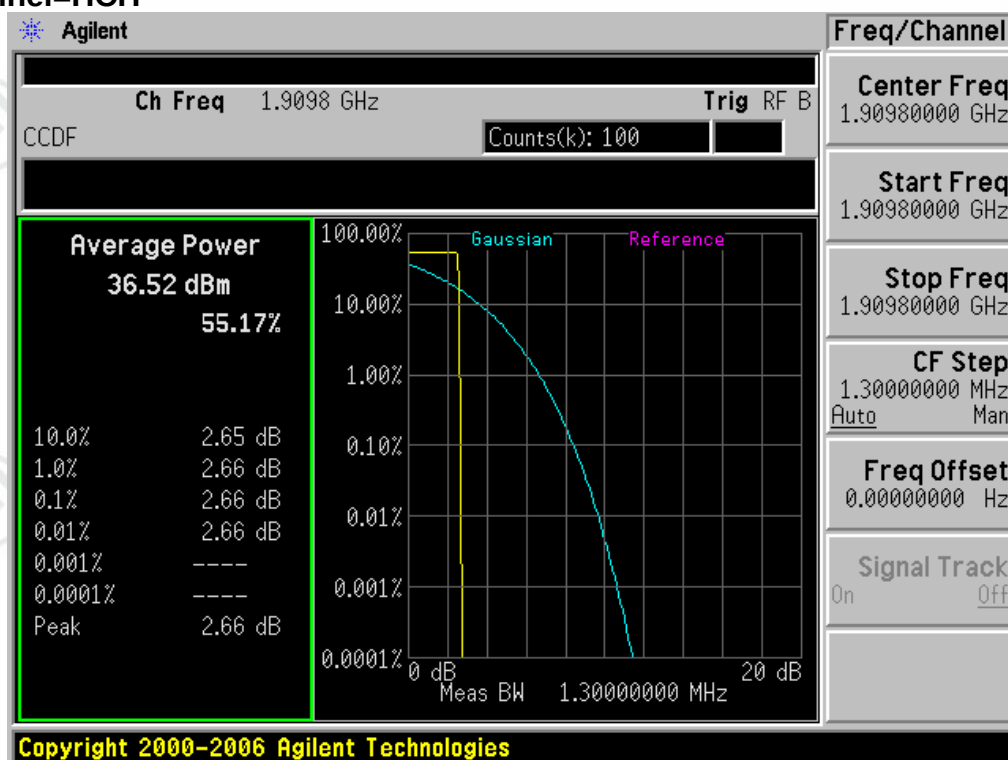
Test Channel=LCH



Test Channel=MCH



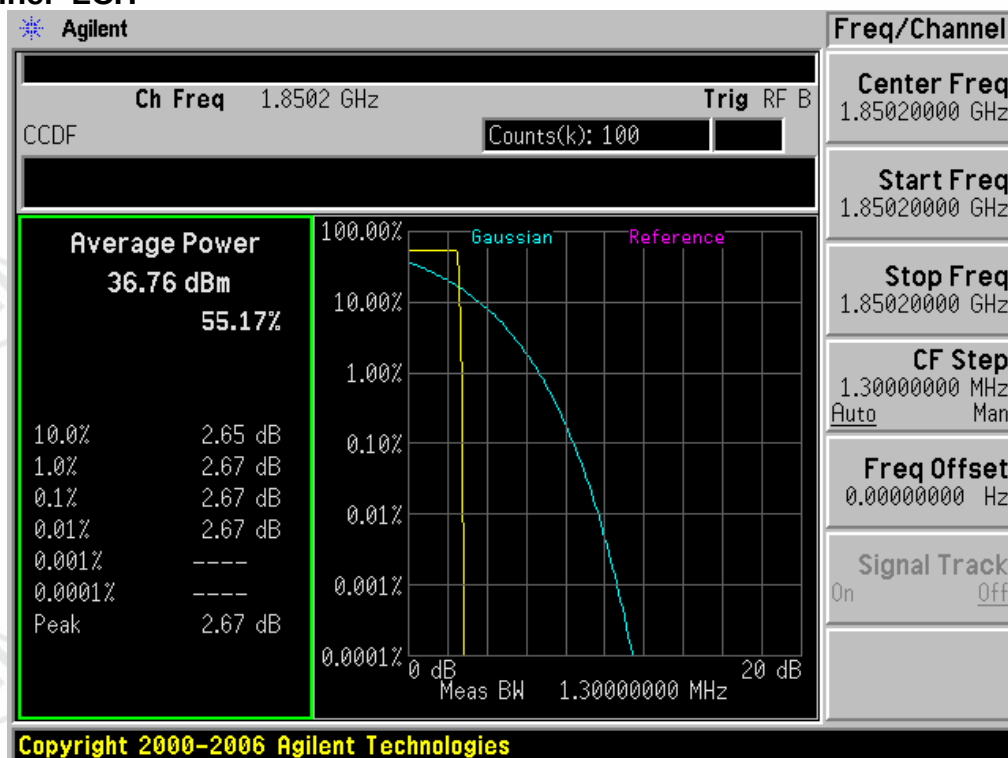
Test Channel=HCH



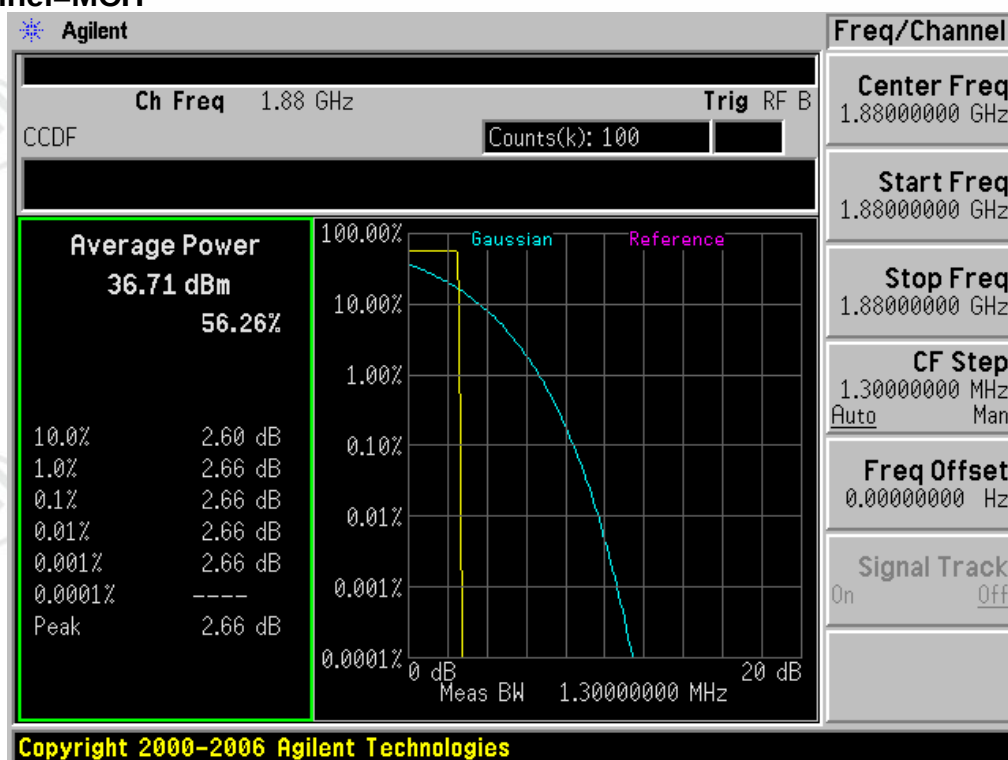
Test Band= GSM1900

Test Mode=TM2

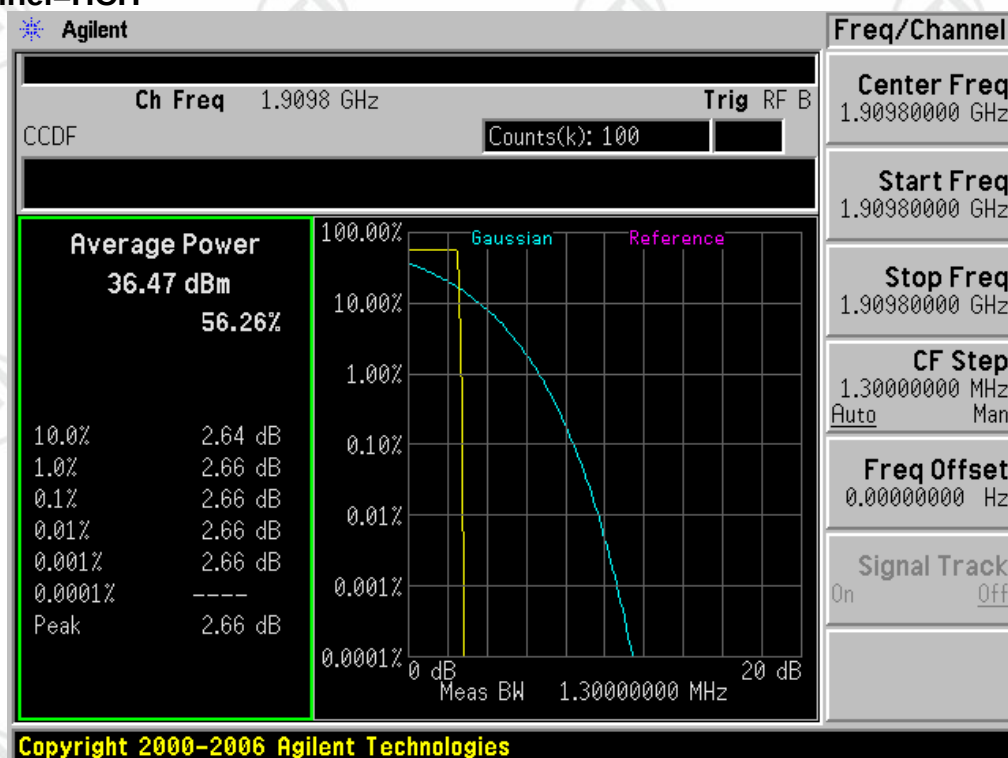
Test Channel=LCH



Test Channel=MCH



Test Channel=HCH

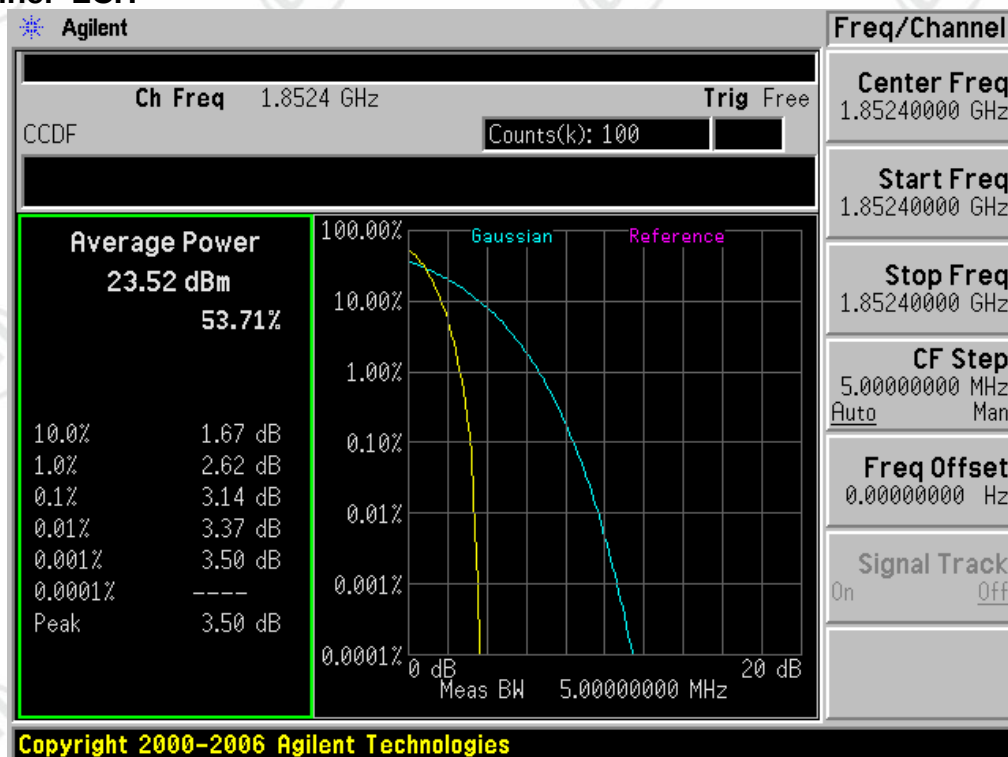


For WCDMA

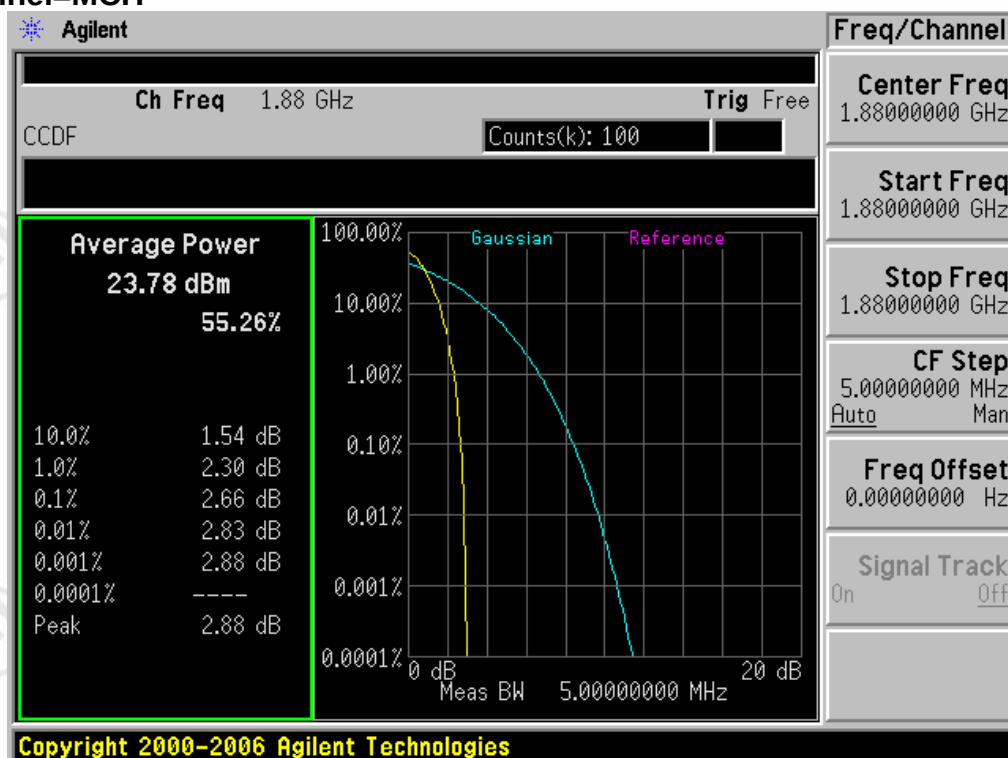
Test Band=WCDMA1900

Test Mode=UMTS/TM1

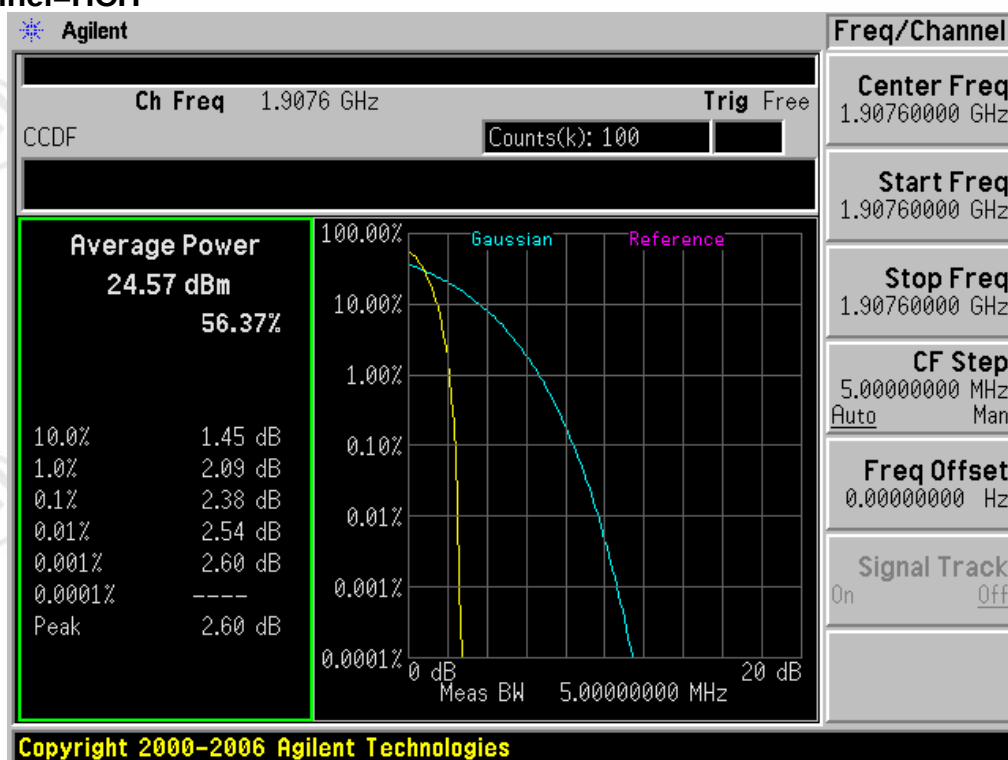
Test Channel=LCH



Test Channel=MCH

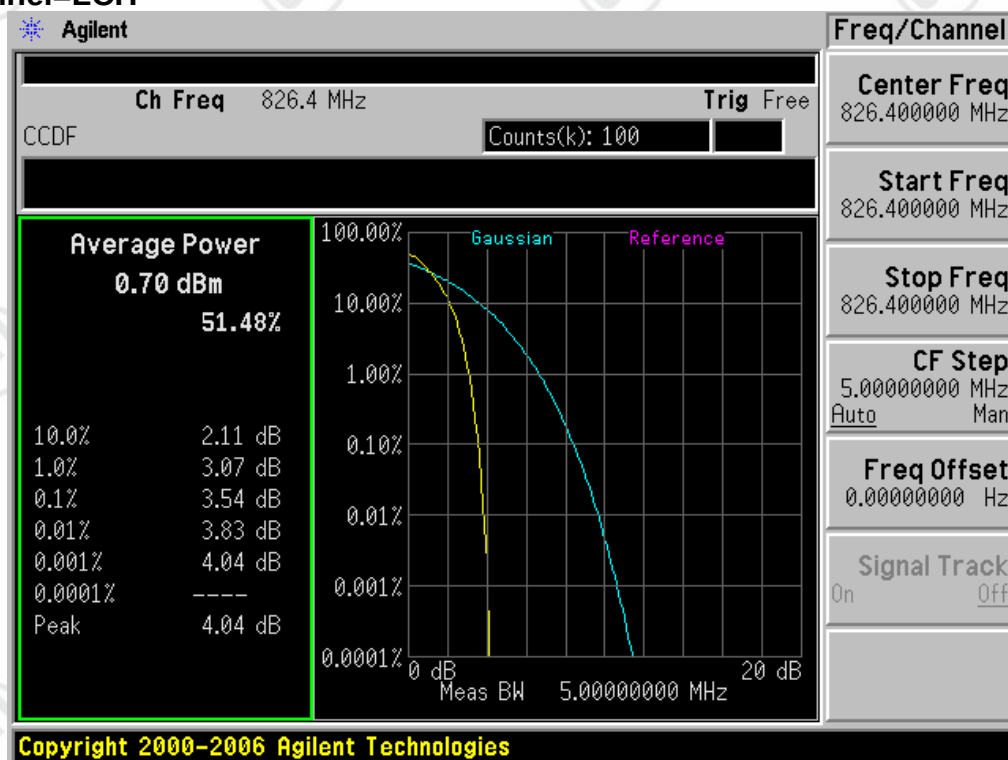


Test Channel=HCH

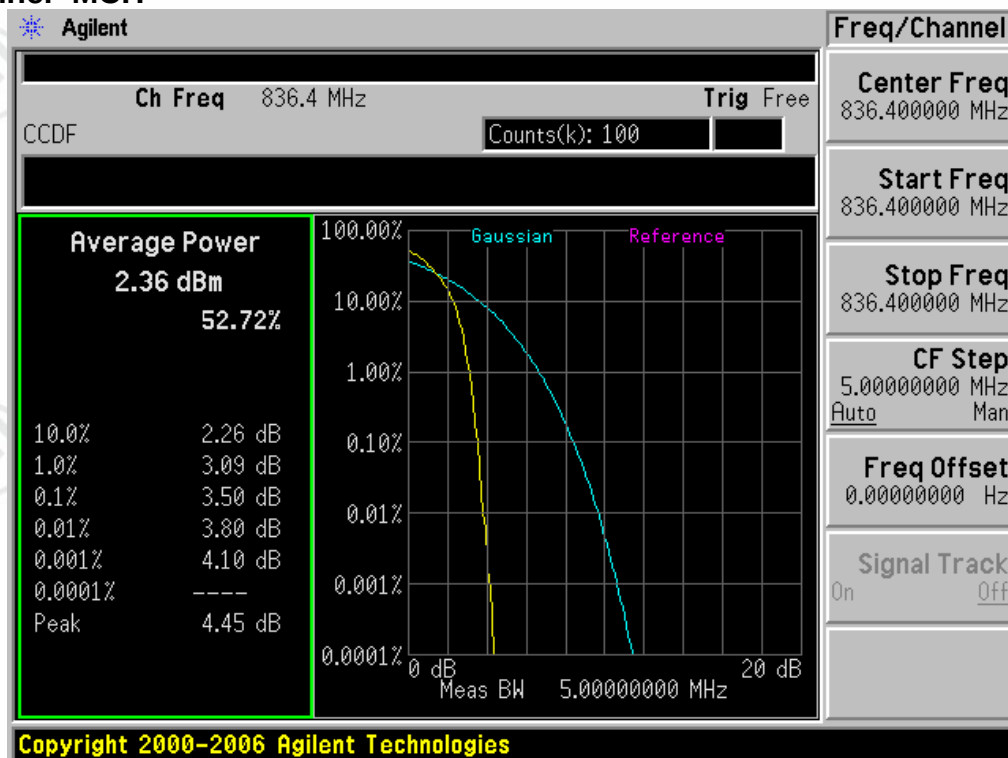


Test Mode=UMTS/TM2

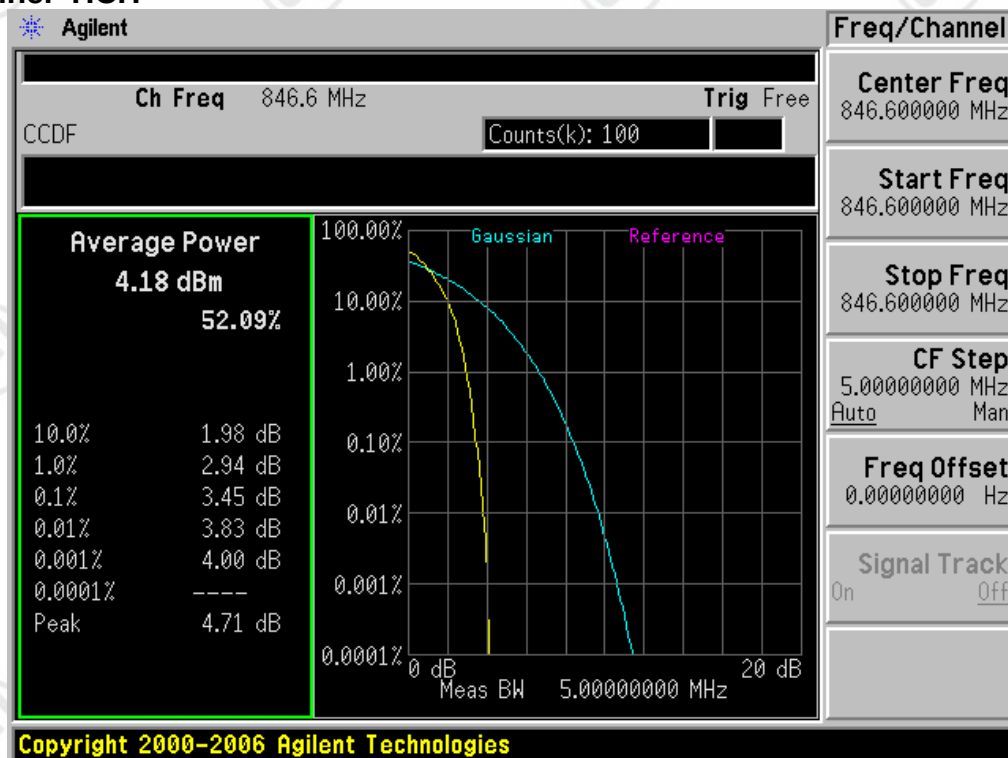
Test Channel=LCH



**Test Channel=MCH**

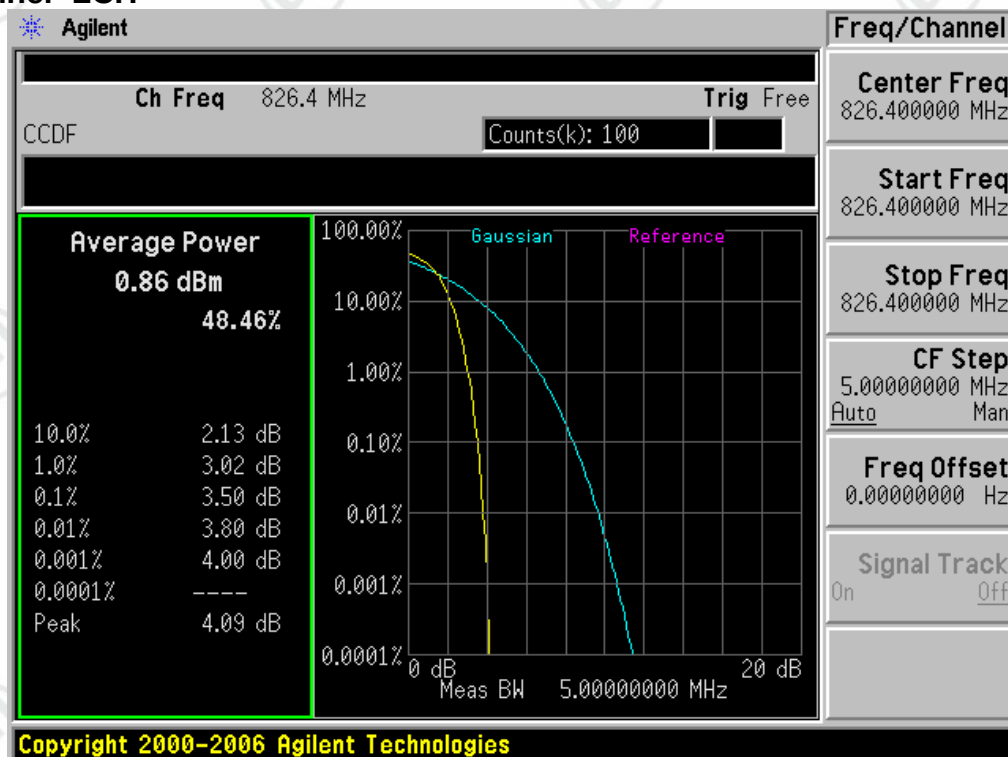


**Test Channel=HCH**

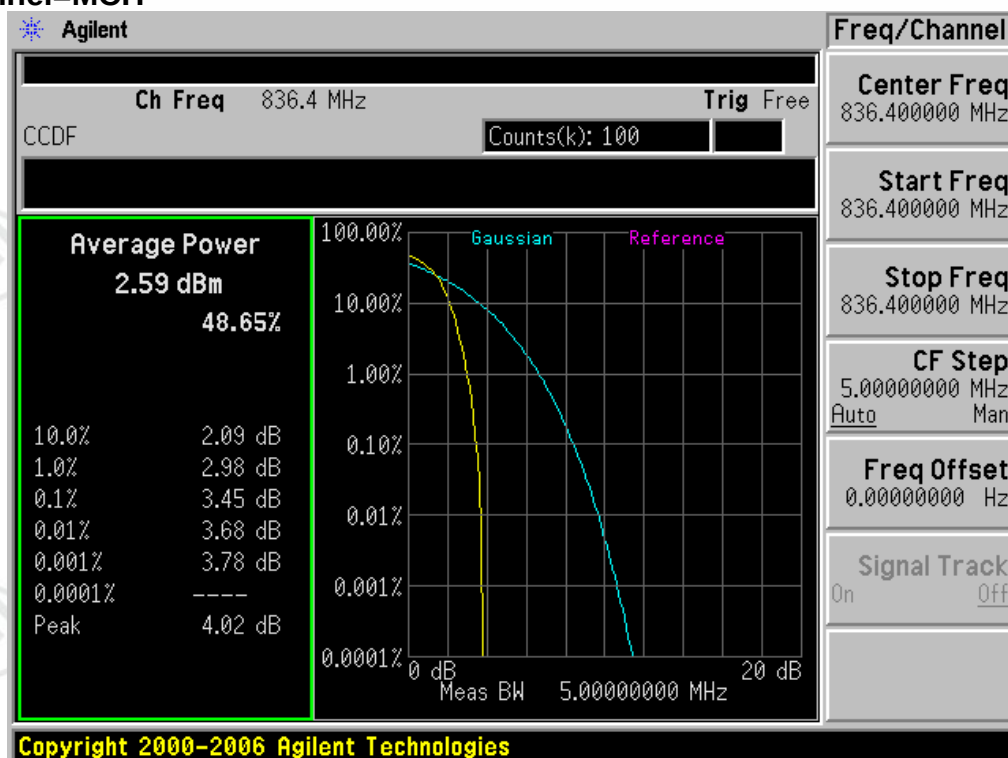


Test Mode=UMTS/TM3

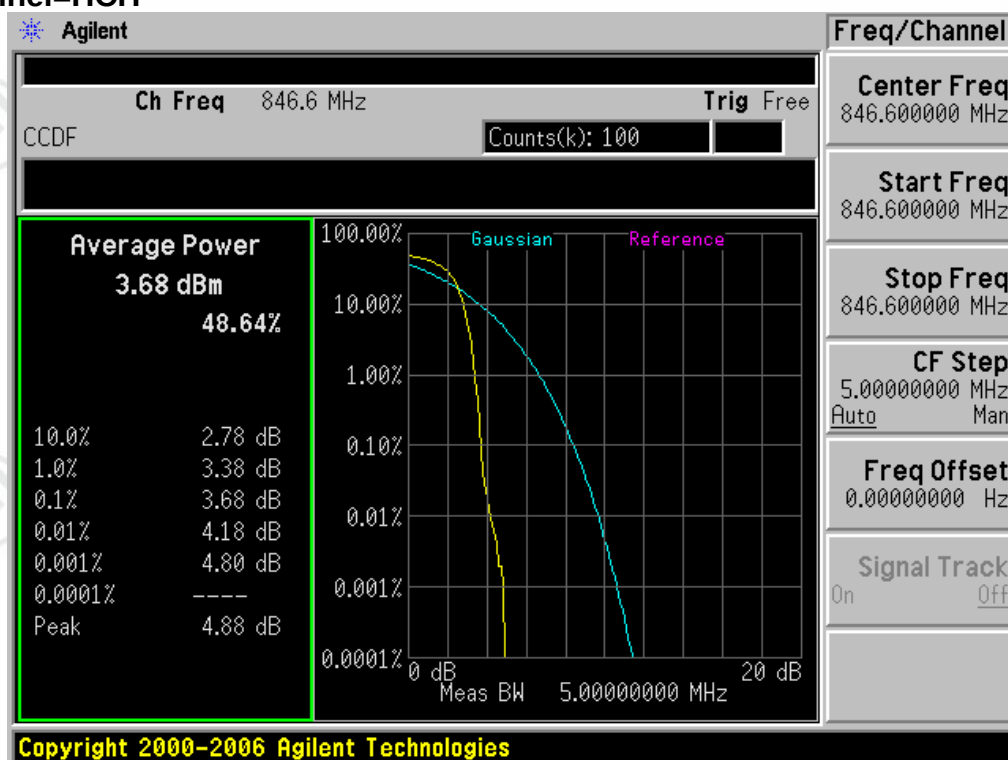
Test Channel=LCH



Test Channel=MCH



Test Channel=HCH



## Appendix C): BandWidth

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b>      | Part 2.1049(h)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Test Method:</b>           | Part 22.917(b)/Part 24.238(b)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Test Setup:</b>            | Refer to section 5 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Limit:</b>                 | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Measurement Procedure:</b> | 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. |
| <b>Instruments Used:</b>      | Refer to section 7 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Test Results:</b>          | Pass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

### Test Data:

| Test Band | Test Mode | Test Channel | Occupied Bandwidth (KHZ) | Emission Bandwidth (KHZ) | Verdict |
|-----------|-----------|--------------|--------------------------|--------------------------|---------|
| GSM850    | GSM/TM1   | LCH          | 242.95                   | 313.73                   | PASS    |
|           |           | MCH          | 243.68                   | 312.76                   | PASS    |
|           |           | HCH          | 244.91                   | 315.01                   | PASS    |
|           | GSM/TM2   | LCH          | 245.82                   | 315.03                   | PASS    |
|           |           | MCH          | 244.39                   | 316.29                   | PASS    |
|           |           | HCH          | 241.64                   | 310.68                   | PASS    |

| Test Band | Test Mode | Test Channel | Occupied Bandwidth (KHZ) | Emission Bandwidth (KHZ) | Verdict |
|-----------|-----------|--------------|--------------------------|--------------------------|---------|
| GSM1900   | GSM/TM1   | LCH          | 243.78                   | 310.14                   | PASS    |
|           |           | MCH          | 244.38                   | 313.46                   | PASS    |
|           |           | HCH          | 247.22                   | 313.49                   | PASS    |
|           | GSM/TM2   | LCH          | 243.26                   | 311.70                   | PASS    |
|           |           | MCH          | 245.60                   | 314.18                   | PASS    |
|           |           | HCH          | 246.50                   | 315.77                   | PASS    |

| Test Band | Test Mode | Test Channel | Occupied Bandwidth (KHZ) | Emission Bandwidth (KHZ) | Verdict |
|-----------|-----------|--------------|--------------------------|--------------------------|---------|
| WCDMA850  | UMTS/TM1  | LCH          | 4043.5                   | 4605                     | PASS    |
|           |           | MCH          | 4045.1                   | 4593                     | PASS    |
|           |           | HCH          | 4047.6                   | 4606                     | PASS    |
|           | UMTS/TM2  | LCH          | 4068.2                   | 4620                     | PASS    |
|           |           | MCH          | 4053.6                   | 4590                     | PASS    |
|           |           | HCH          | 4042.9                   | 4613                     | PASS    |
|           | UMTS/TM3  | LCH          | 4056.7                   | 4617                     | PASS    |
|           |           | MCH          | 4044.7                   | 4622                     | PASS    |
|           |           | HCH          | 4046.0                   | 4617                     | PASS    |

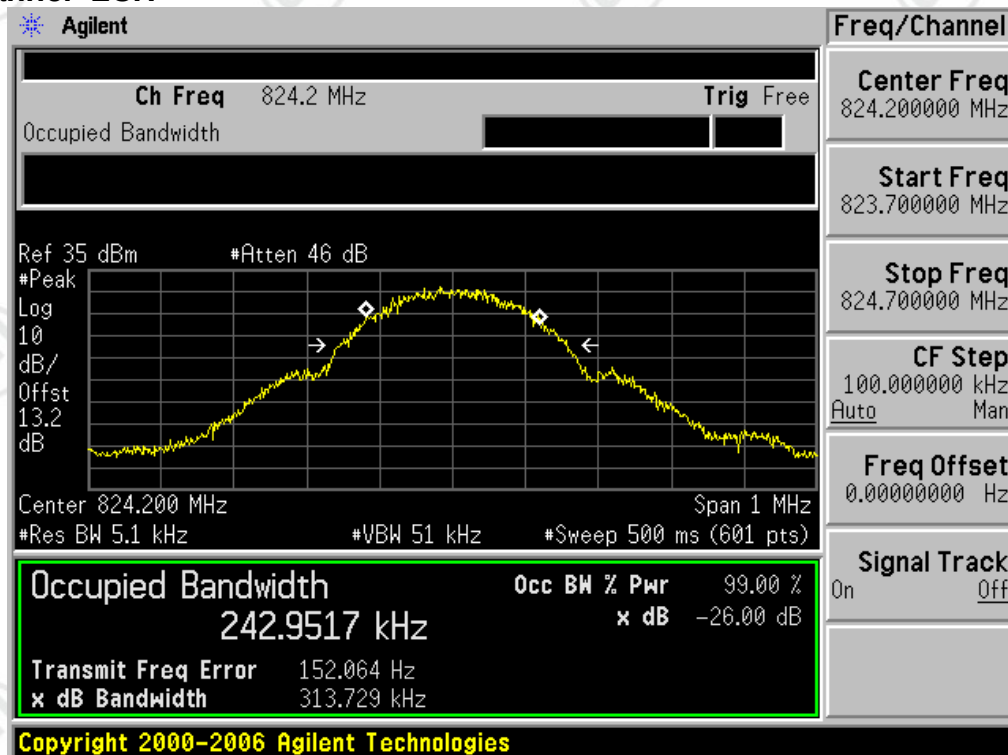
| Test Band  | Test Mode | Test Channel | Occupied Bandwidth (KHZ) | Emission Bandwidth (KHZ) | Verdict |
|------------|-----------|--------------|--------------------------|--------------------------|---------|
| WCDMA 1900 | UMTS/TM1  | LCH          | 4050.6                   | 4623                     | PASS    |
|            |           | MCH          | 4050.0                   | 4621                     | PASS    |
|            |           | HCH          | 4075.0                   | 4652                     | PASS    |
|            | UMTS/TM2  | LCH          | 4065.8                   | 4635                     | PASS    |
|            |           | MCH          | 4076.0                   | 4652                     | PASS    |
|            |           | HCH          | 4083.0                   | 4650                     | PASS    |
|            | UMTS/TM3  | LCH          | 4059.1                   | 4624                     | PASS    |
|            |           | MCH          | 4053.9                   | 4610                     | PASS    |
|            |           | HCH          | 4057.1                   | 4596                     | PASS    |

**For GSM**

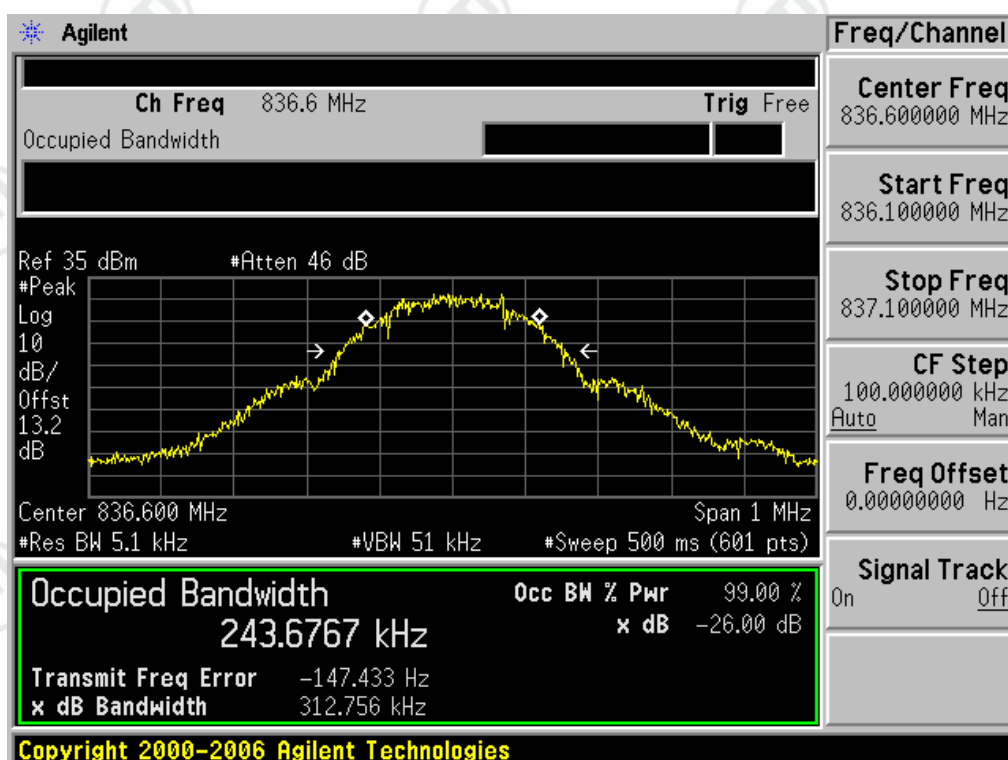
**Test Band=GSM850**

**Test Mode=GSM/TM1**

**Test Channel=LCH**



**Test Channel=MCH**



**Test Channel=HCH**



**Test Mode=GSM/TM2**

**Test Channel=LCH**



Test Channel=MCH



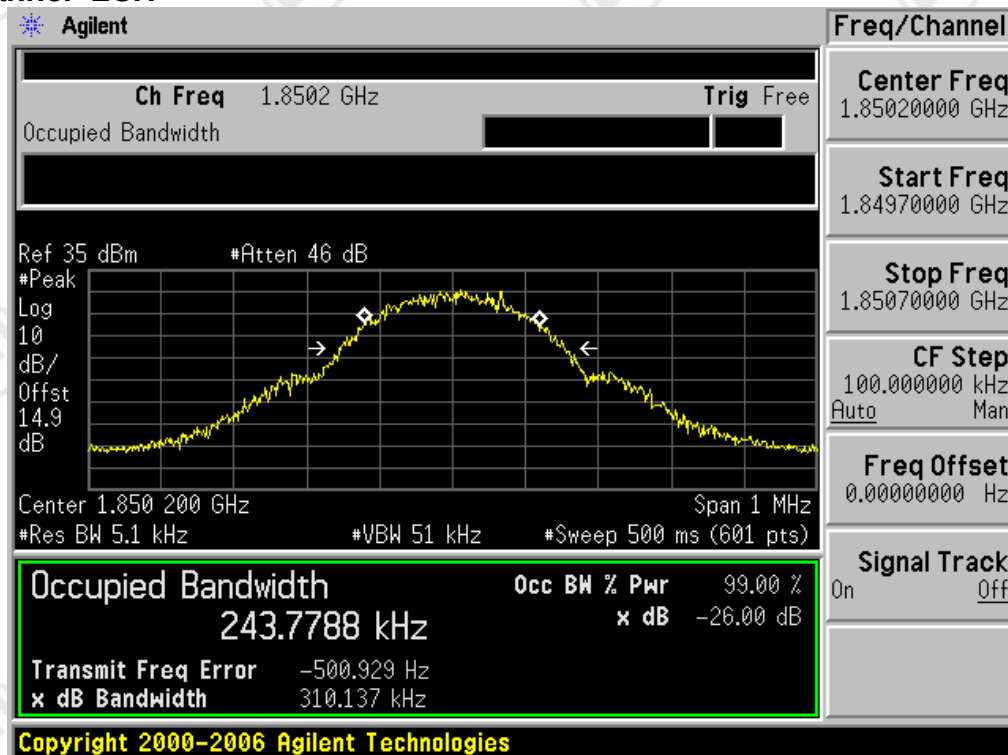
Test Channel=HCH



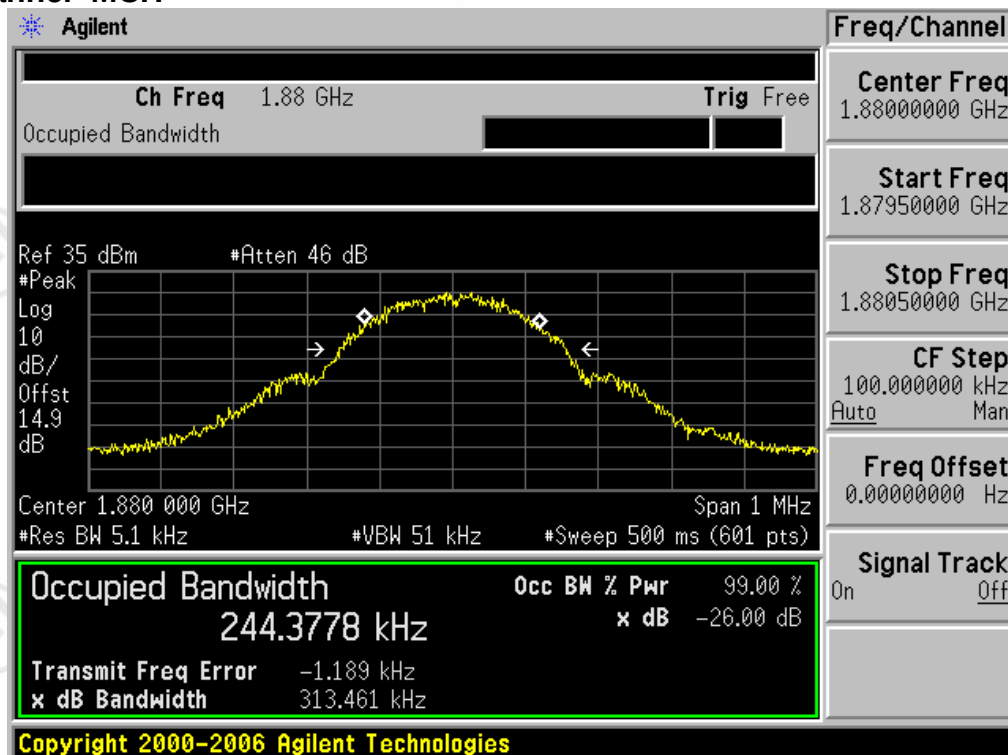
Test Band=GSM1900

Test Mode=GSM/TM1

Test Channel=LCH



Test Channel=MCH

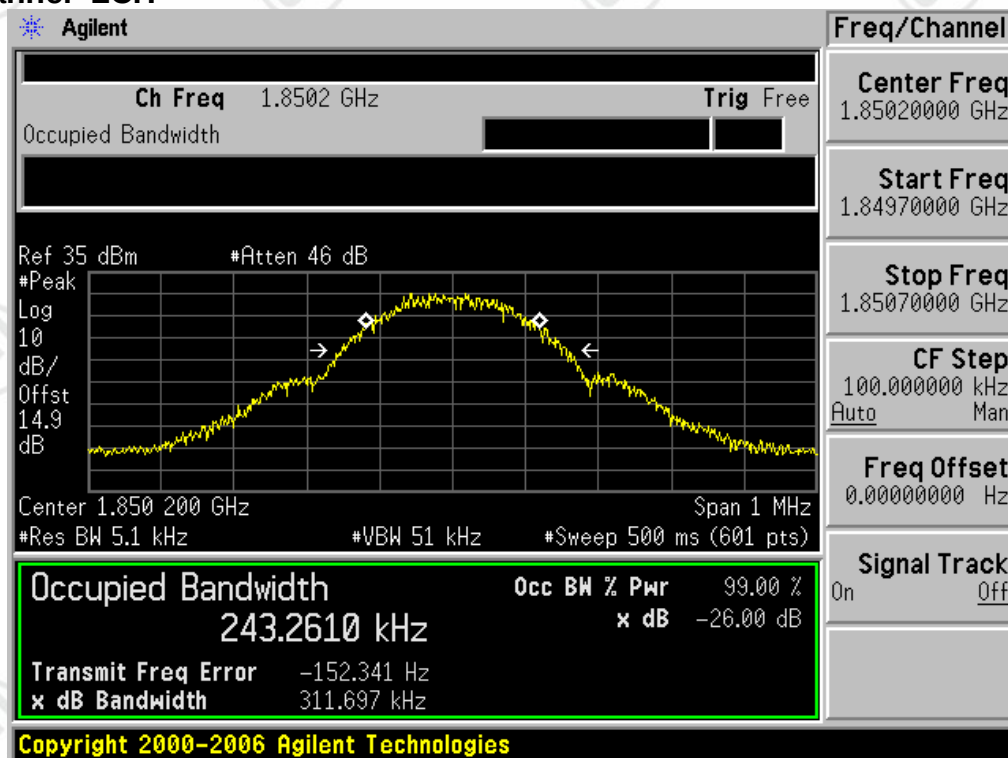


Test Channel=HCH

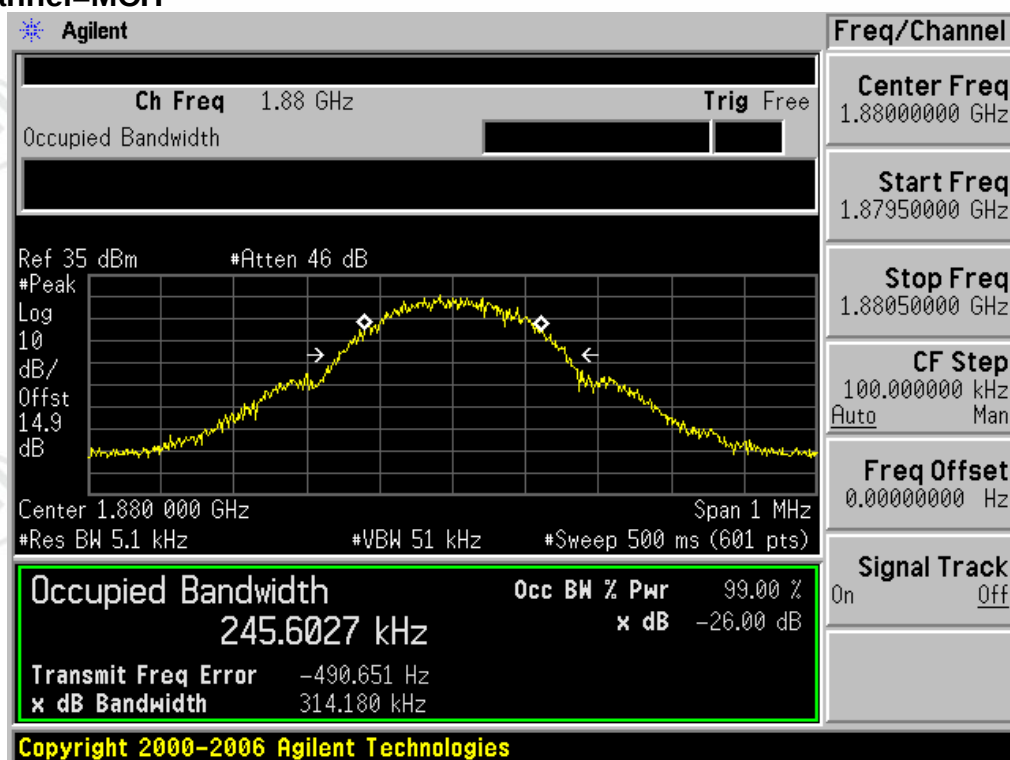


Test Mode=GSM/TM2

Test Channel=LCH



Test Channel=MCH



Test Channel=HCH

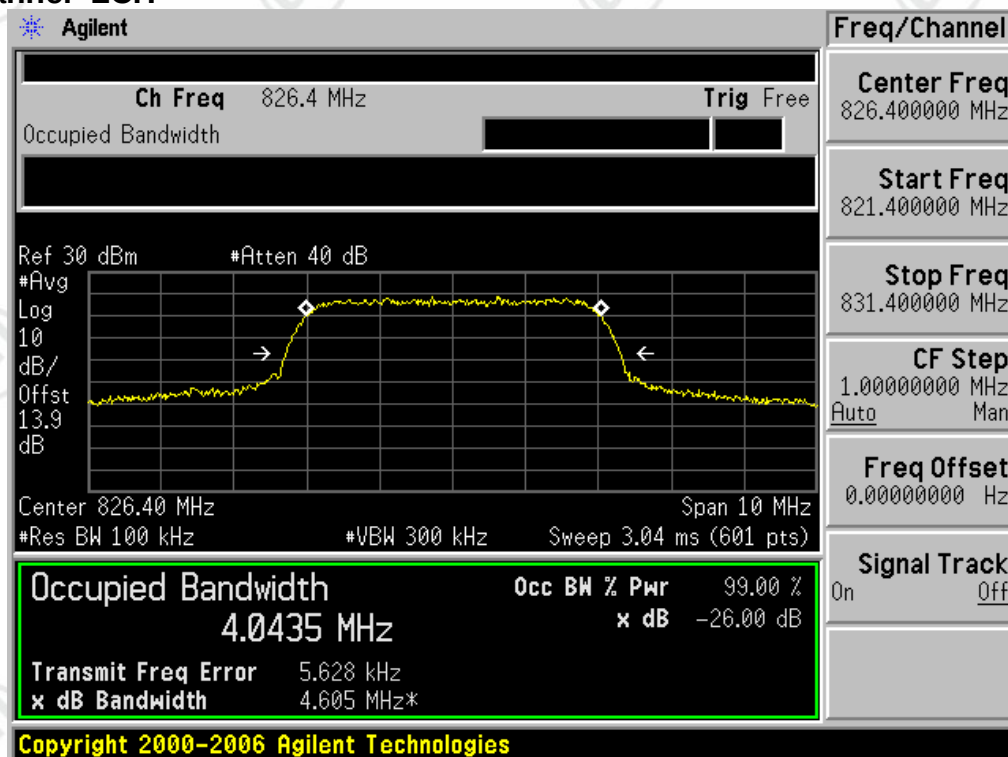


For WCDMA

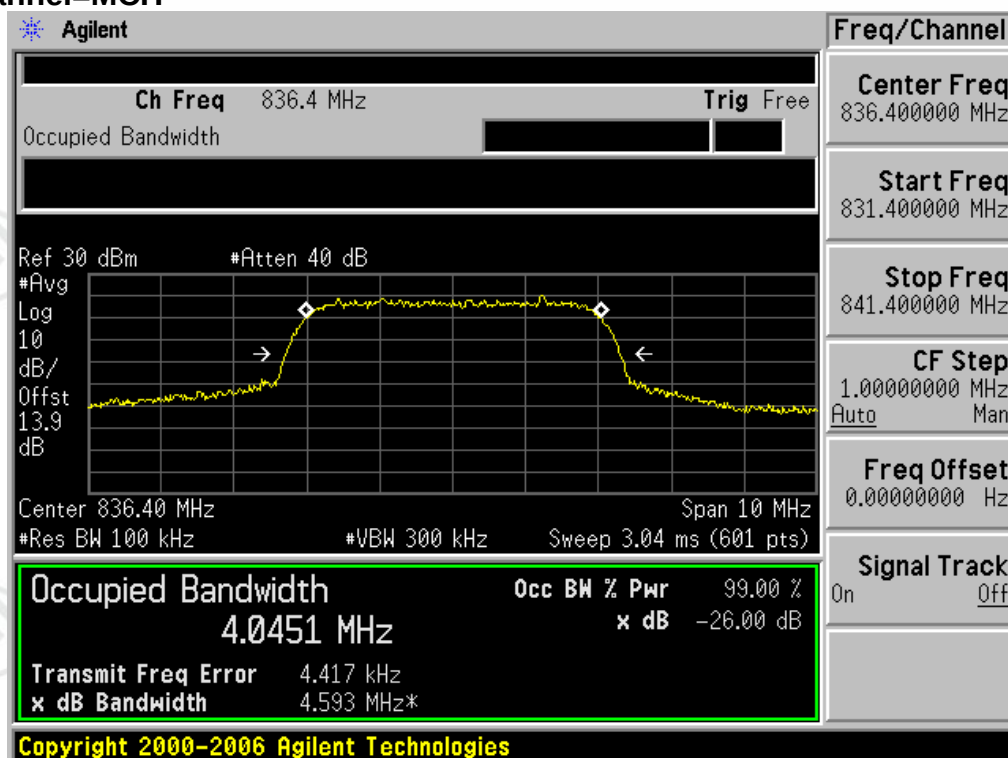
Test Band=WCDMA850

Test Mode=UMTS/TM1

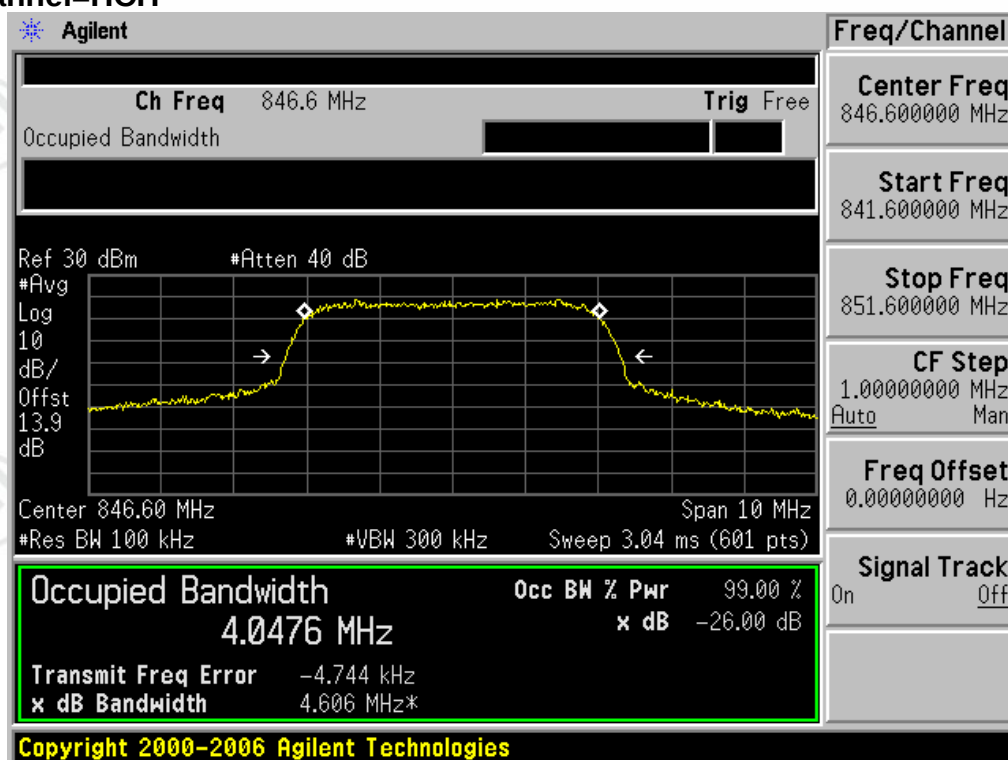
Test Channel=LCH



Test Channel=MCH

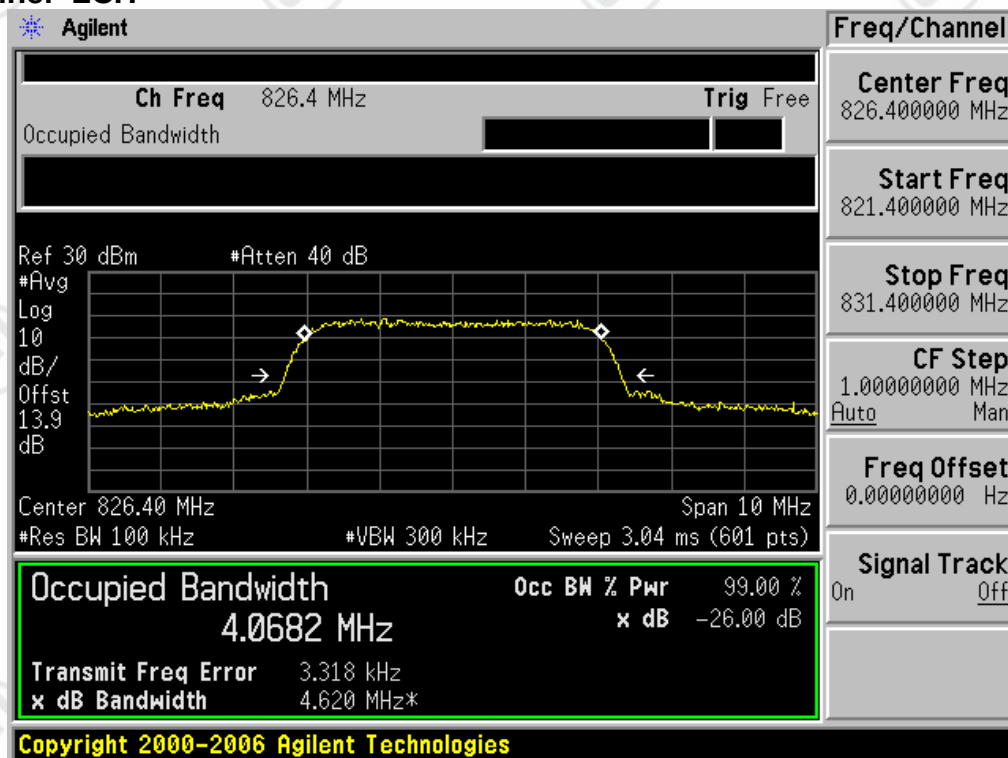


Test Channel=HCH

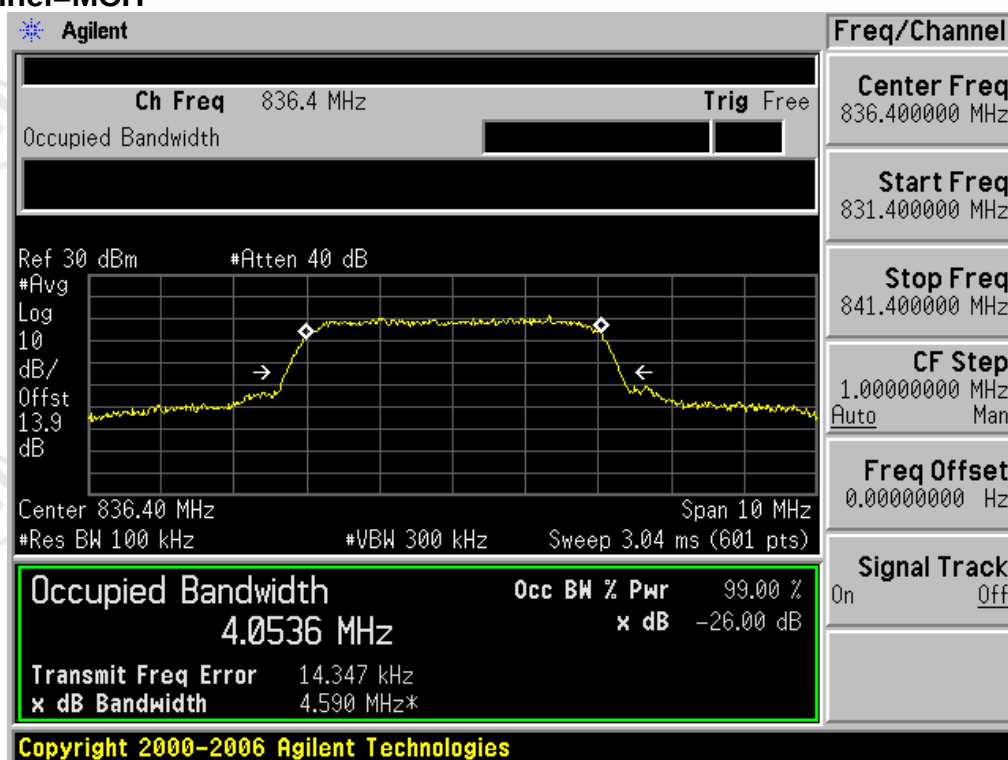


Test Mode=UMTS/TM2

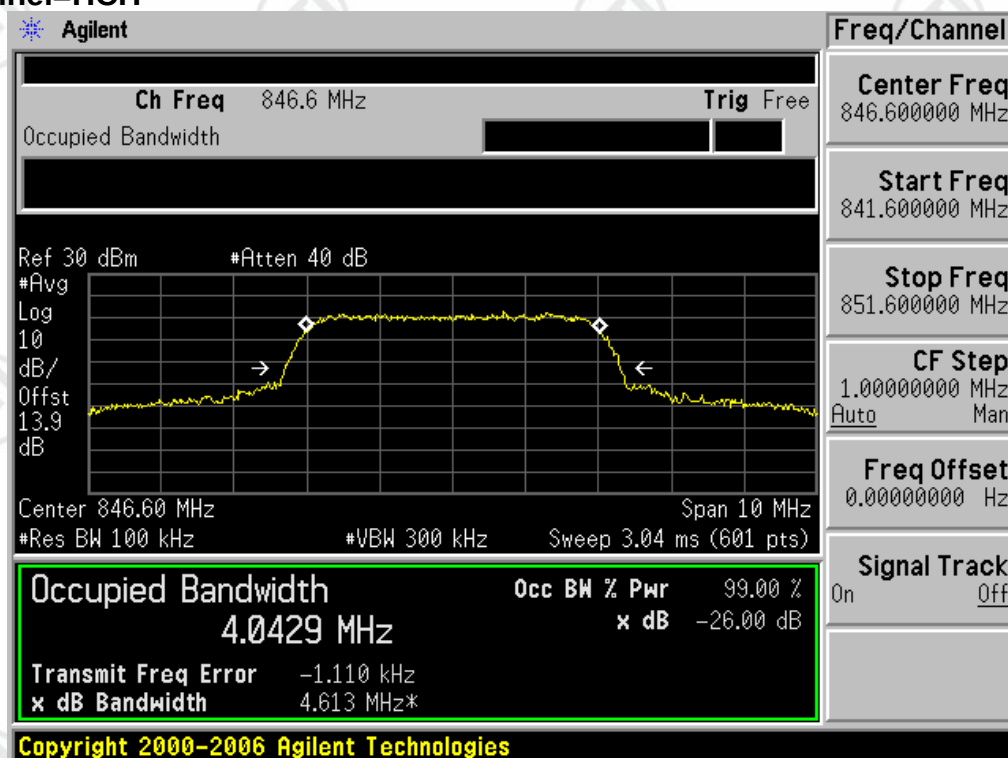
Test Channel=LCH



Test Channel=MCH

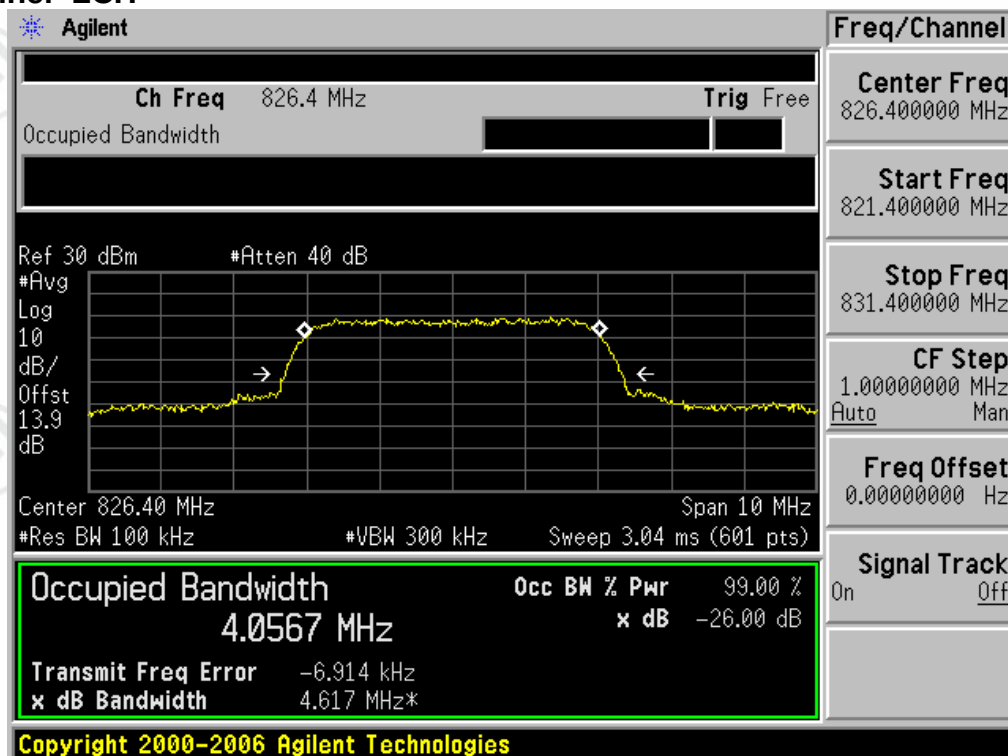


Test Channel=HCH

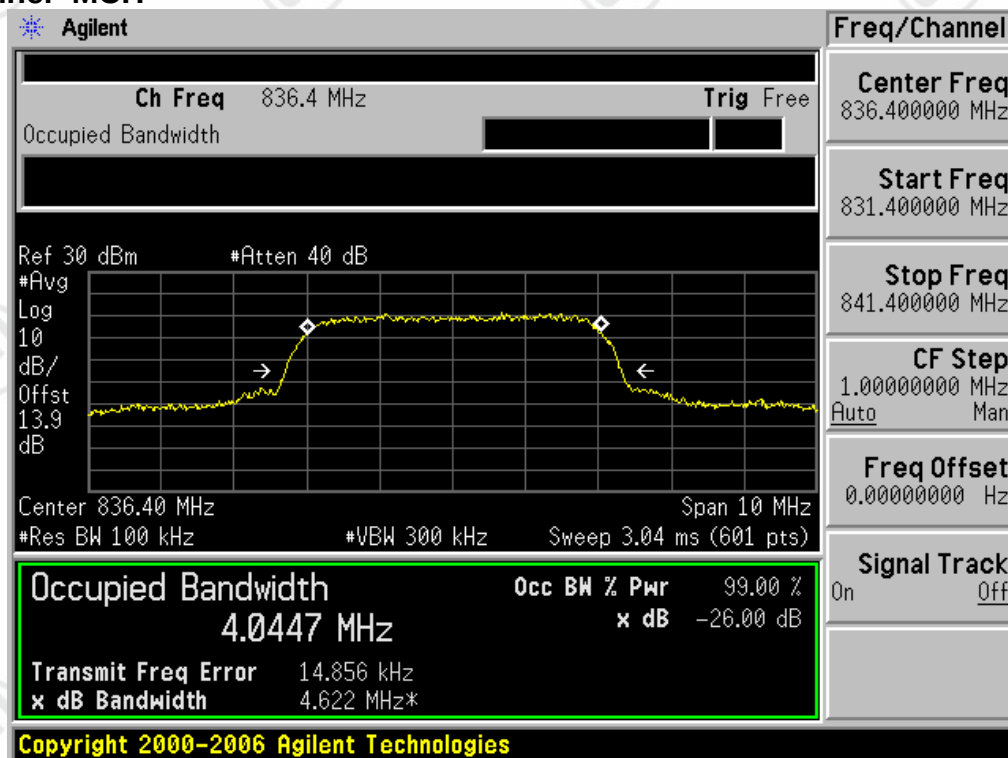


Test Mode=UMTS/TM3

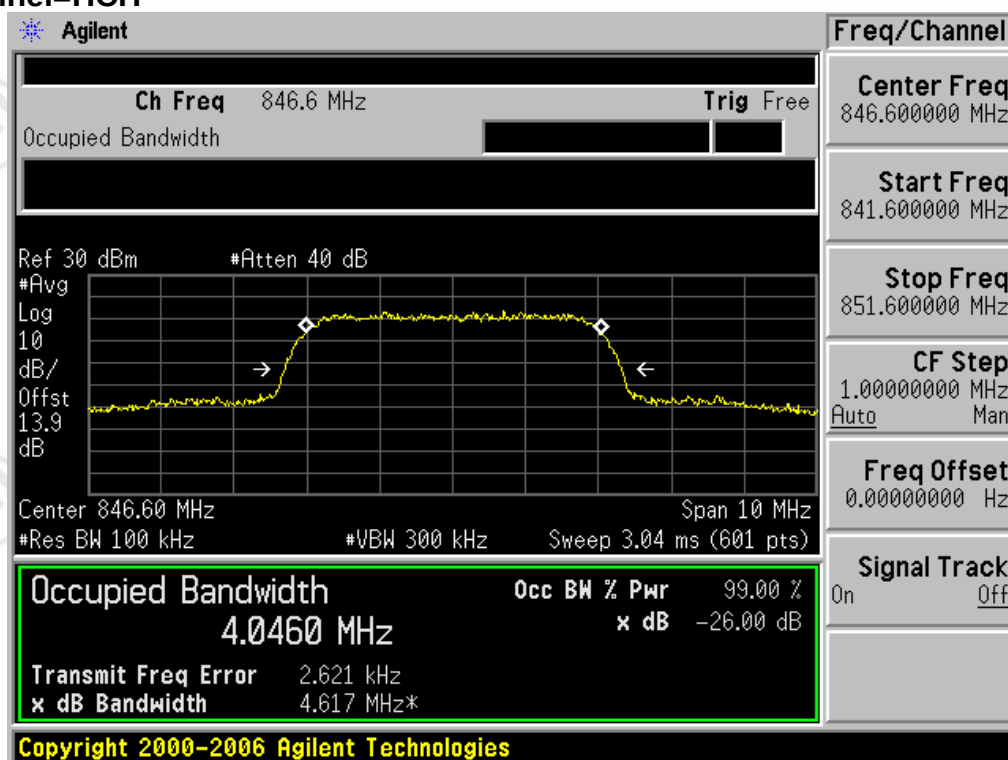
Test Channel=LCH



Test Channel=MCH



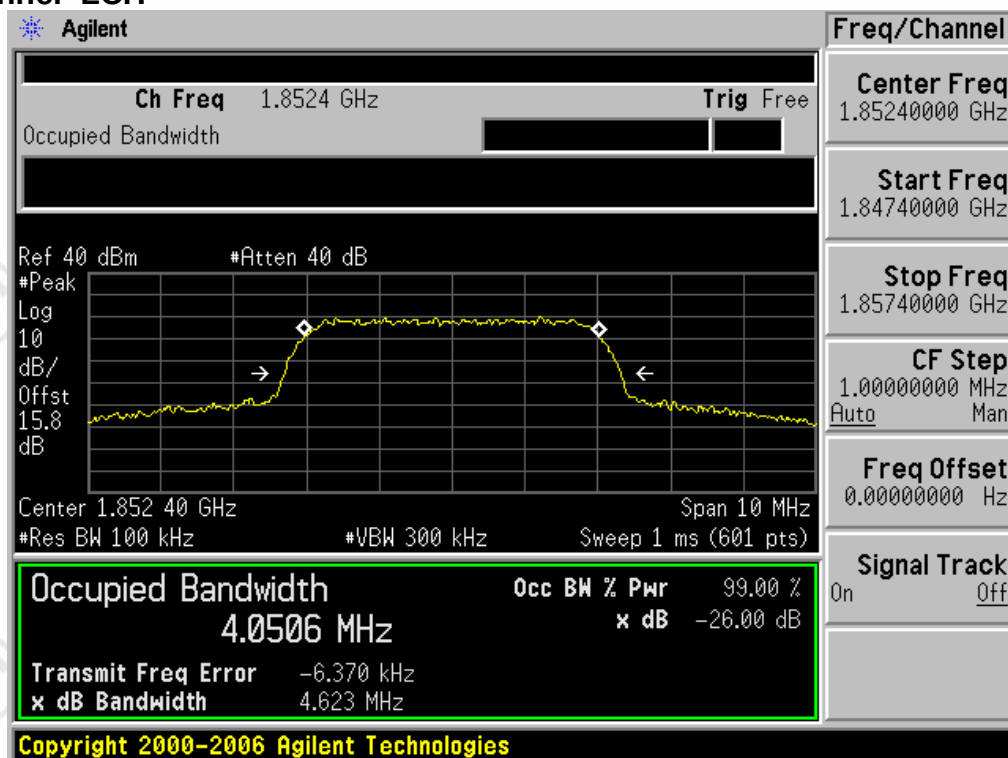
Test Channel=HCH



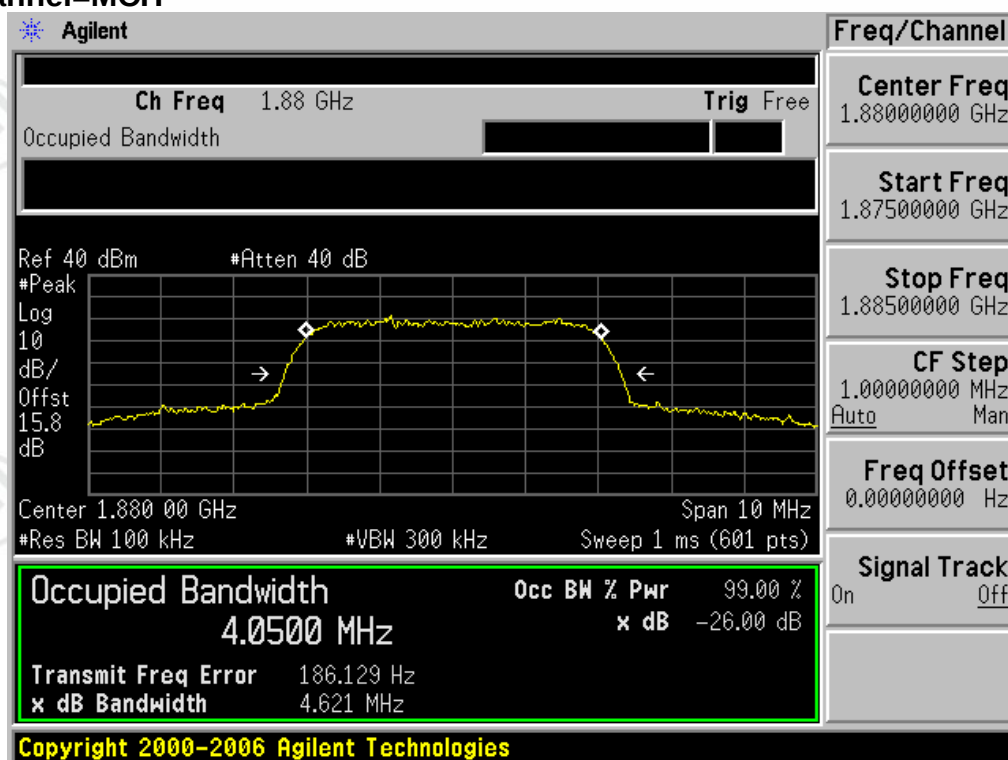
Test Band=WCDMA1900

Test Mode=UMTS/TM1

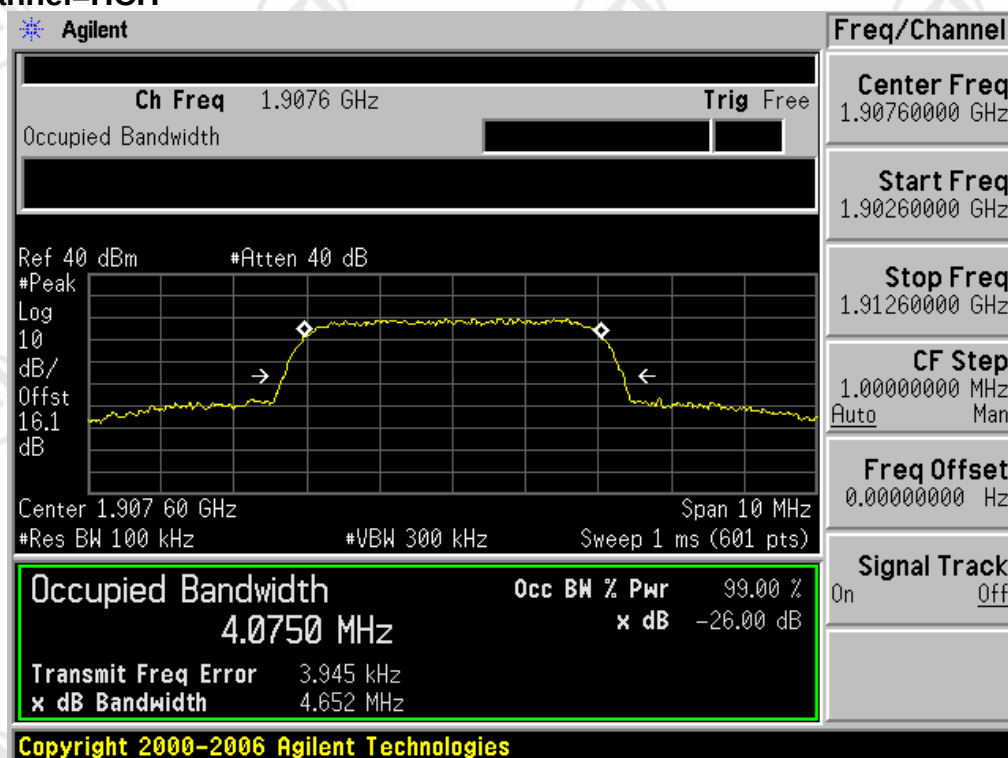
Test Channel=LCH



Test Channel=MCH

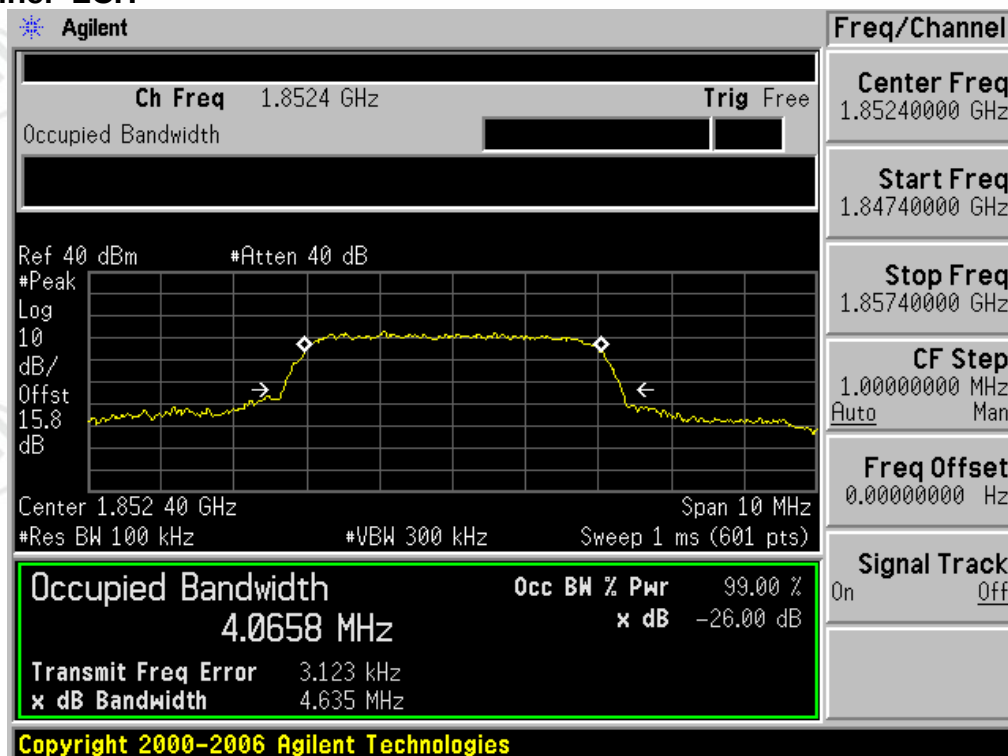


Test Channel=HCH

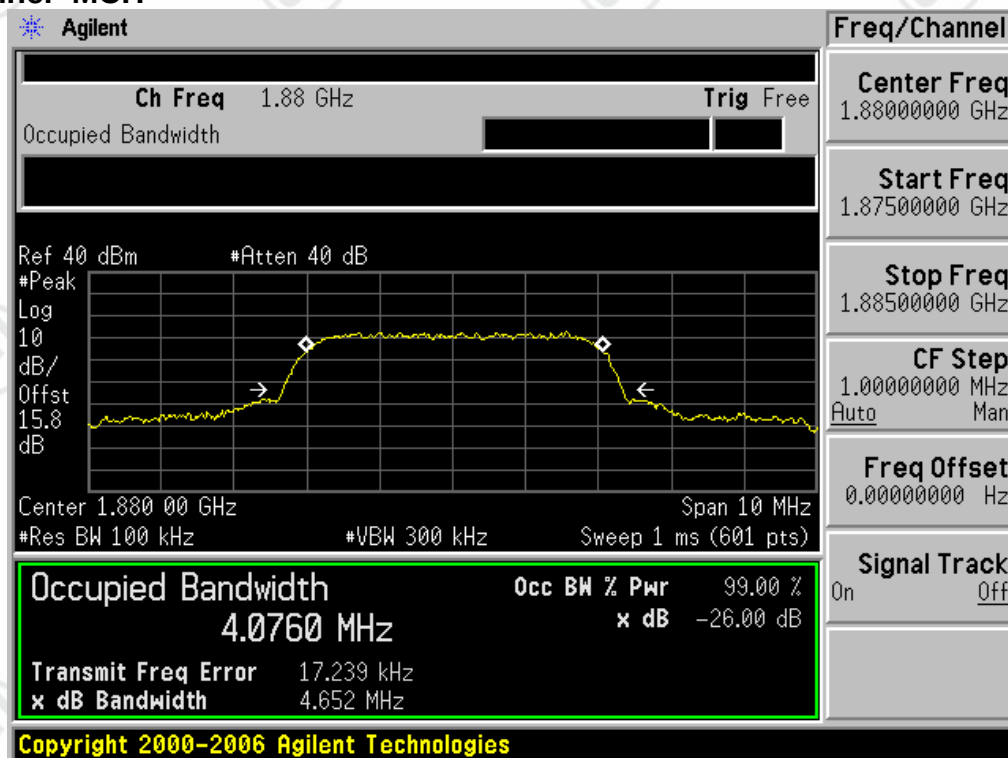


Test Mode=UMTS/TM2

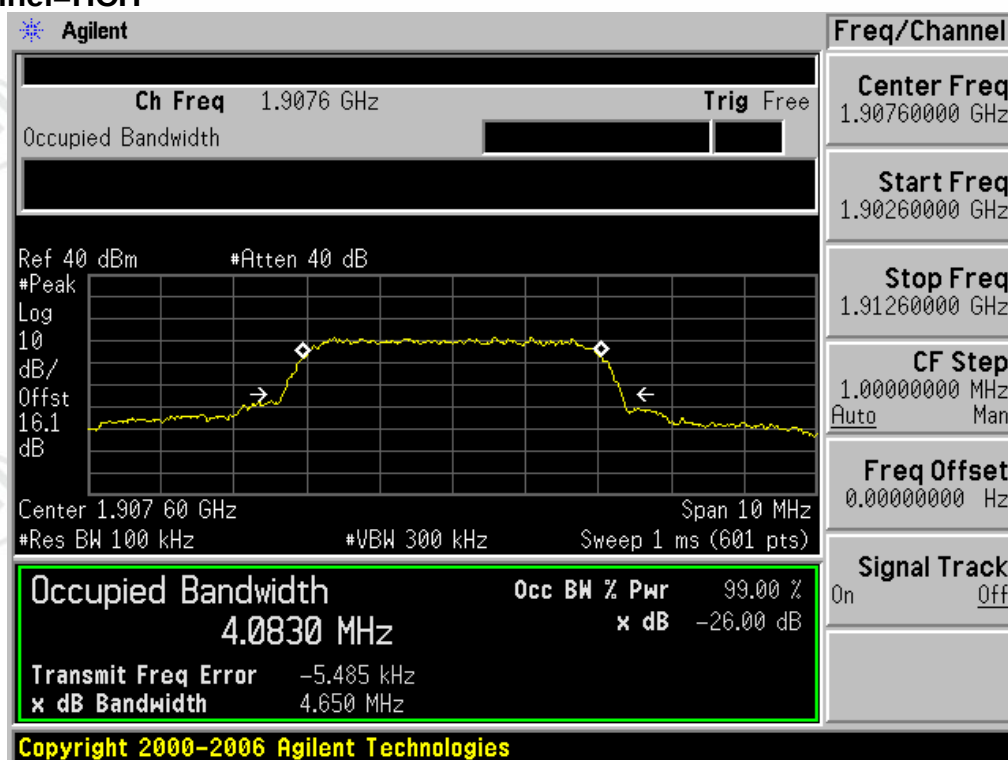
Test Channel=LCH



Test Channel=MCH

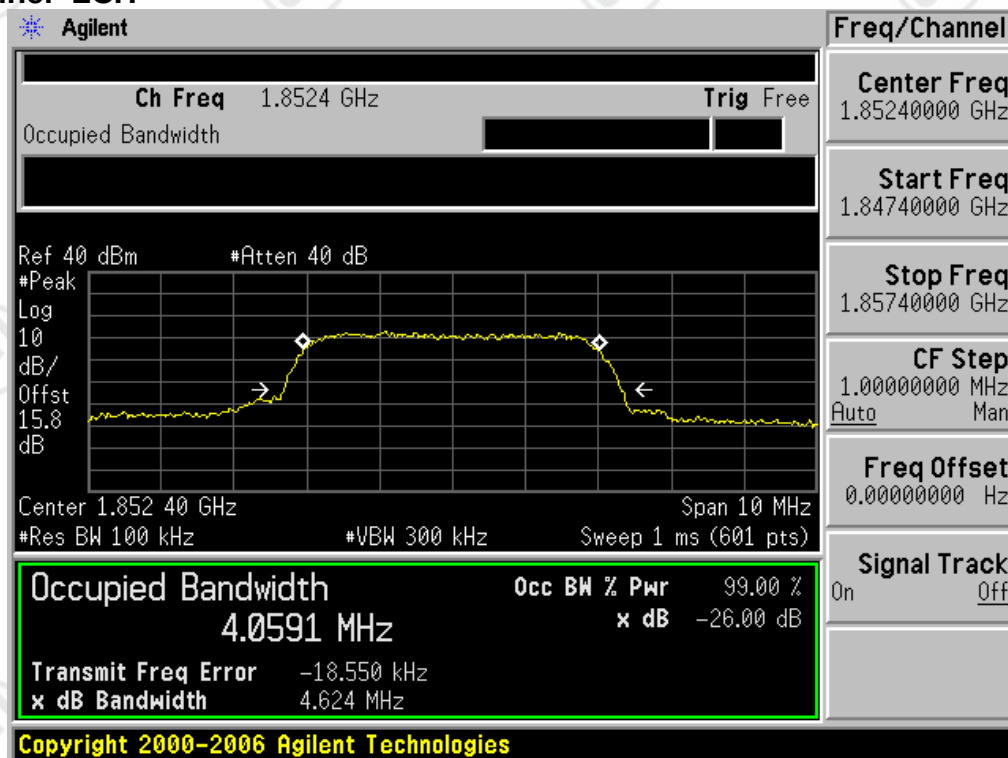


Test Channel=HCH

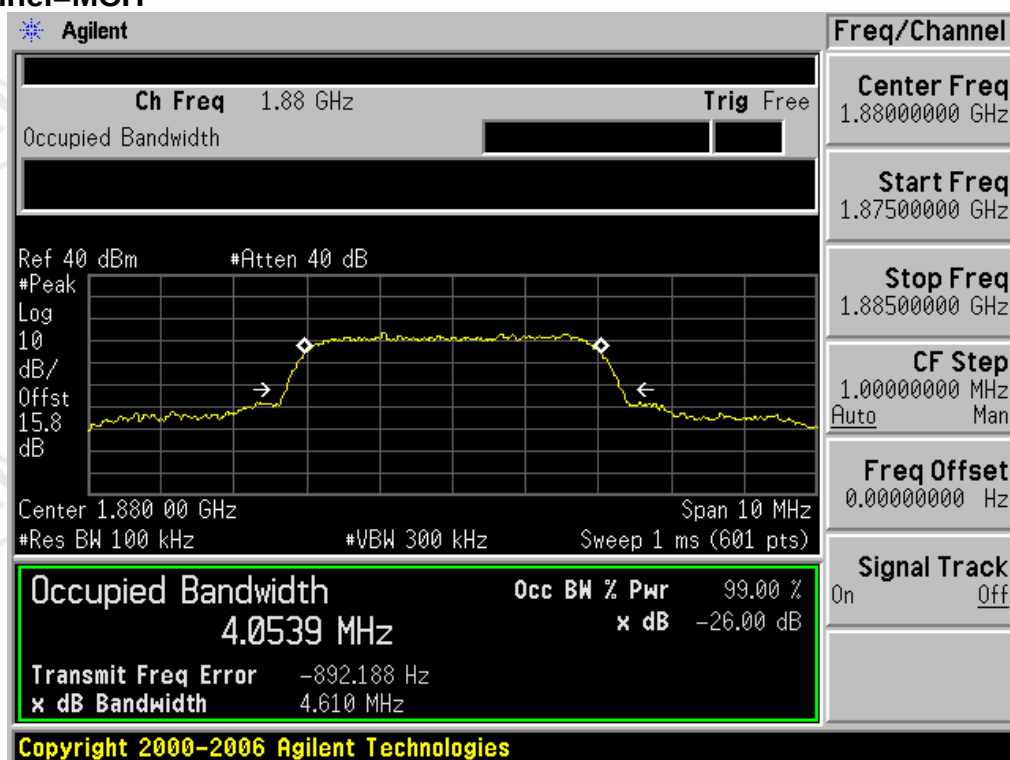


Test Mode=UMTS/TM3

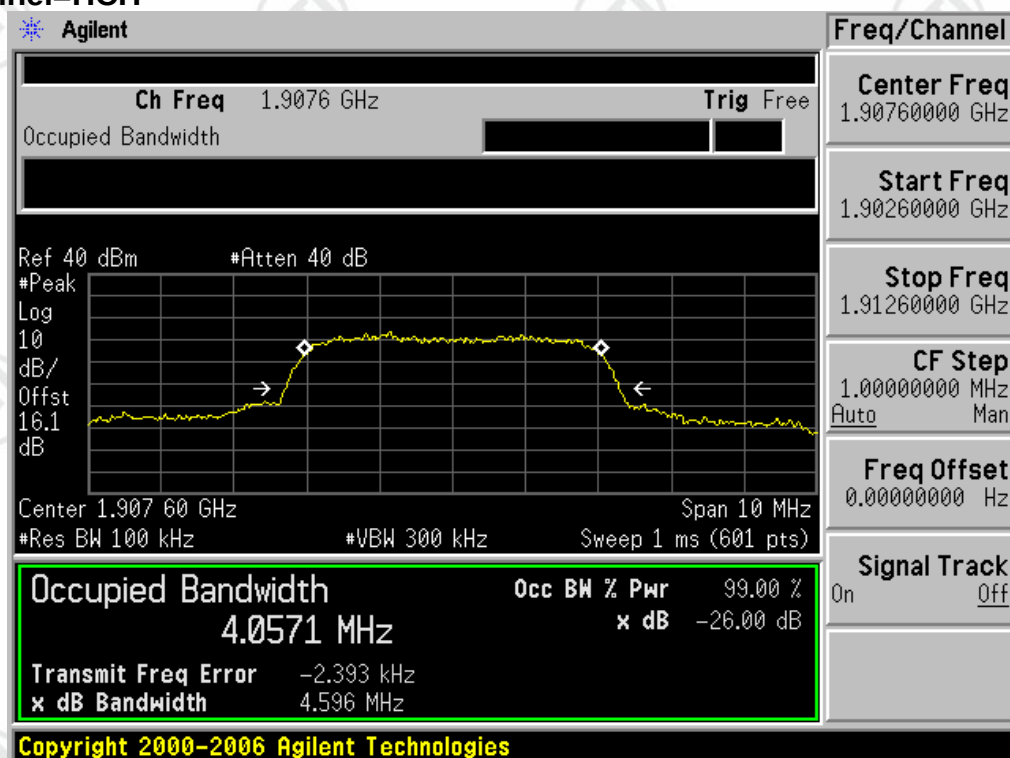
Test Channel=LCH



Test Channel=MCH



Test Channel=HCH



## Appendix D): Band Edges Compliance

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                           |                                 |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------|
| <b>Test Requirement:</b>      | Part 2.1051                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                           |                                 |
| <b>Test Method:</b>           | Part 22.917(b)/Part 24.238(b)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                           |                                 |
| <b>Test Setup:</b>            | Refer to section 5 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                           |                                 |
| <b>Measurement Procedure:</b> | 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. |                           |                                 |
| <b>Limit:</b>                 | 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) |
| <b>Instruments Used:</b>      | Refer to section 7 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                           |                                 |
| <b>Test Results:</b>          | Pass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                           |                                 |

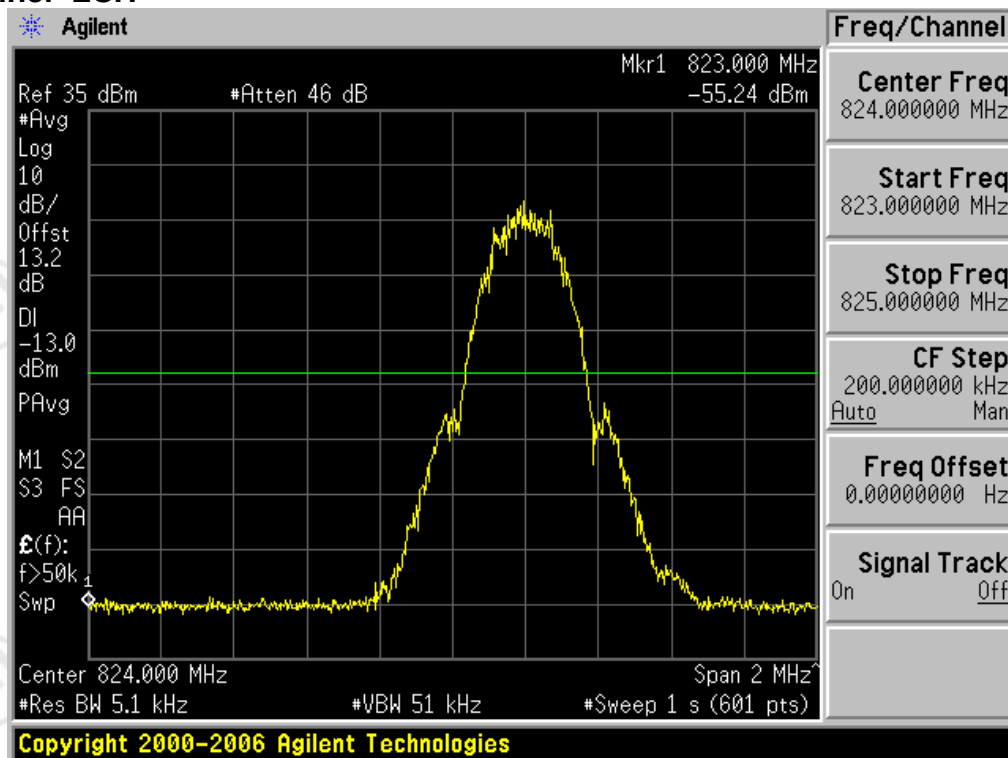
**Test Graphs:**

**For GSM**

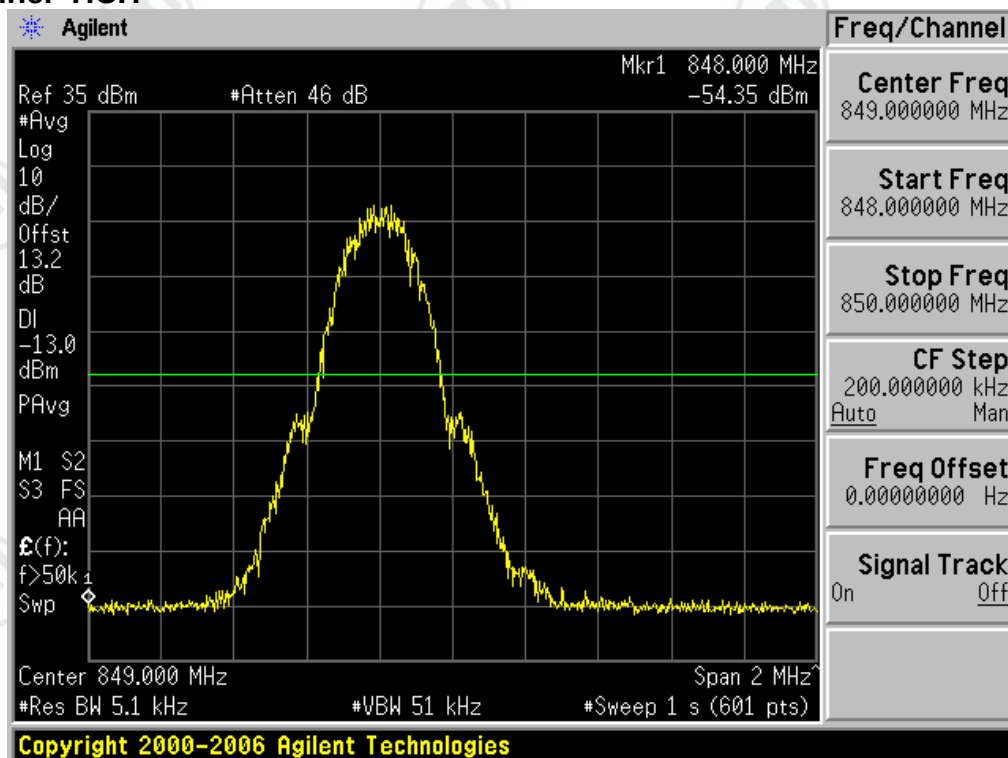
**Test Band=GSM850**

**Test Mode=GSM/TM1**

**Test Channel=LCH**

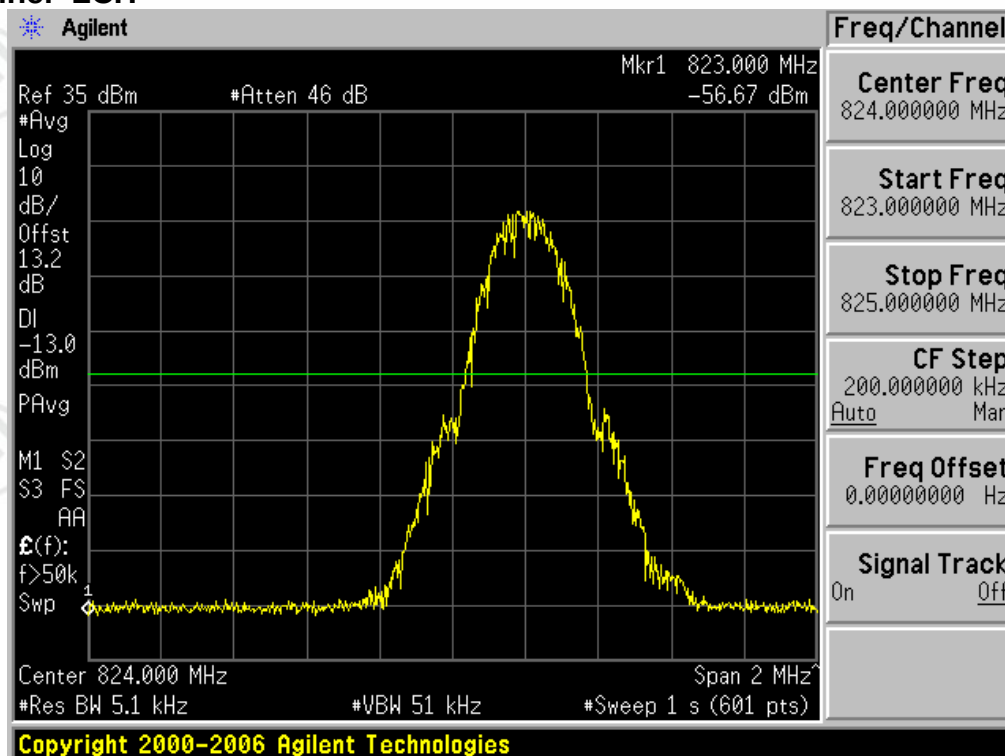


**Test Channel=HCH**

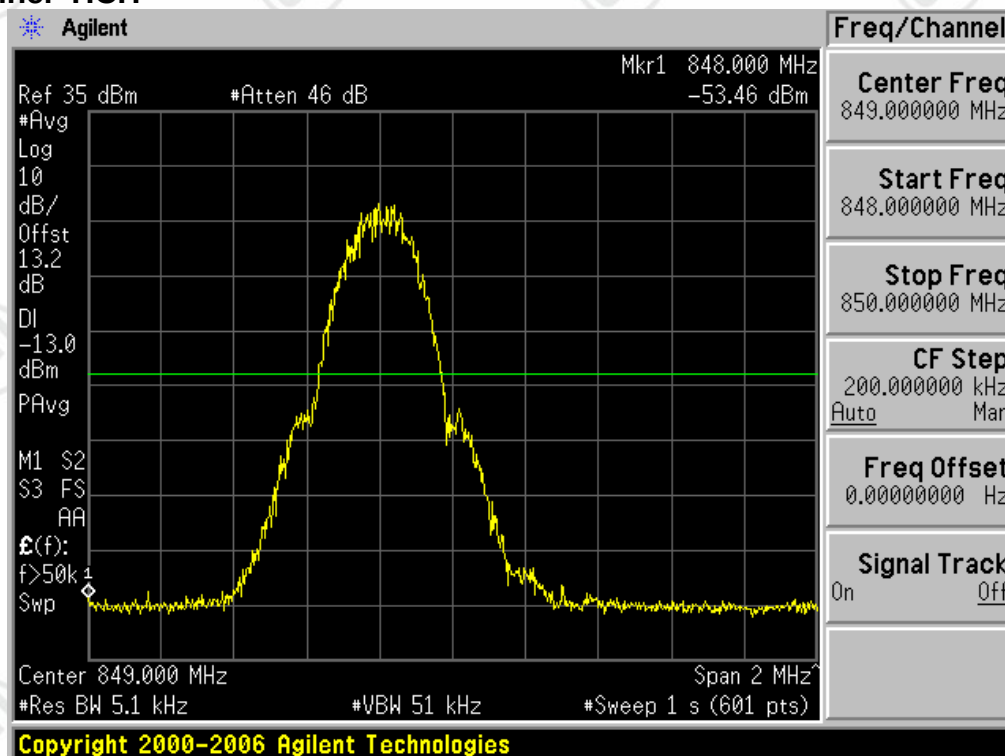


Test Mode=GSM/TM2

Test Channel=LCH



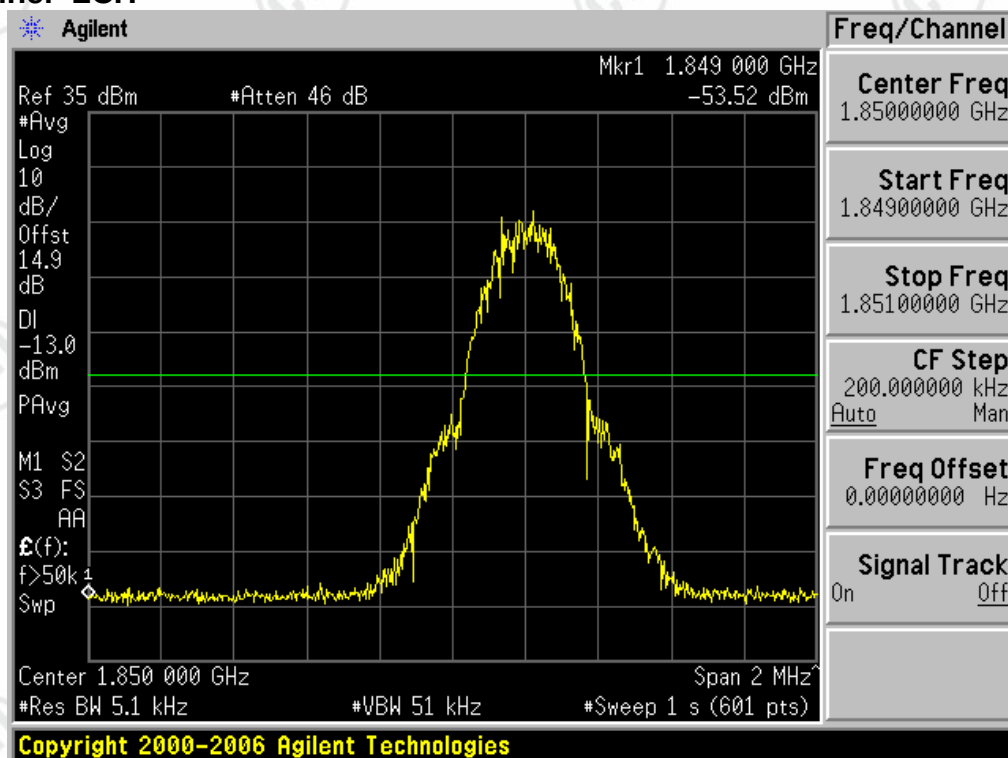
Test Channel=HCH



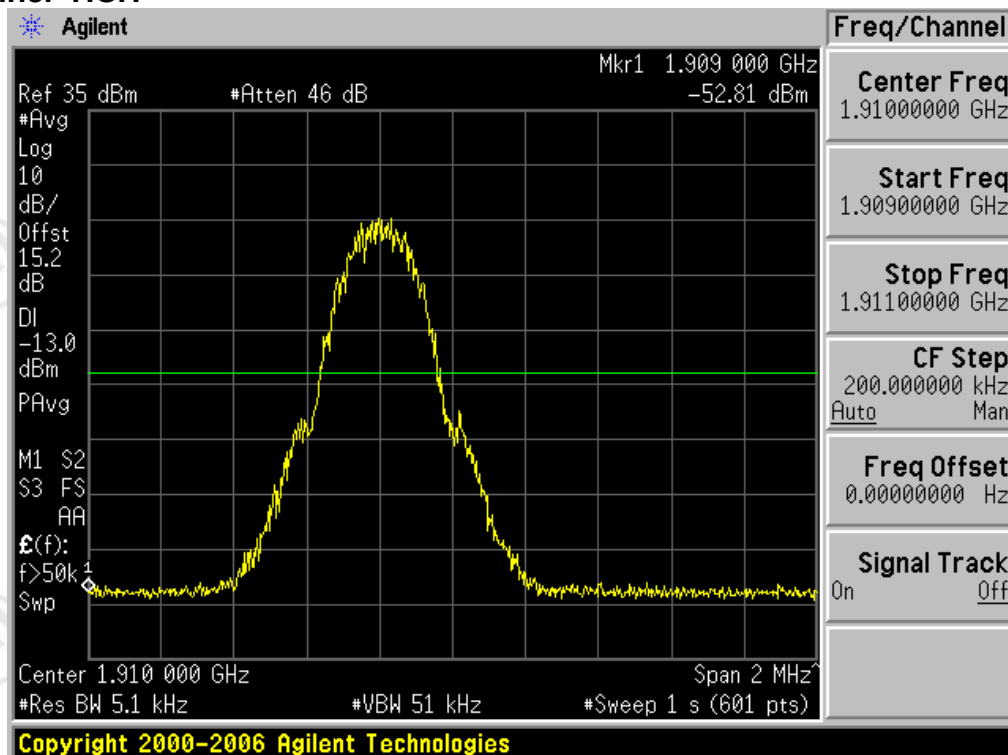
Test Band=GSM1900

Test Mode=GSM/TM1

Test Channel=LCH

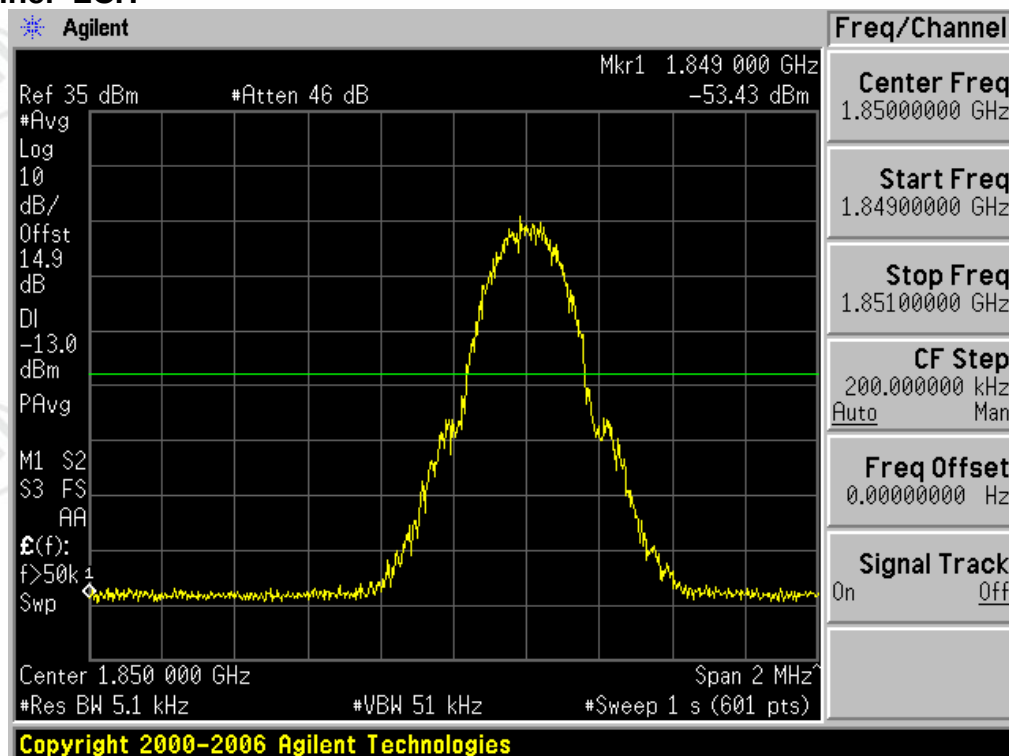


Test Channel=HCH

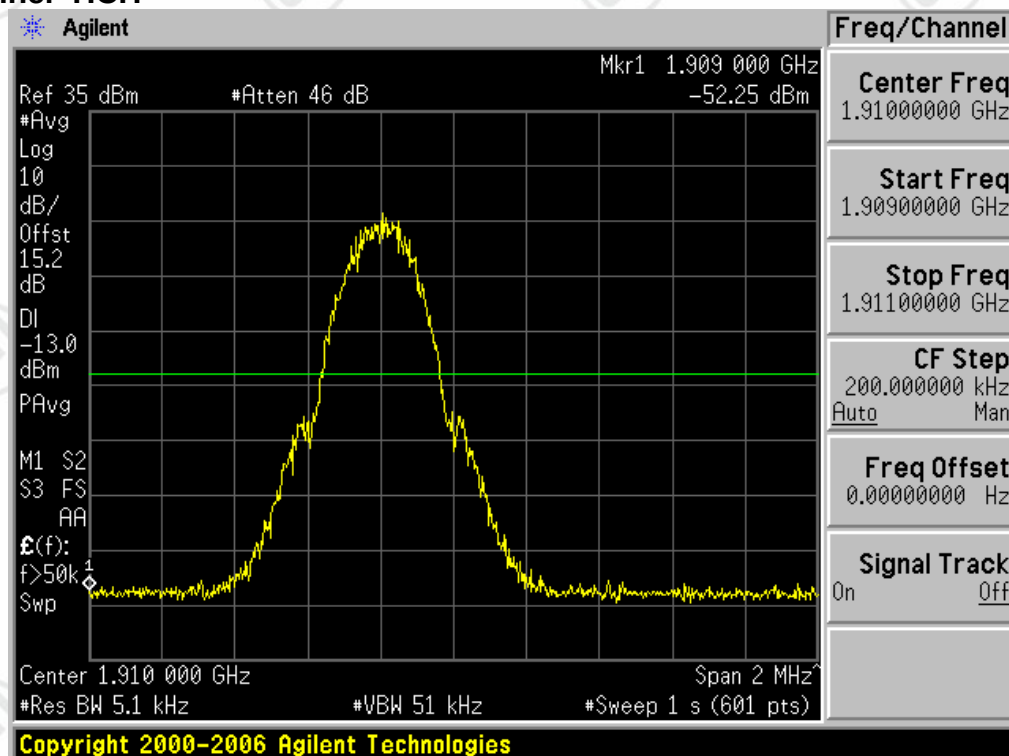


Test Mode=GSM/TM2

Test Channel=LCH



Test Channel=HCH

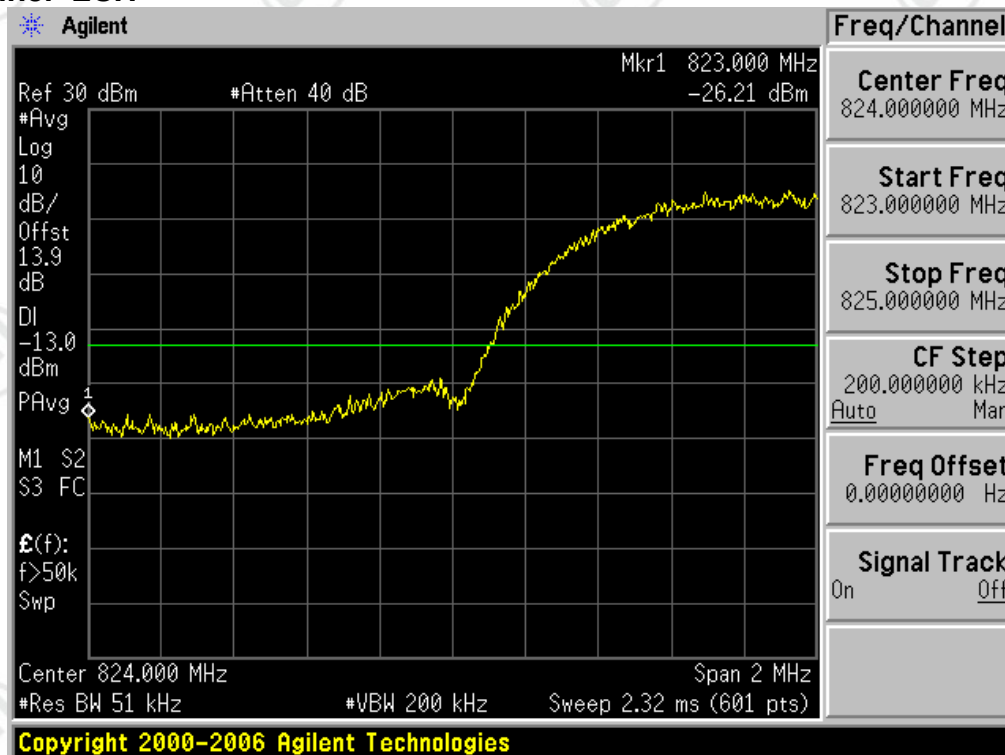


For WCDMA

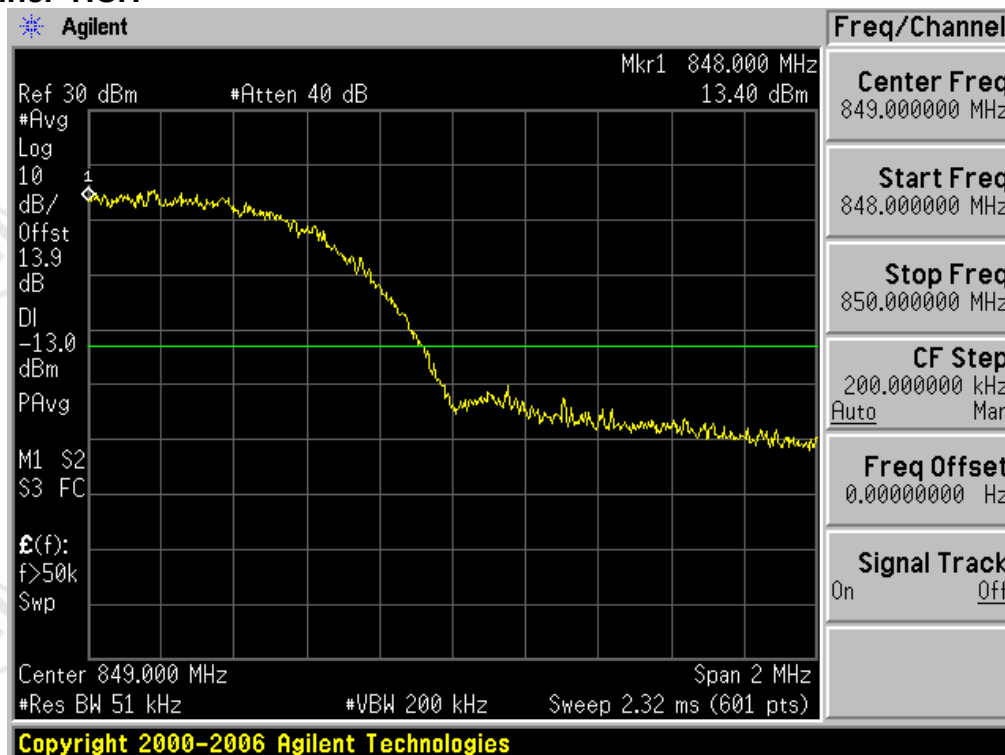
Test Band=WCDMA850

Test Mode=UMTS/TM1

Test Channel=LCH

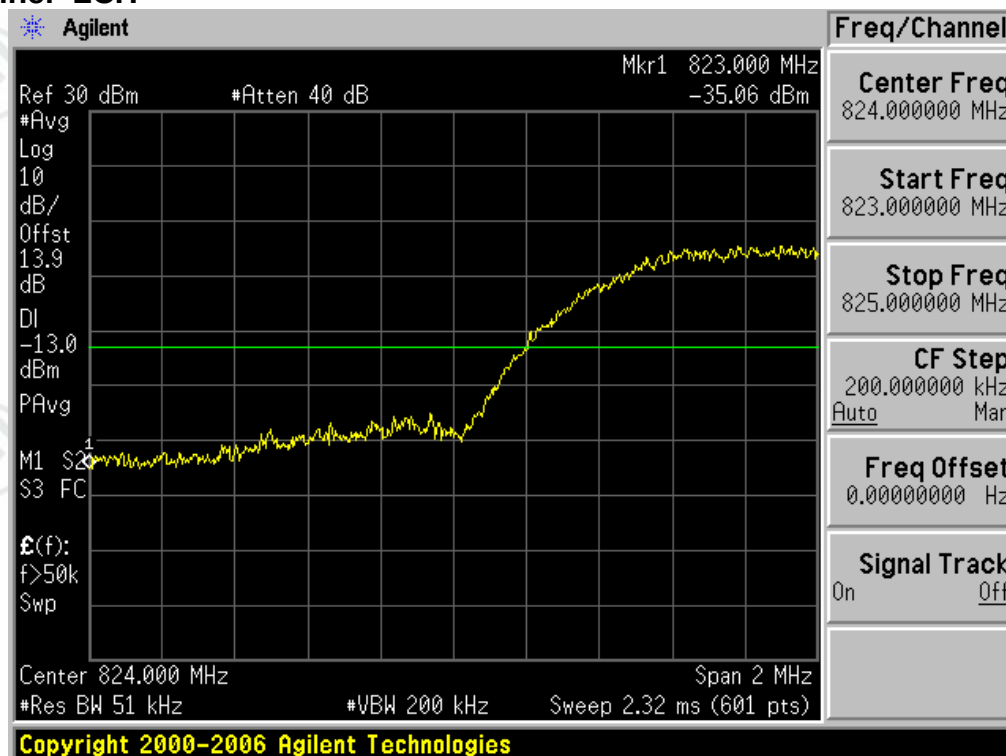


Test Channel=HCH

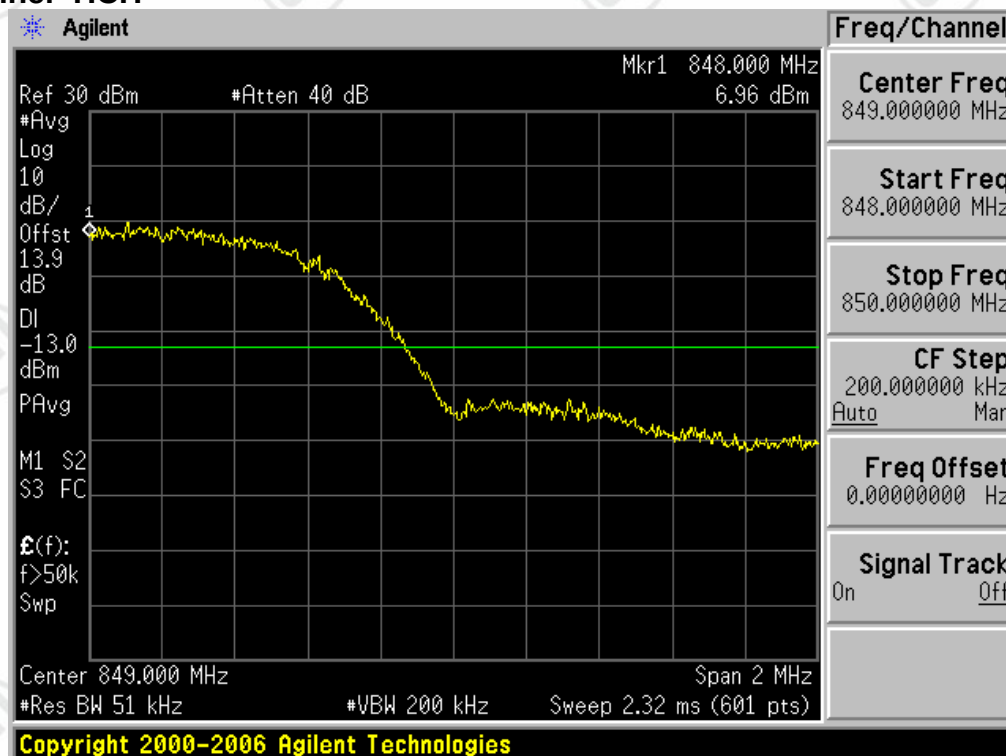


Test Mode=UMTS/TM2

Test Channel=LCH

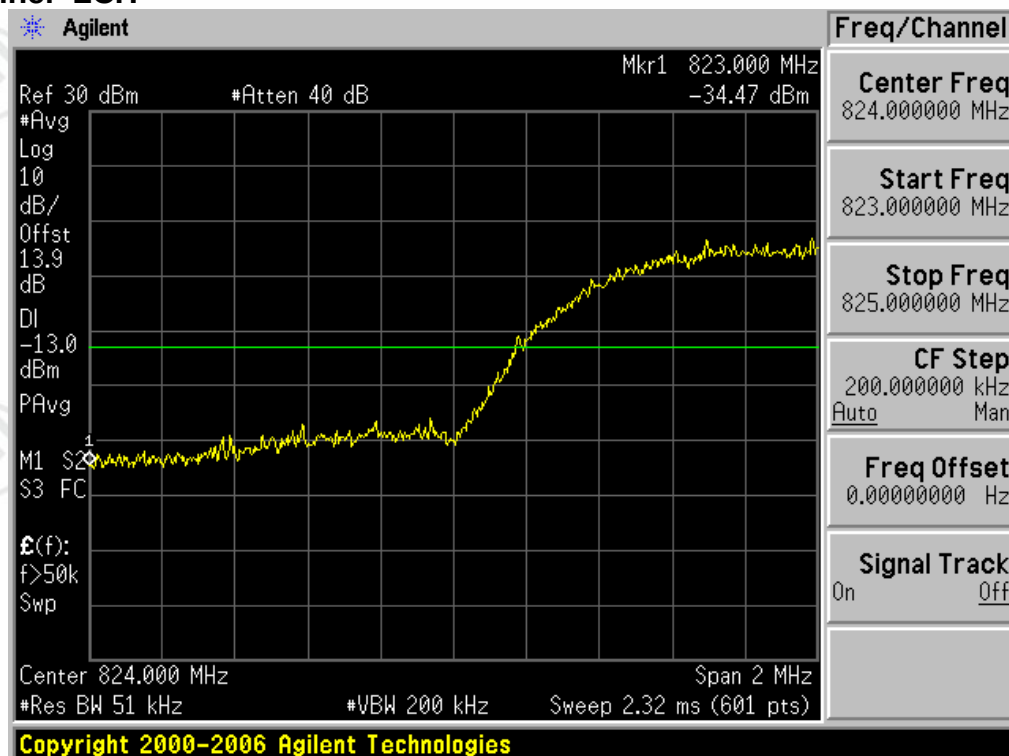


Test Channel=HCH

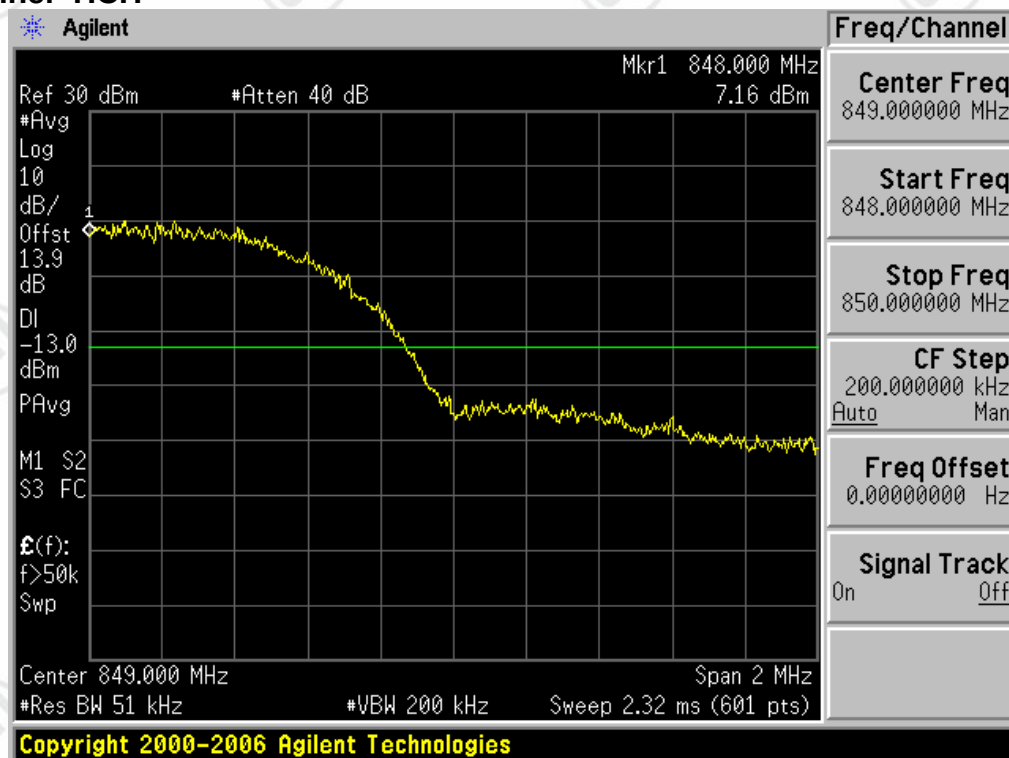


Test Mode=UMTS/TM3

Test Channel=LCH



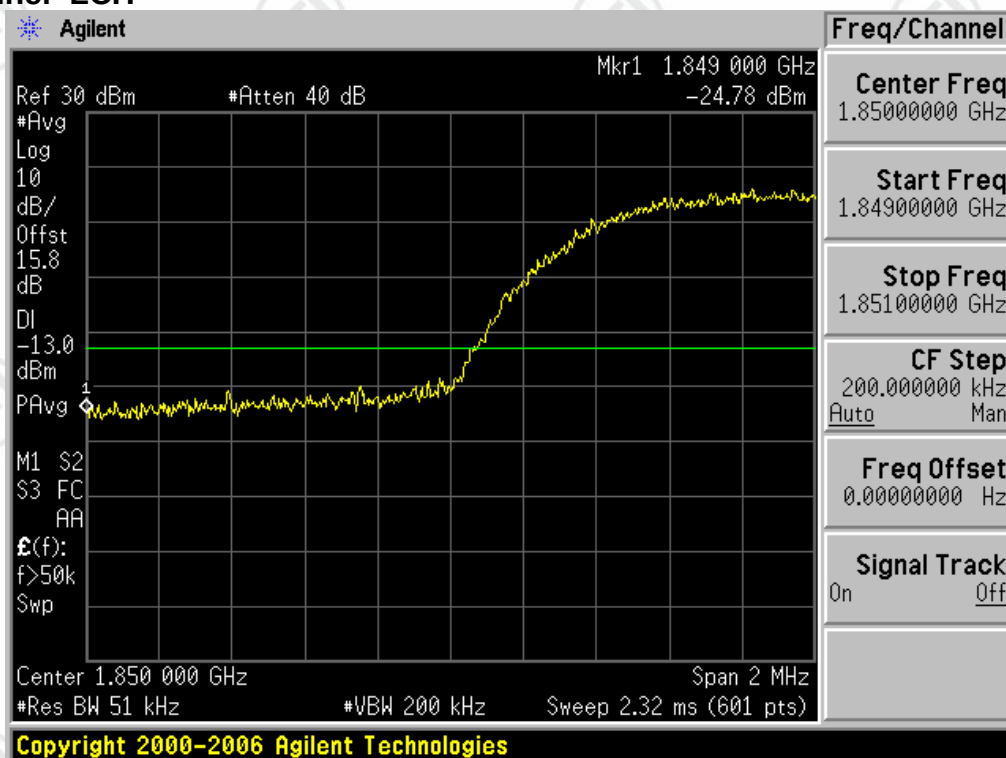
Test Channel=HCH



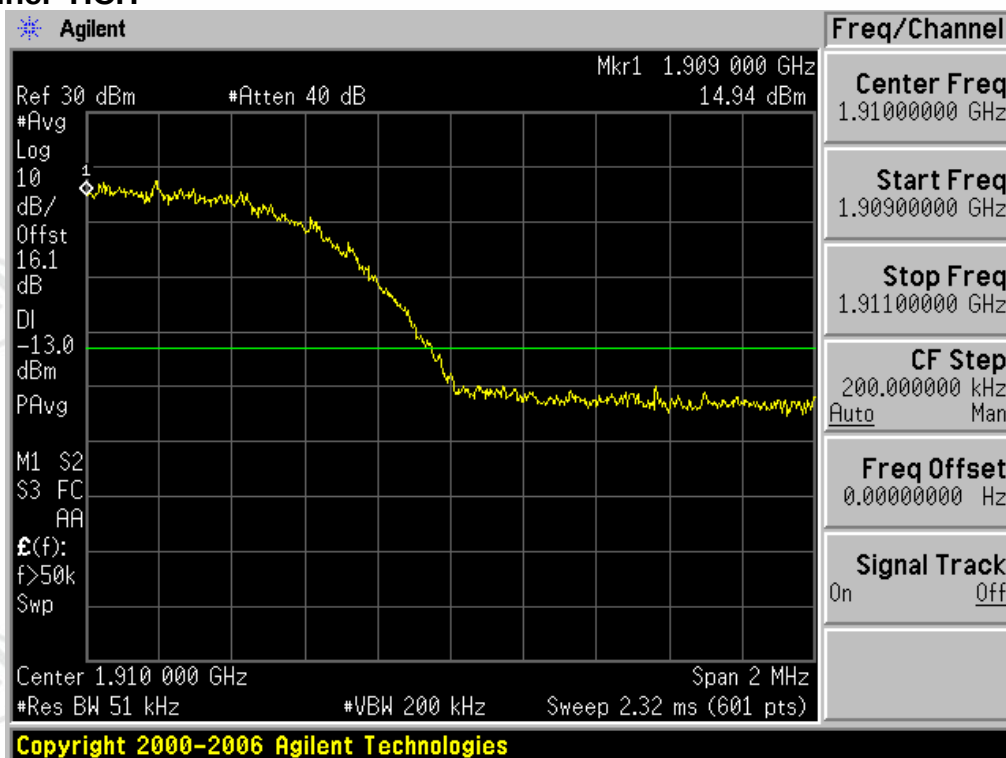
Test Band=WCDMA1900

Test Mode=UMTSTM1

Test Channel=LCH

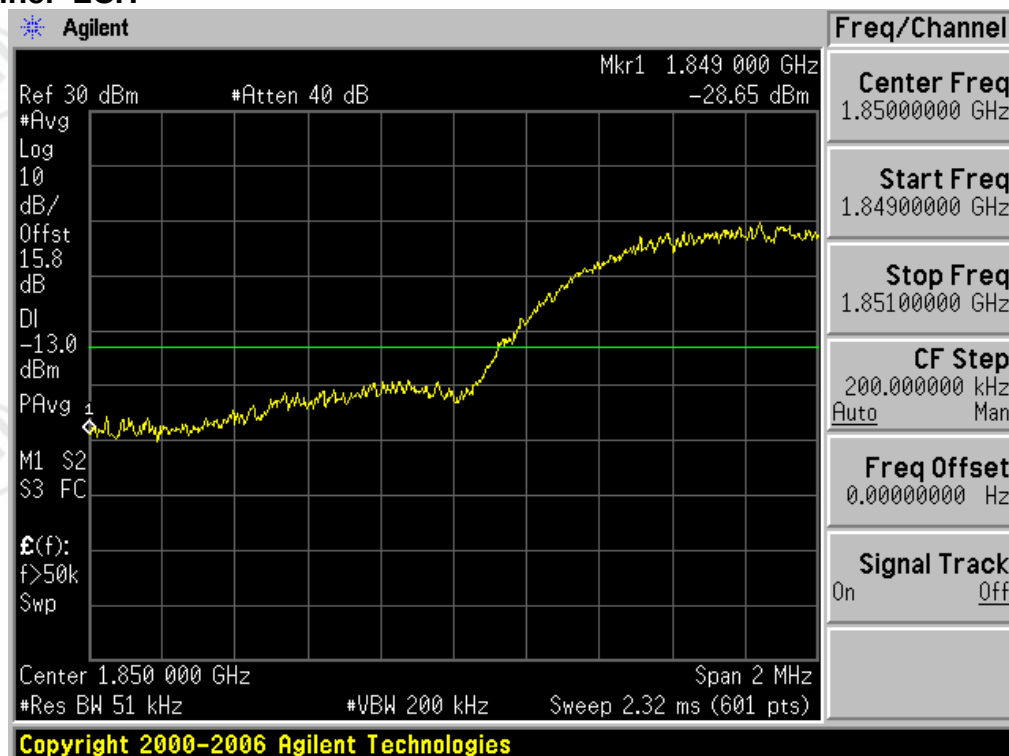


Test Channel=HCH

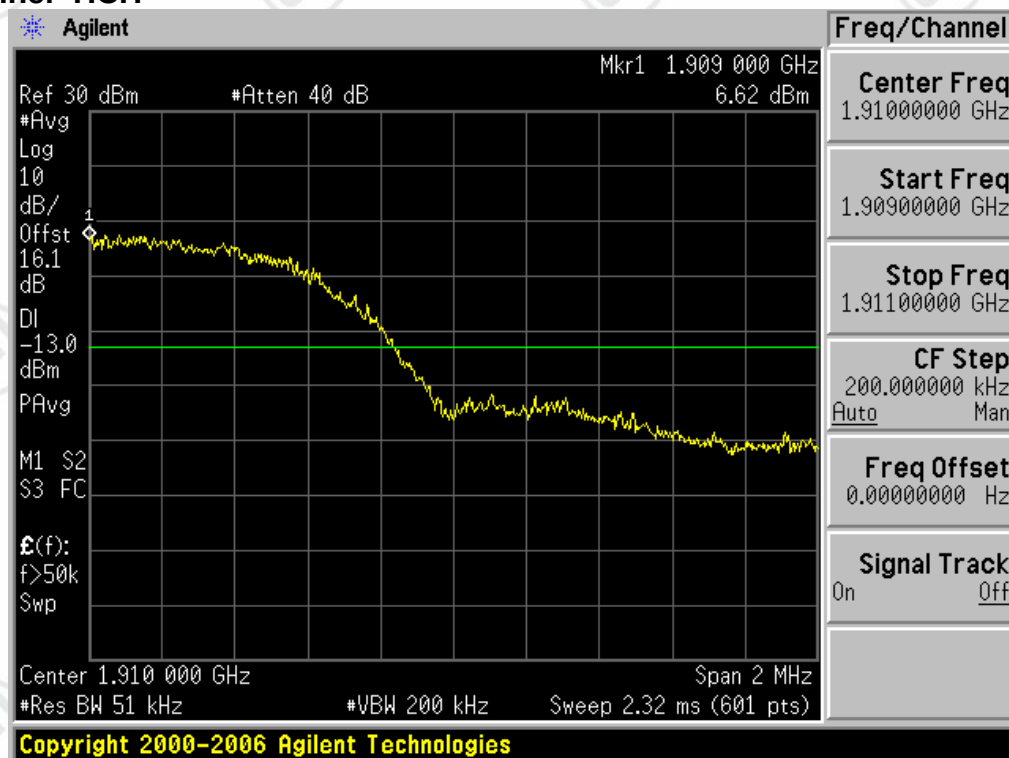


Test Mode=UMTS/TM2

Test Channel=LCH

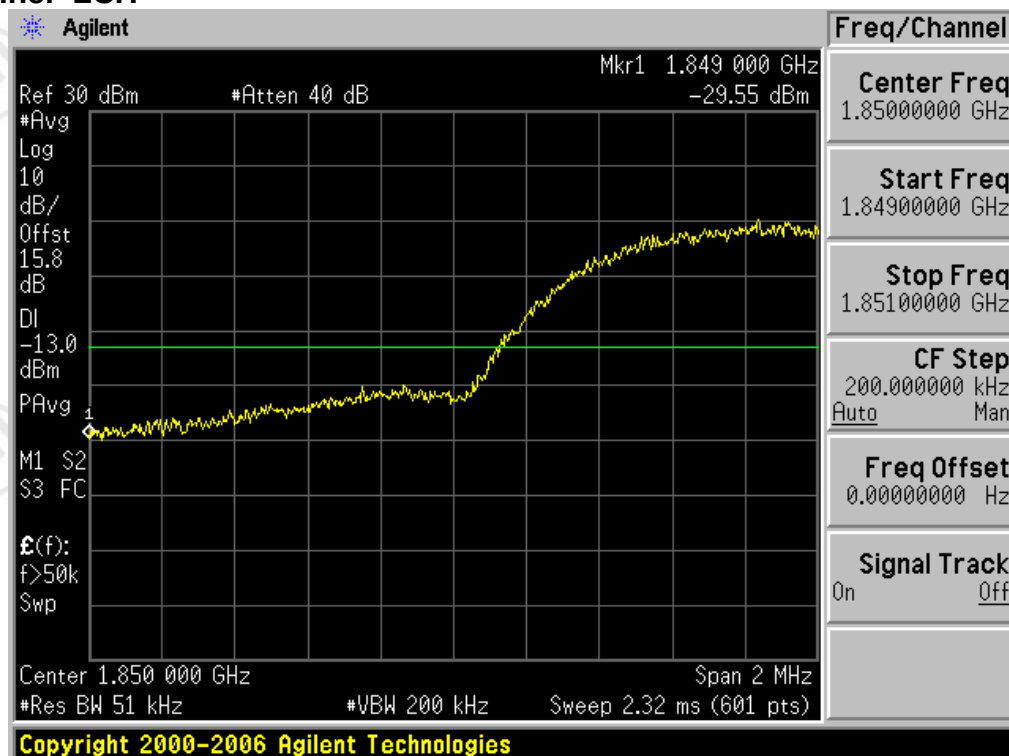


Test Channel=HCH

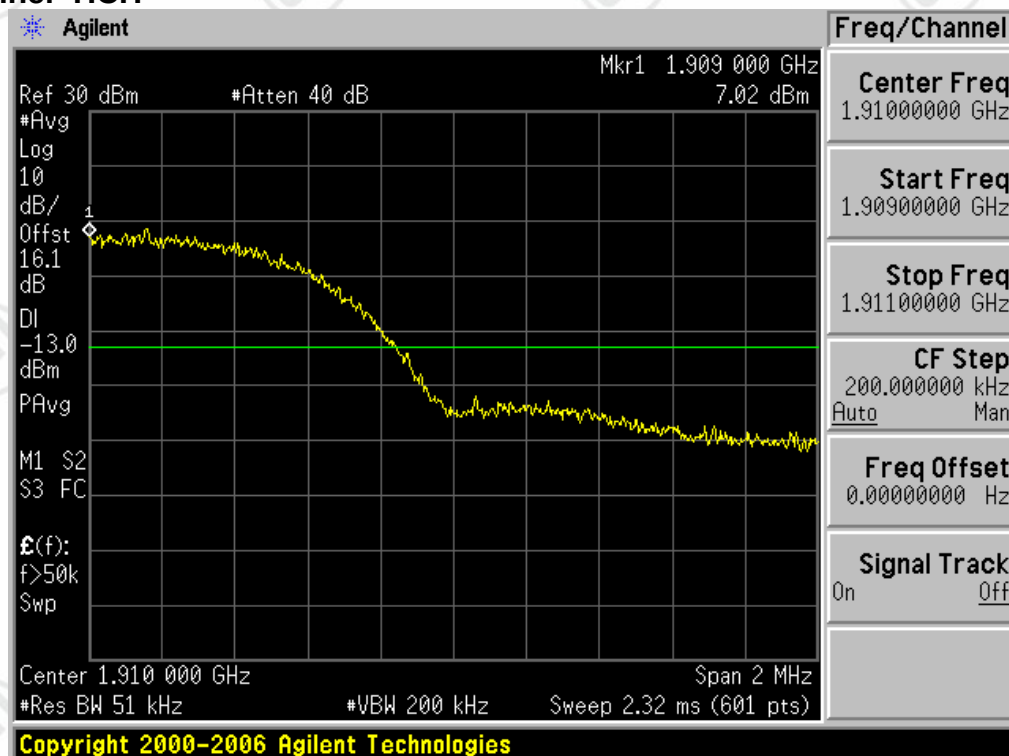


Test Mode=UMTS/TM3

Test Channel=LCH



Test Channel=HCH



## Appendix E): Spurious Emission at Antenna Terminal

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b>      | Part 2.1051/Part 2.1057                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Test Method:</b>           | TIA-603-D-2010 Clause 2.2.13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Test Setup:</b>            | Refer to section 5 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Measurement Procedure:</b> | 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. |
| <b>Instruments Used:</b>      | Refer to section 7 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Limit:</b>                 | Attenuated at least $43+10\log(P)$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Test Results:</b>          | Pass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

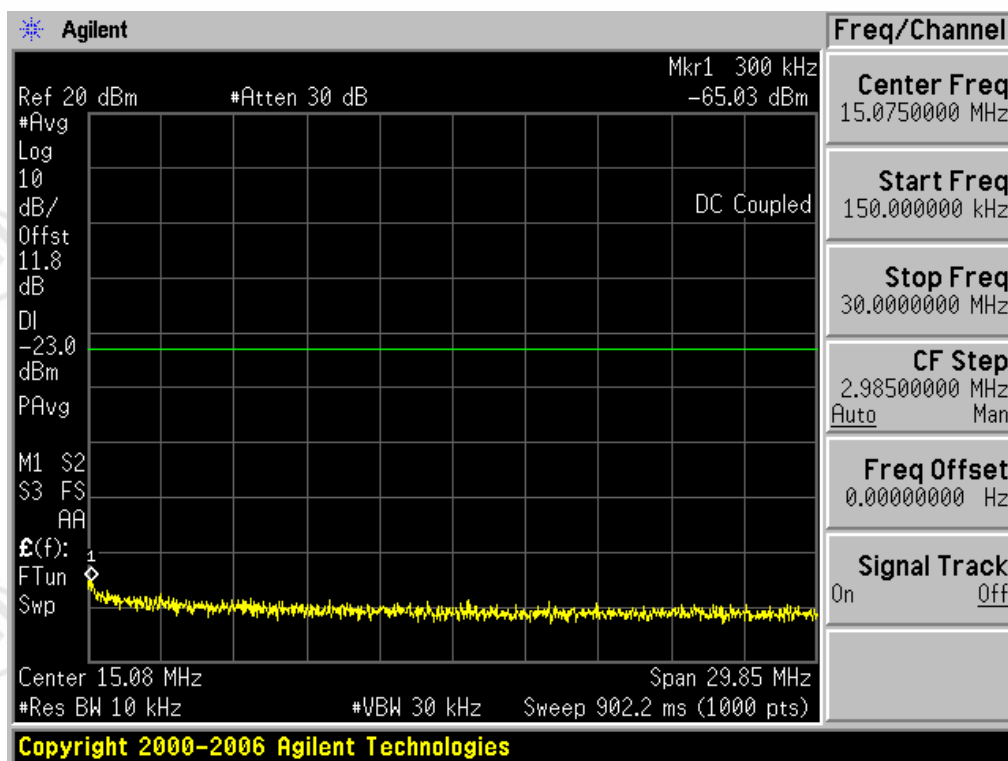
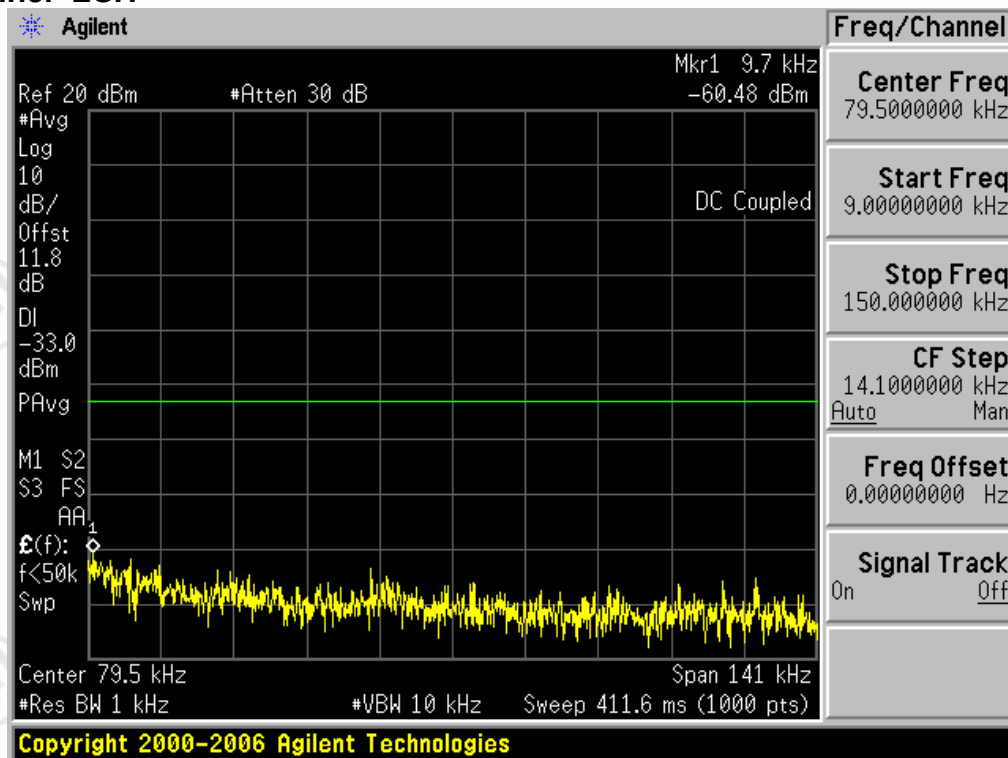
**Test Graphs:**

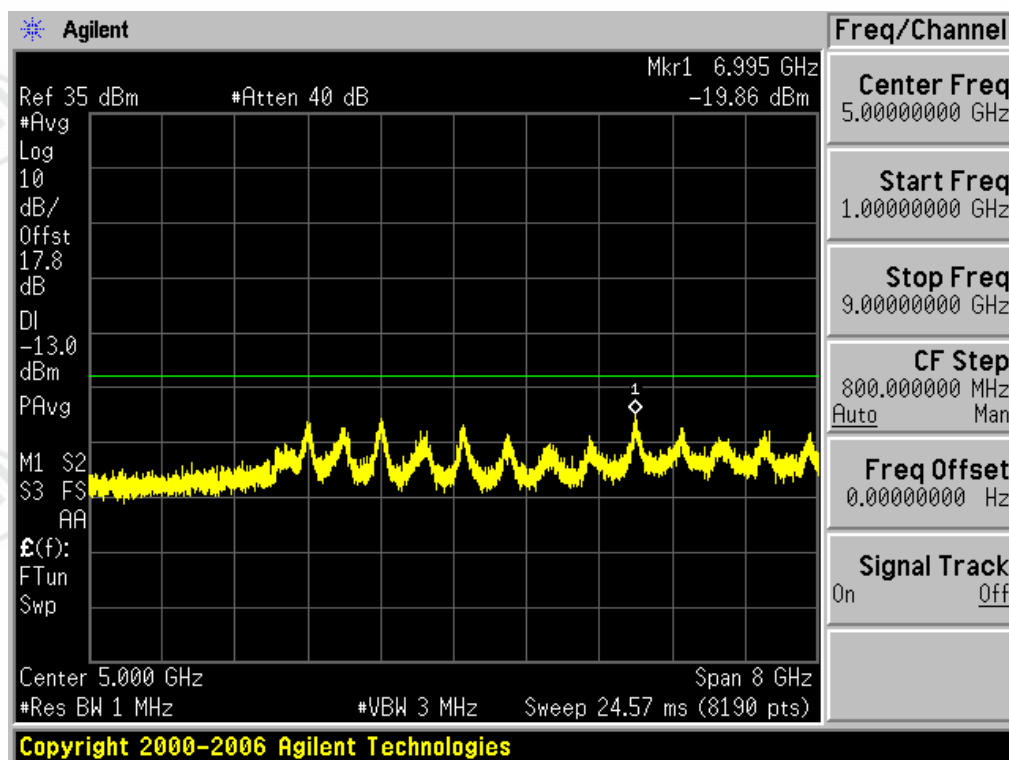
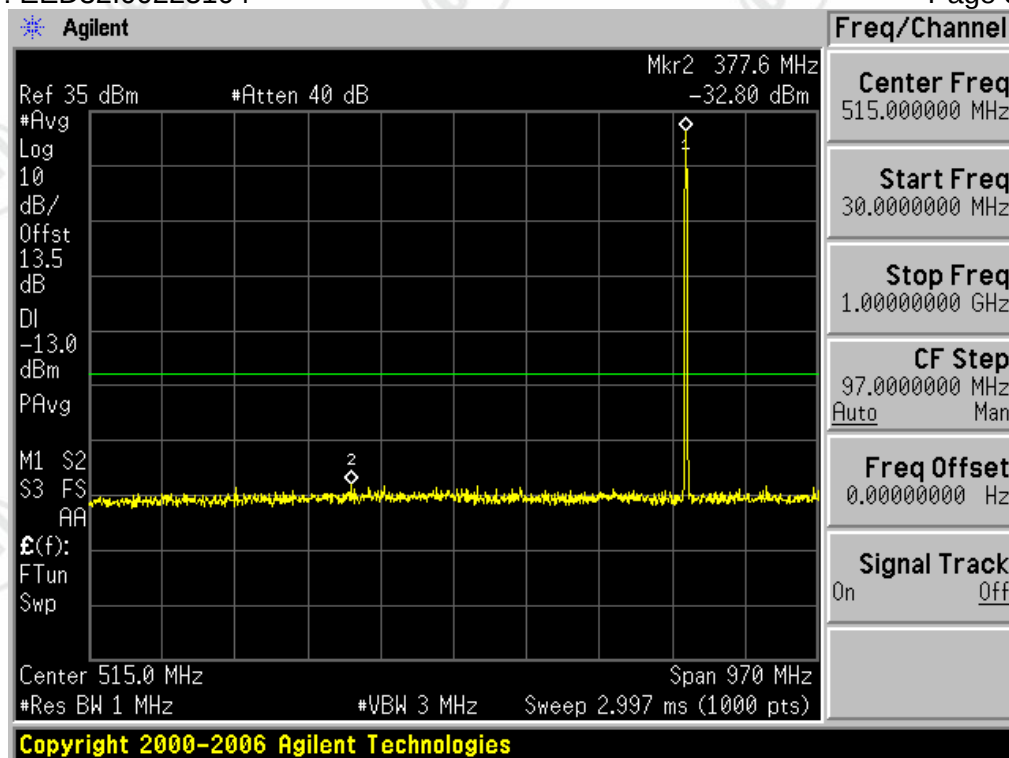
**For GSM**

**Test Band=GSM850**

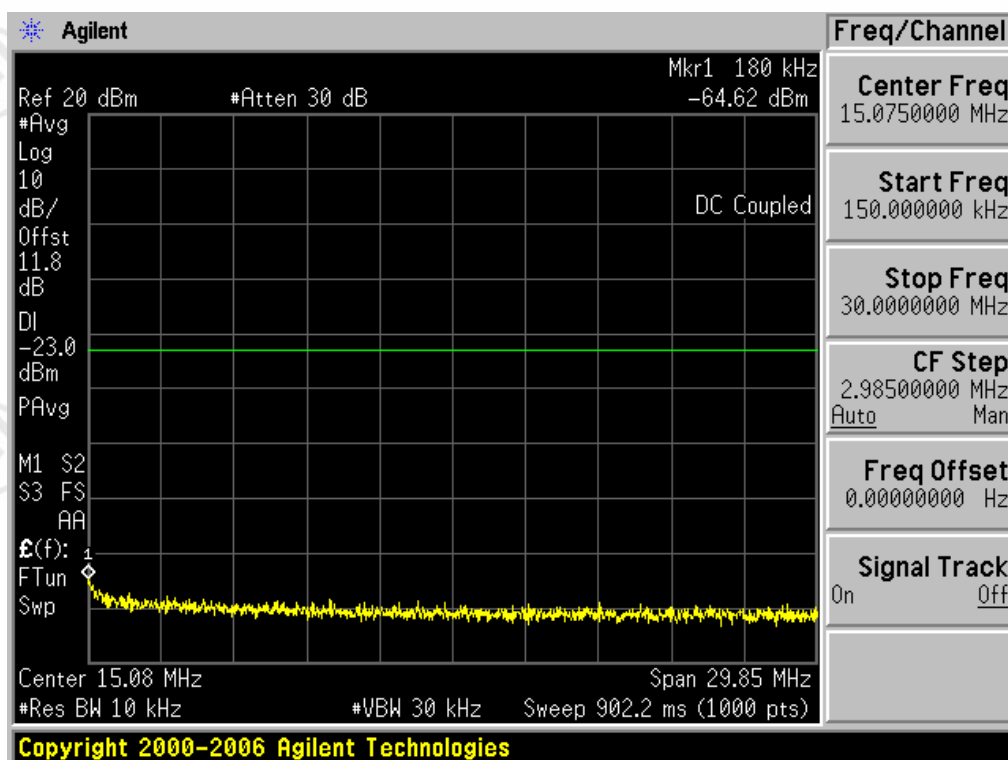
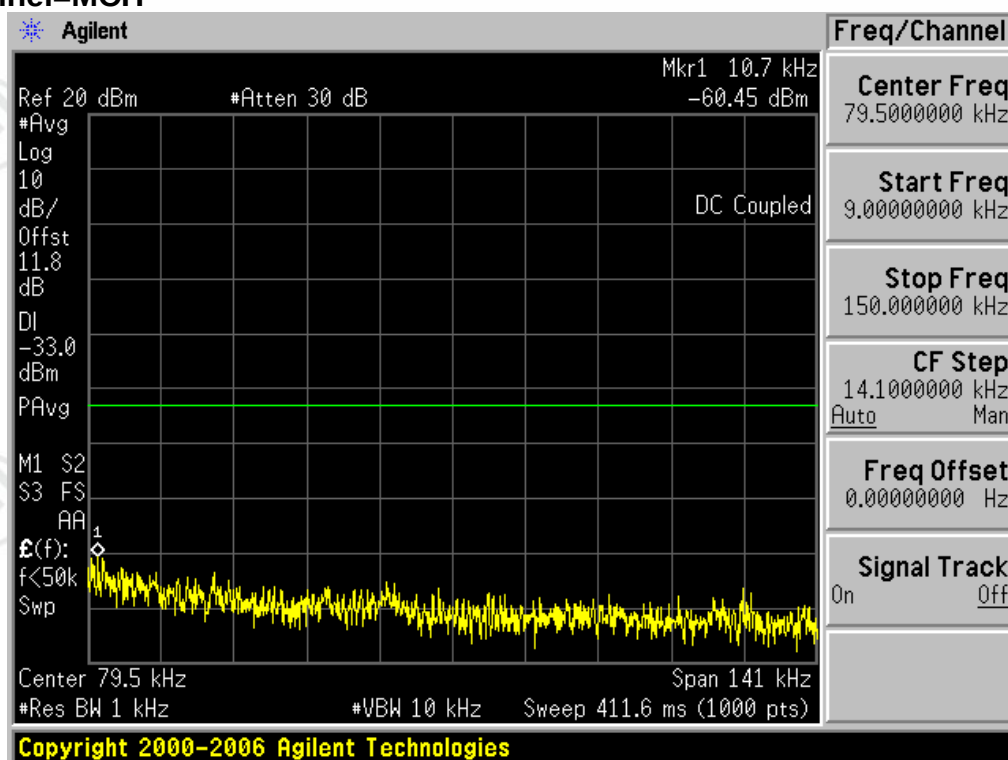
**Test Mode=GSM/TM1**

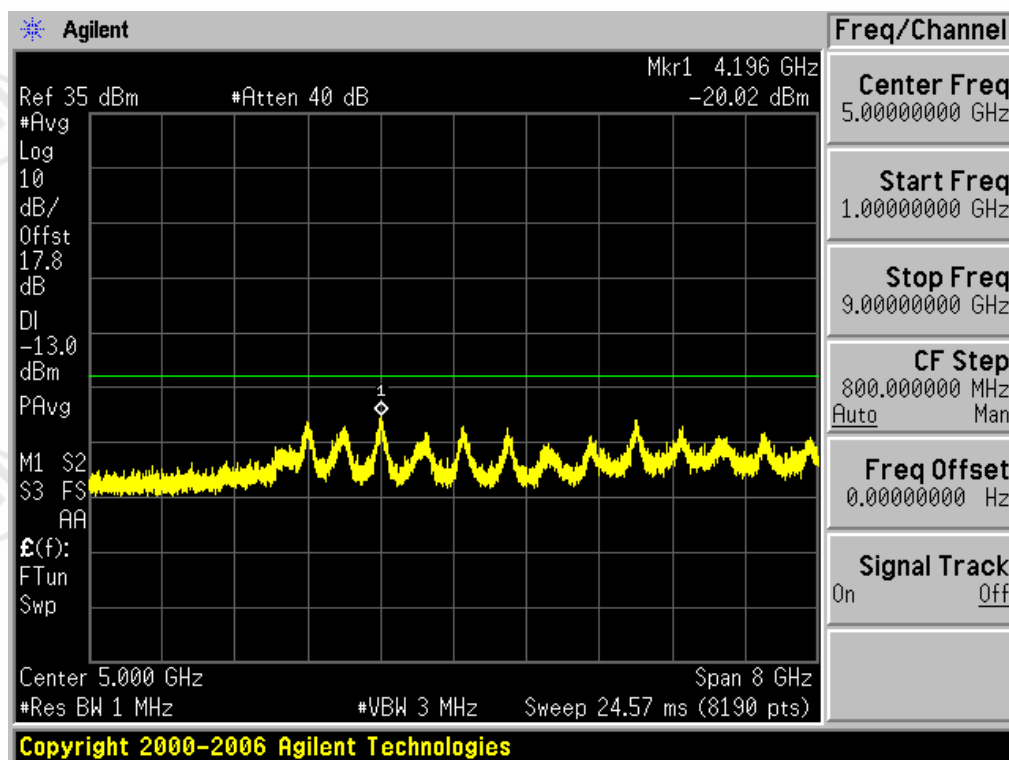
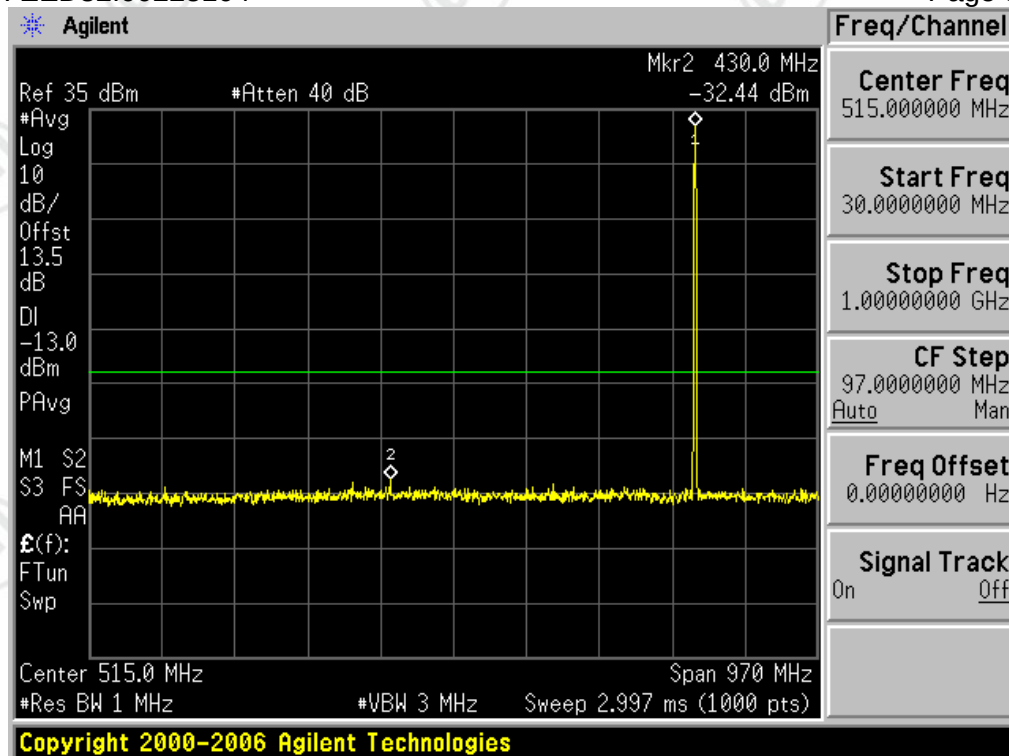
**Test Channel=LCH**



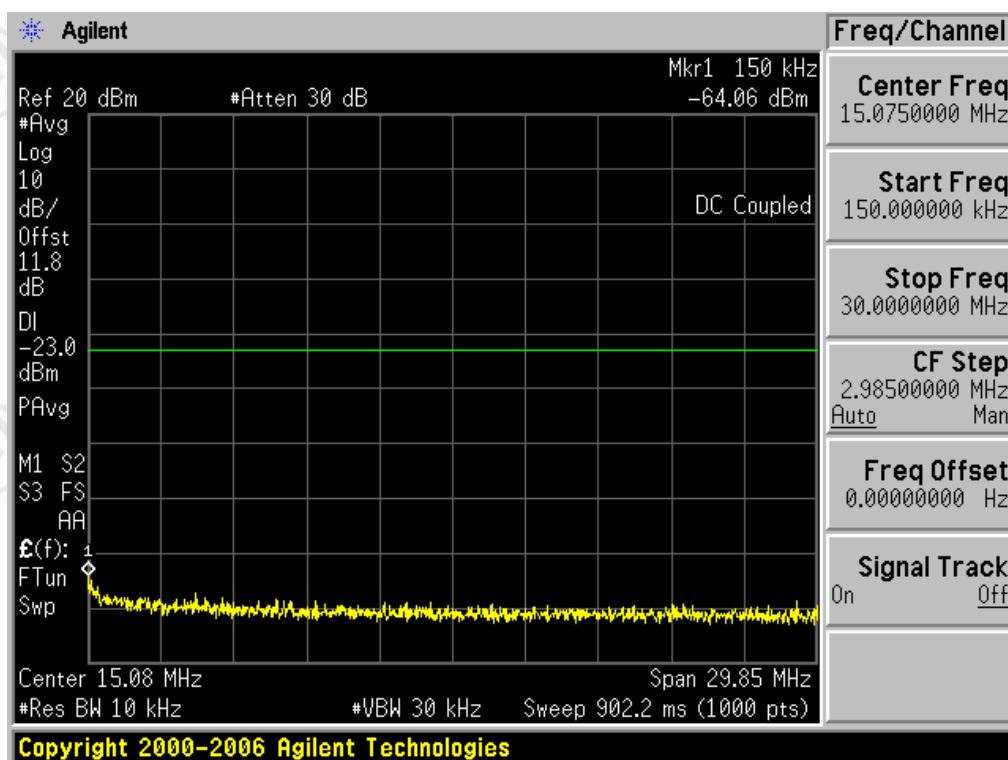
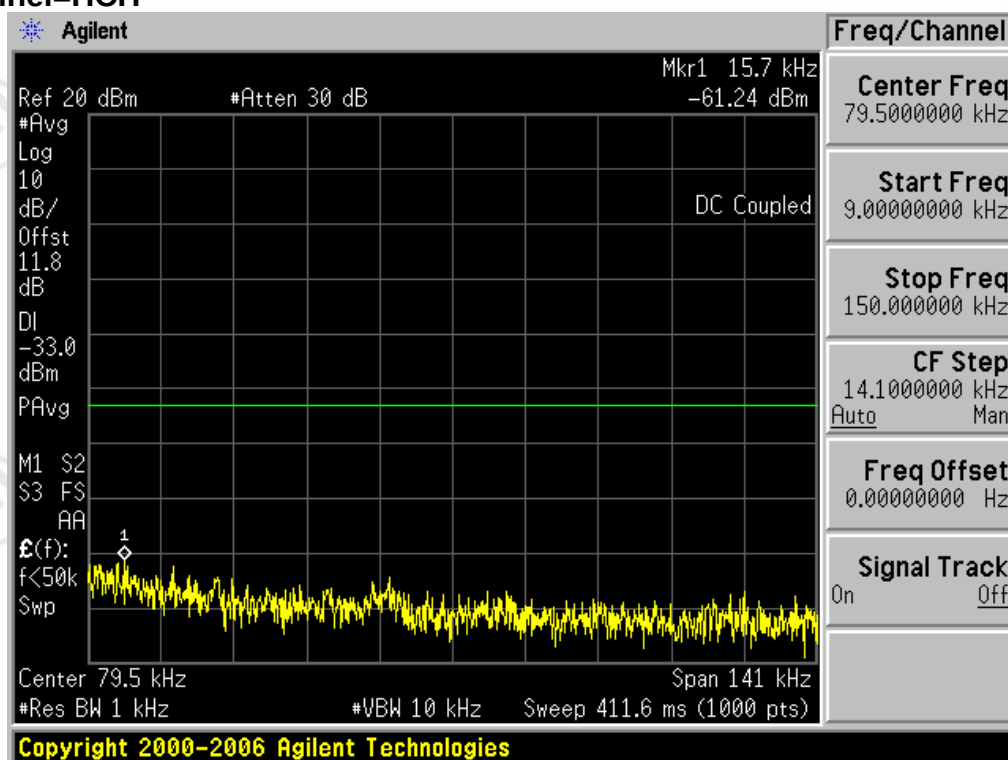


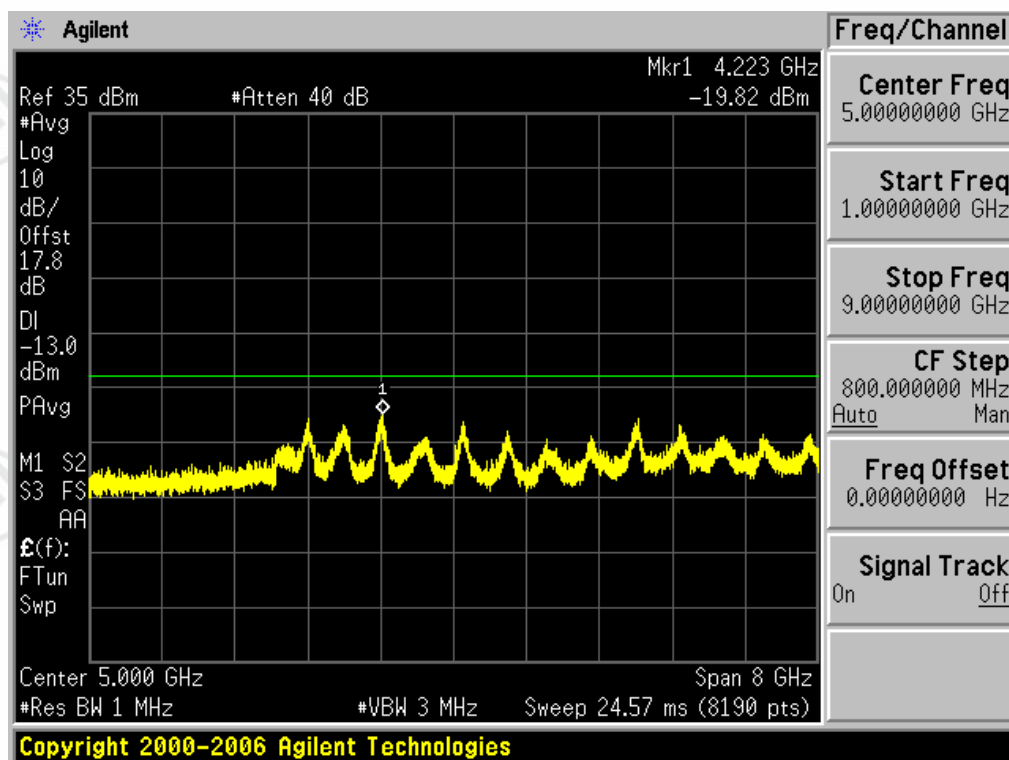
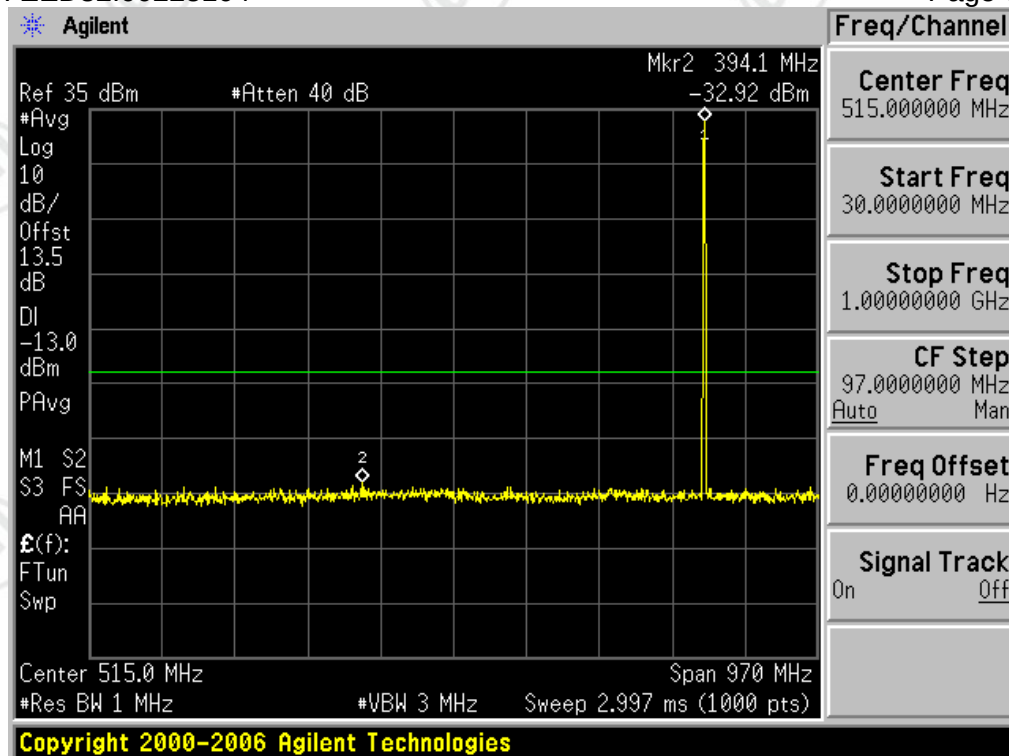
Test Channel=MCH





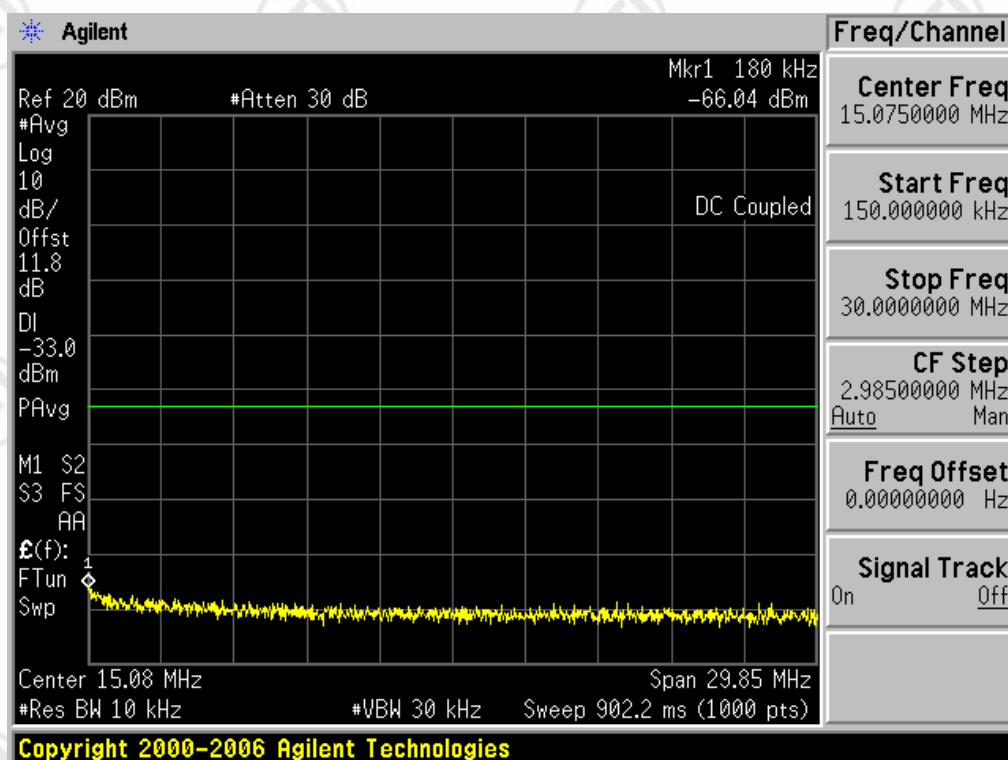
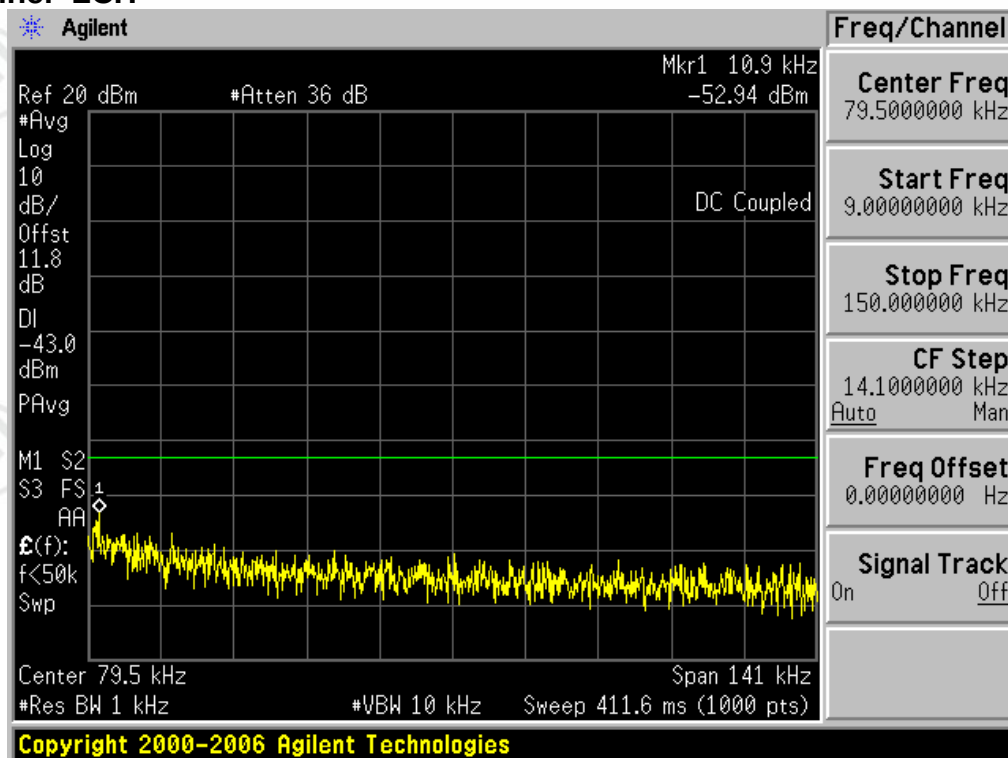
Test Channel=HCH

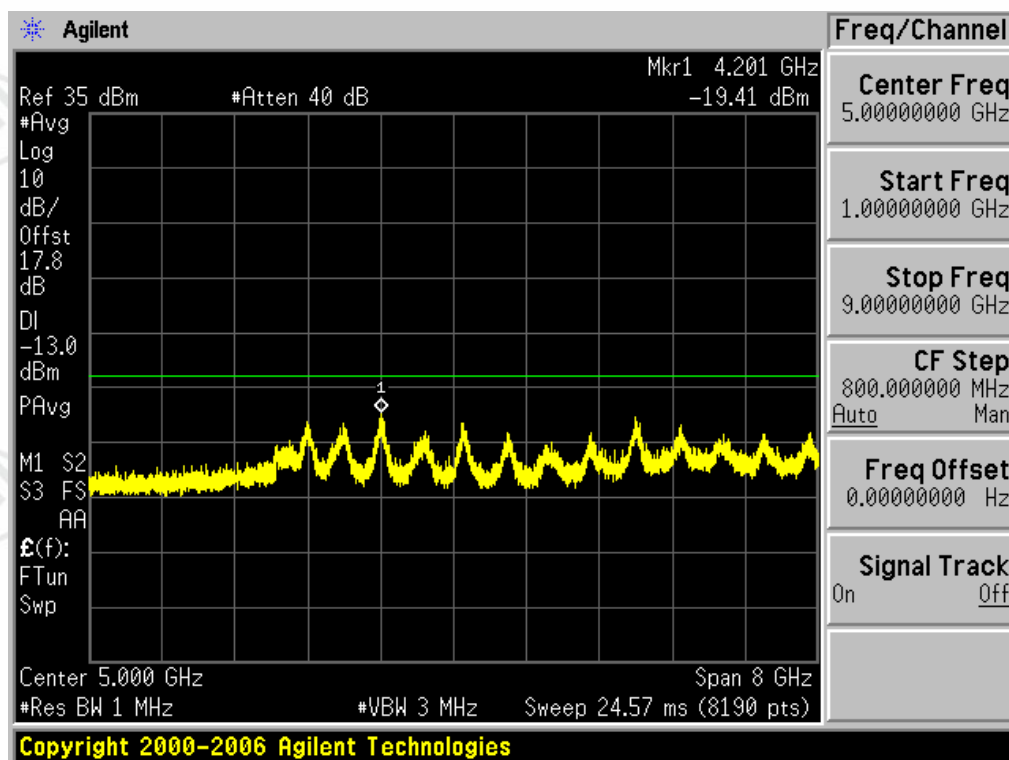
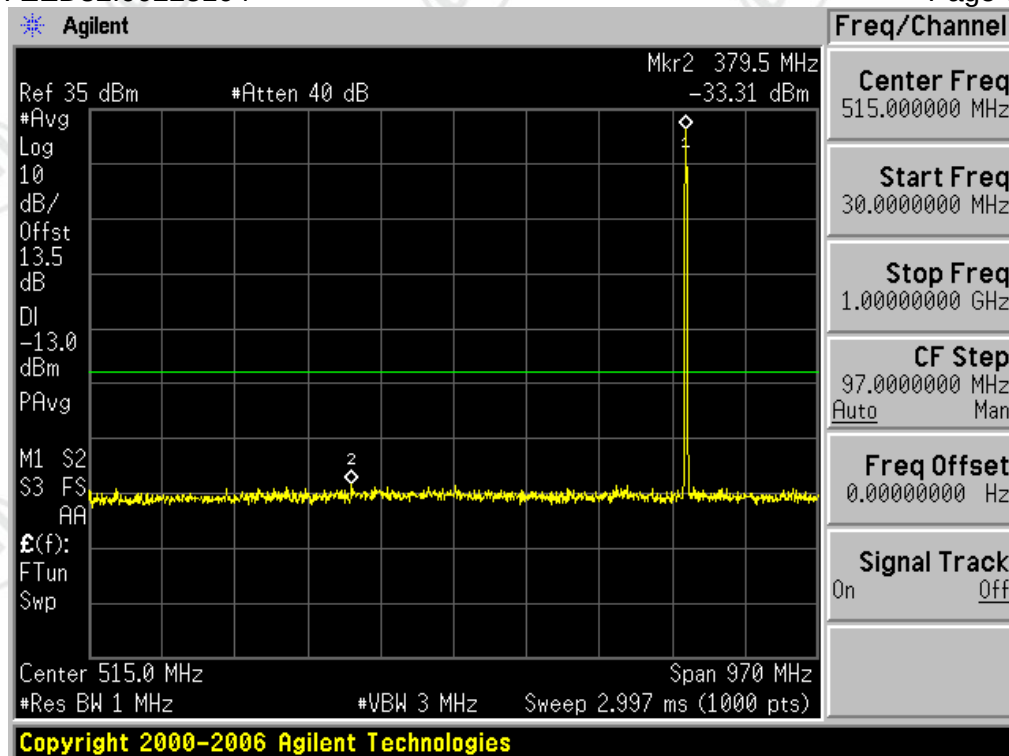




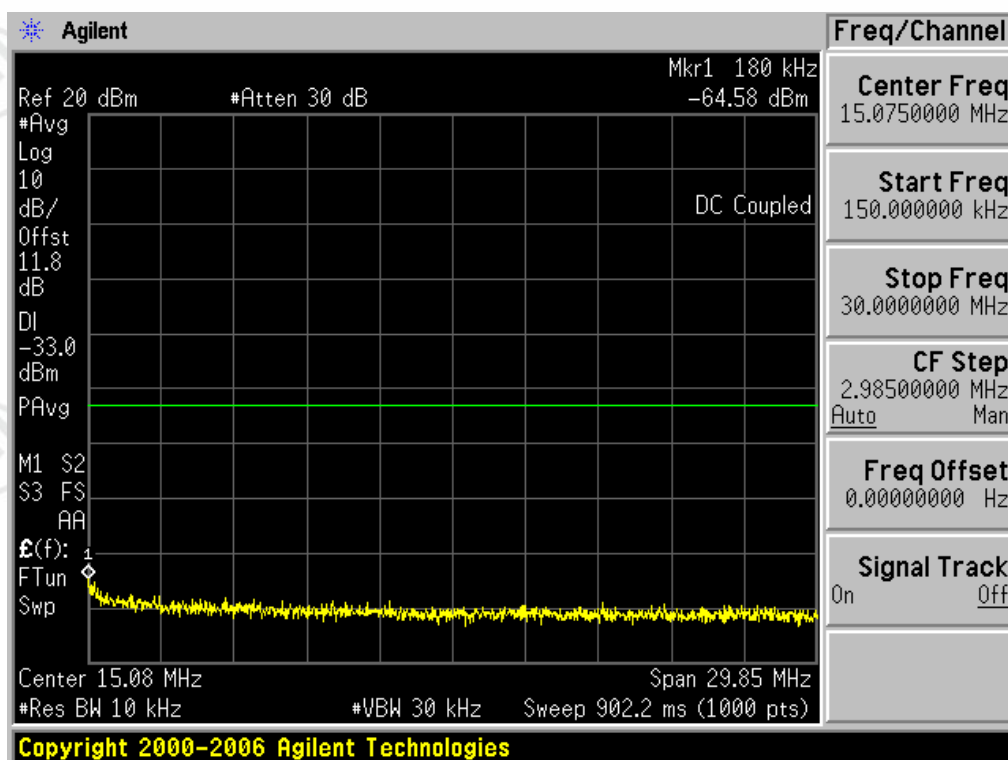
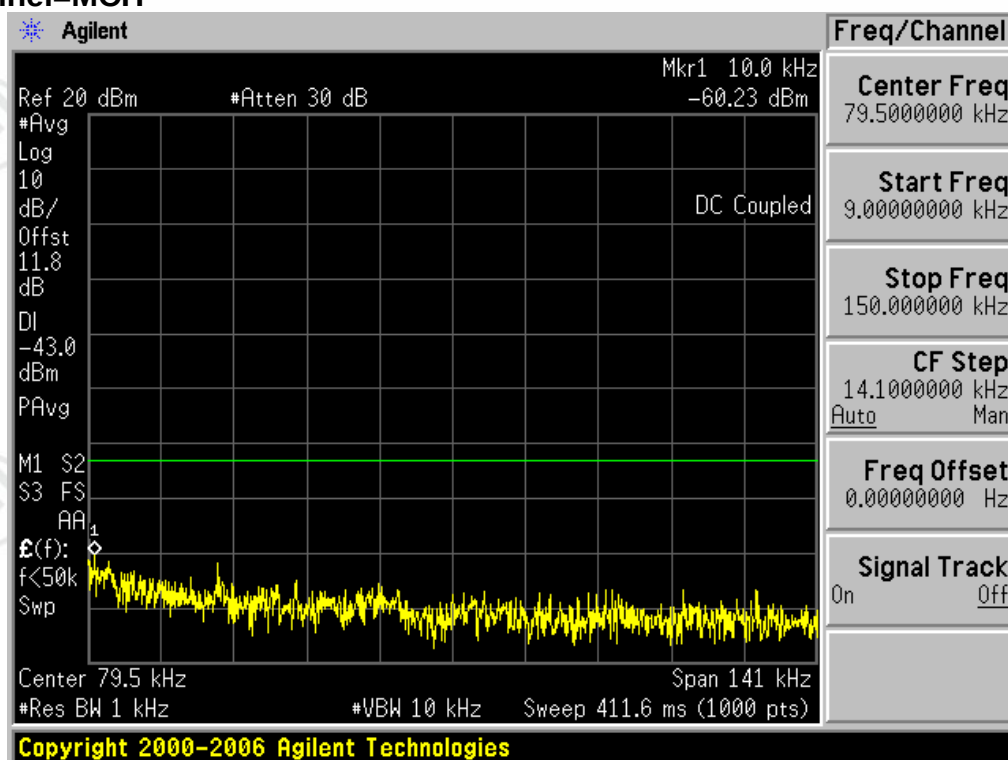
Test Mode=GSM/TM2

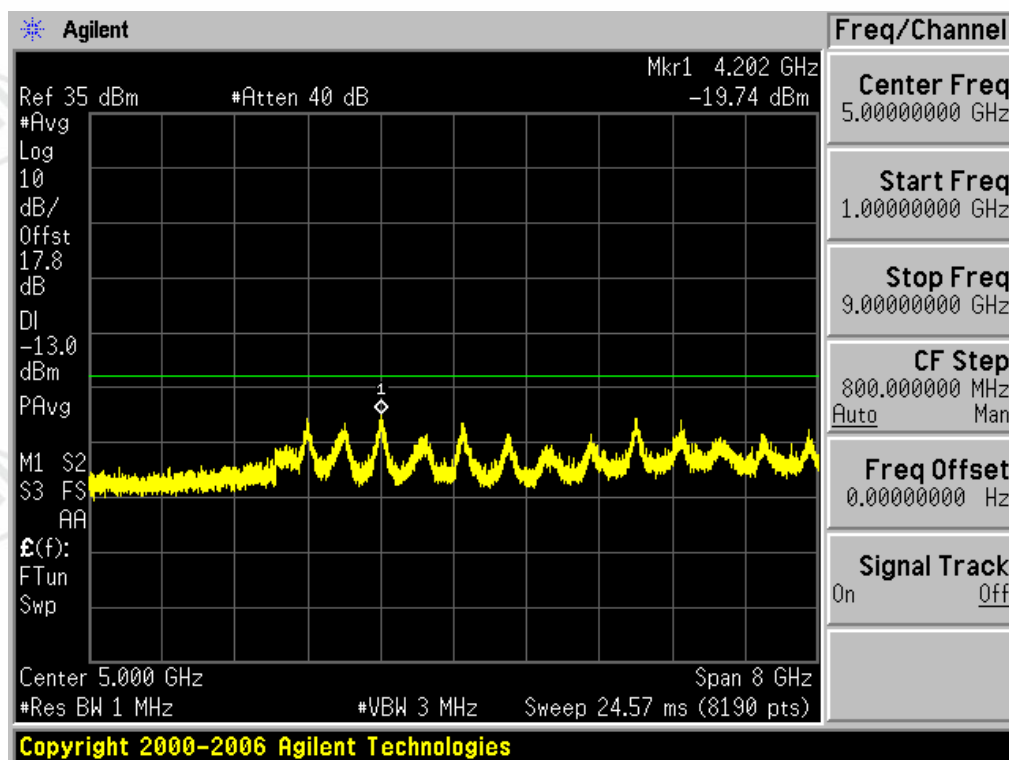
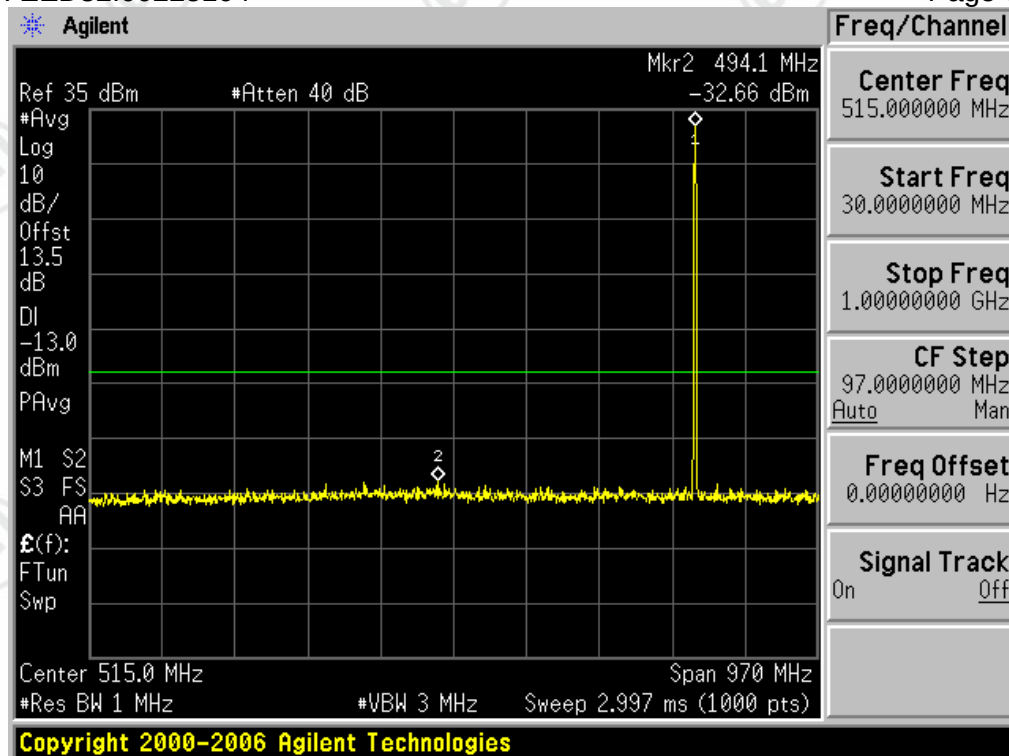
Test Channel=LCH



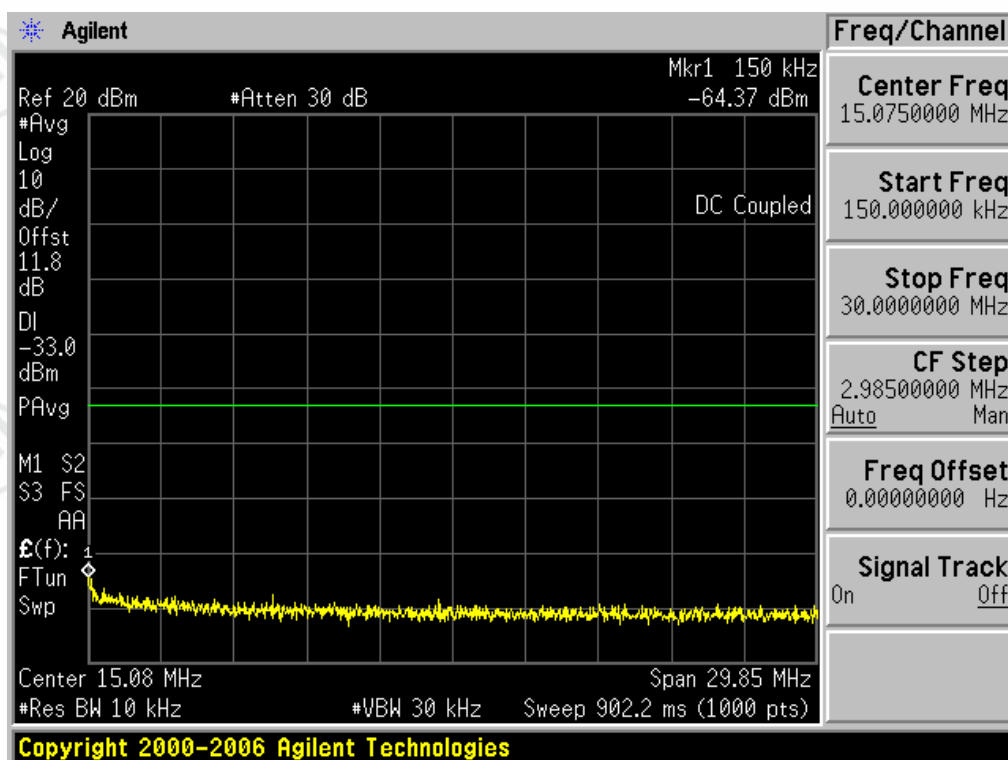
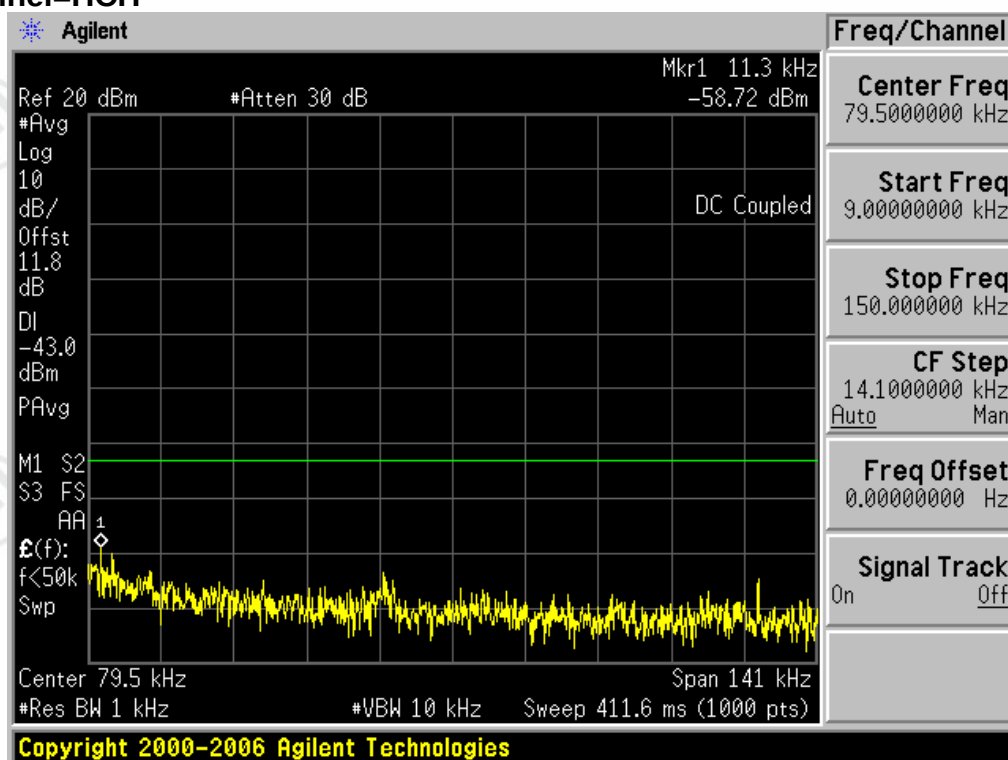


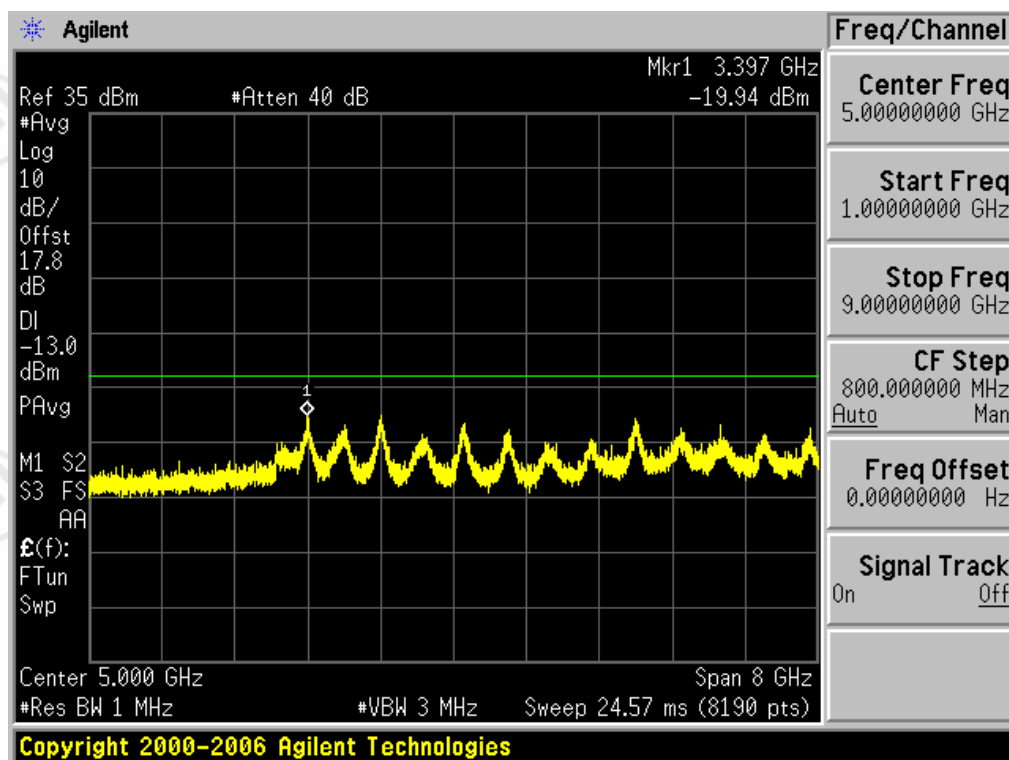
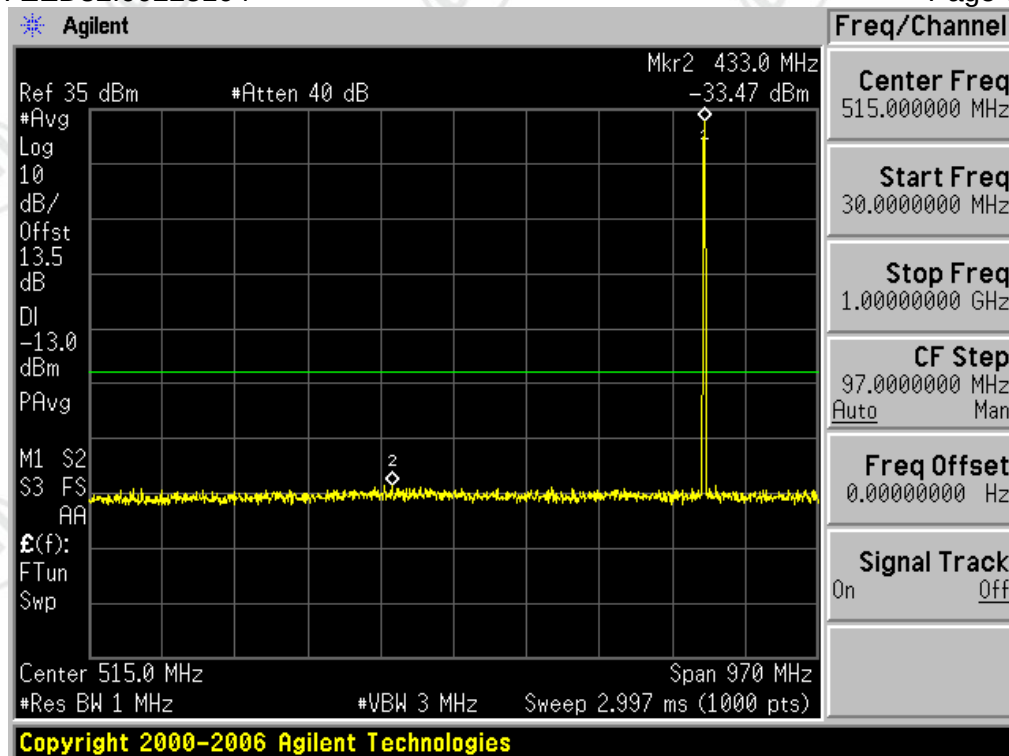
Test Channel=MCH





Test Channel=HCH

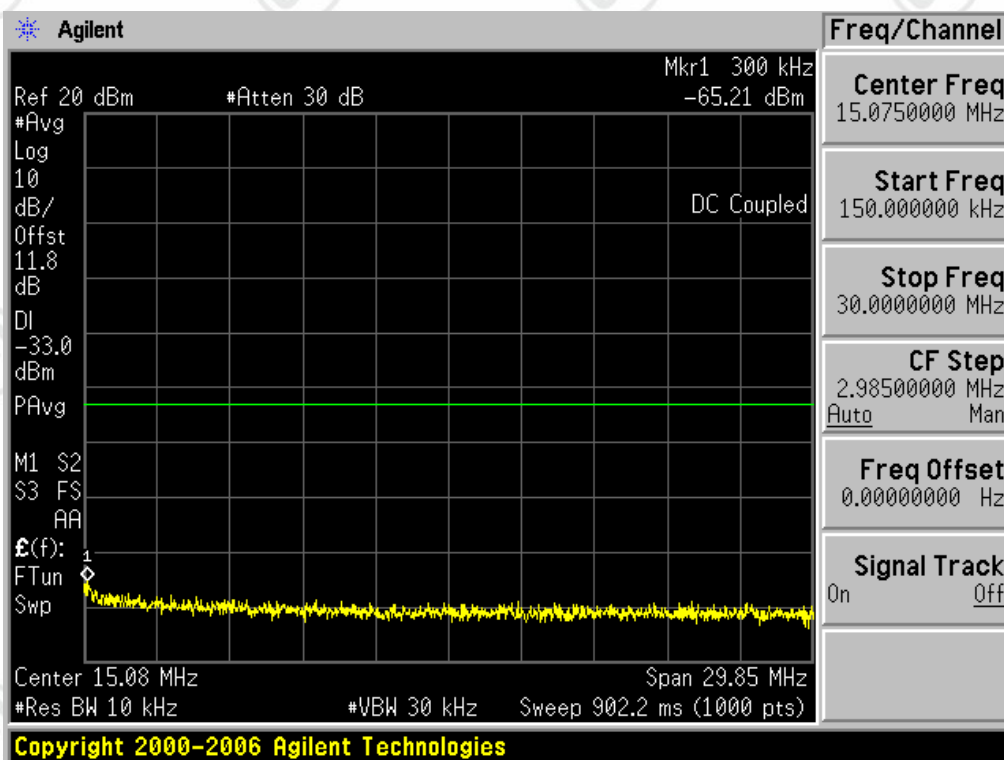
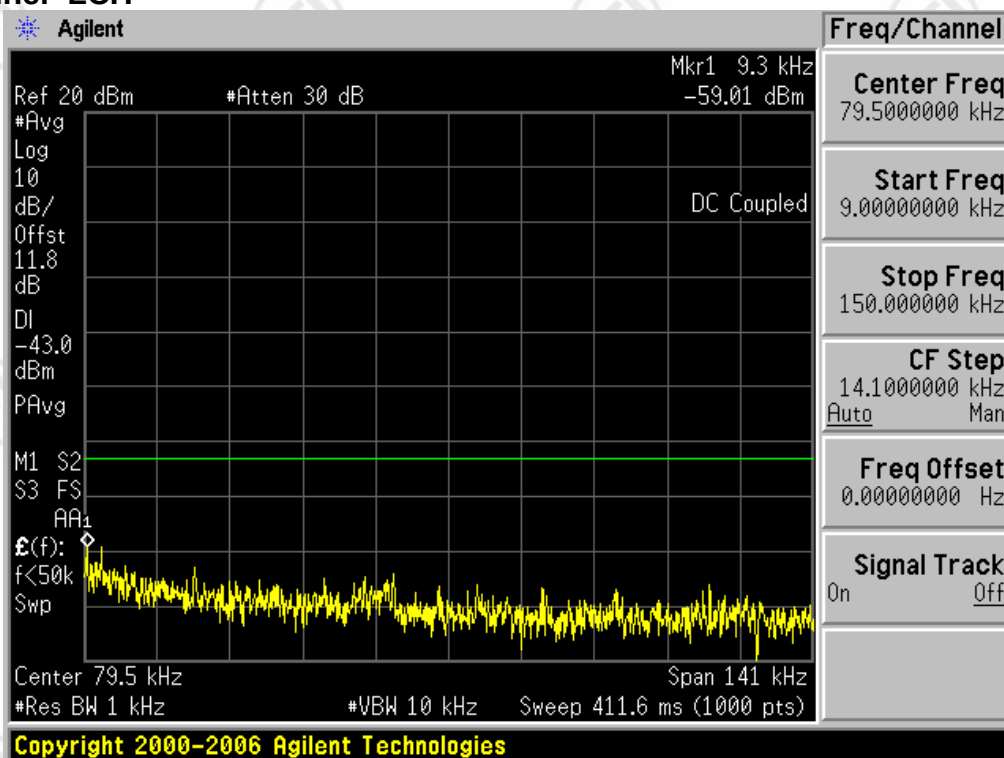


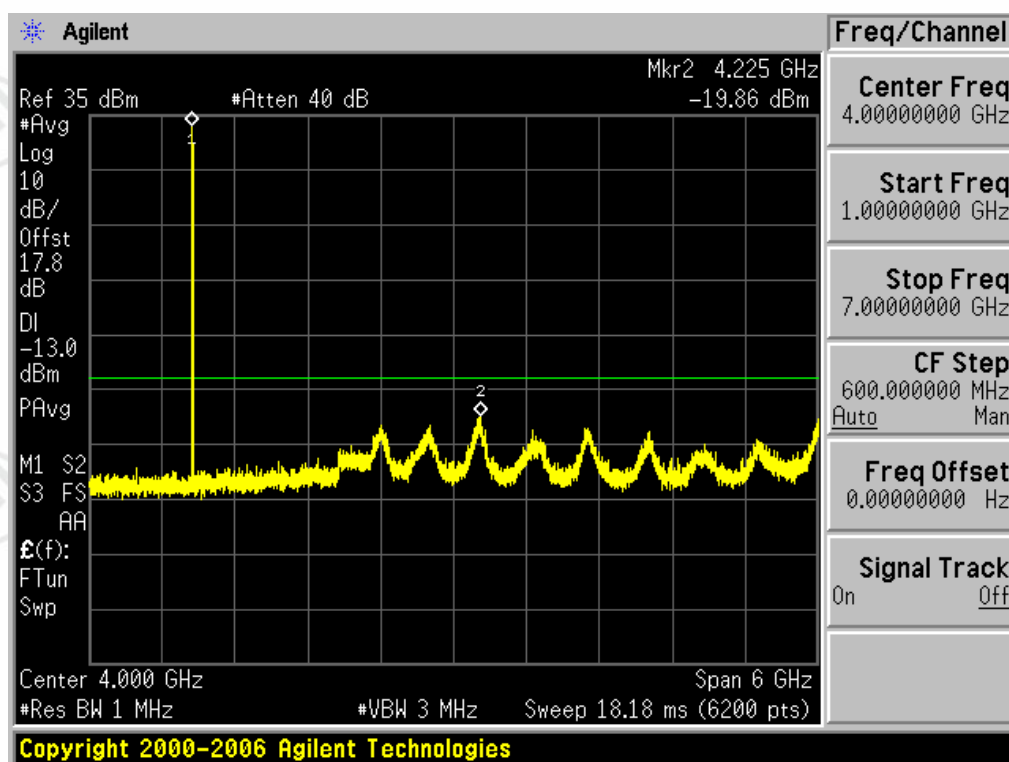
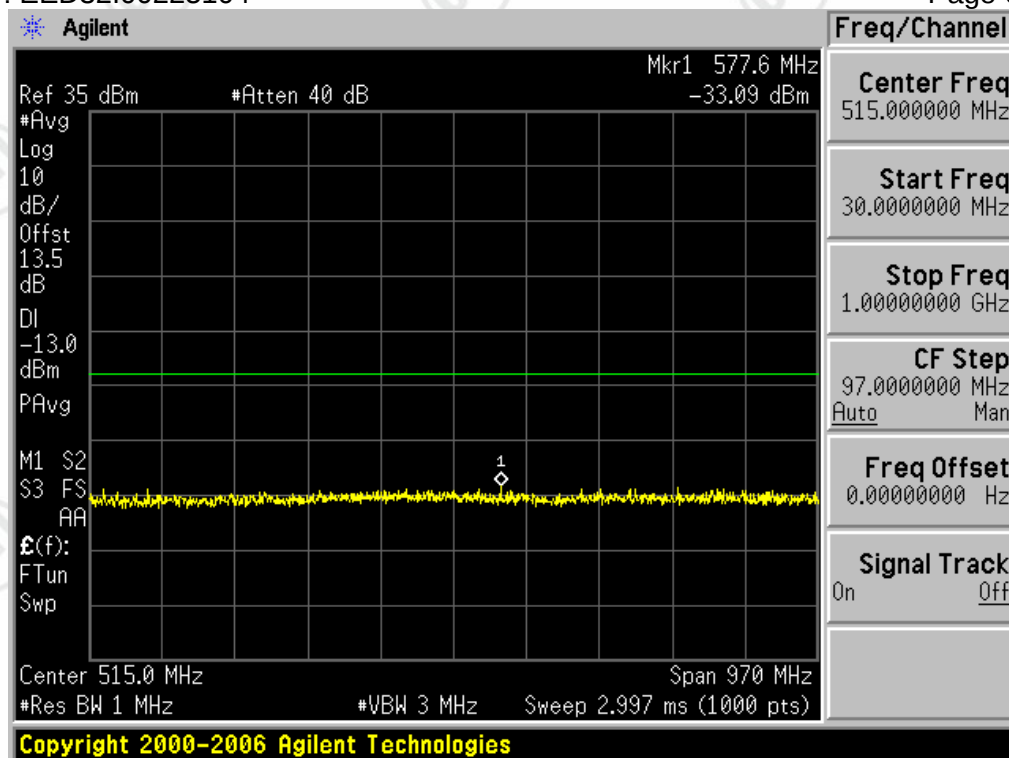


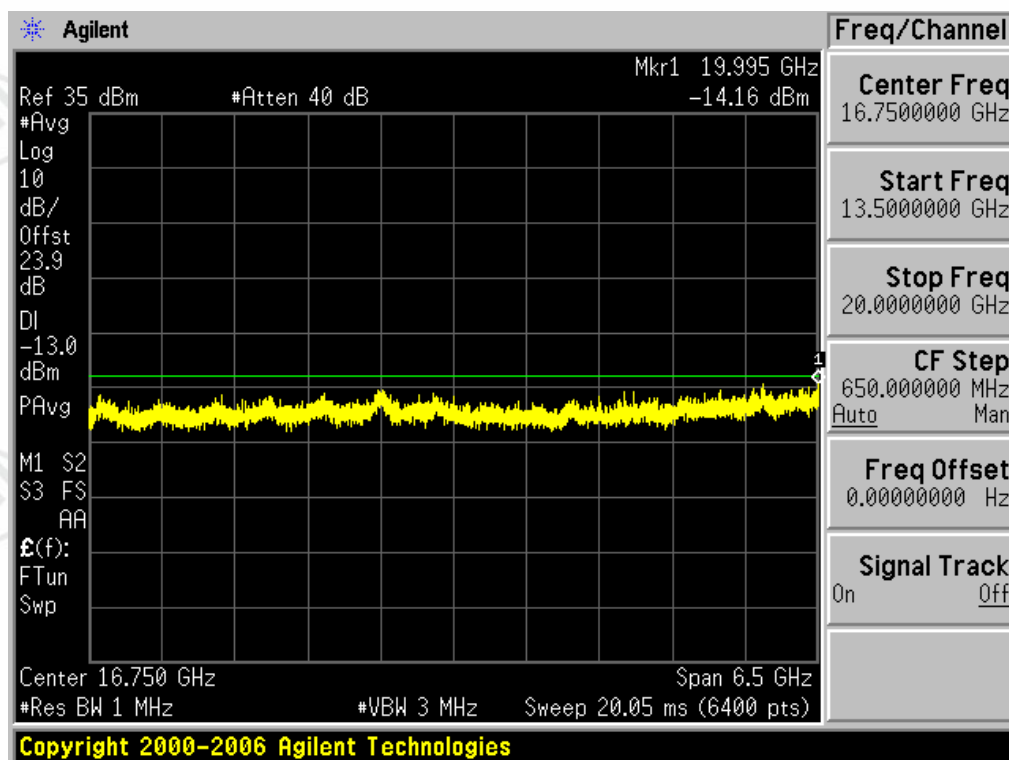
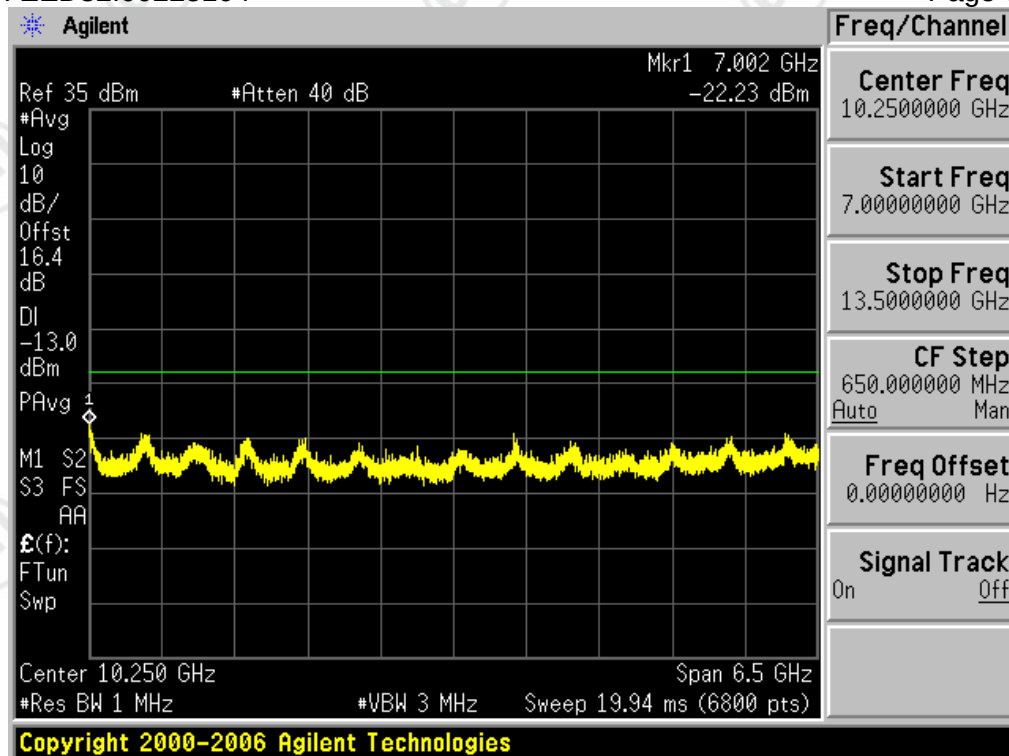
Test Band=GSM1900

Test Mode=GSM/TM1

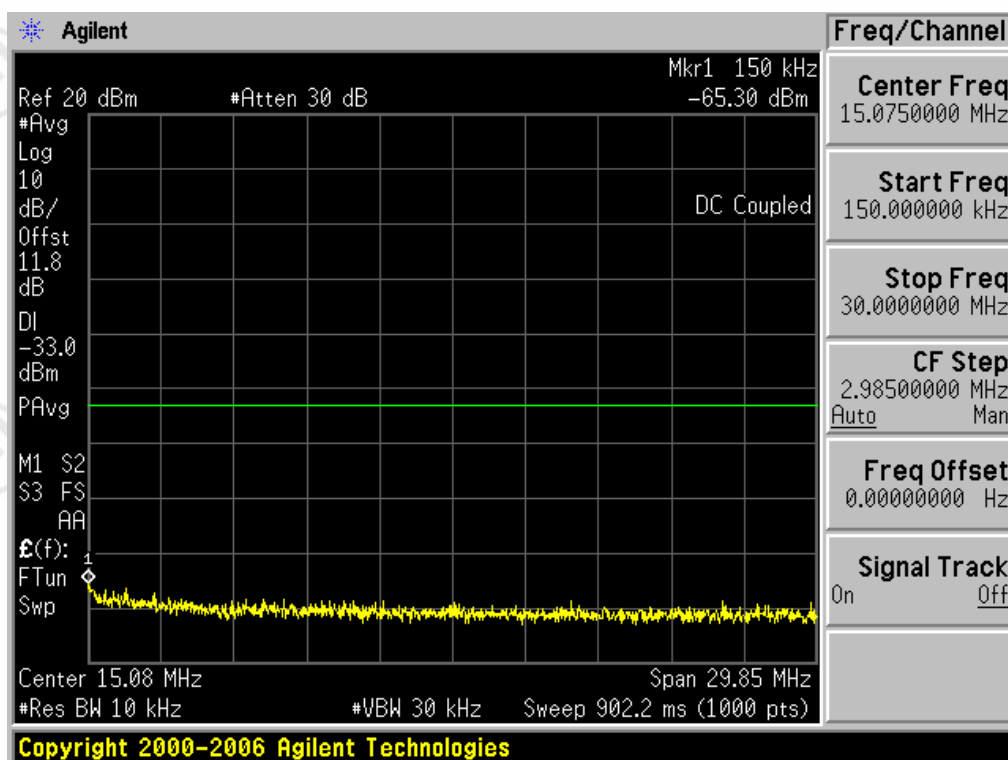
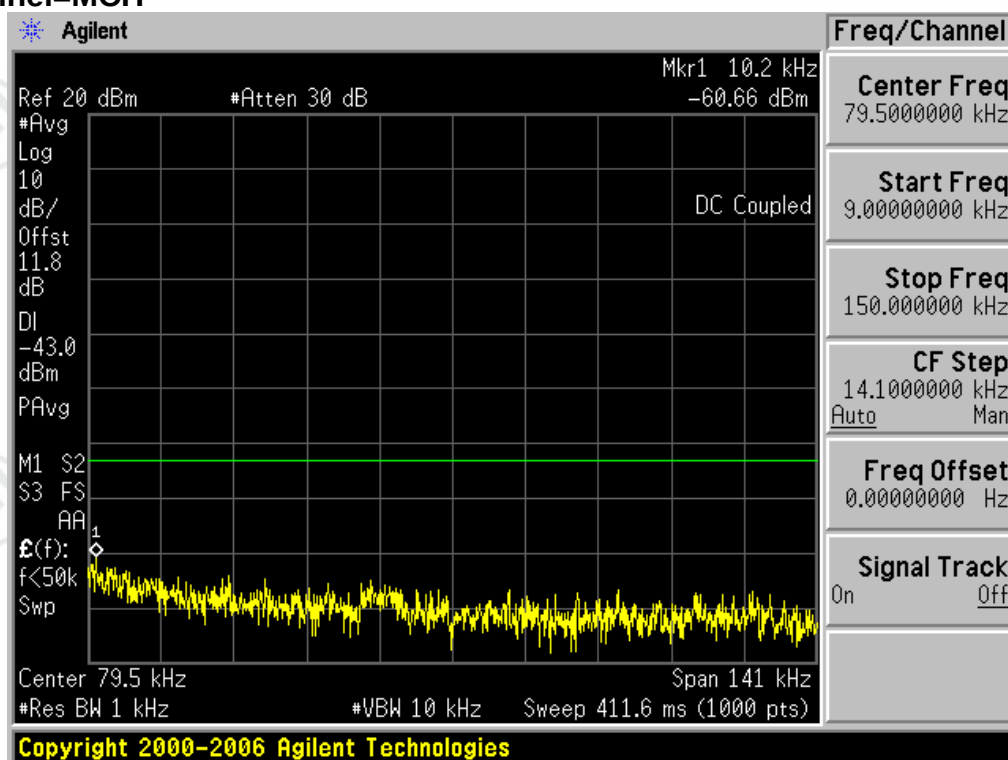
Test Channel=LCH

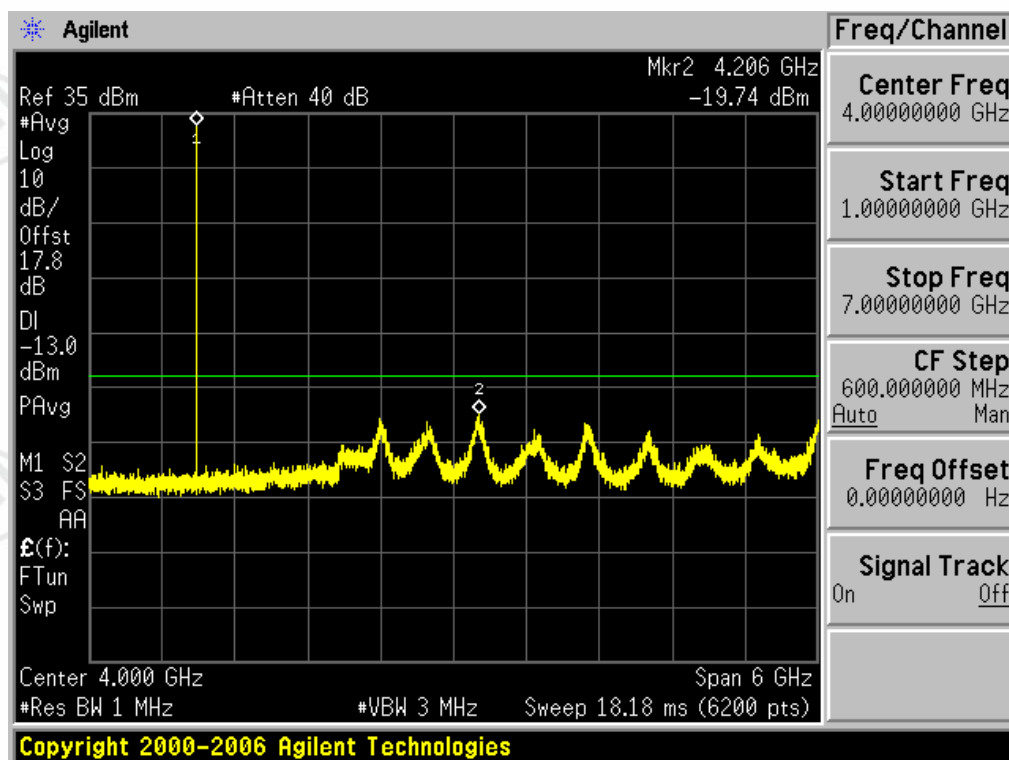
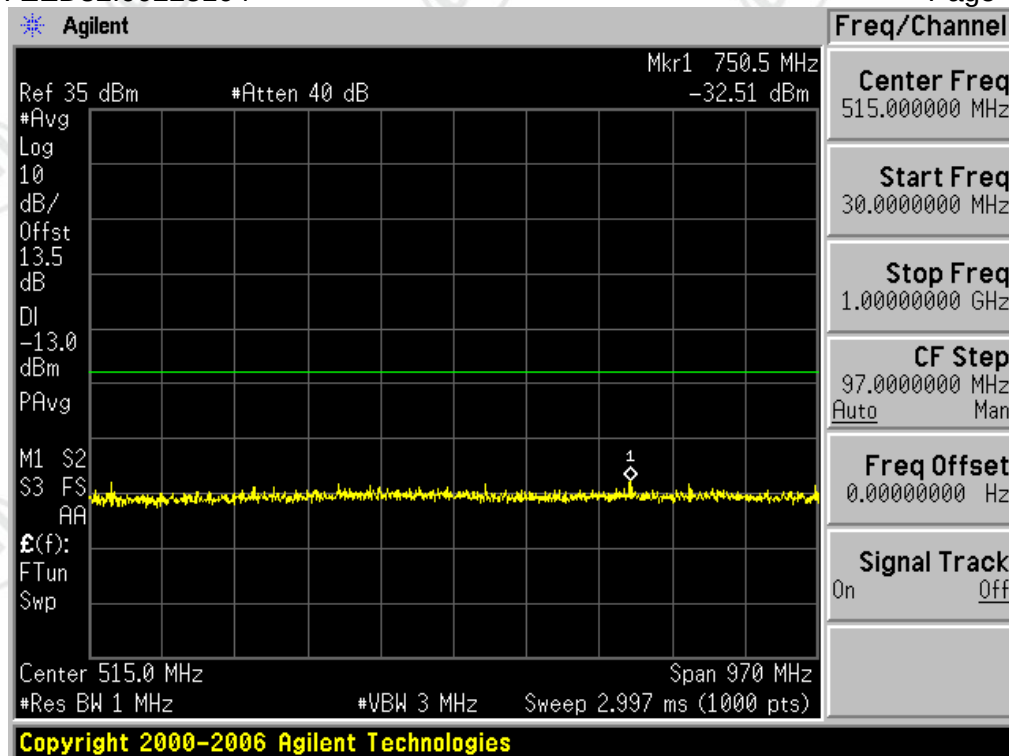


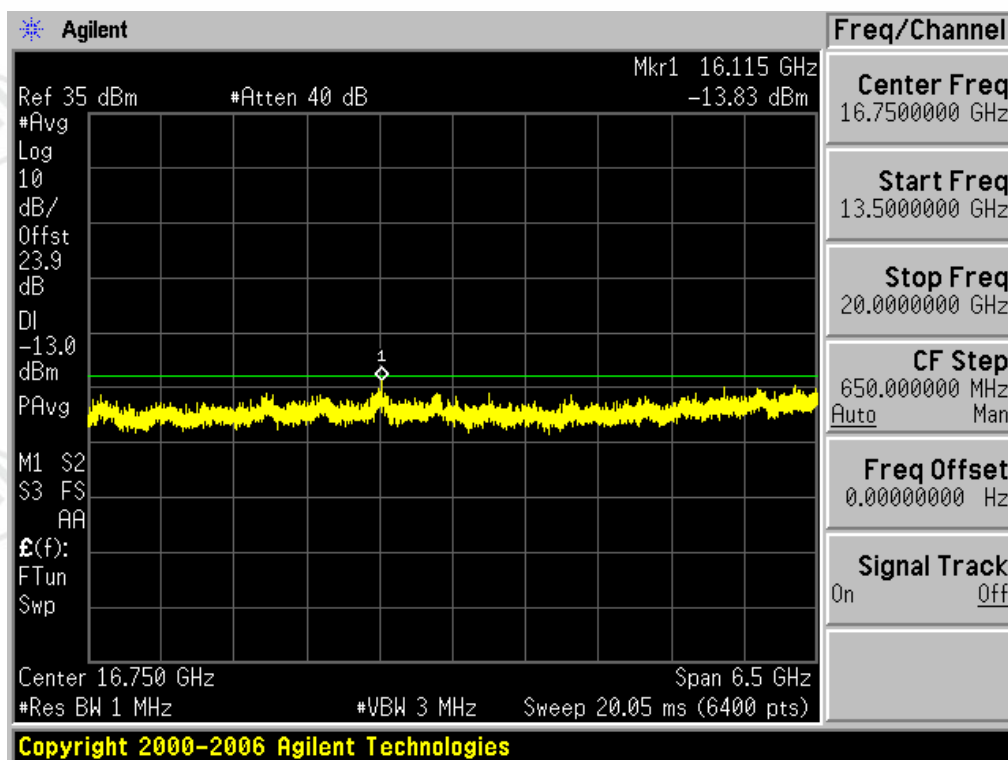
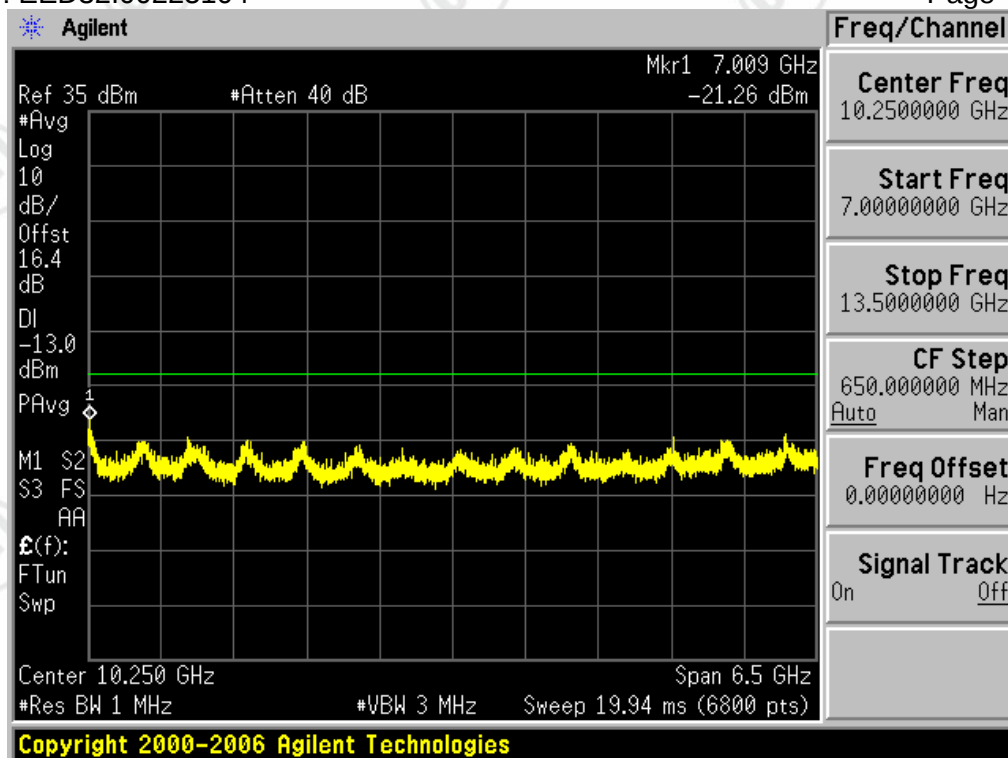




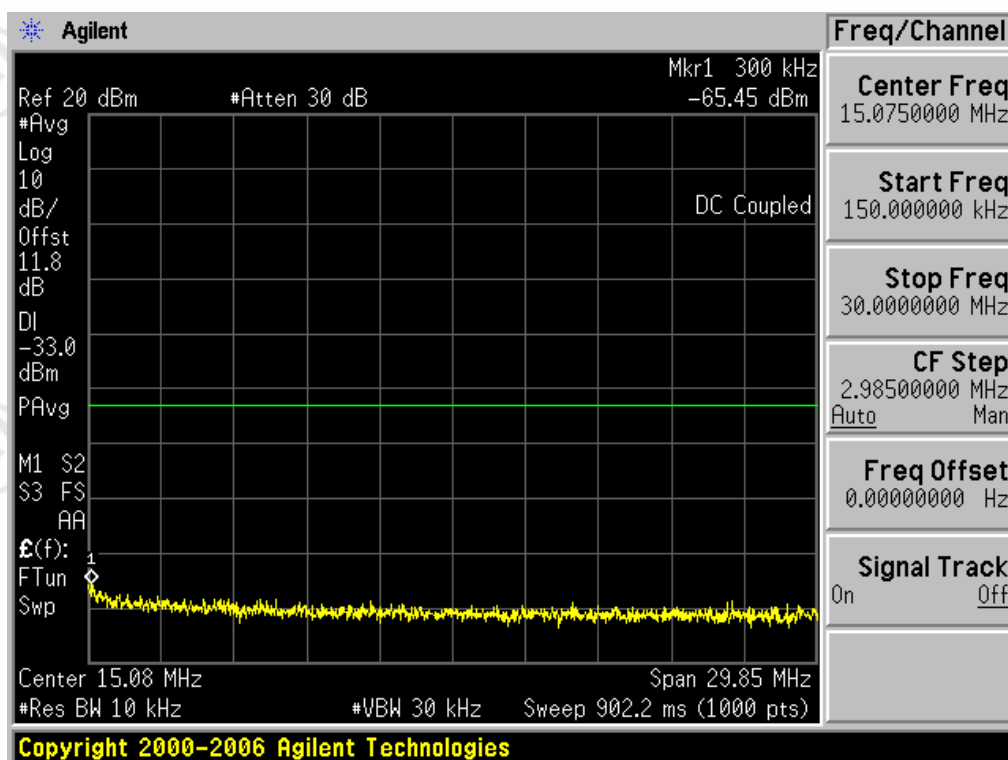
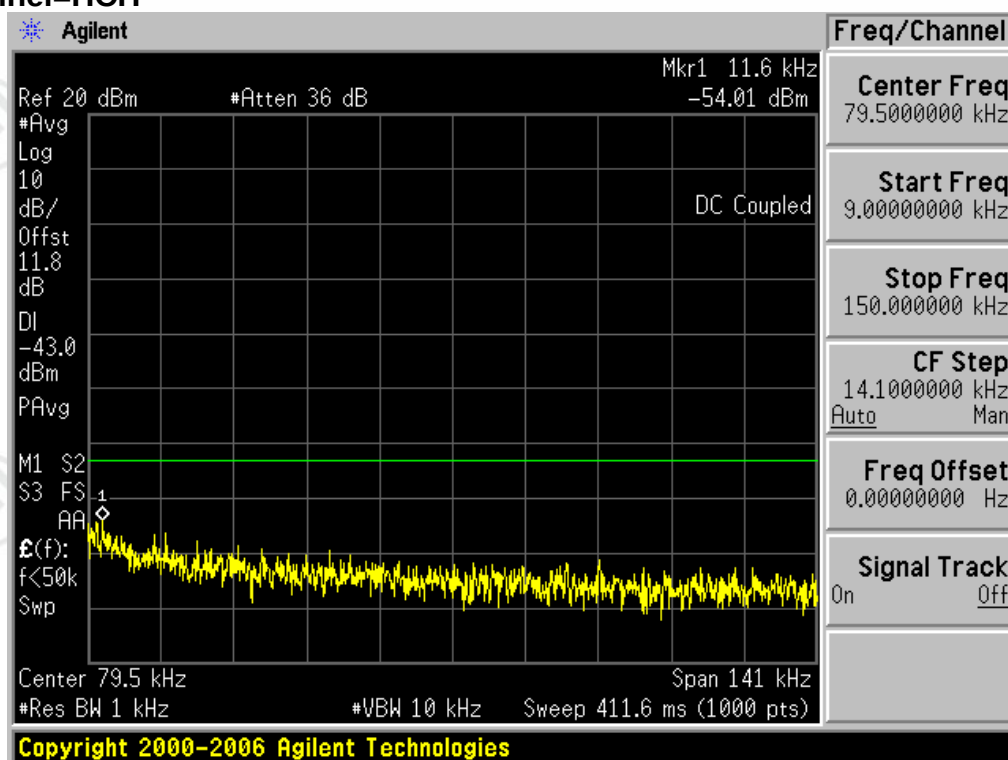
Test Channel=MCH

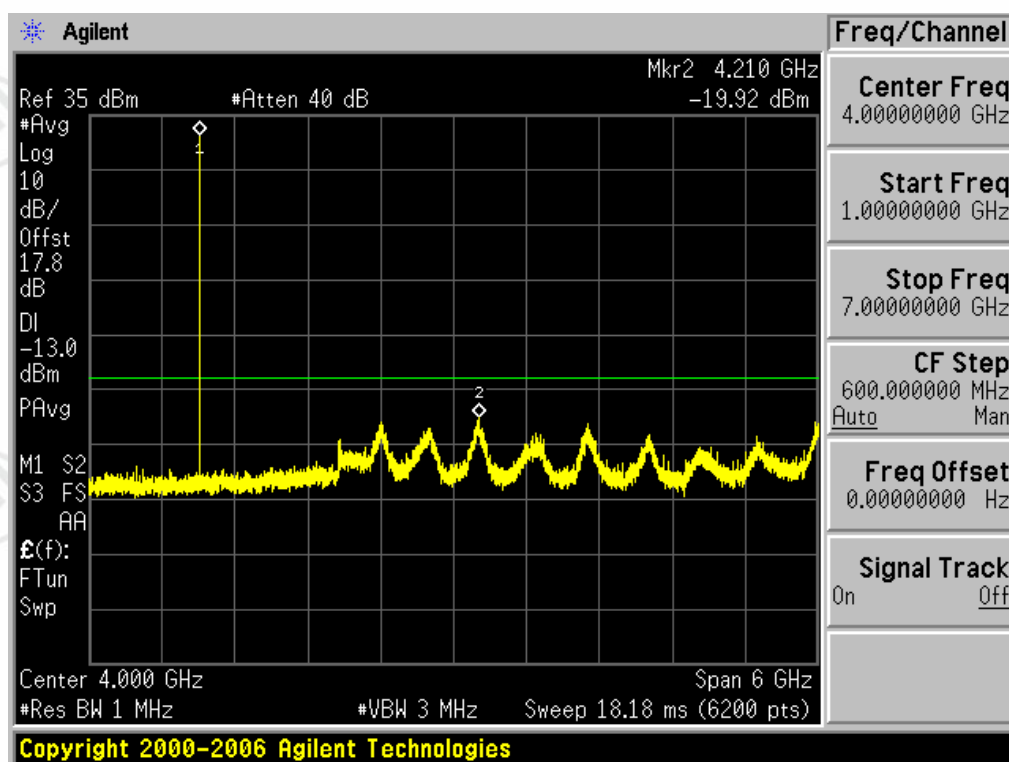
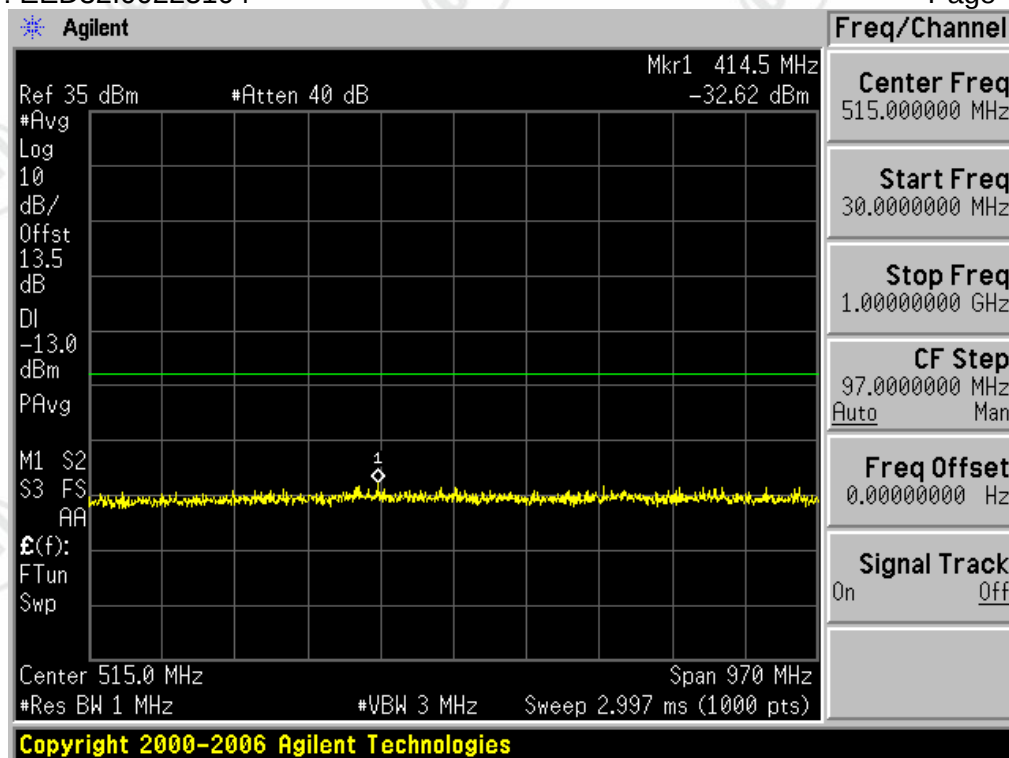


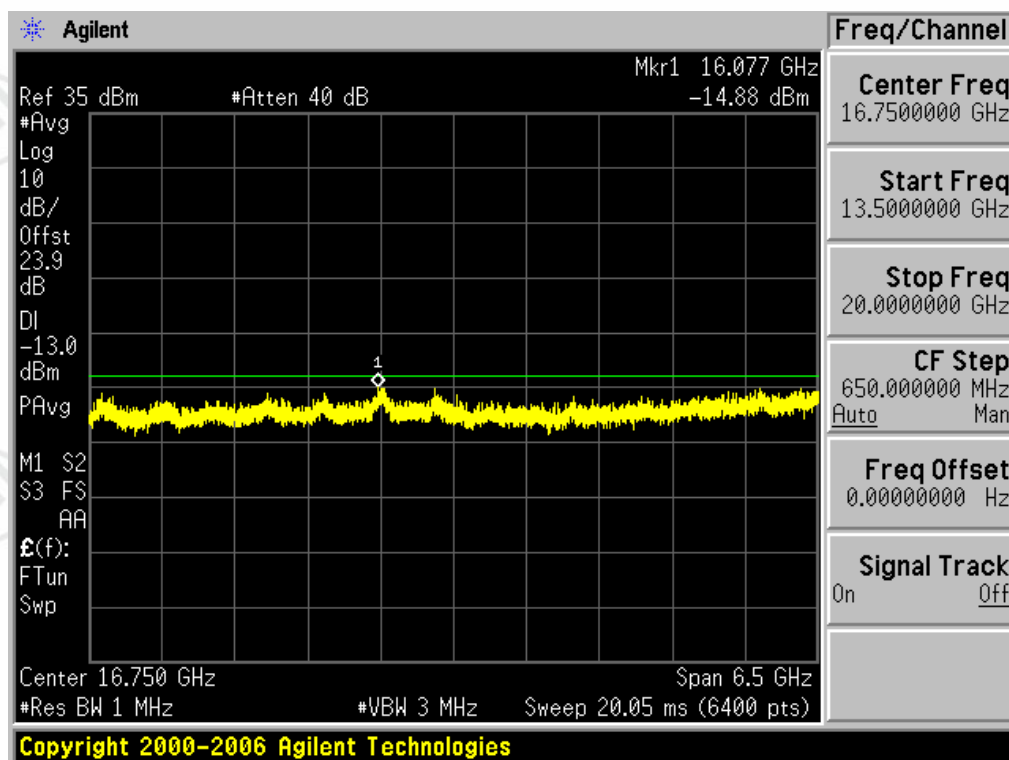
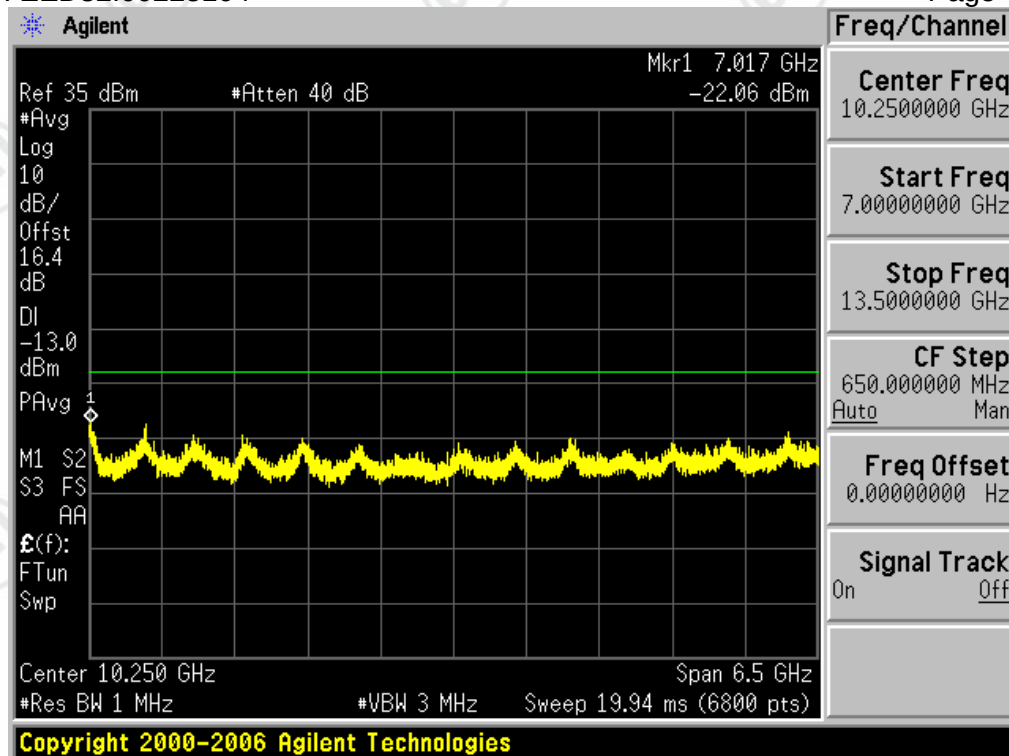




Test Channel=HCH

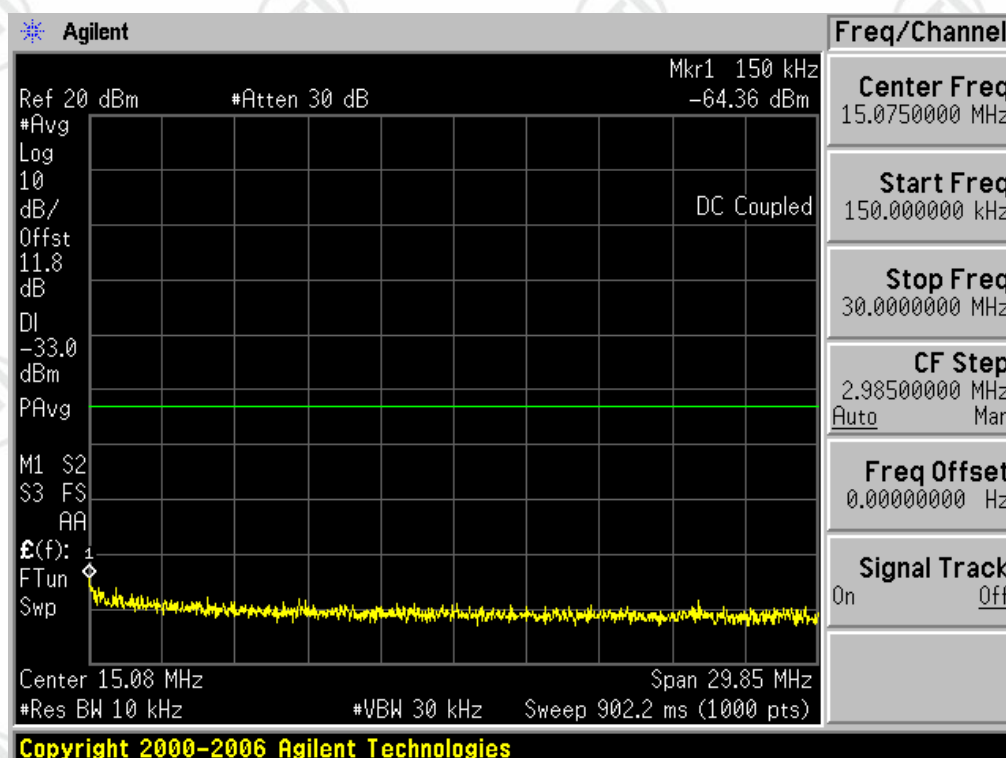
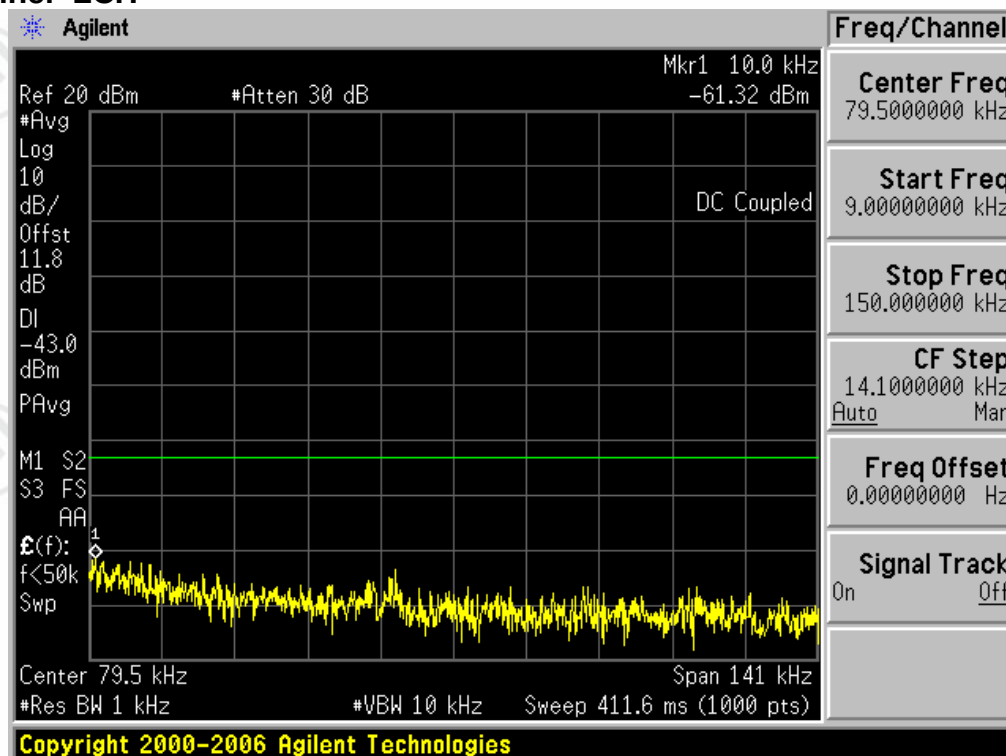


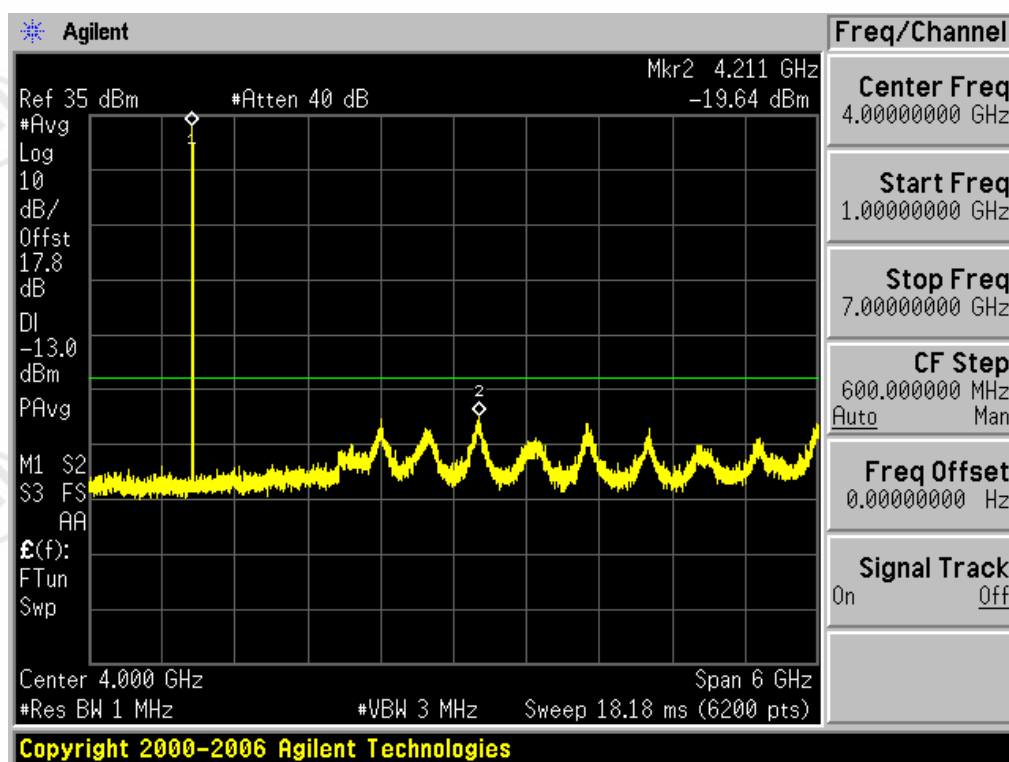
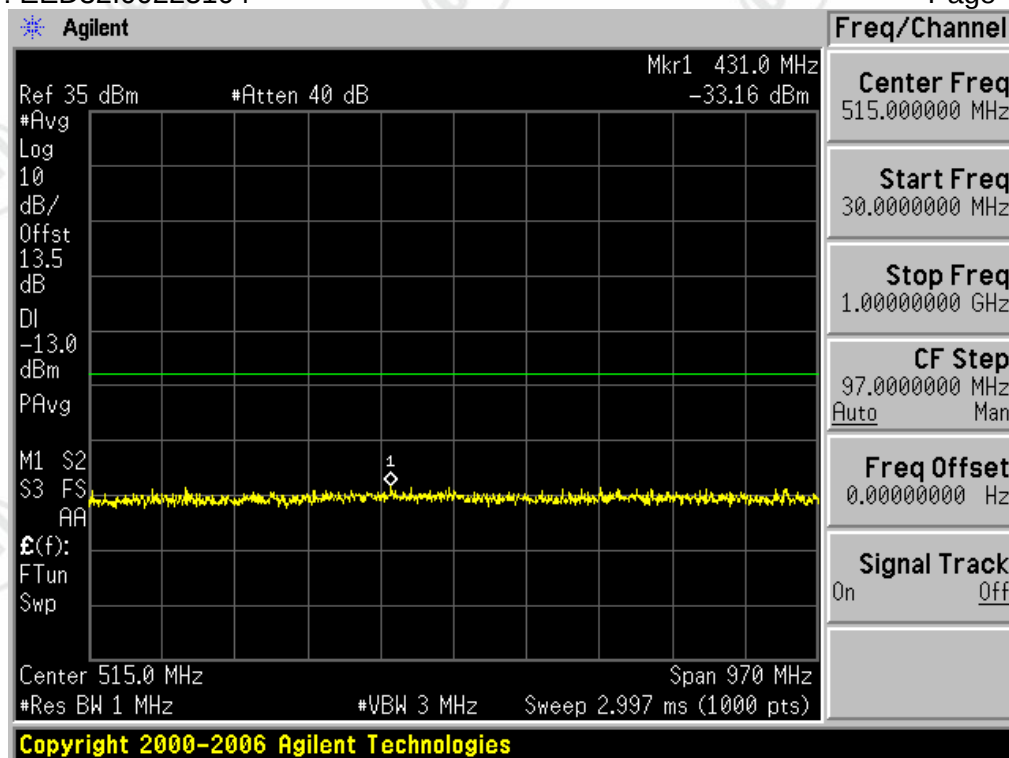


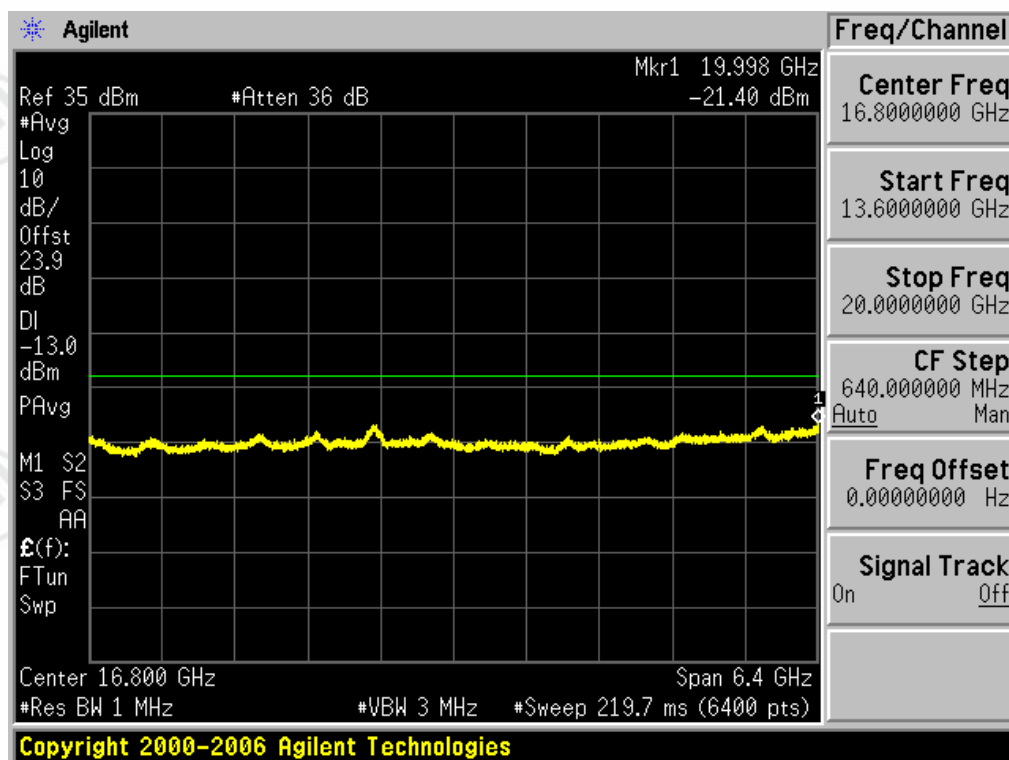
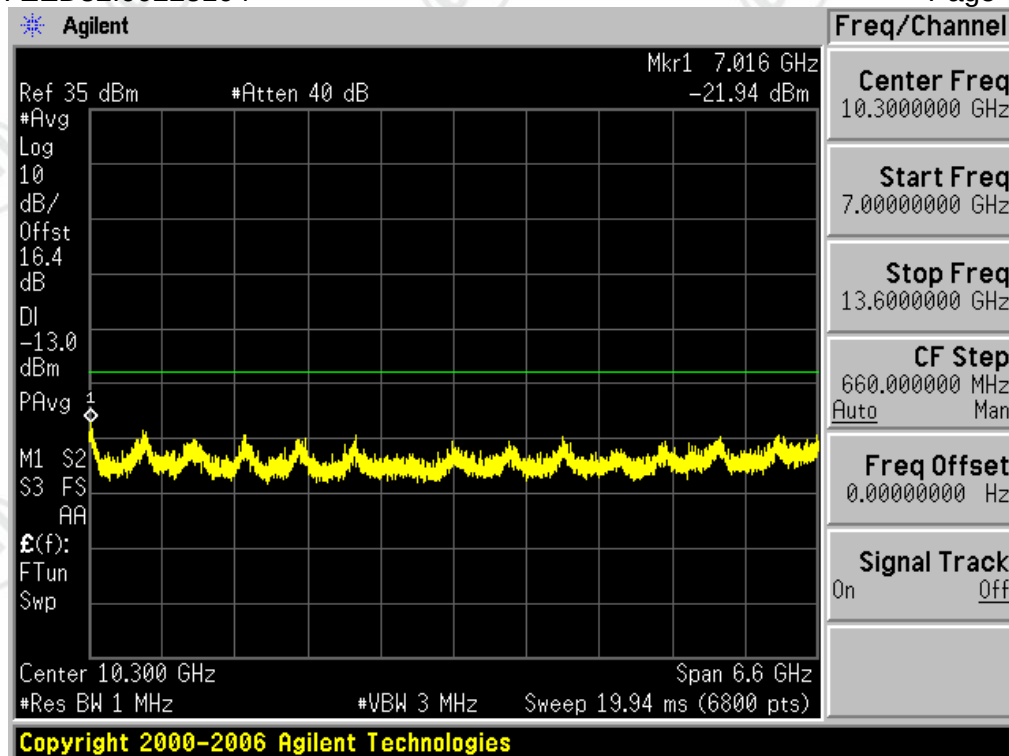


Test Mode=GSM/TM2

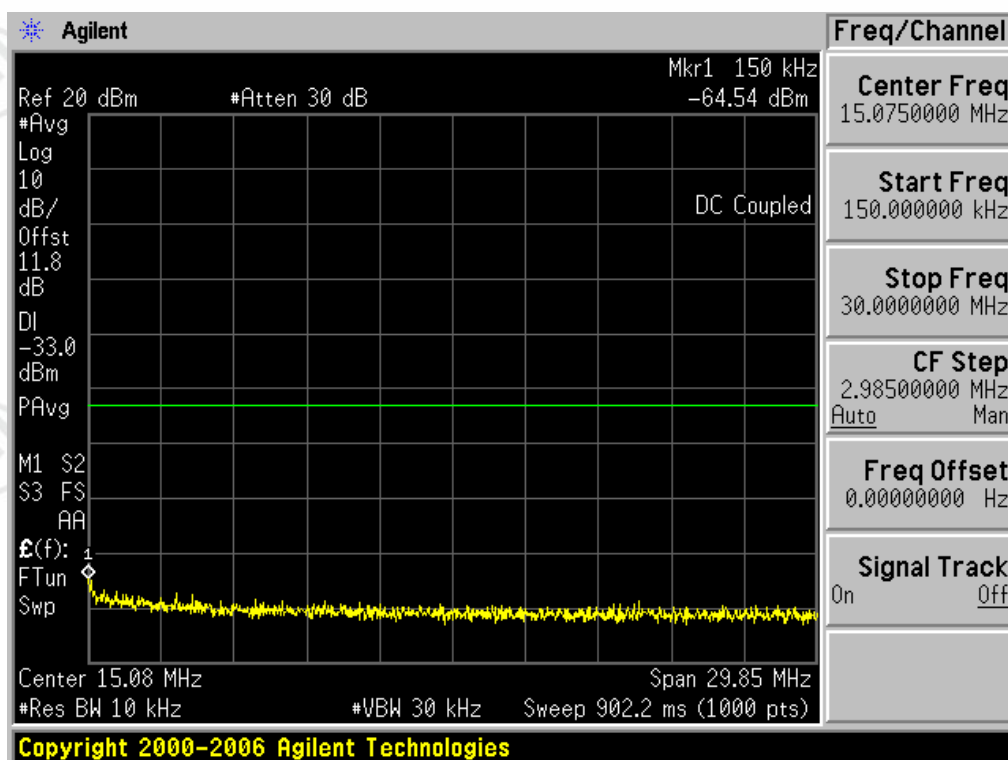
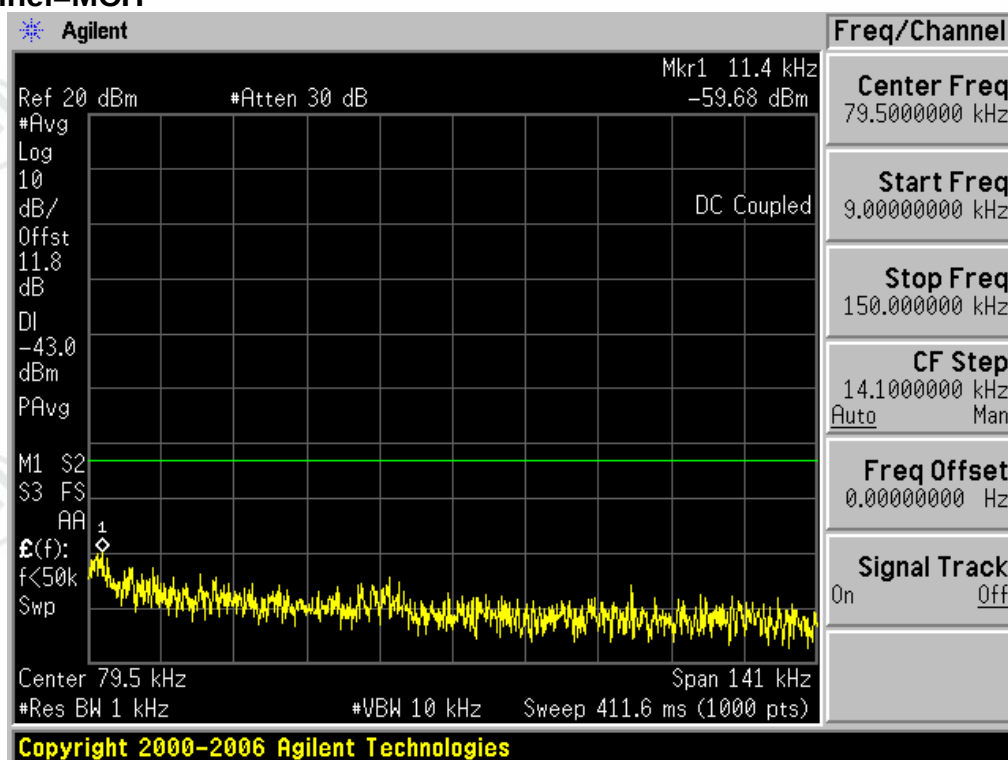
Test Channel=LCH

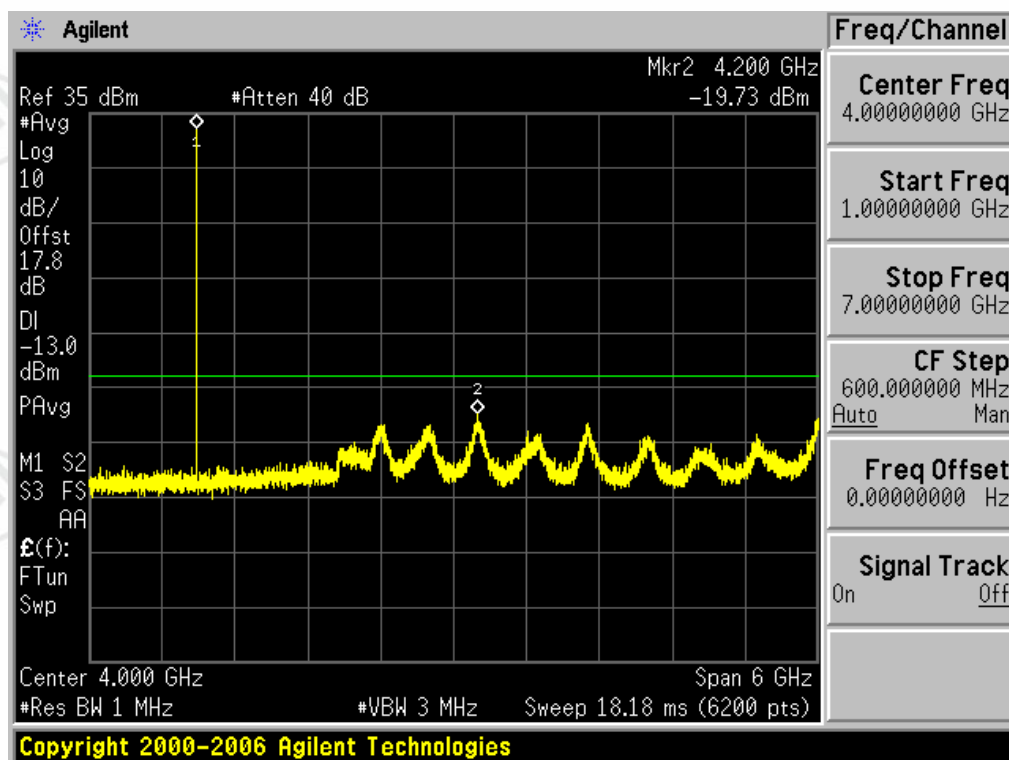
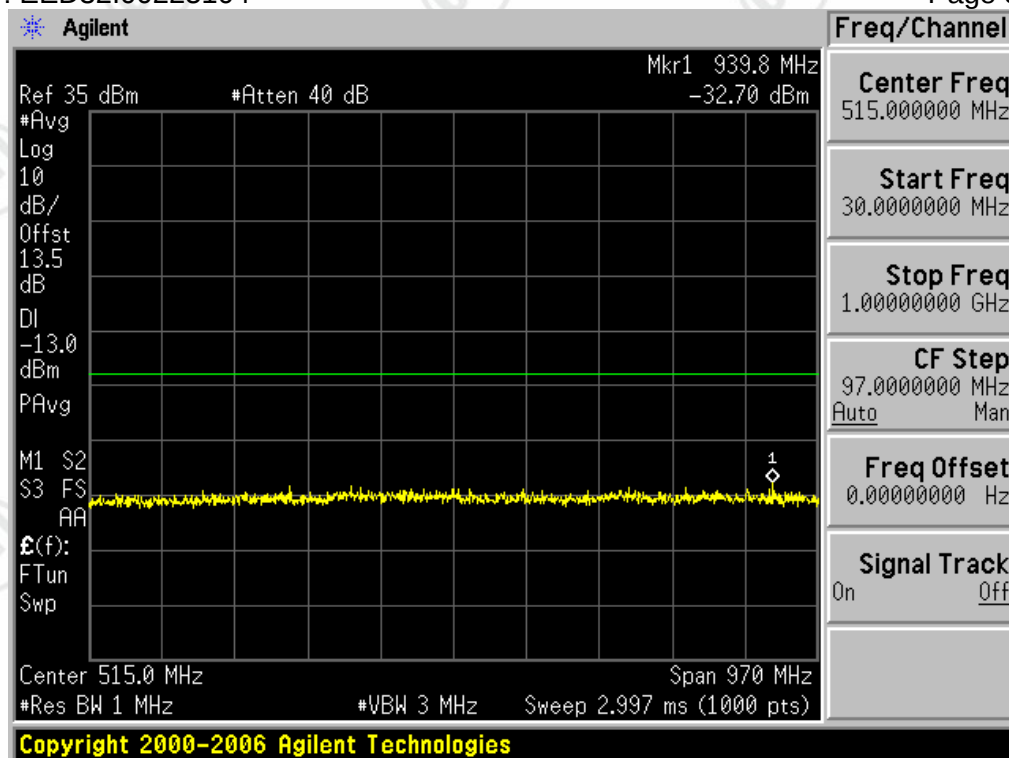


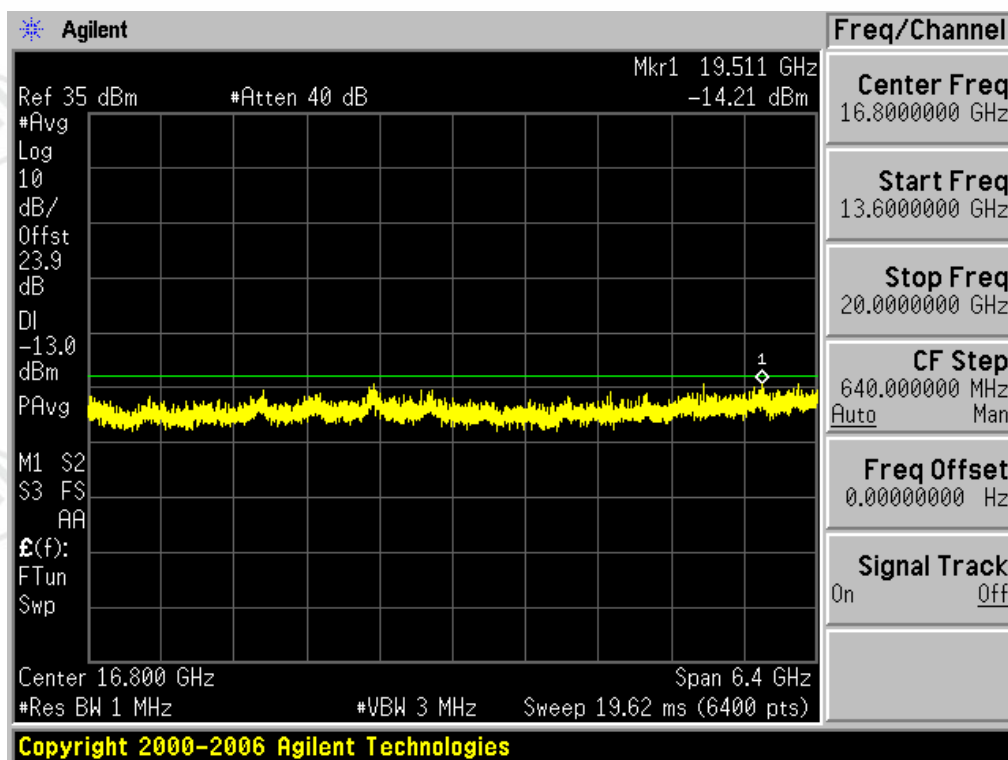
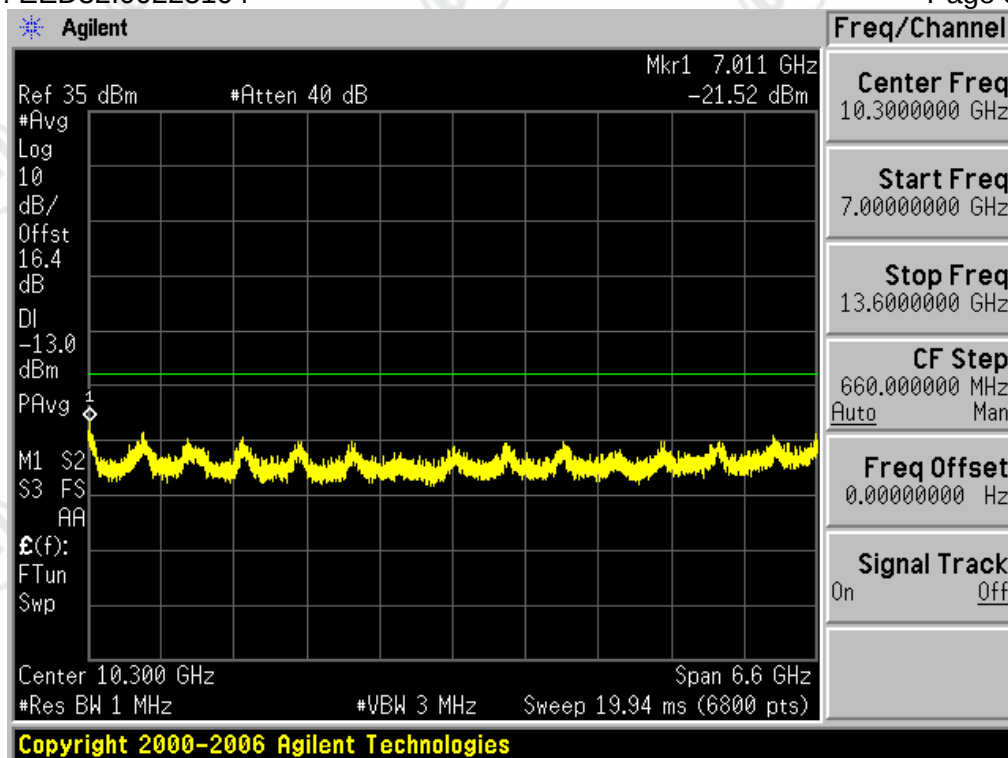




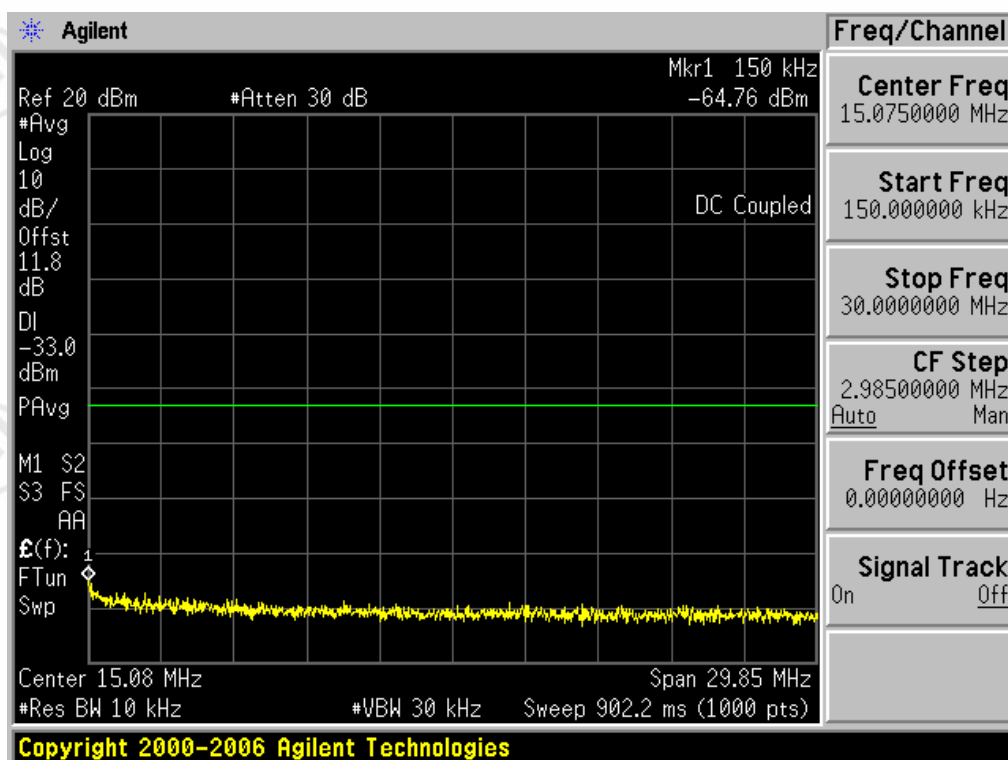
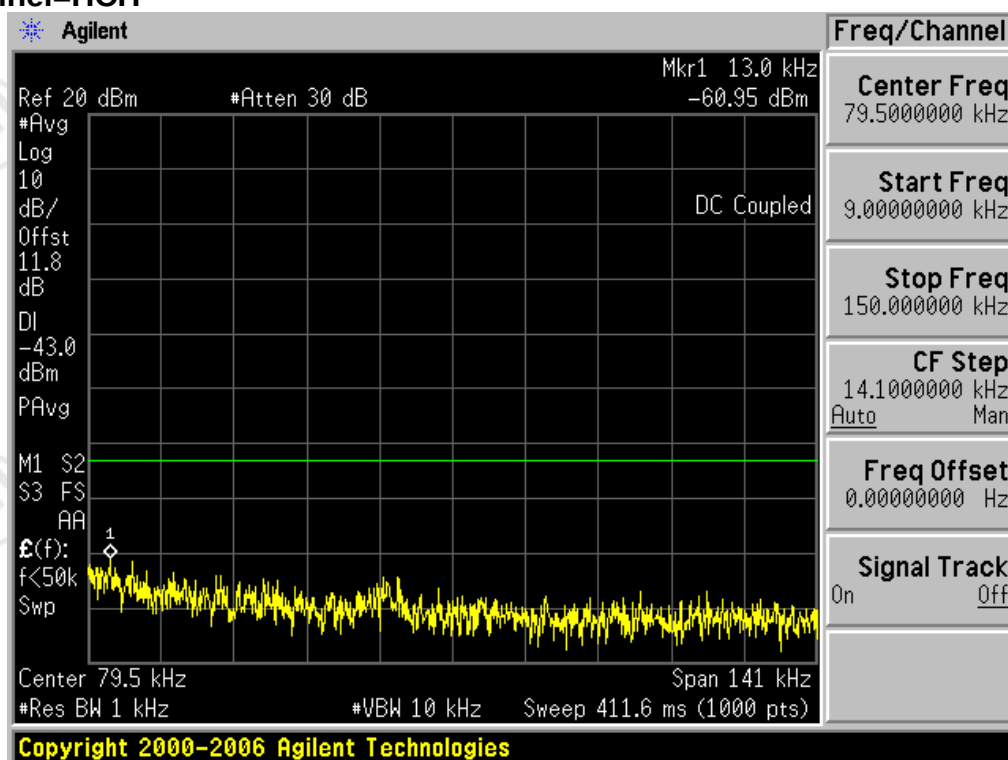
Test Channel=MCH

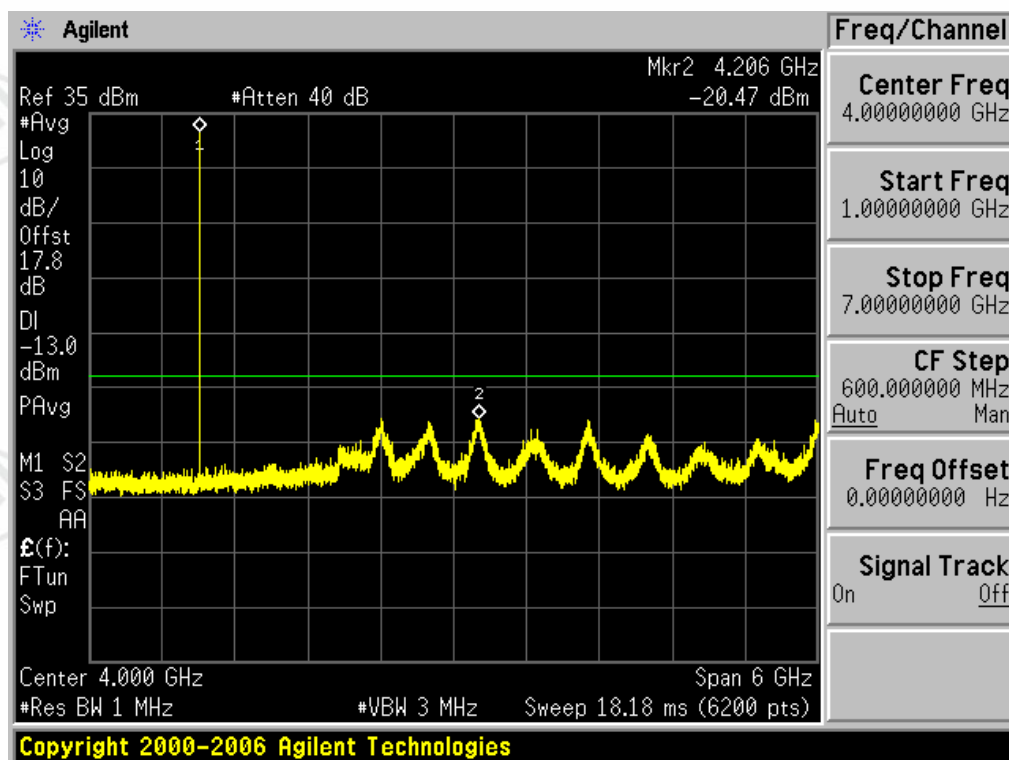
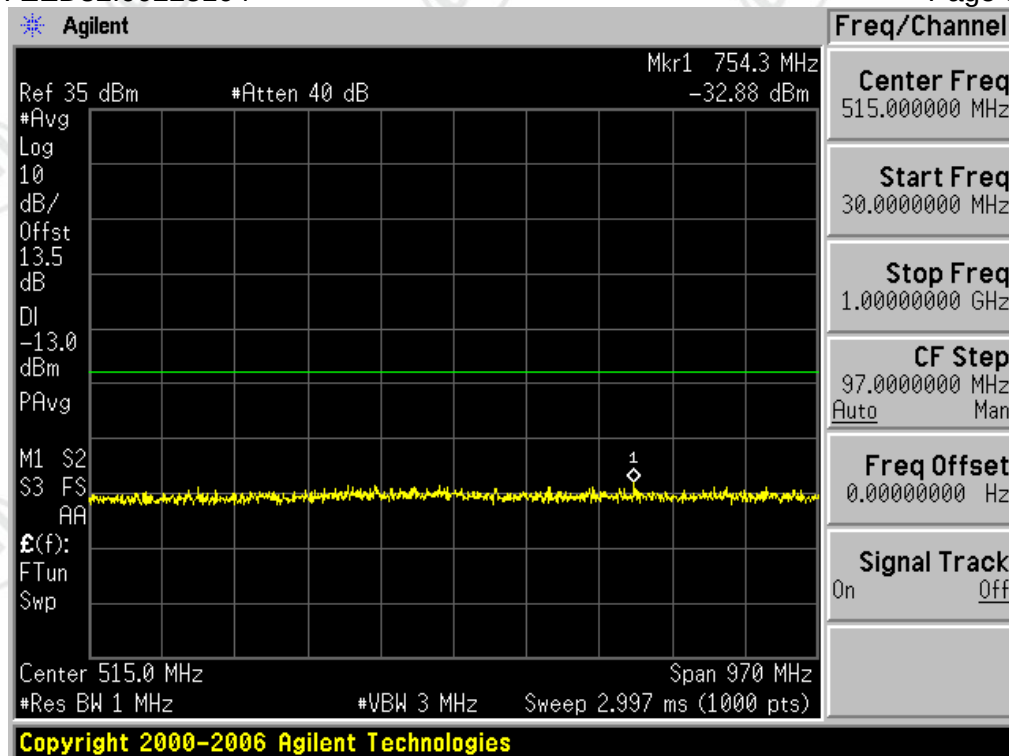


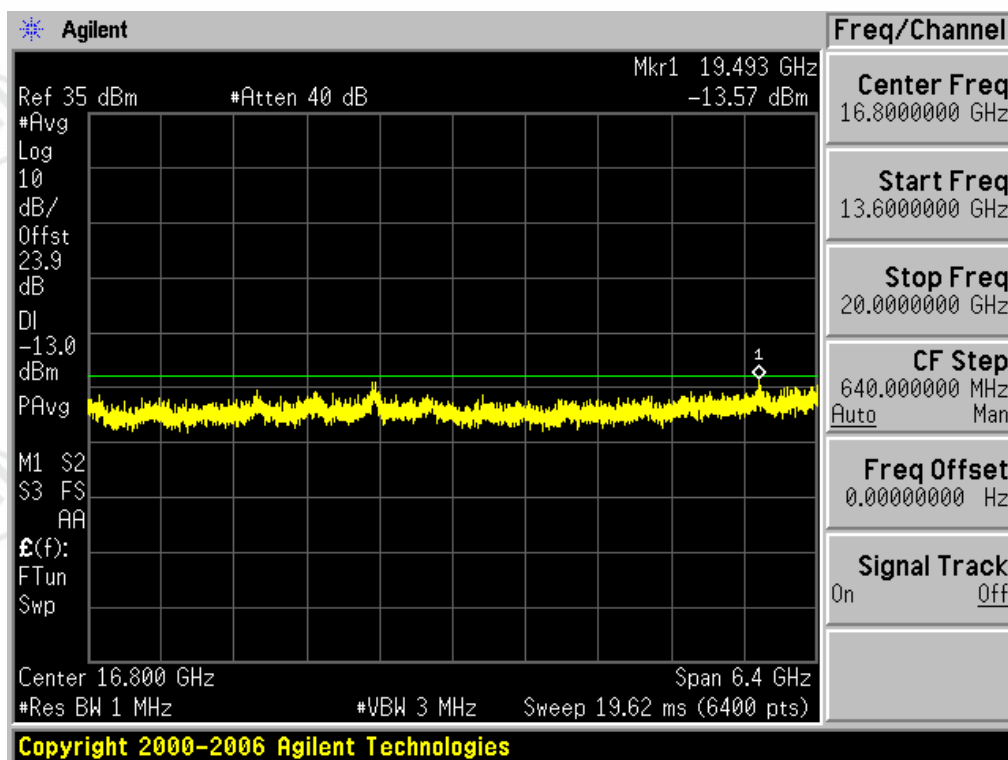
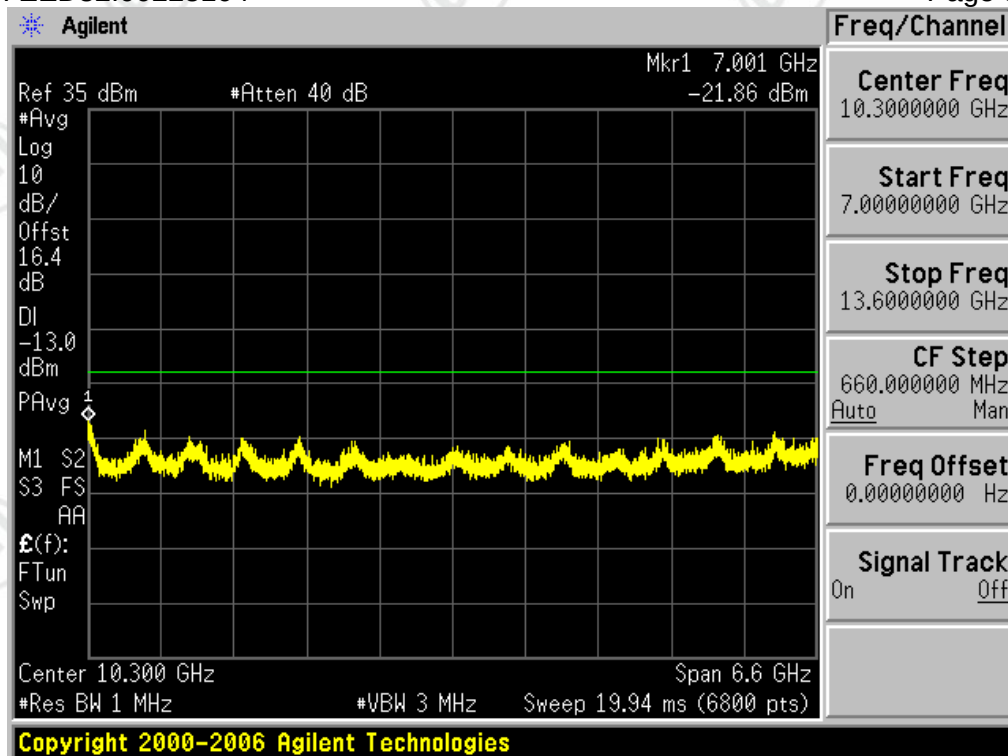




Test Channel=HCH





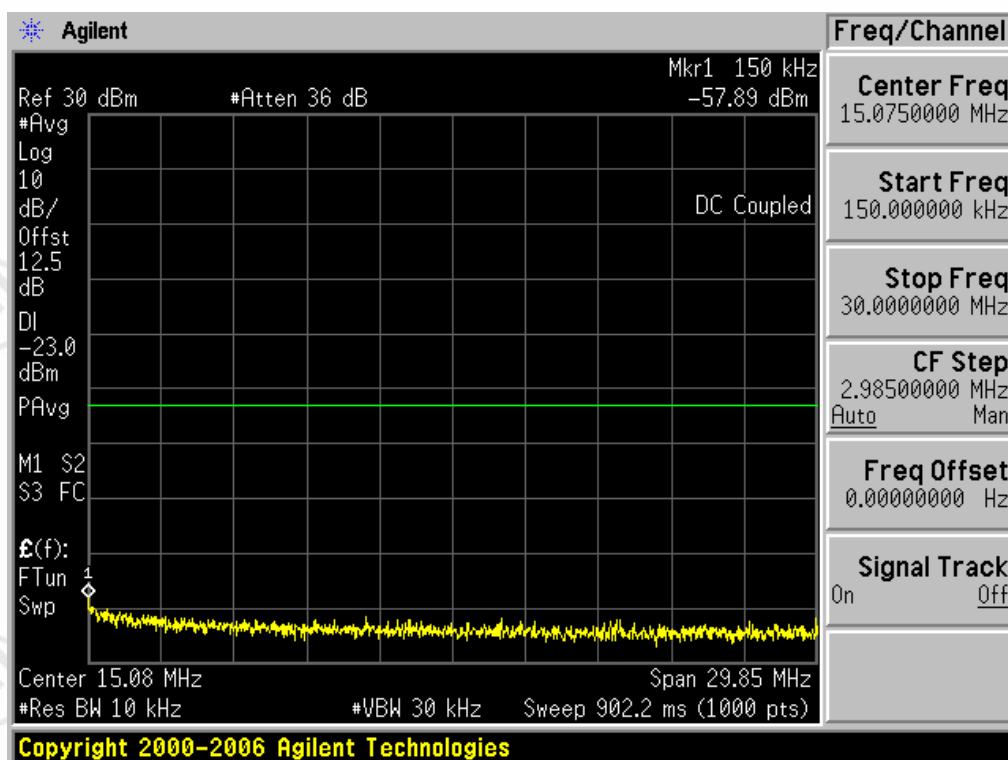
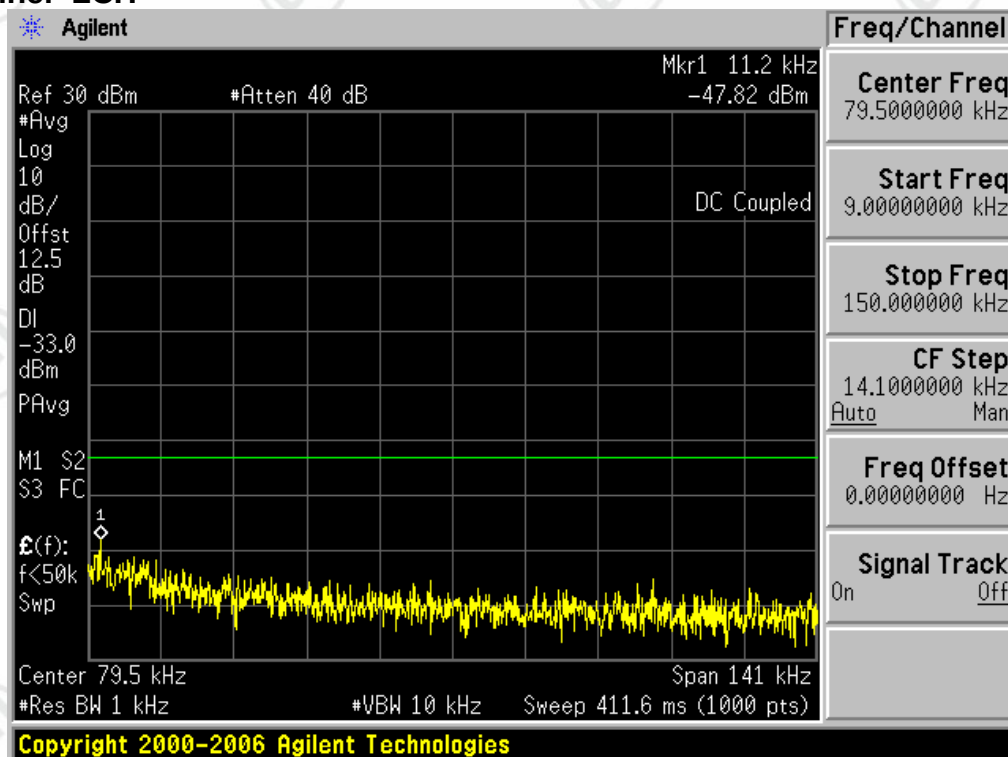


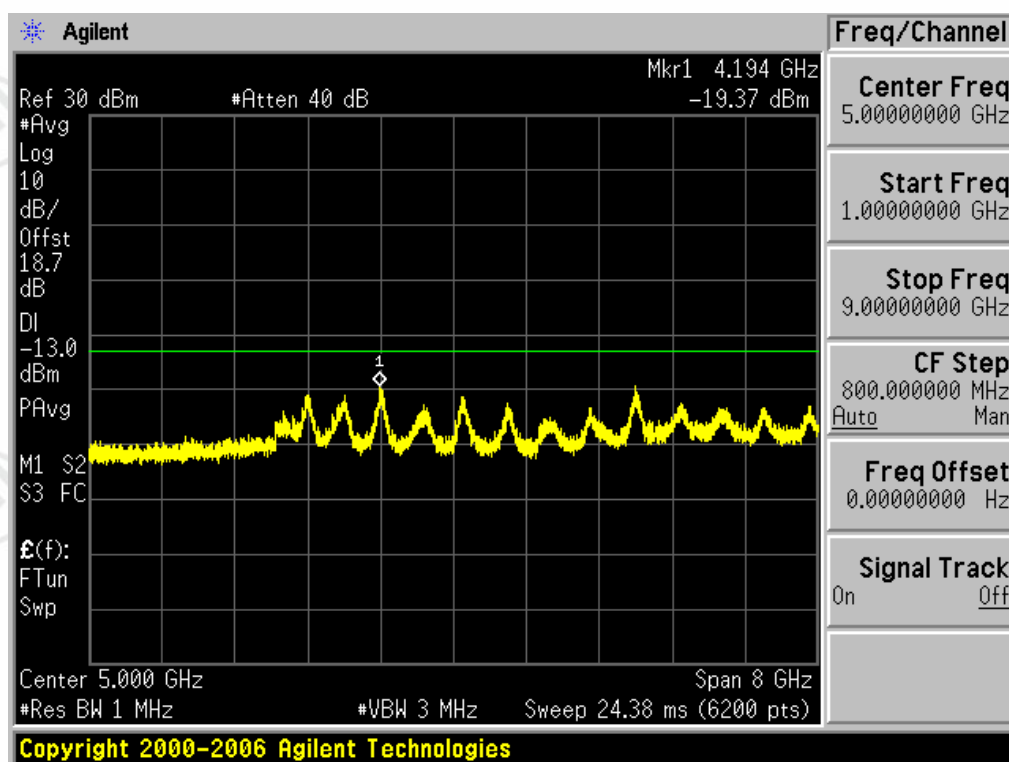
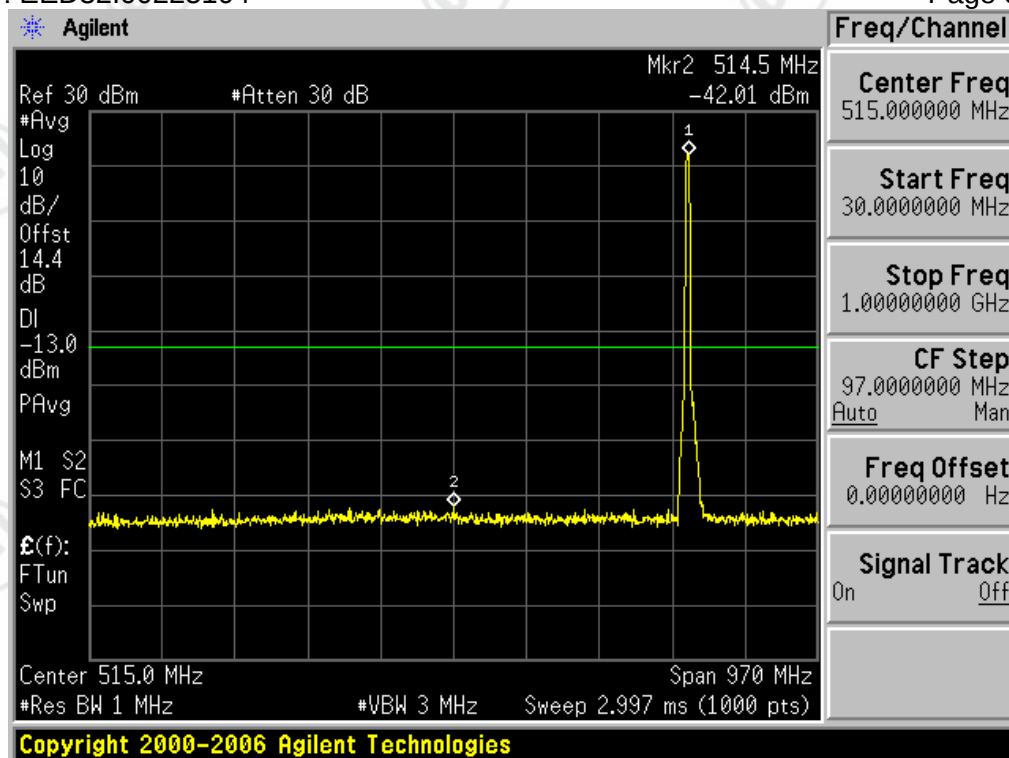
For WCDMA

Test Band=WCDMA850

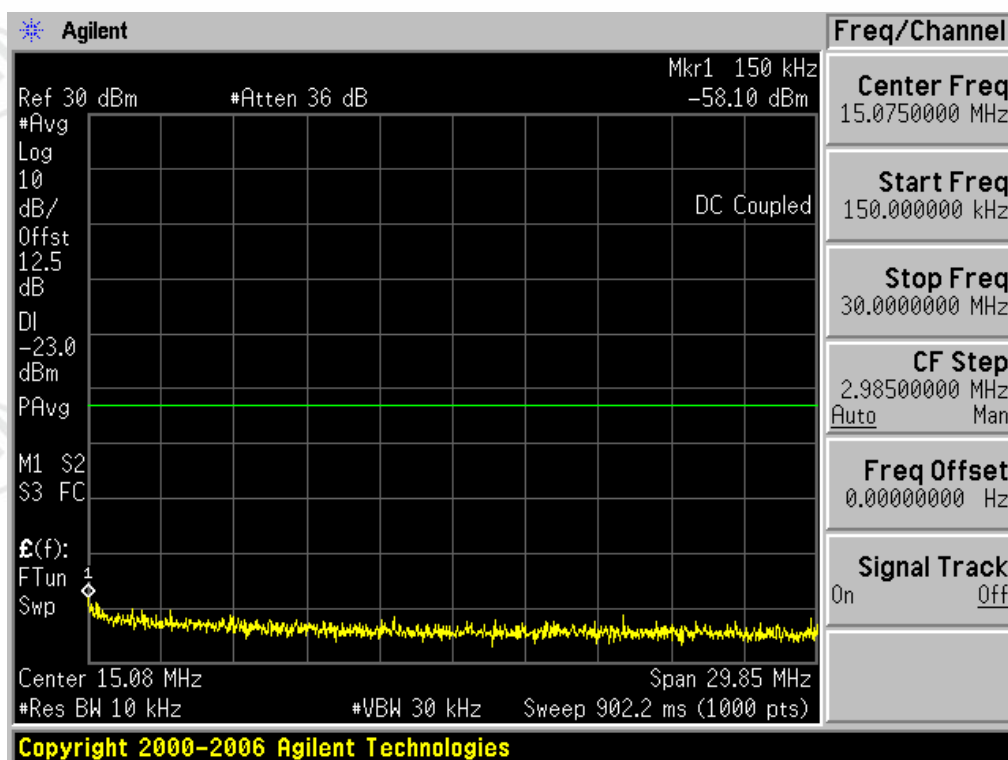
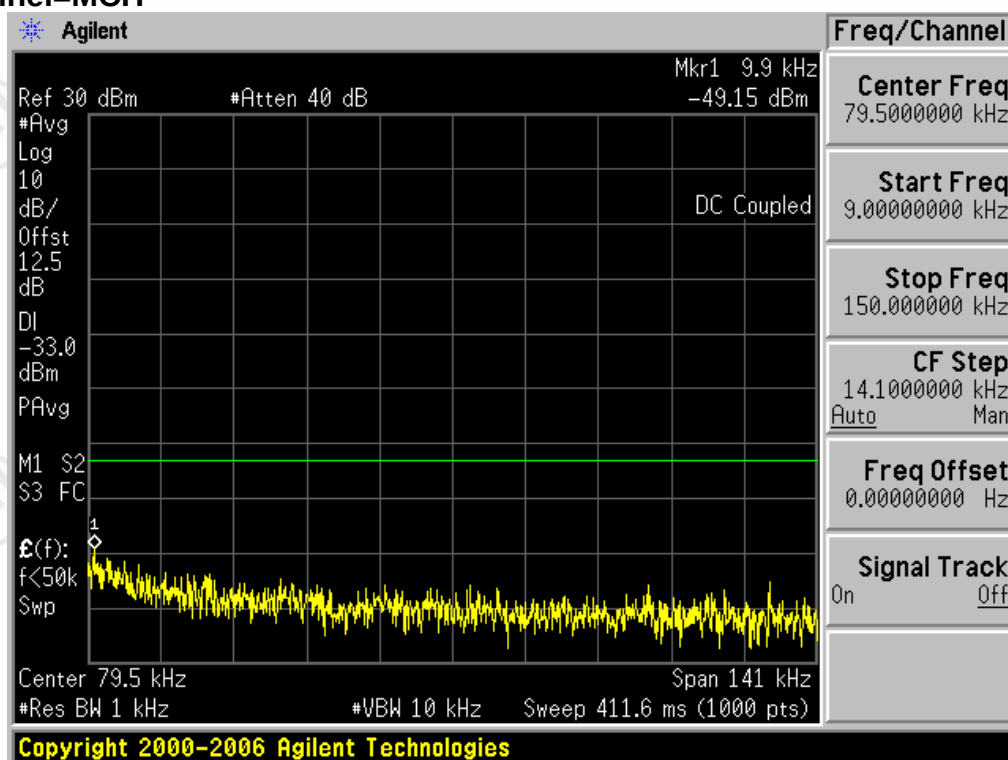
Test Mode=UMTS/TM1

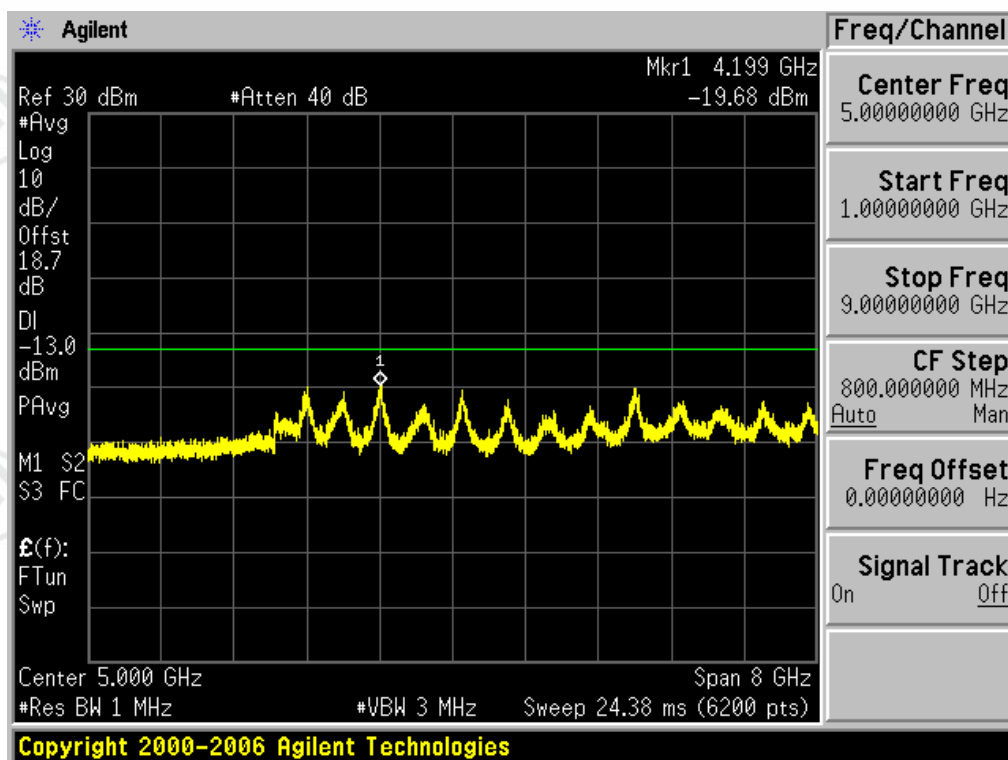
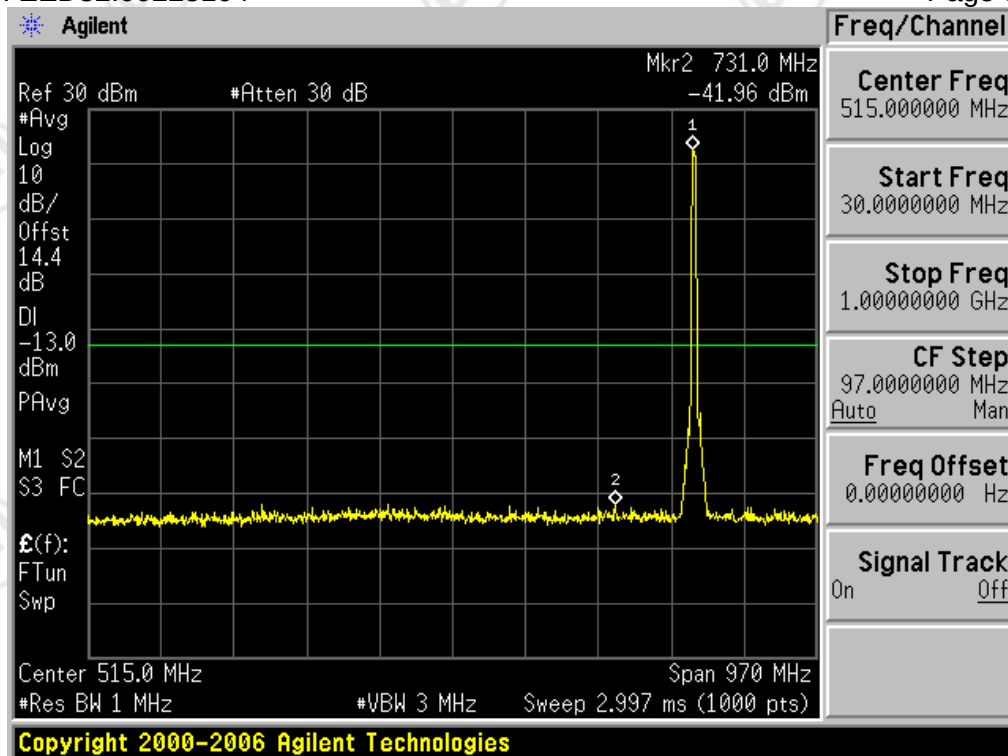
Test Channel=LCH



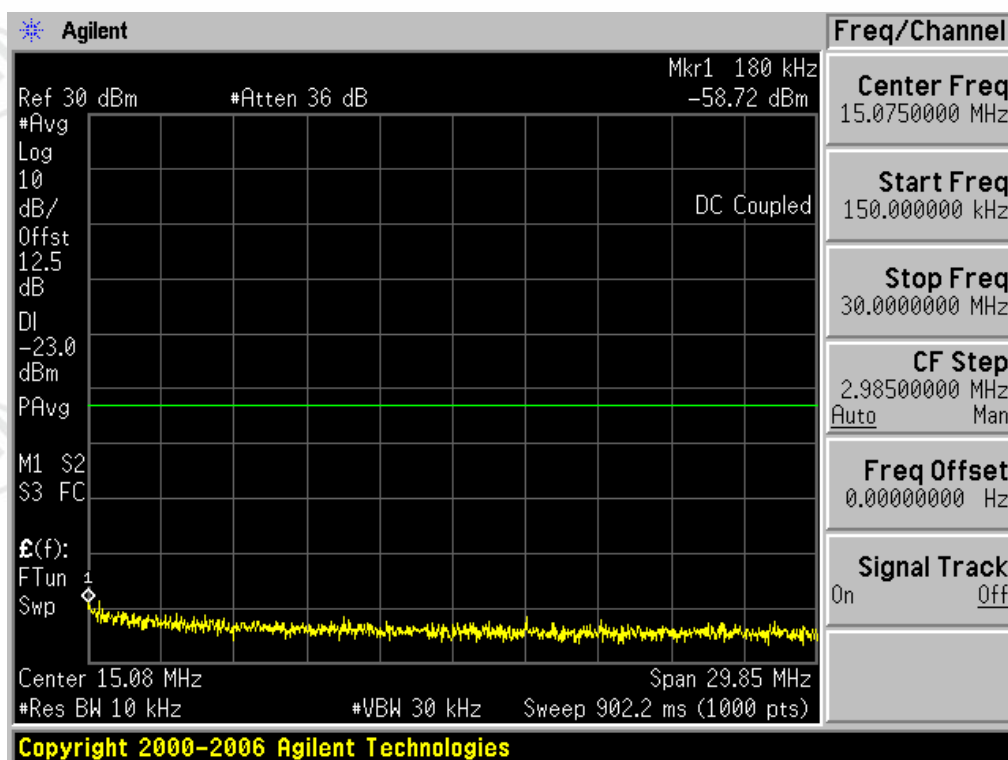
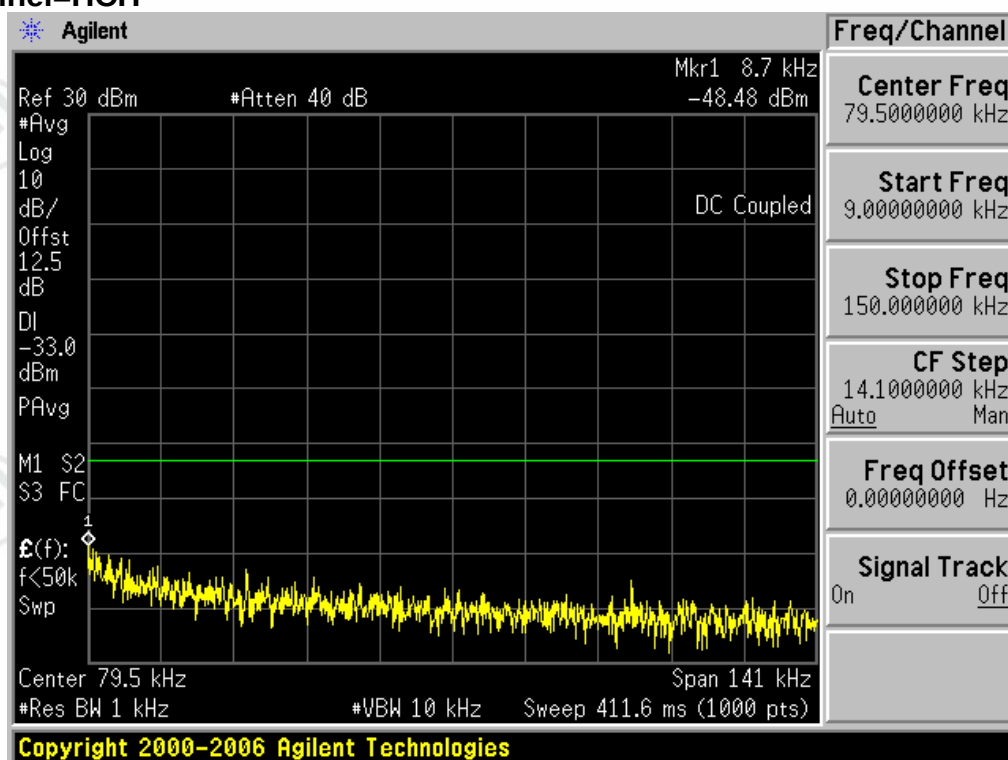


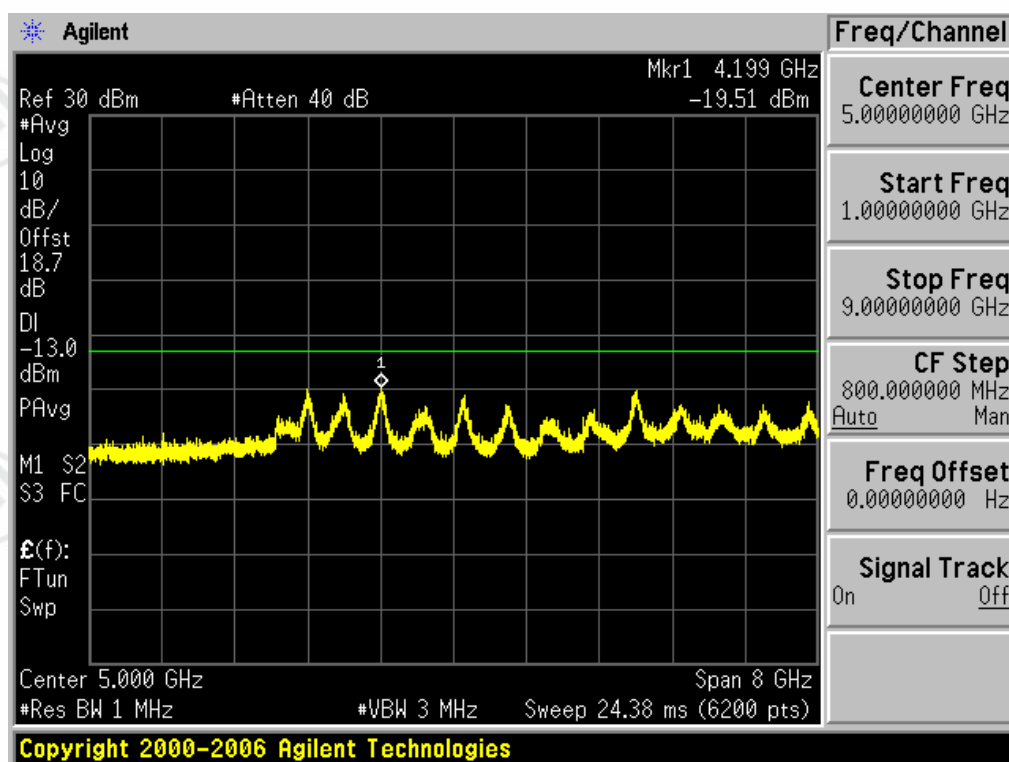
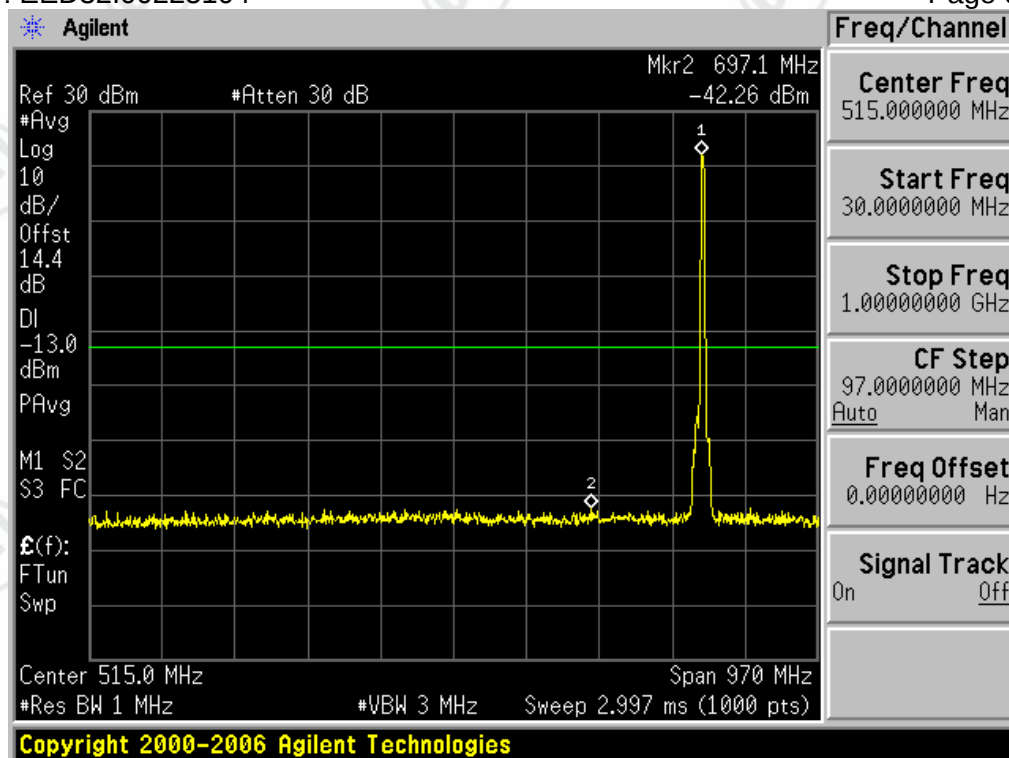
Test Channel=MCH





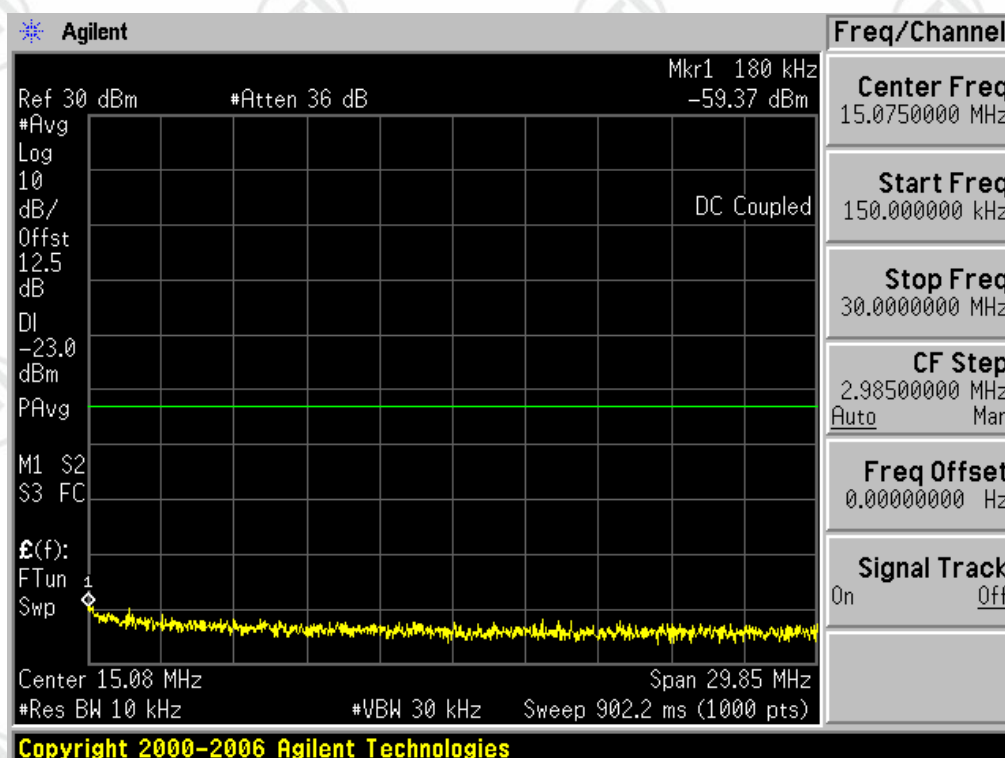
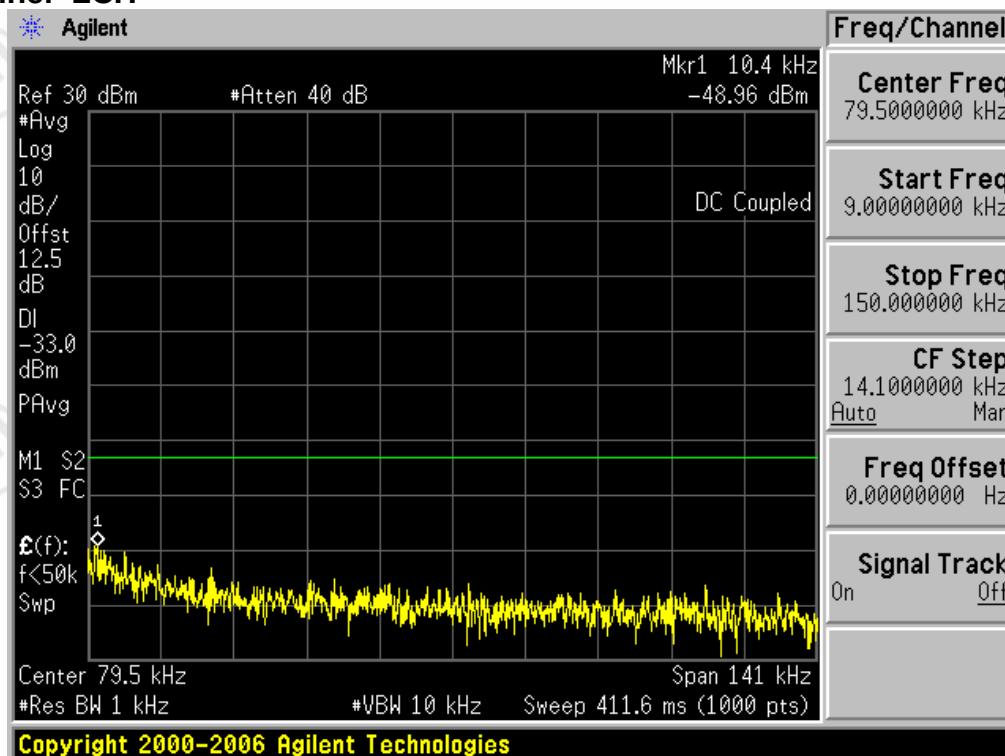
Test Channel=HCH

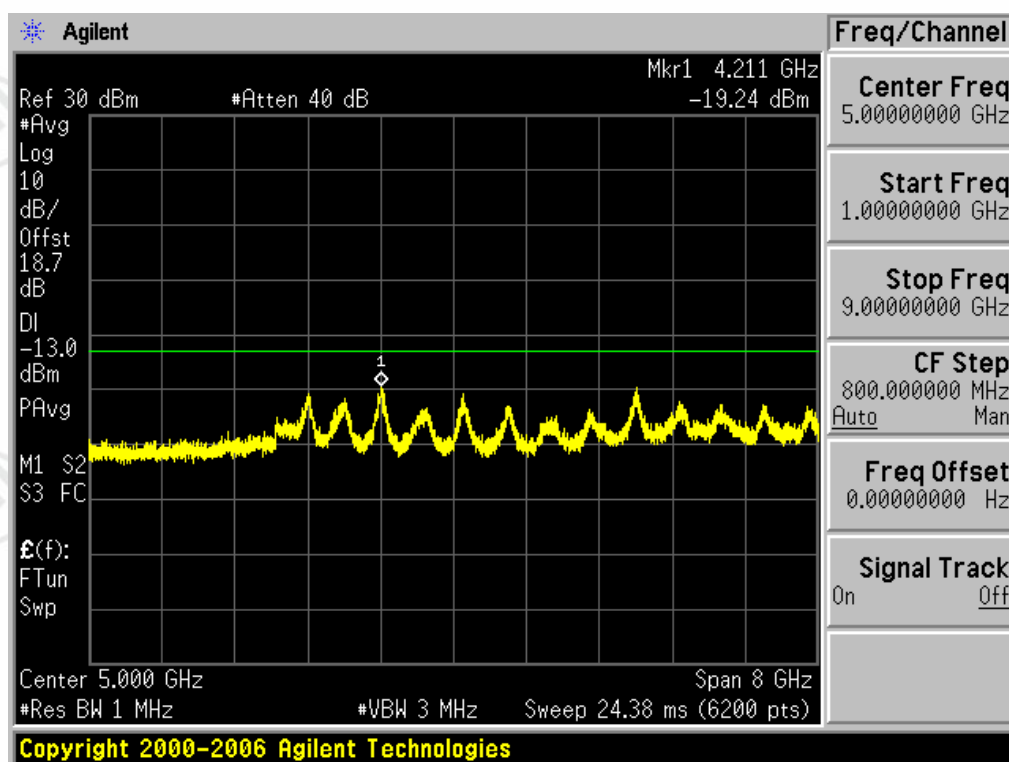
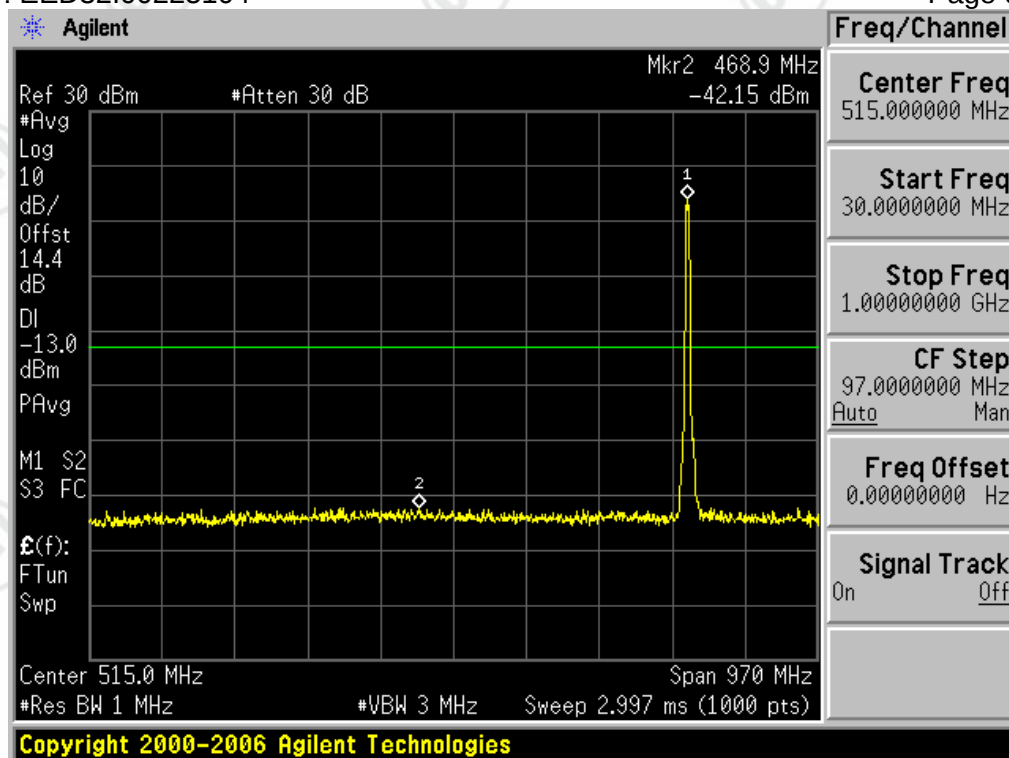




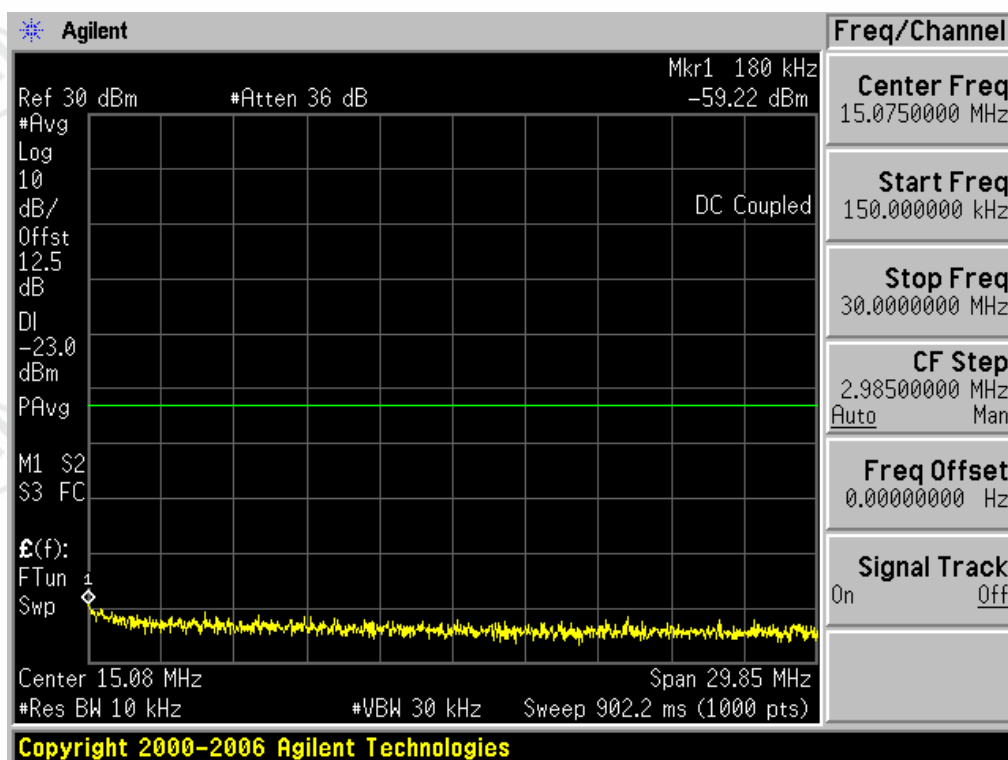
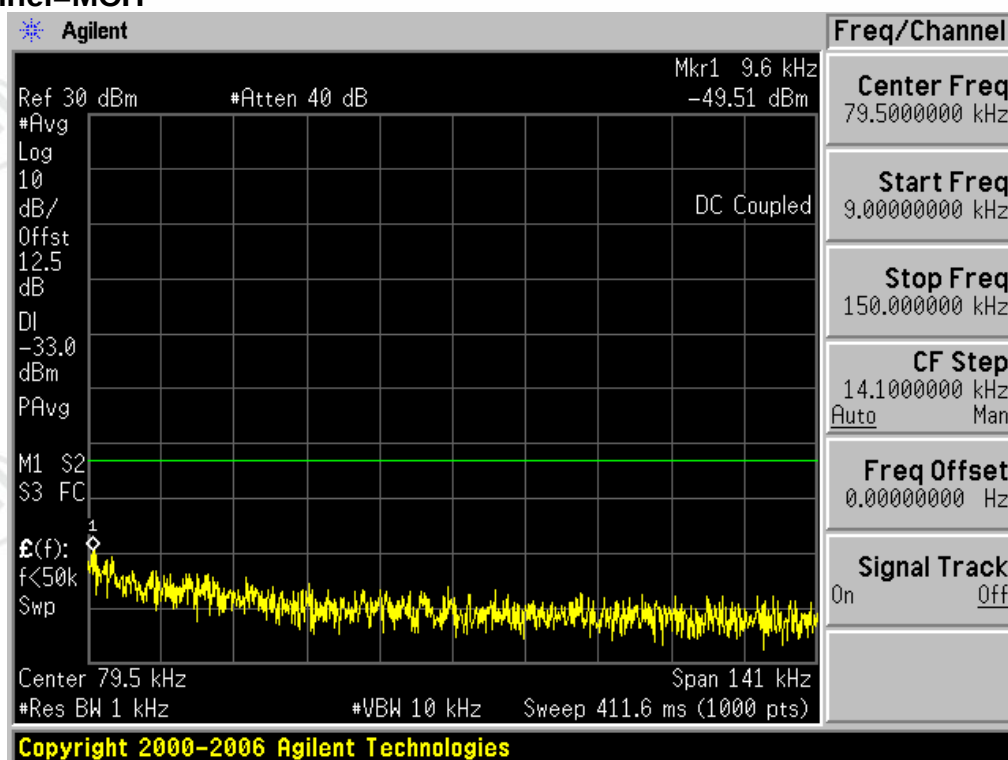
Test Mode=UMTS/TM2

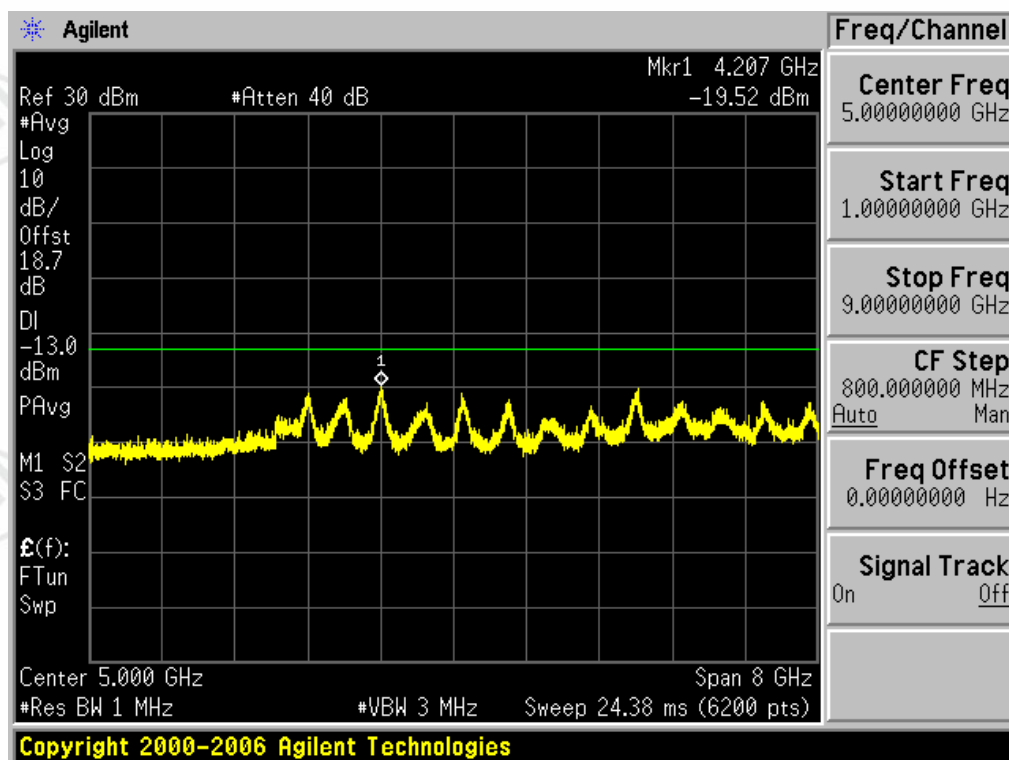
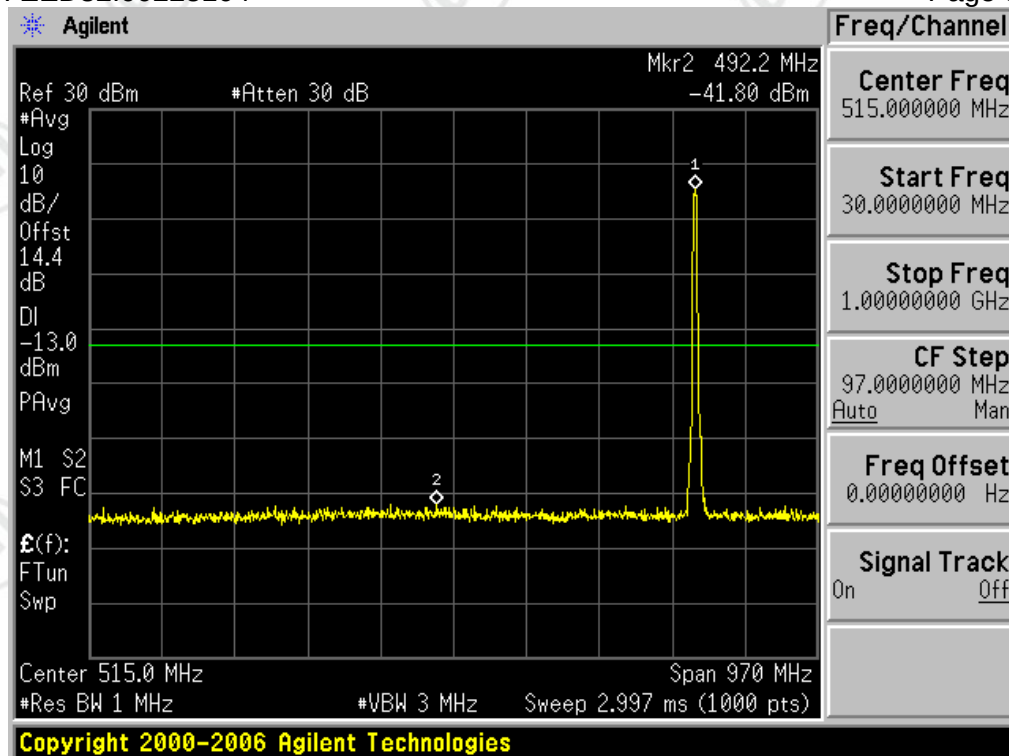
Test Channel=LCH



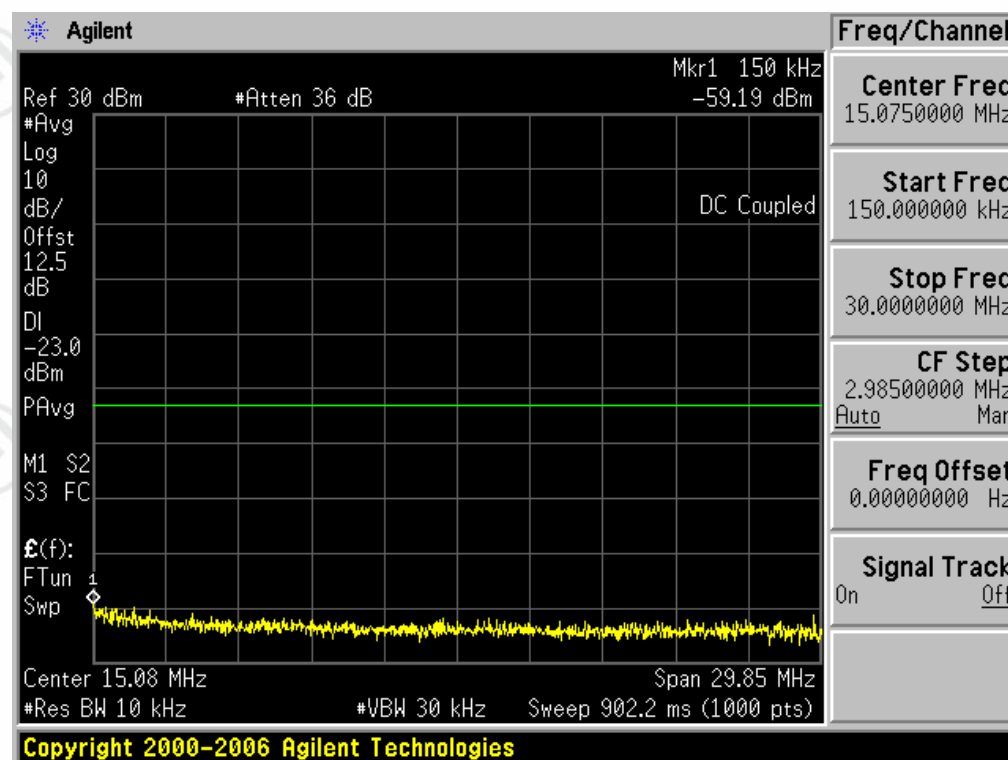
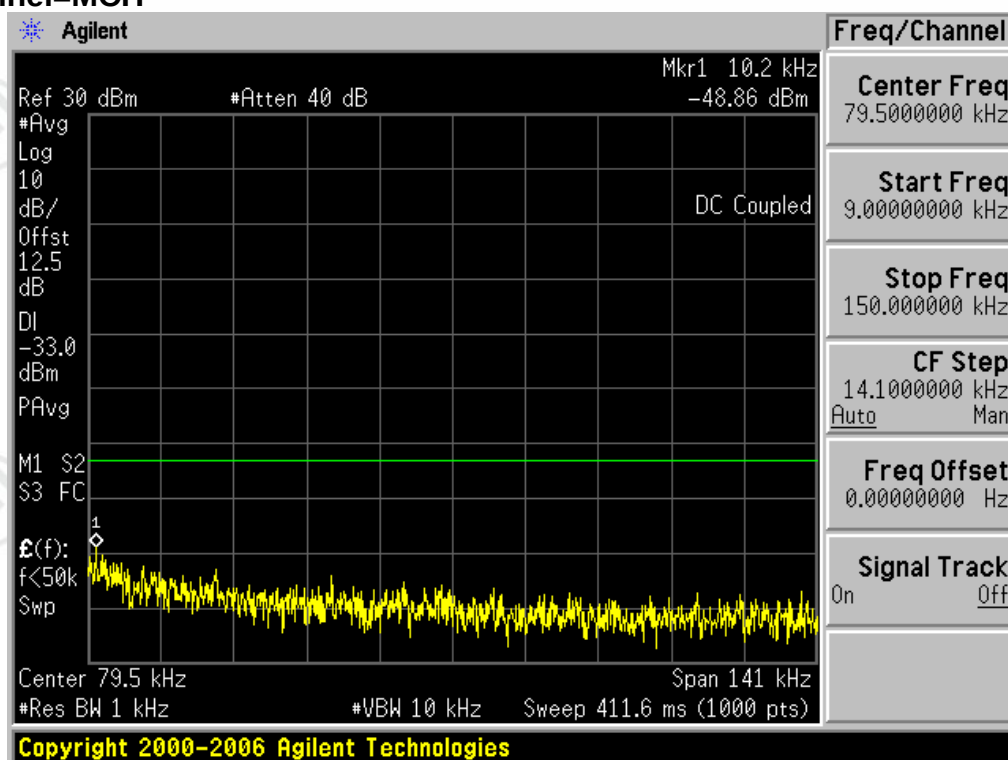


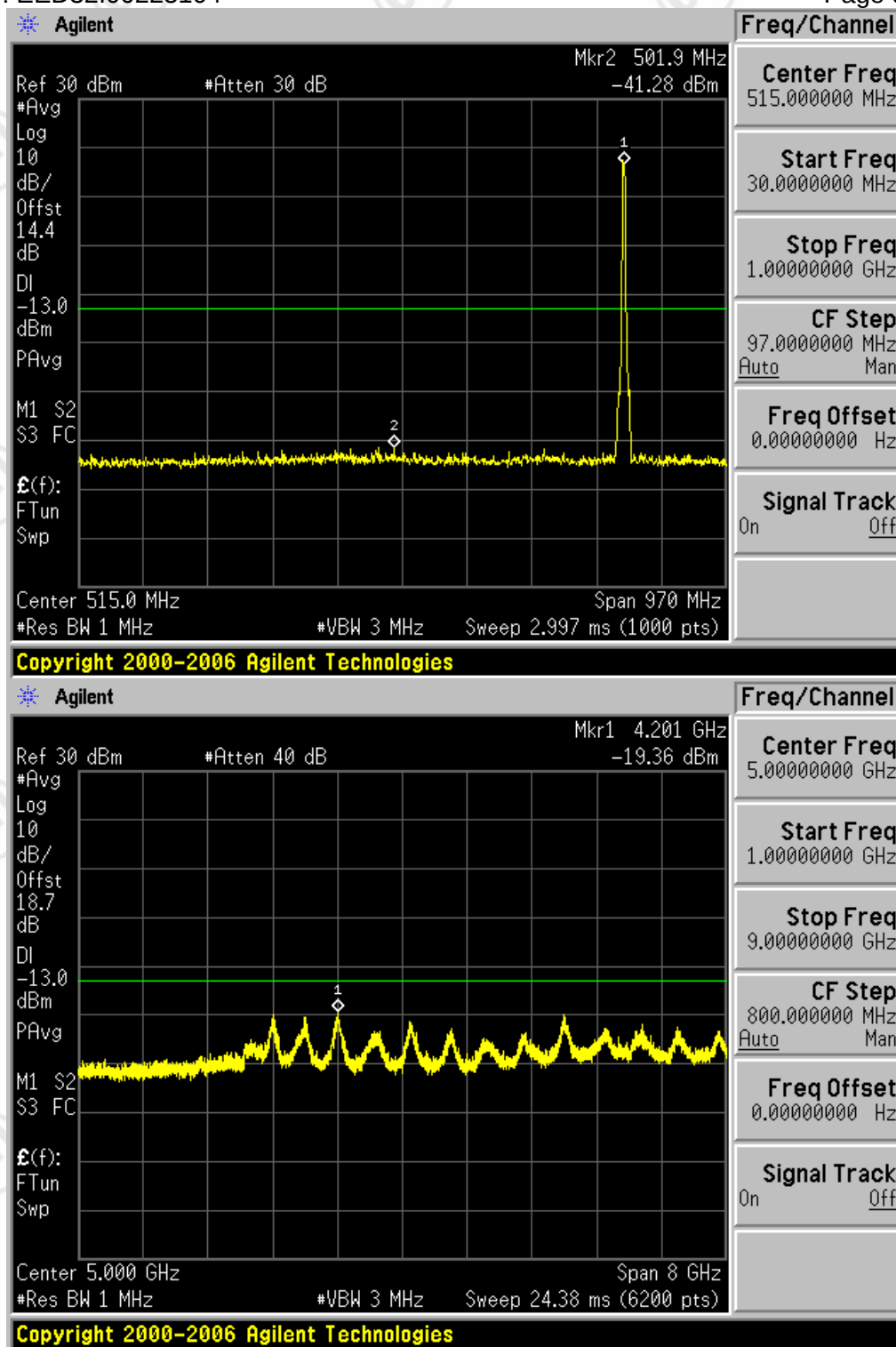
Test Channel=MCH





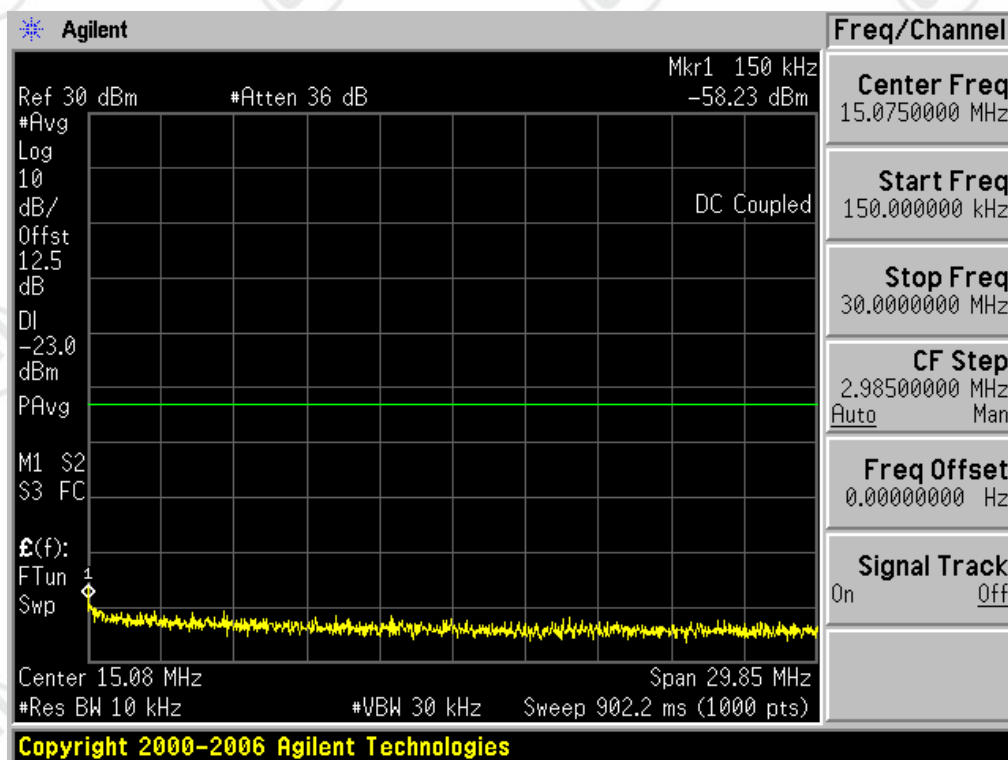
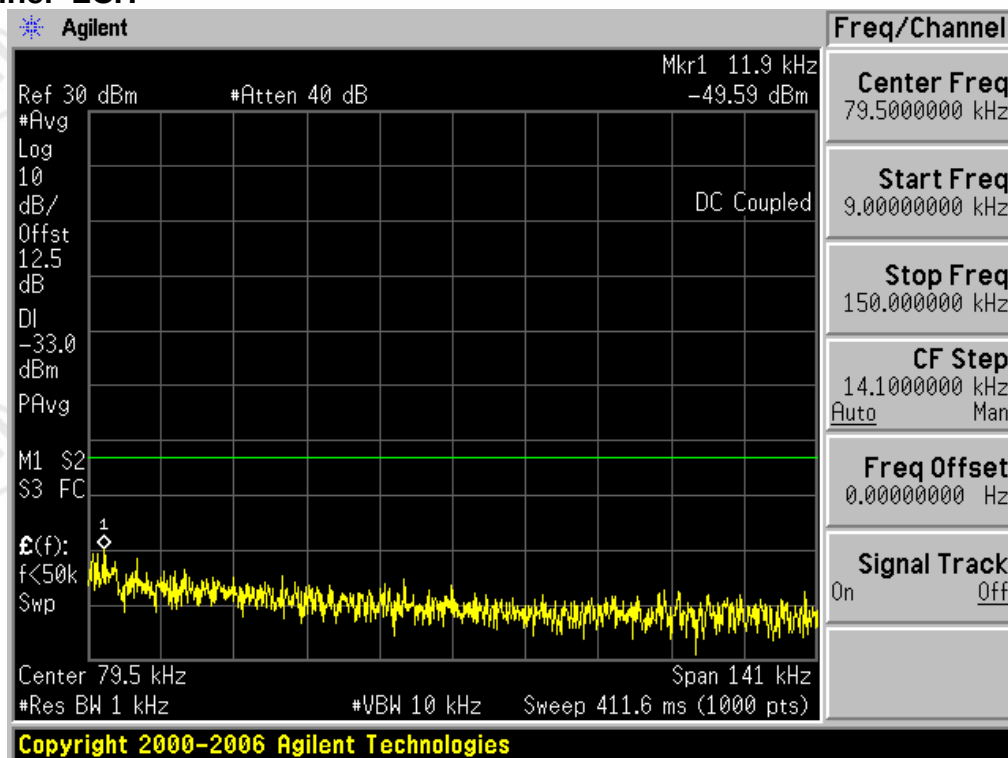
Test Channel=MCH

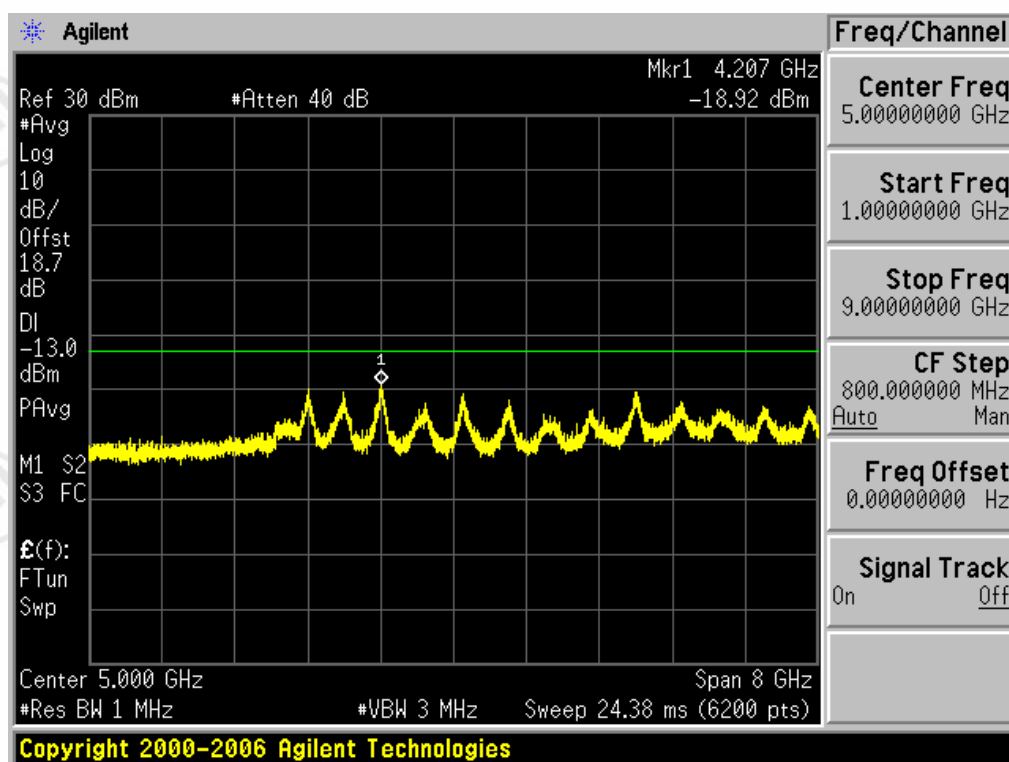
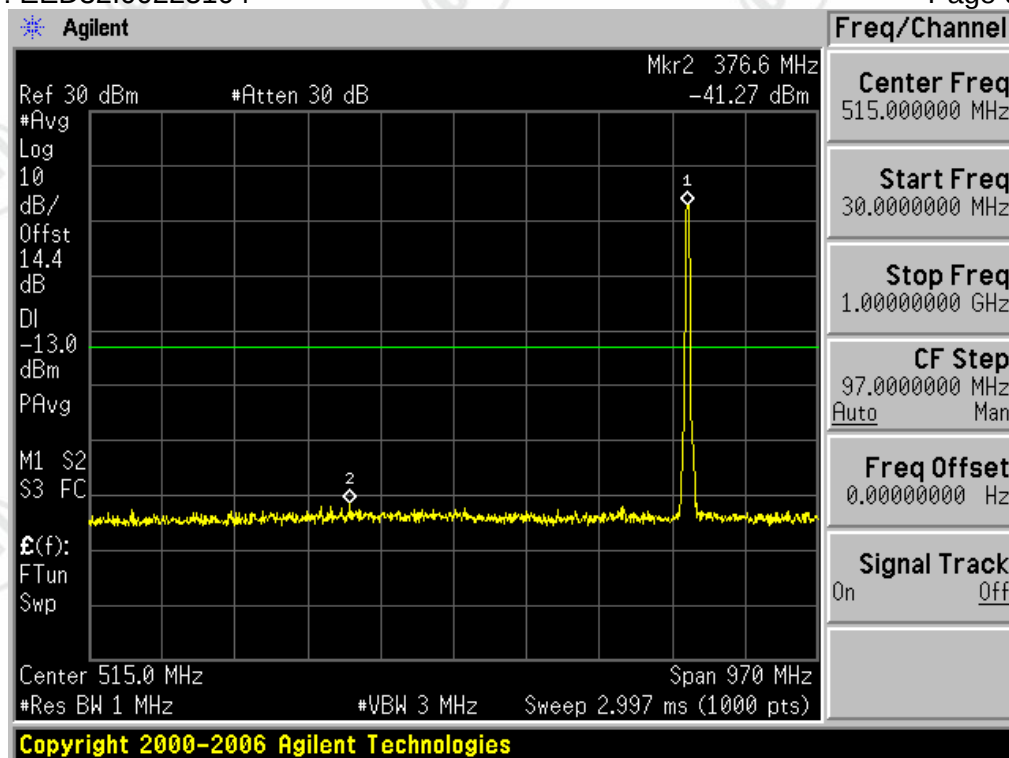




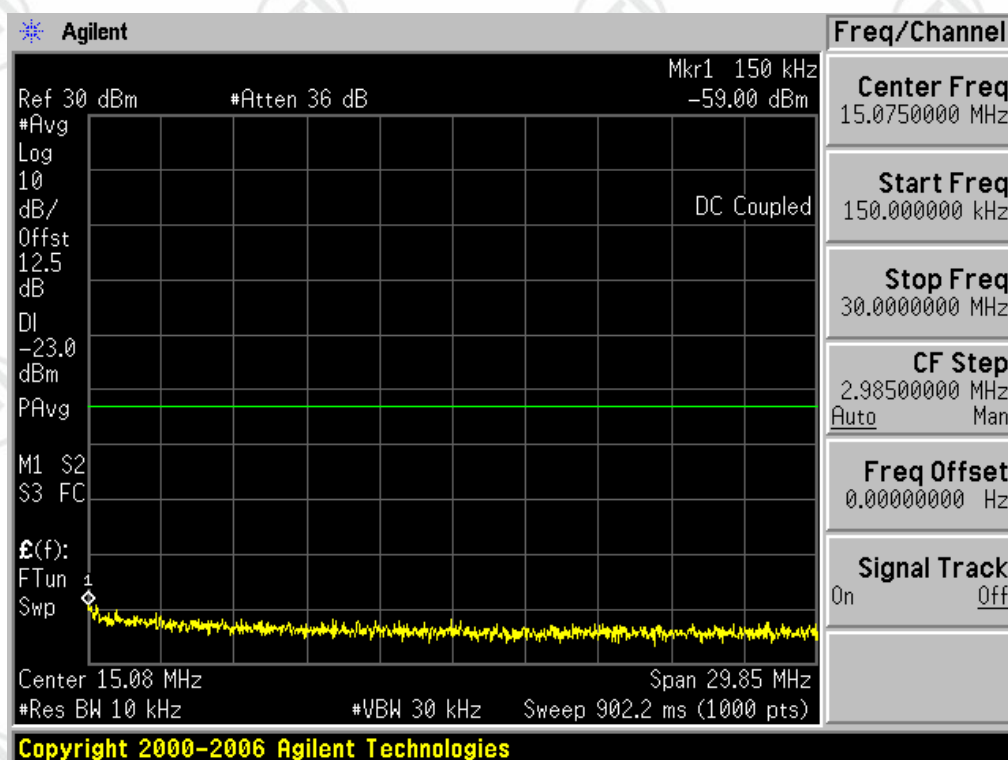
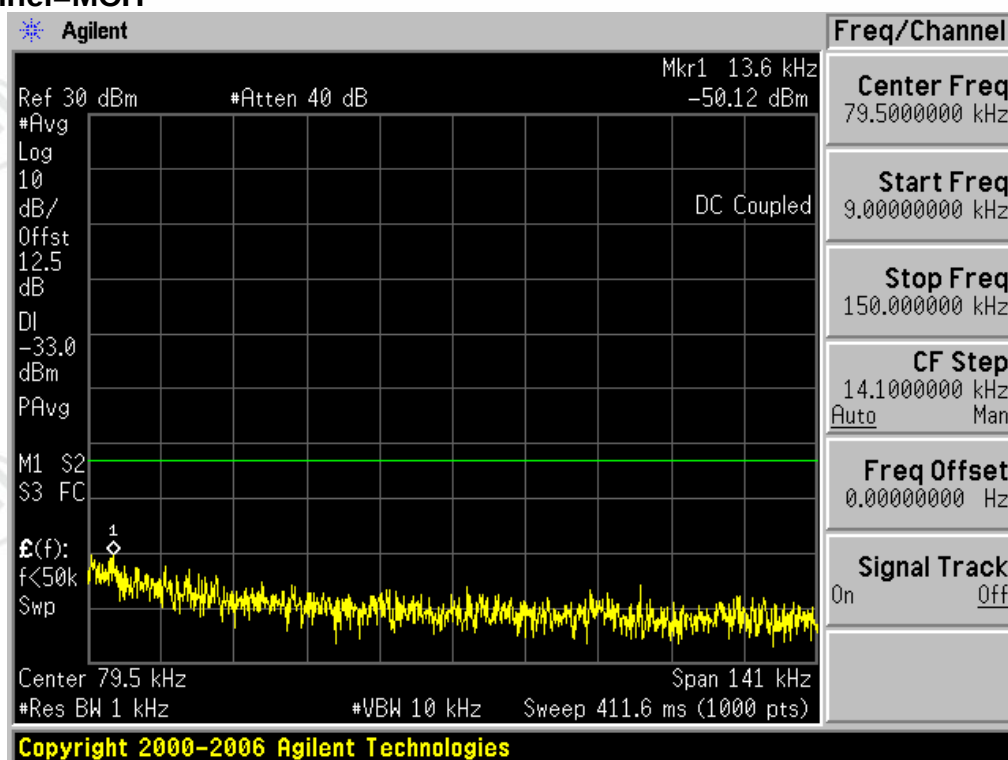
Test Mode=UMTS/TM3

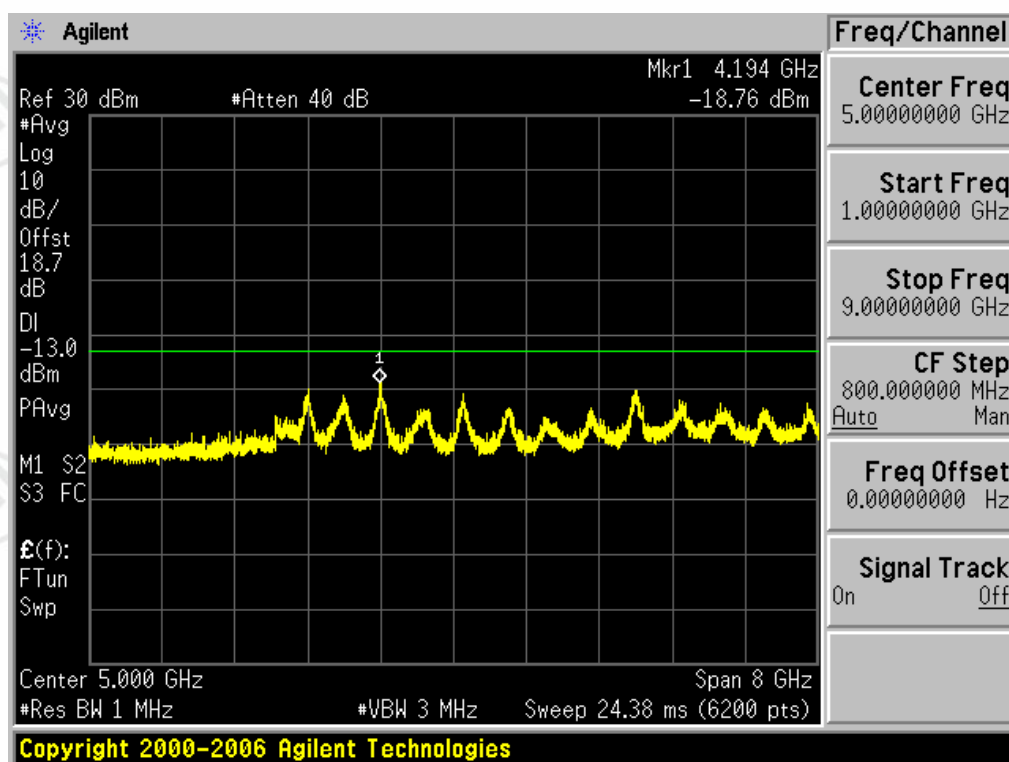
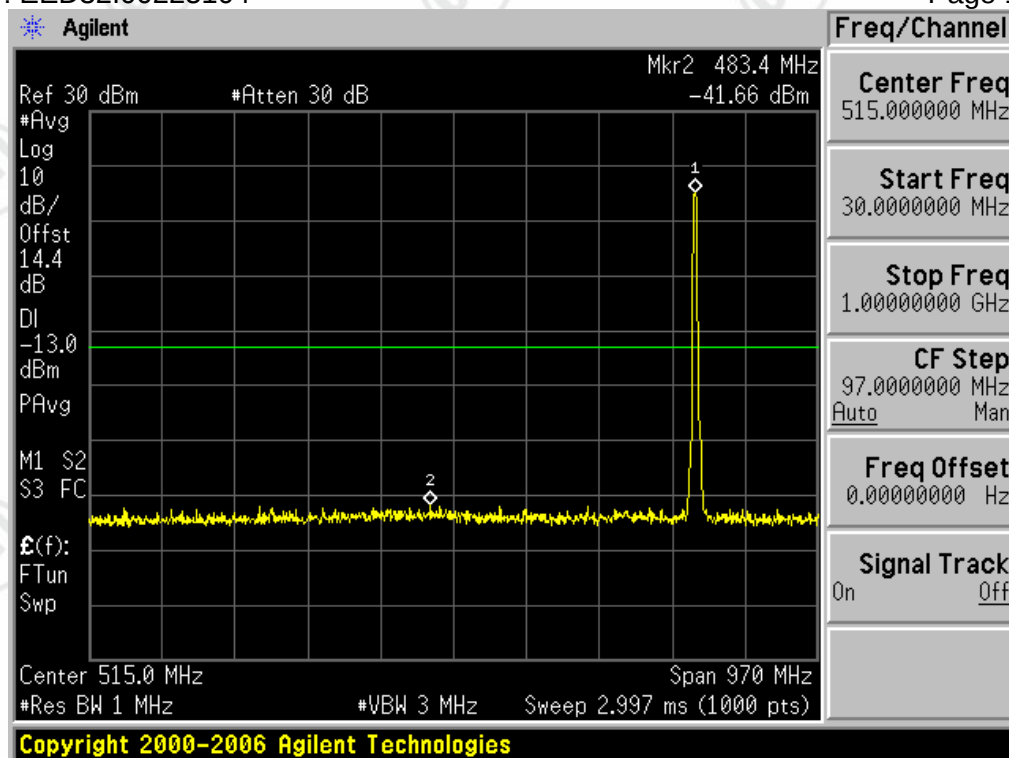
Test Channel=LCH



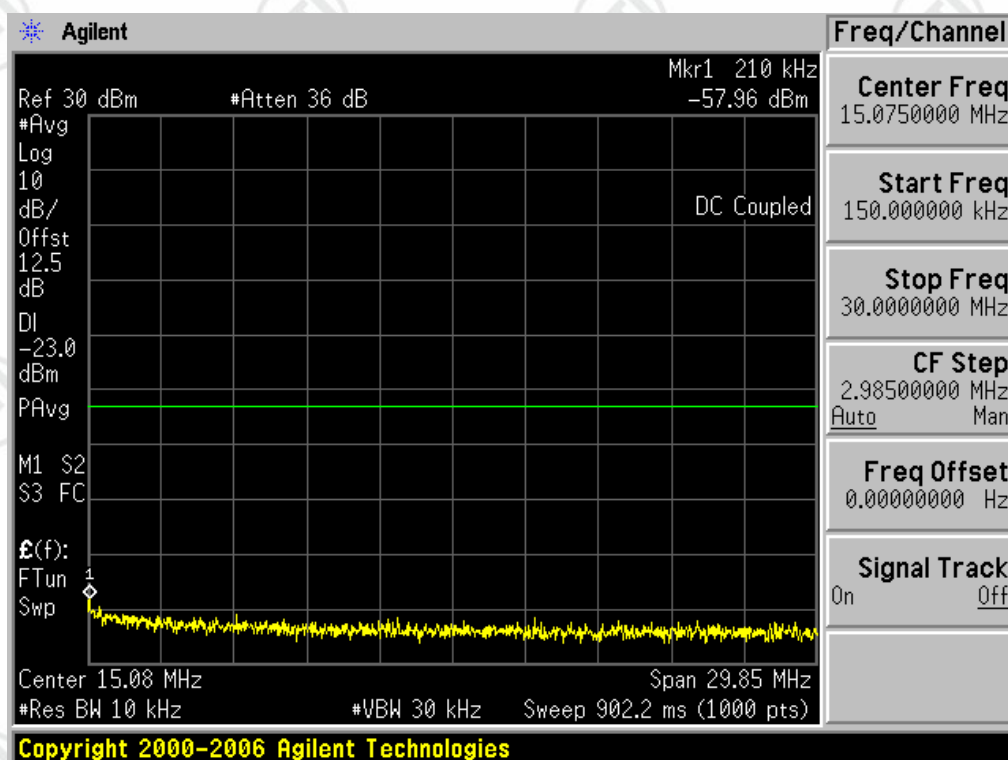
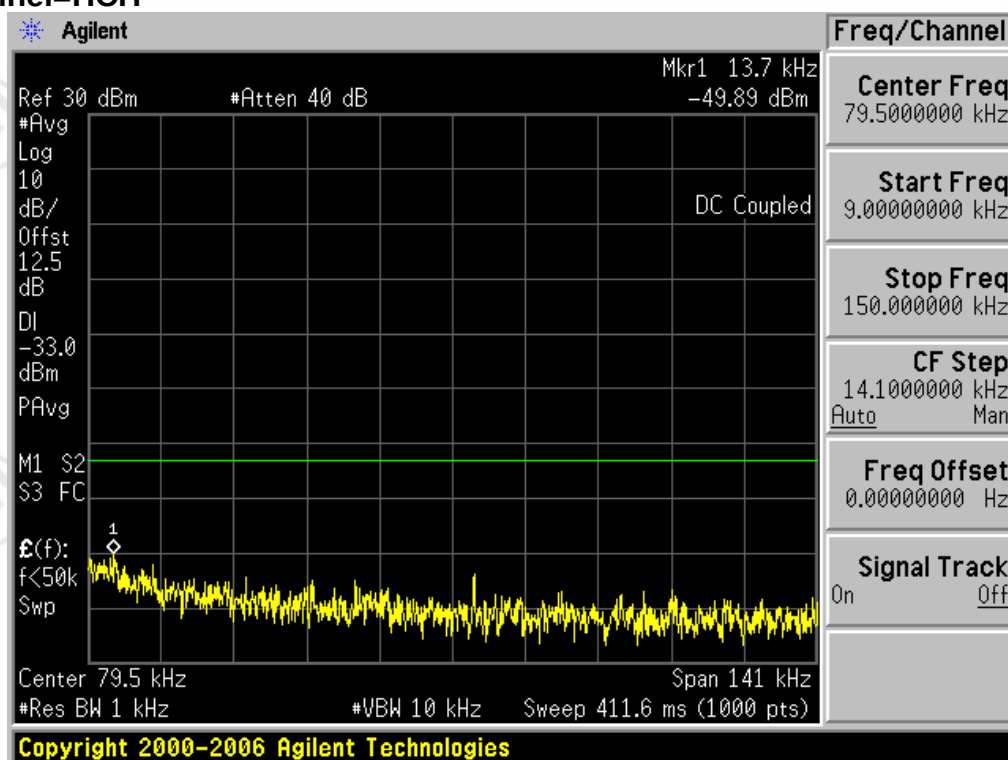


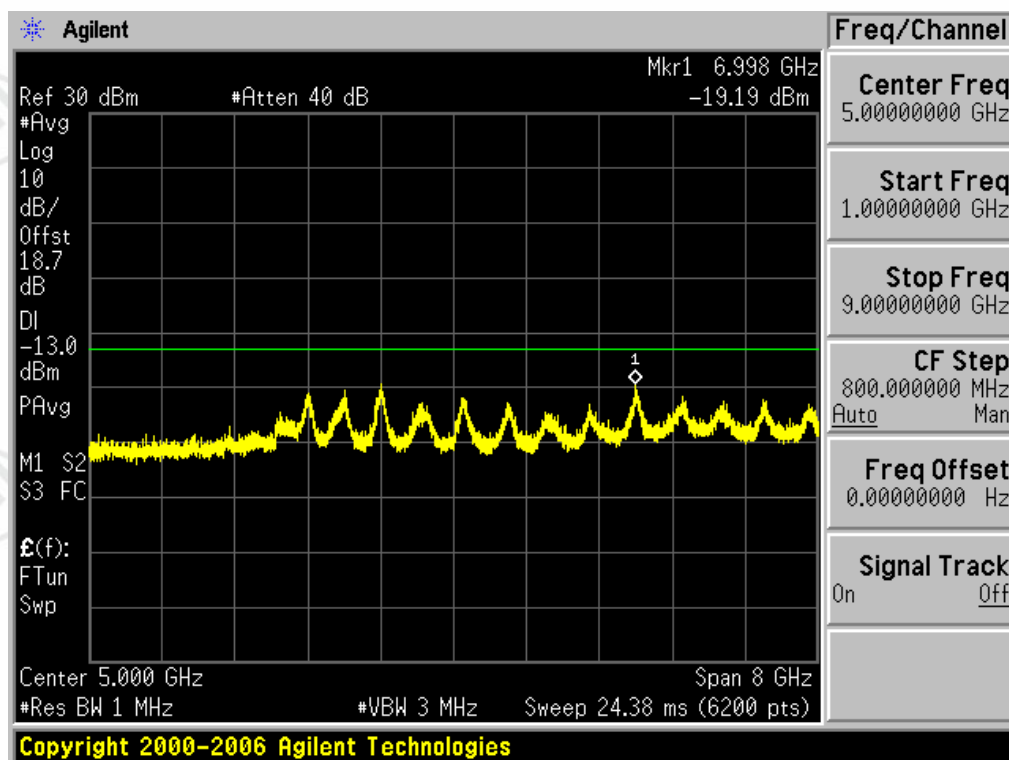
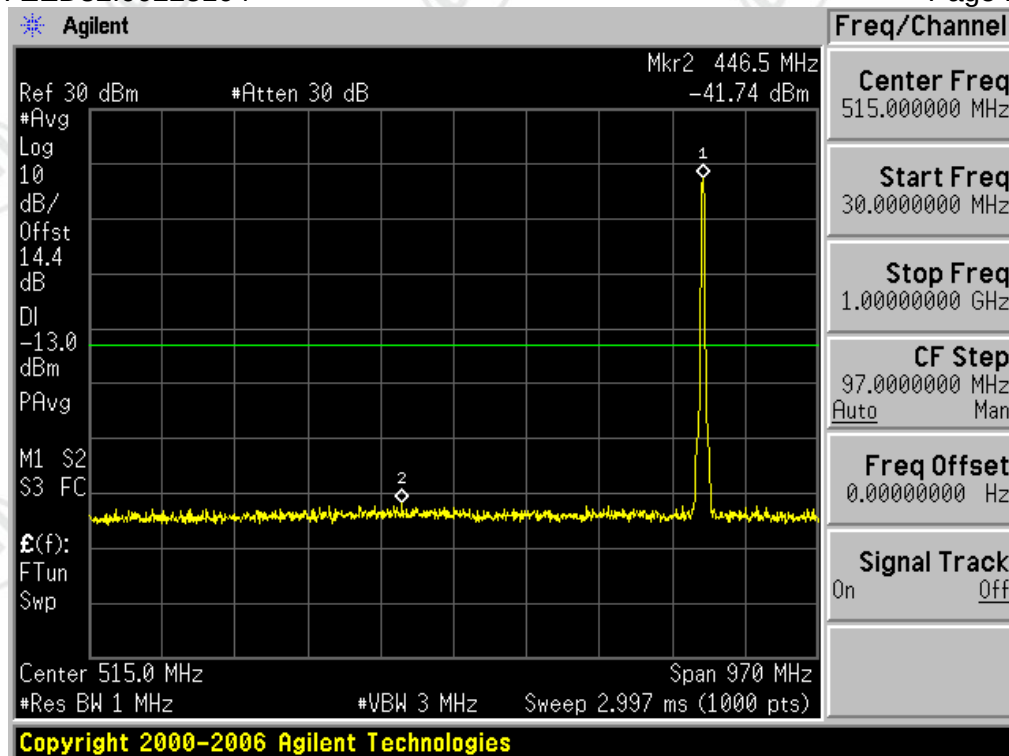
Test Channel=MCH





Test Channel=HCH

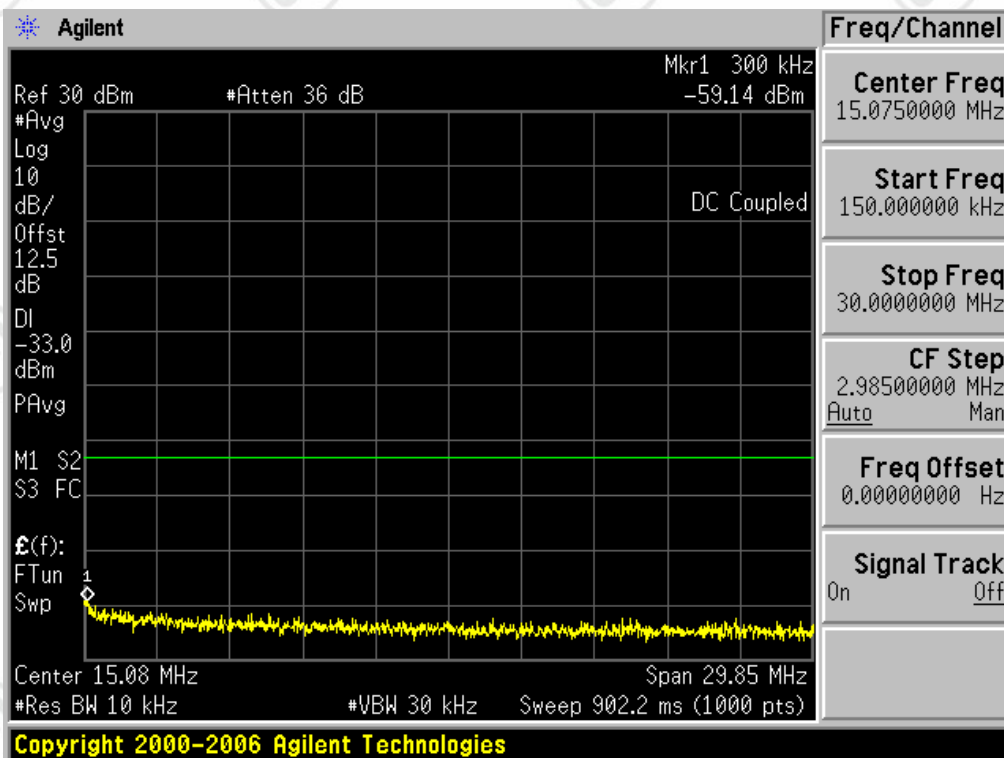
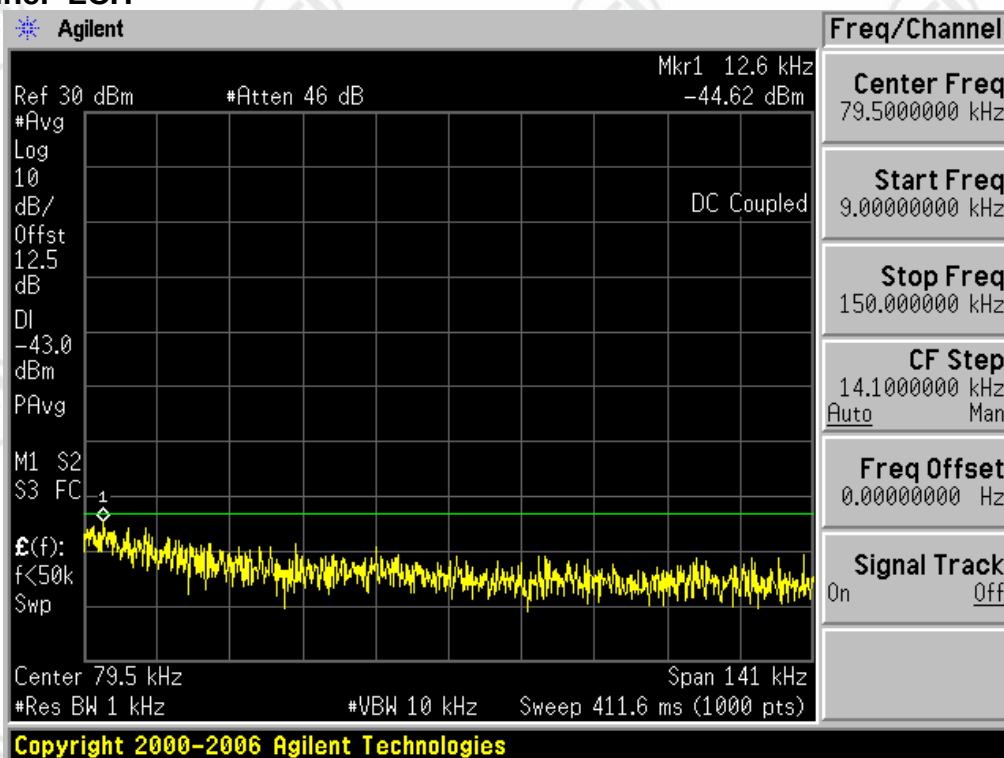


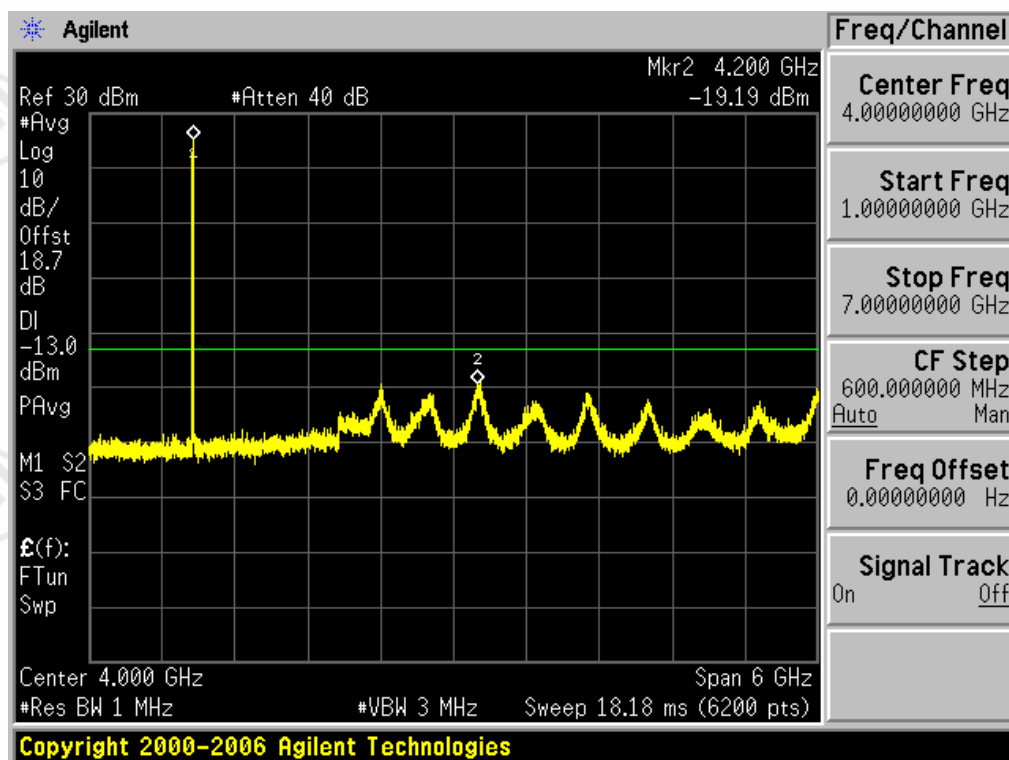
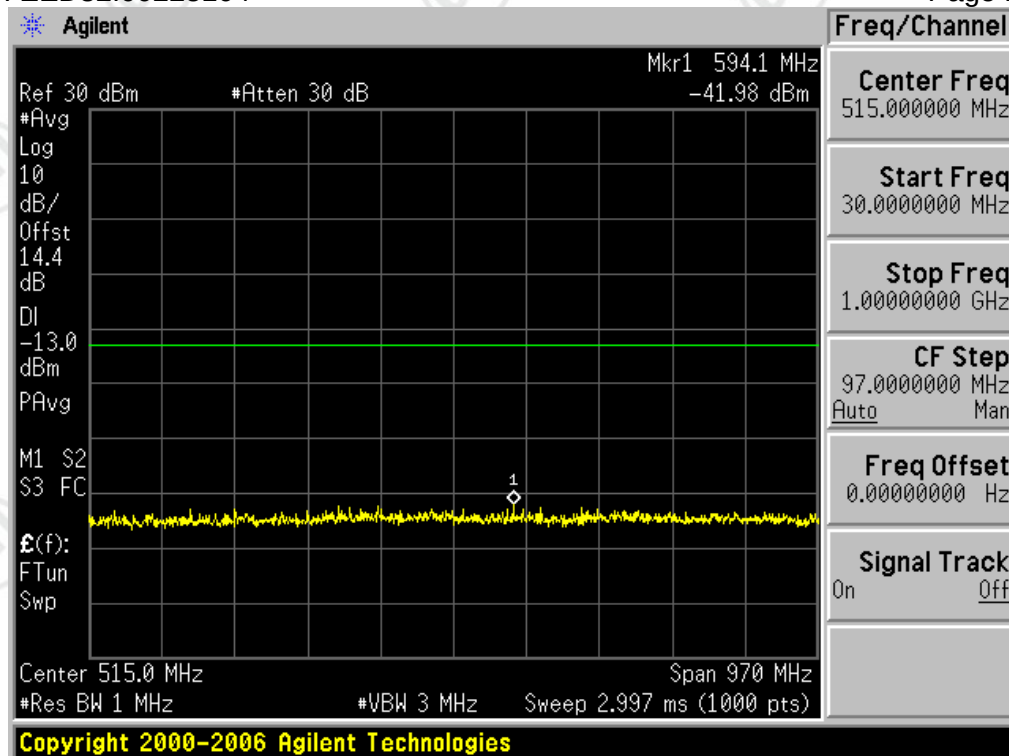


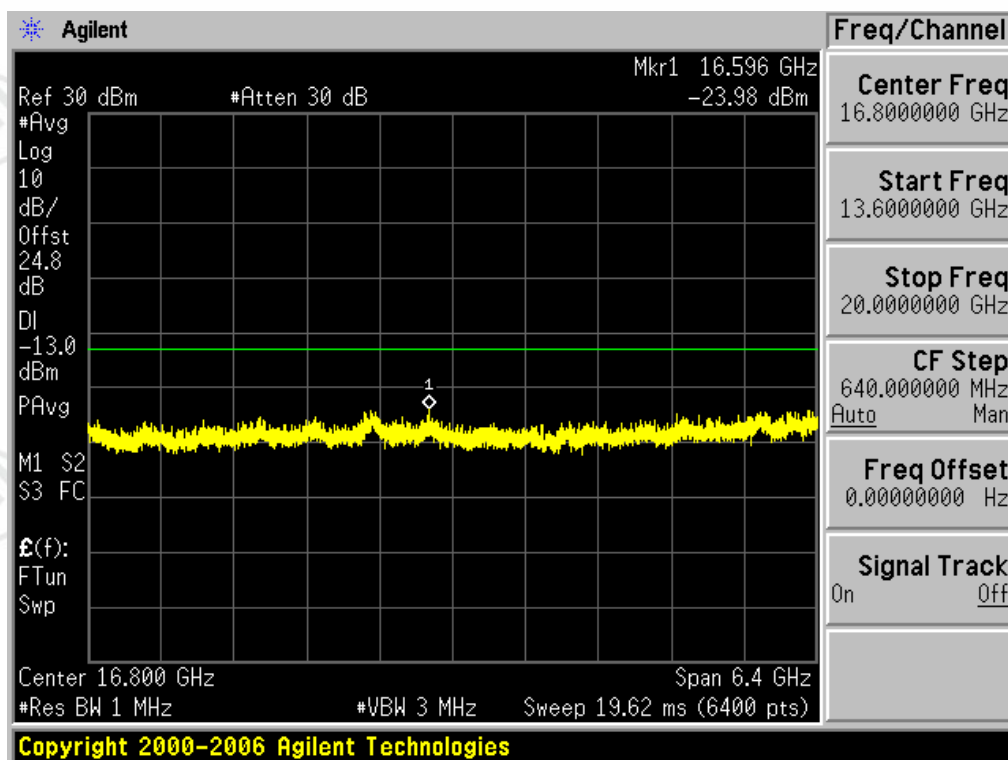
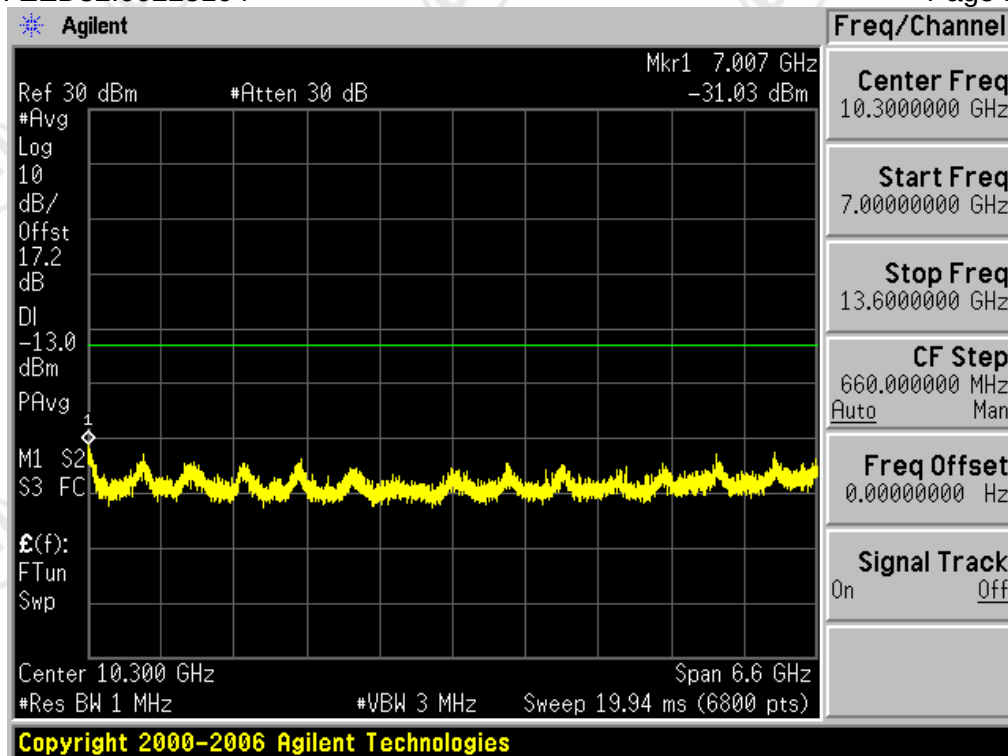
Test Band=WCDMA1900

Test Mode=UMTS/TM1

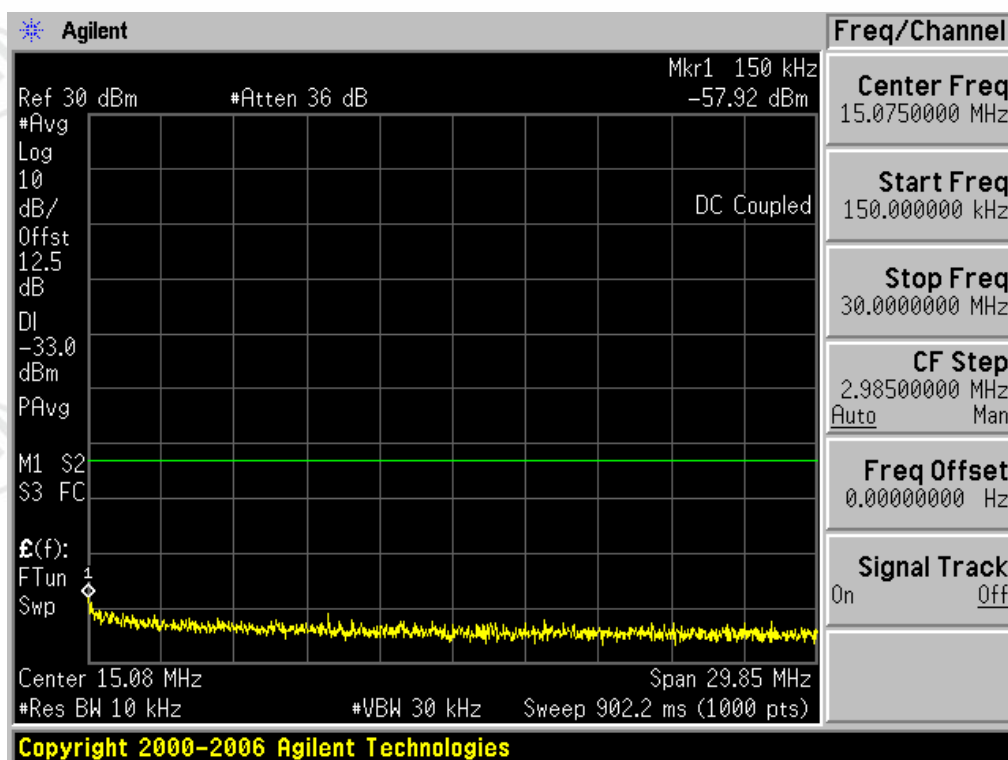
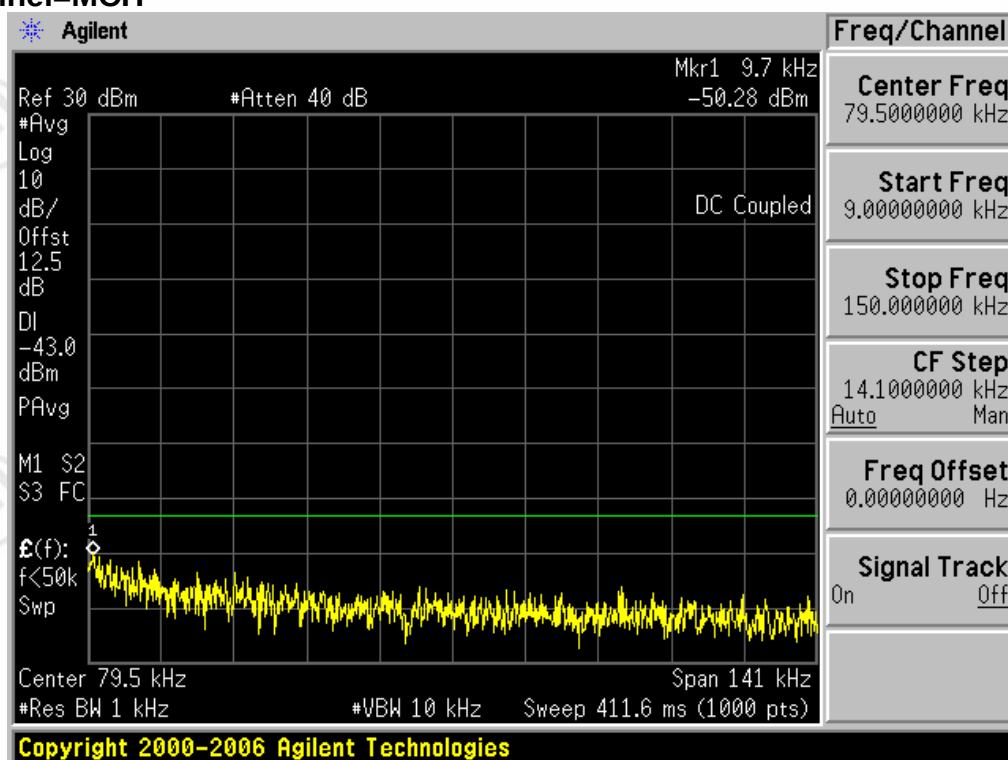
Test Channel=LCH

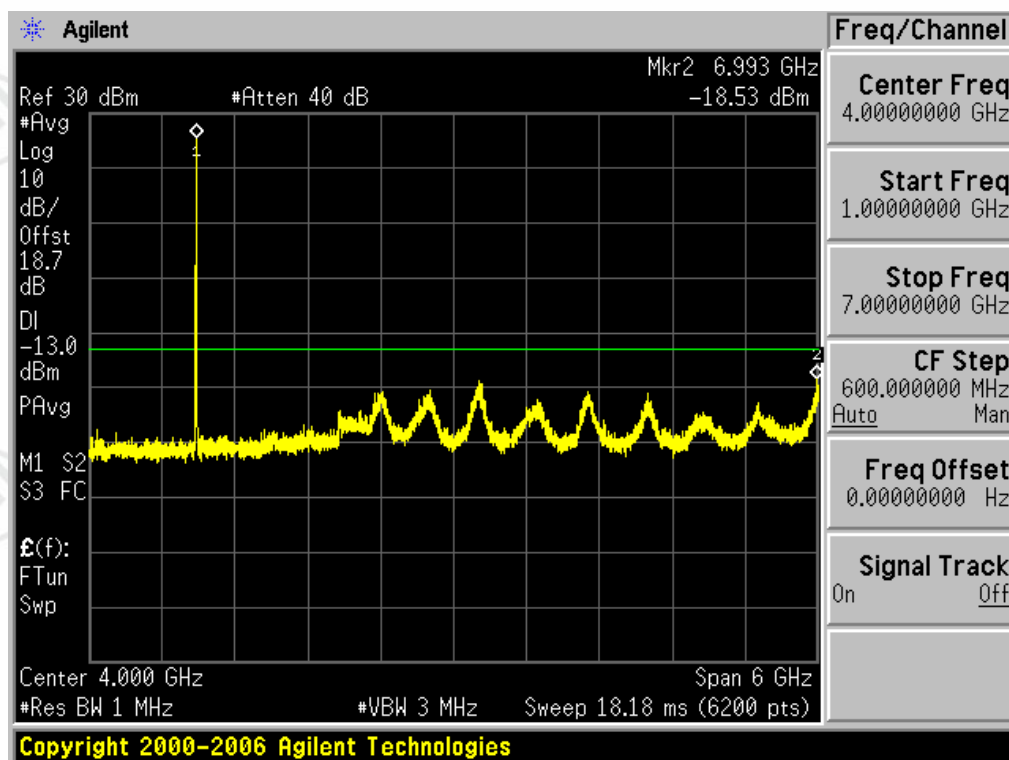
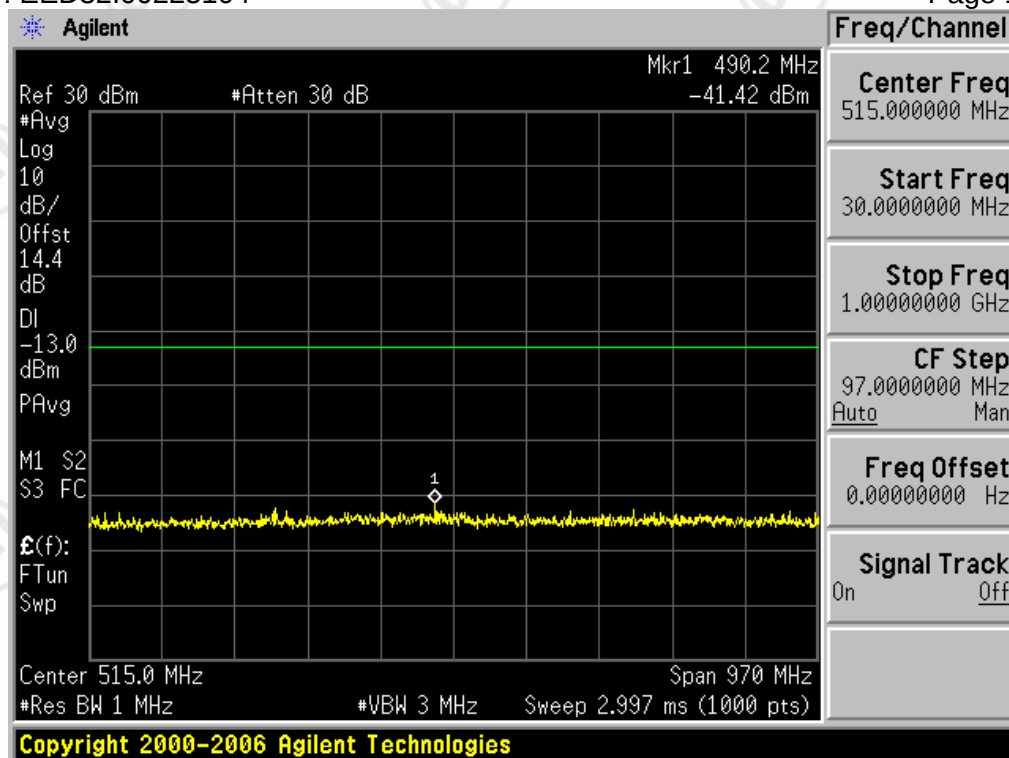


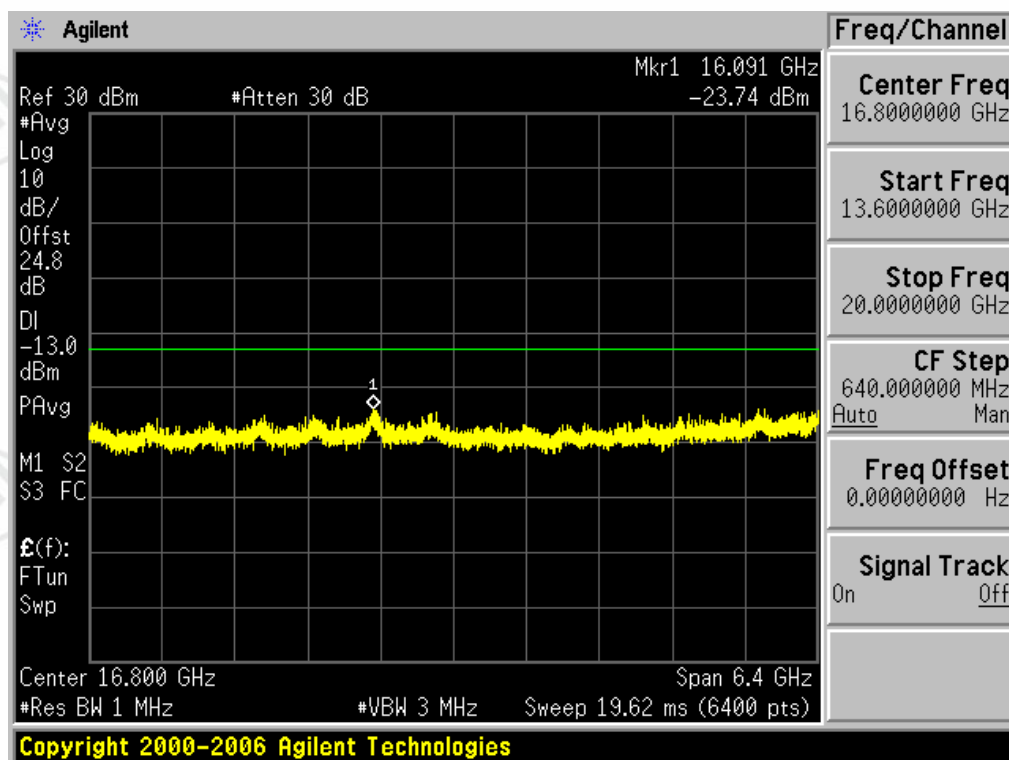
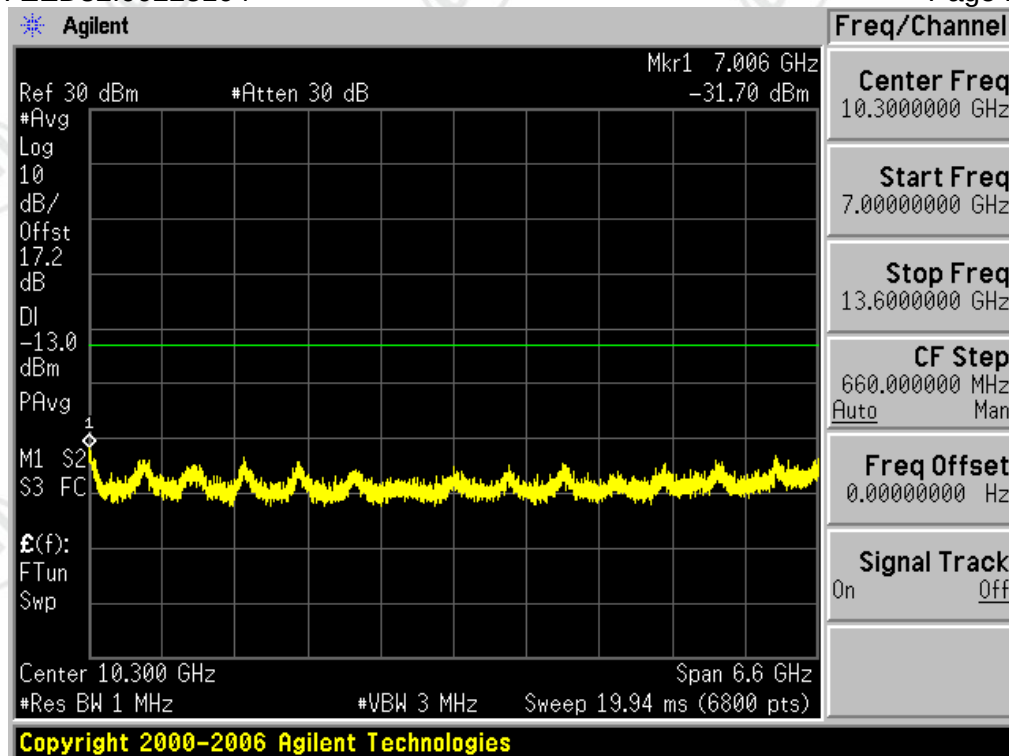




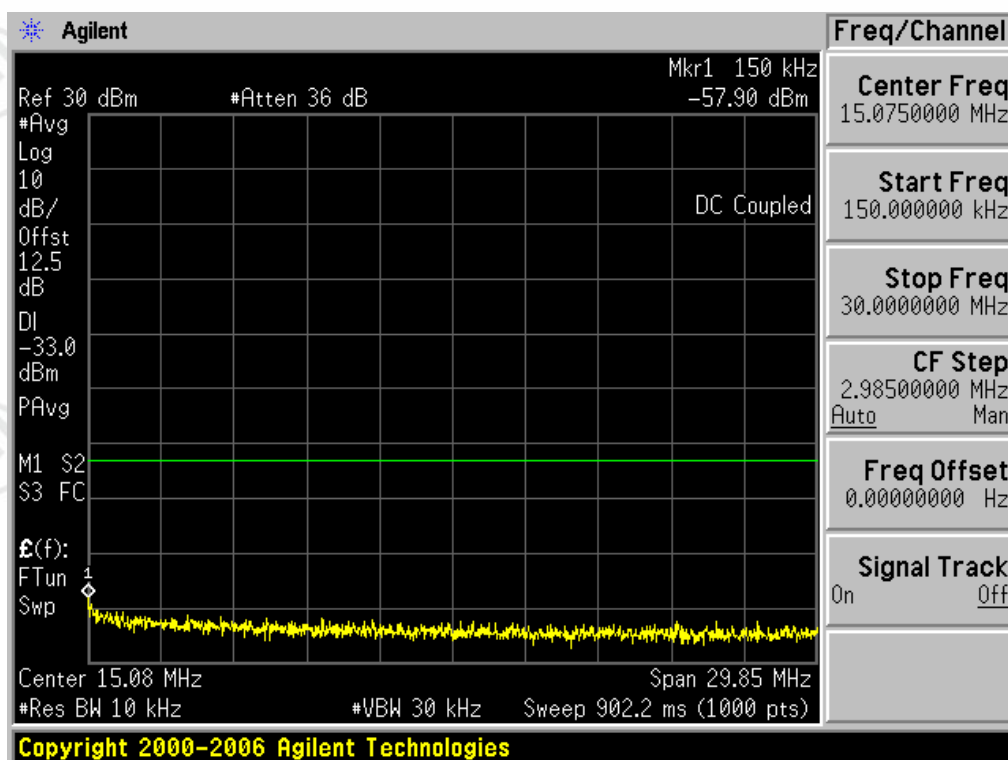
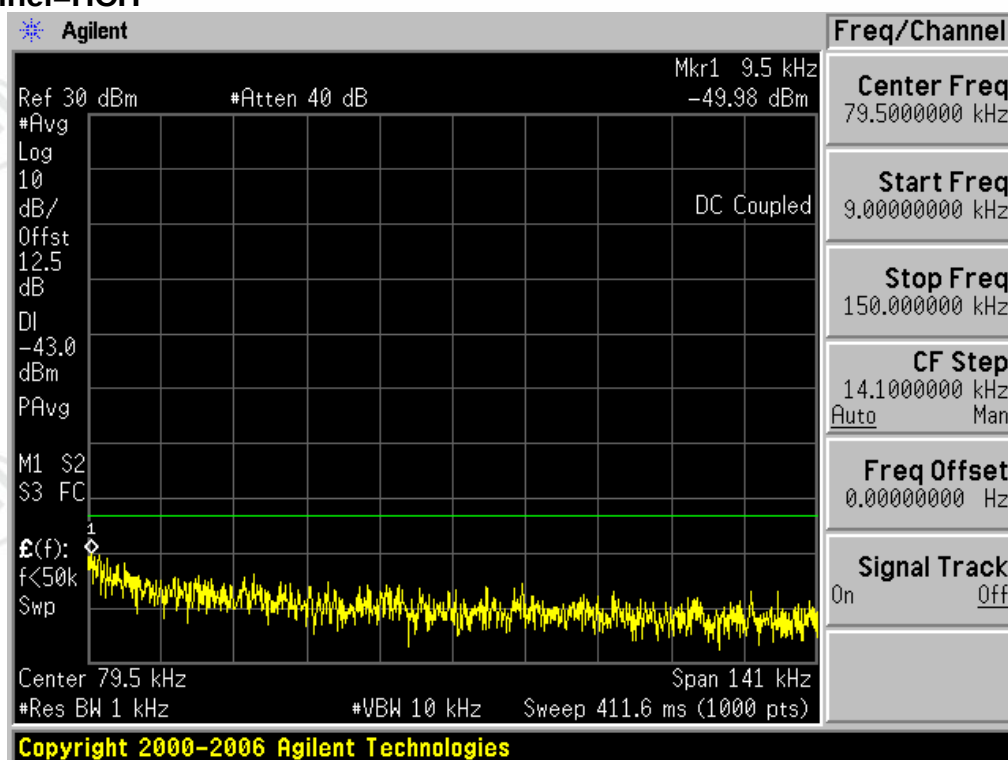
Test Channel=MCH

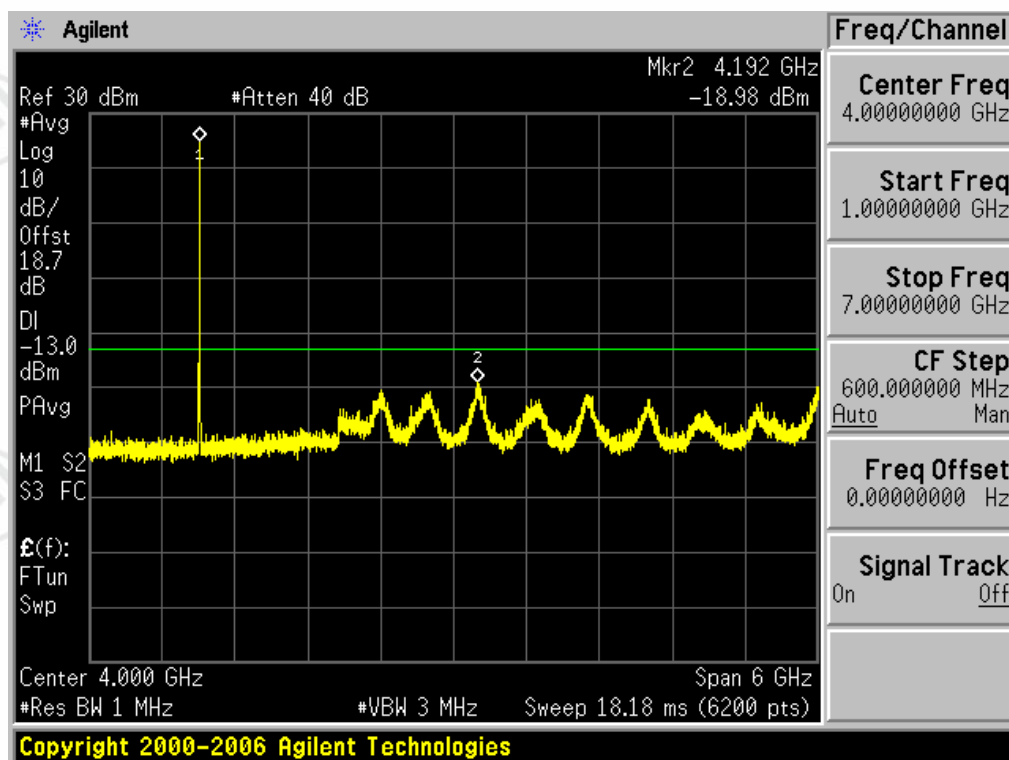
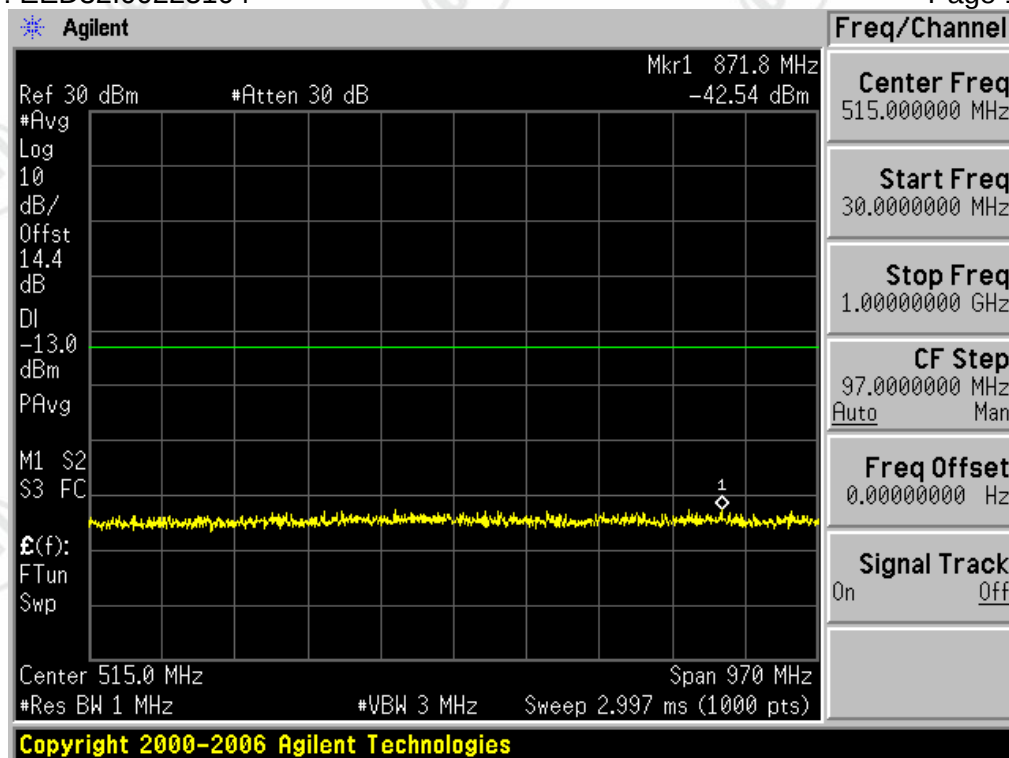


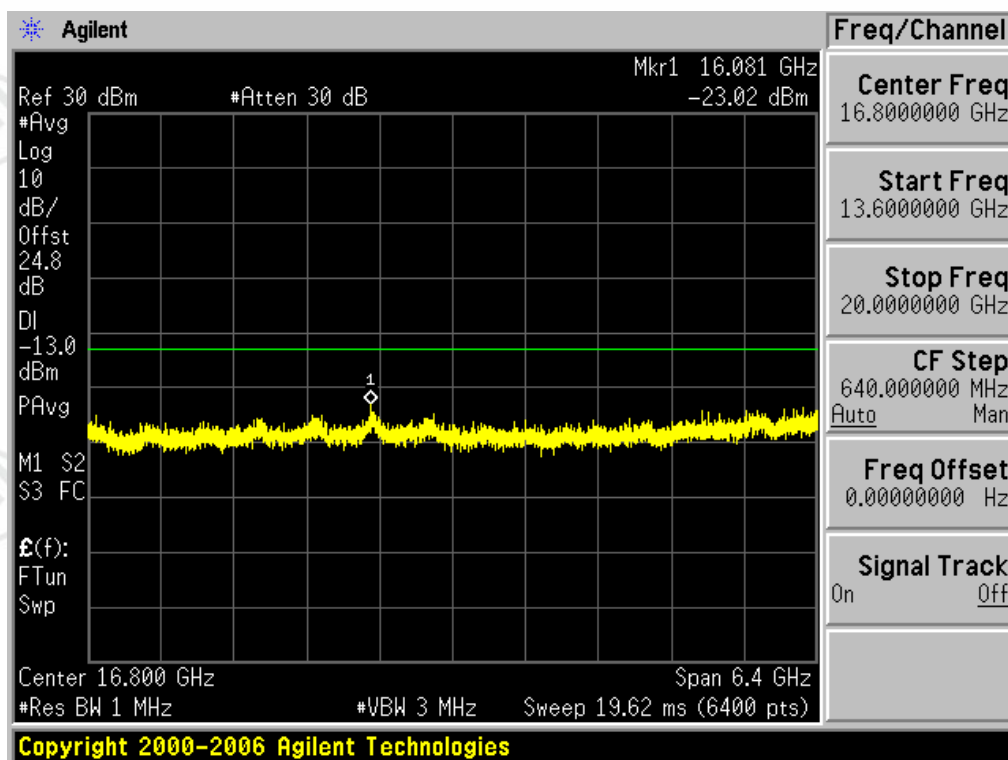
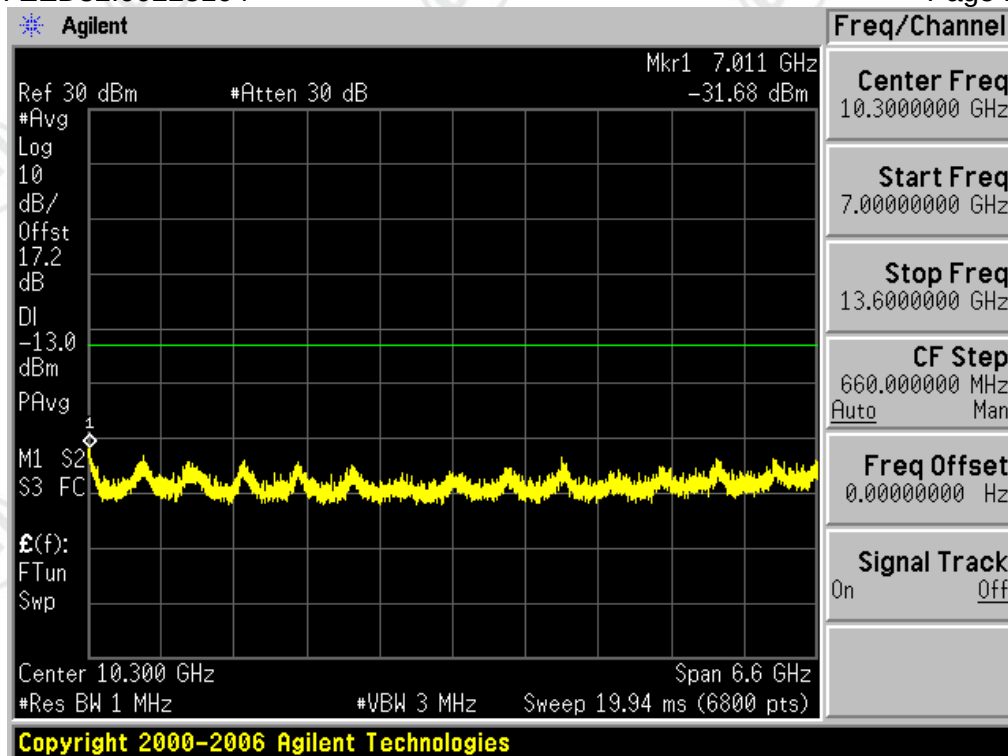




Test Channel=HCH

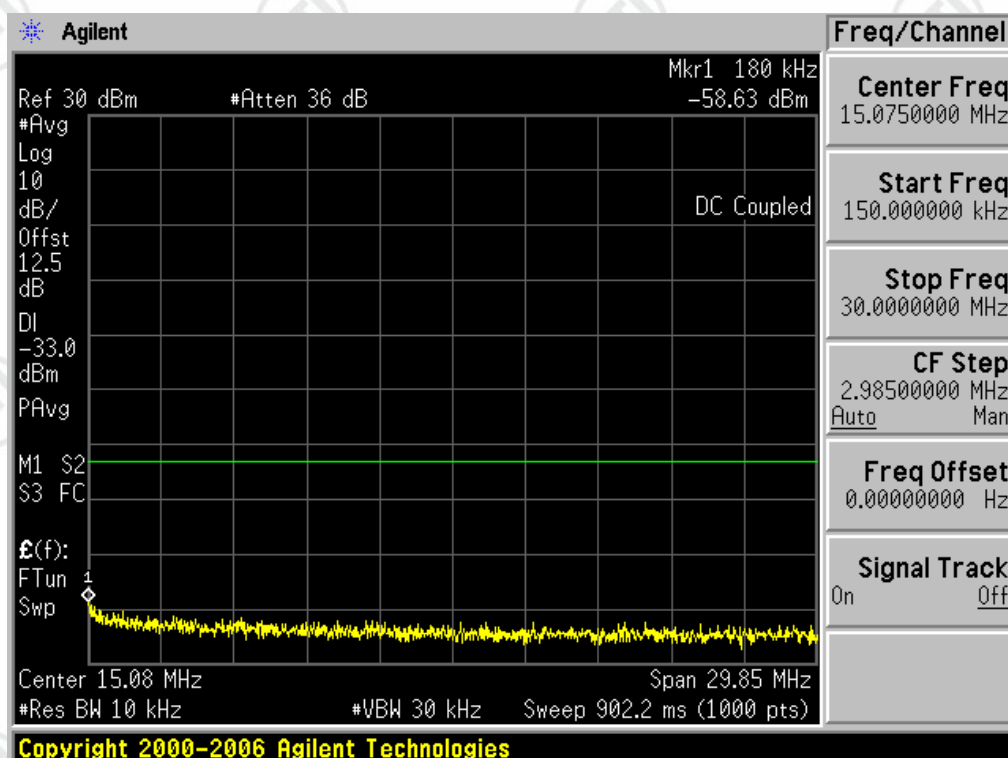
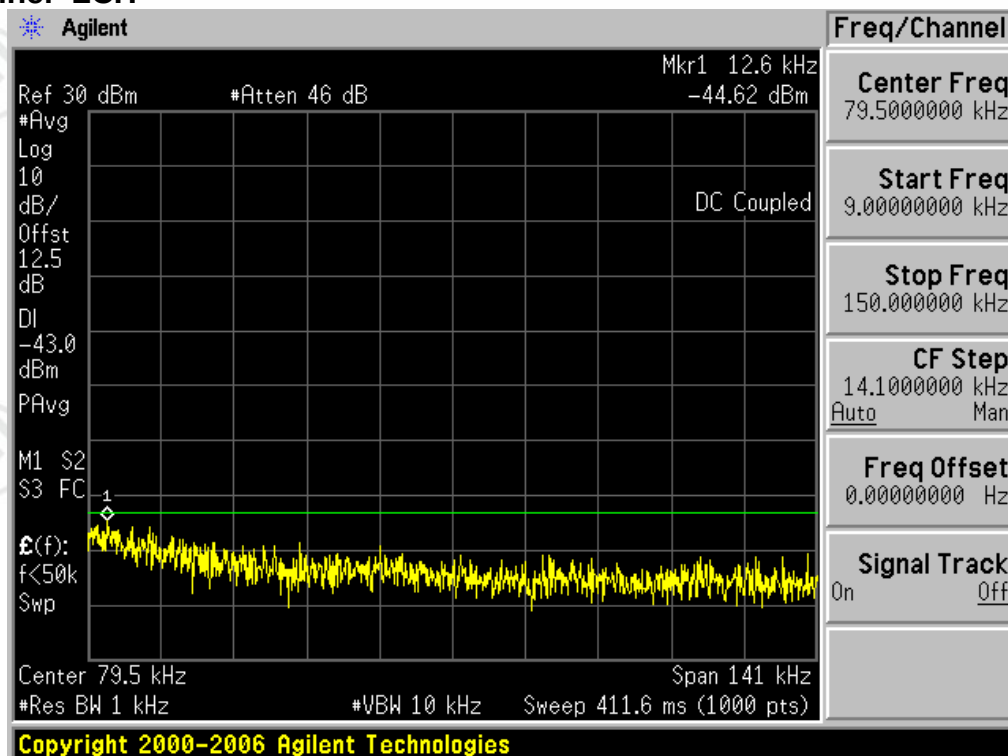


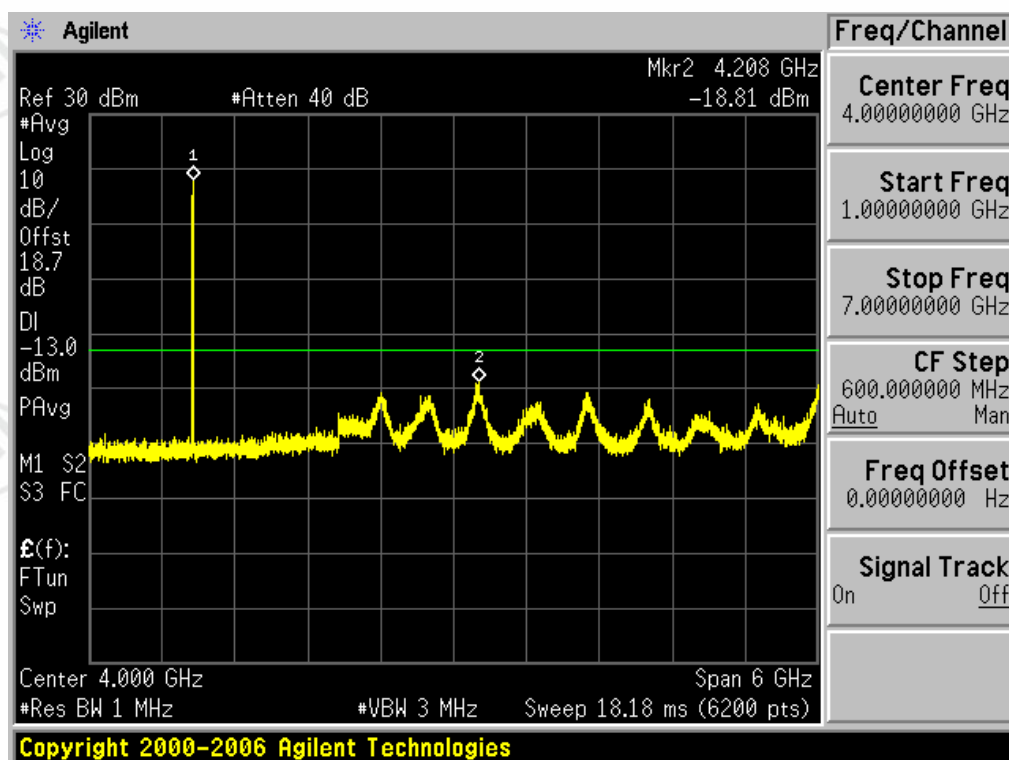
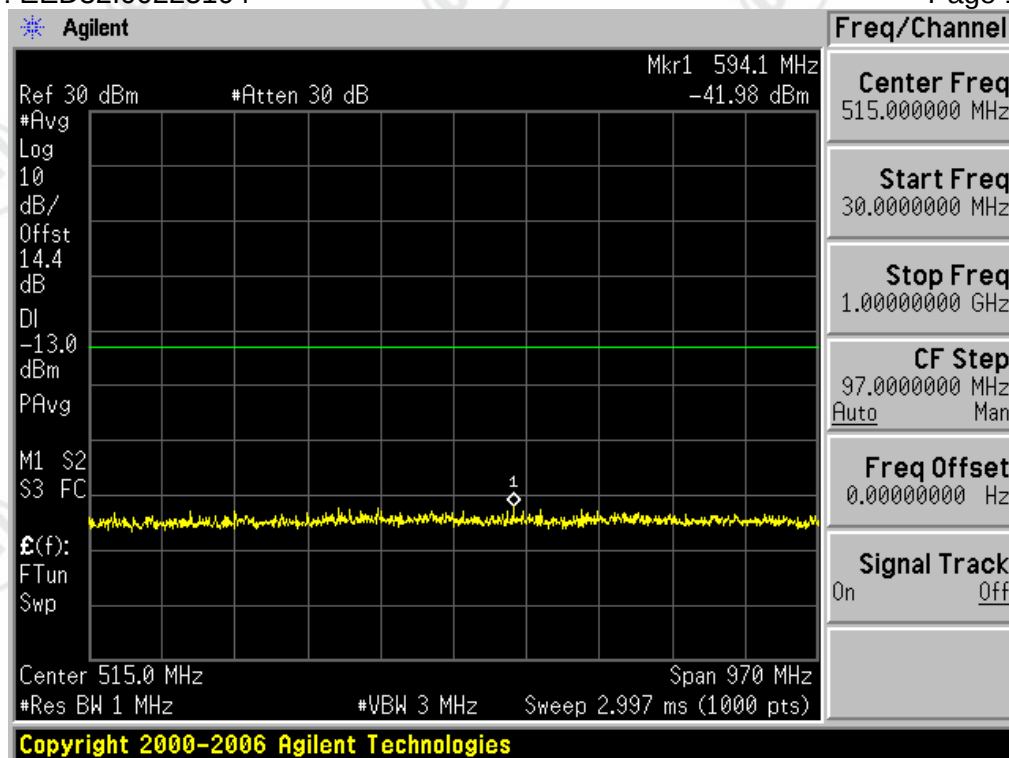


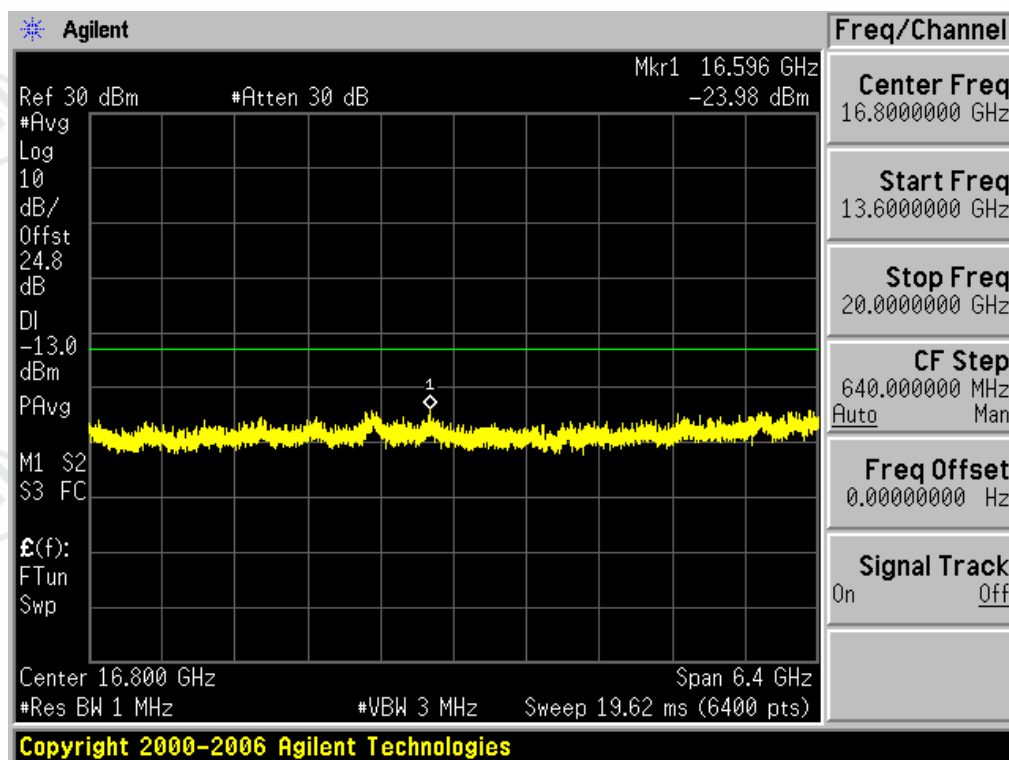
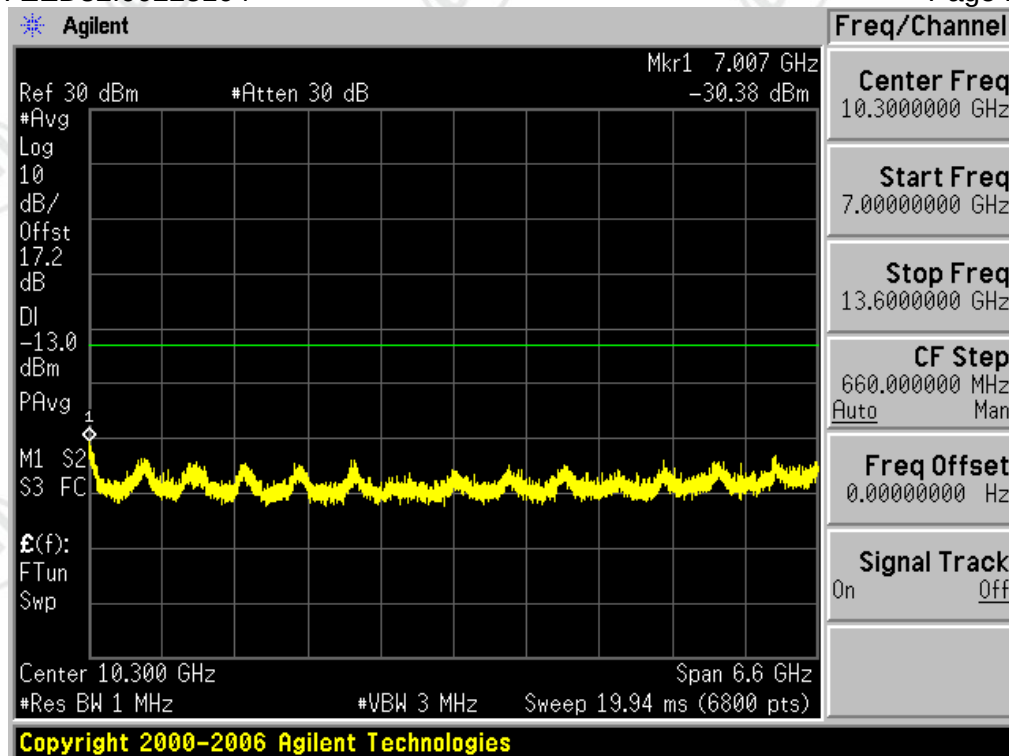


Test Mode=UMTS/TM2

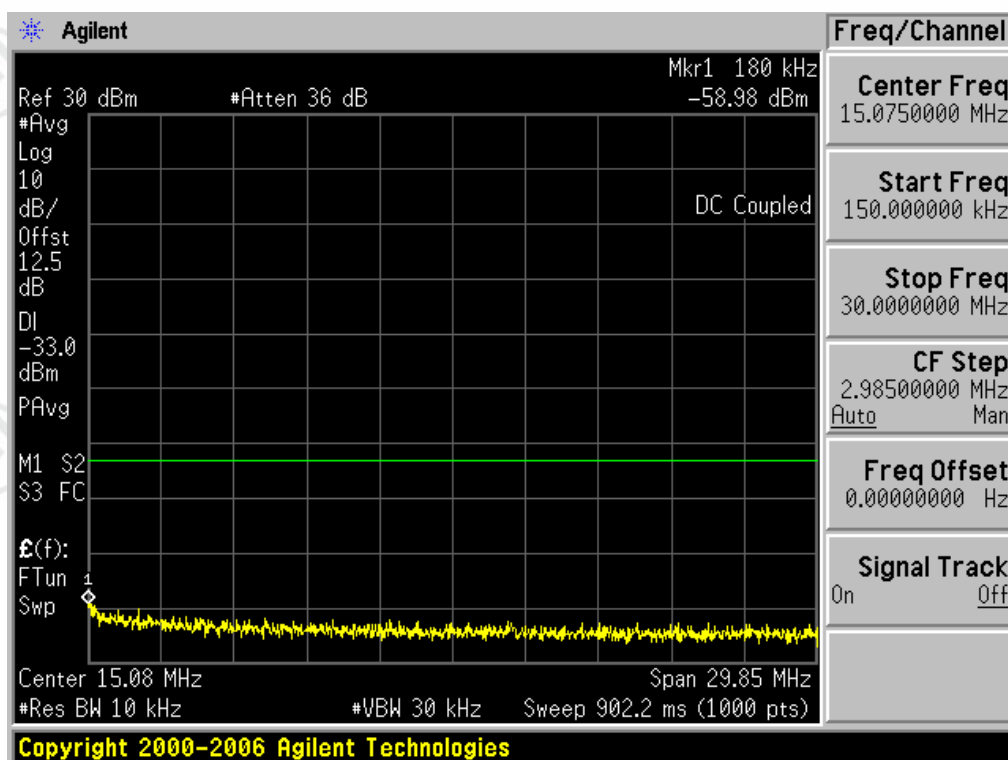
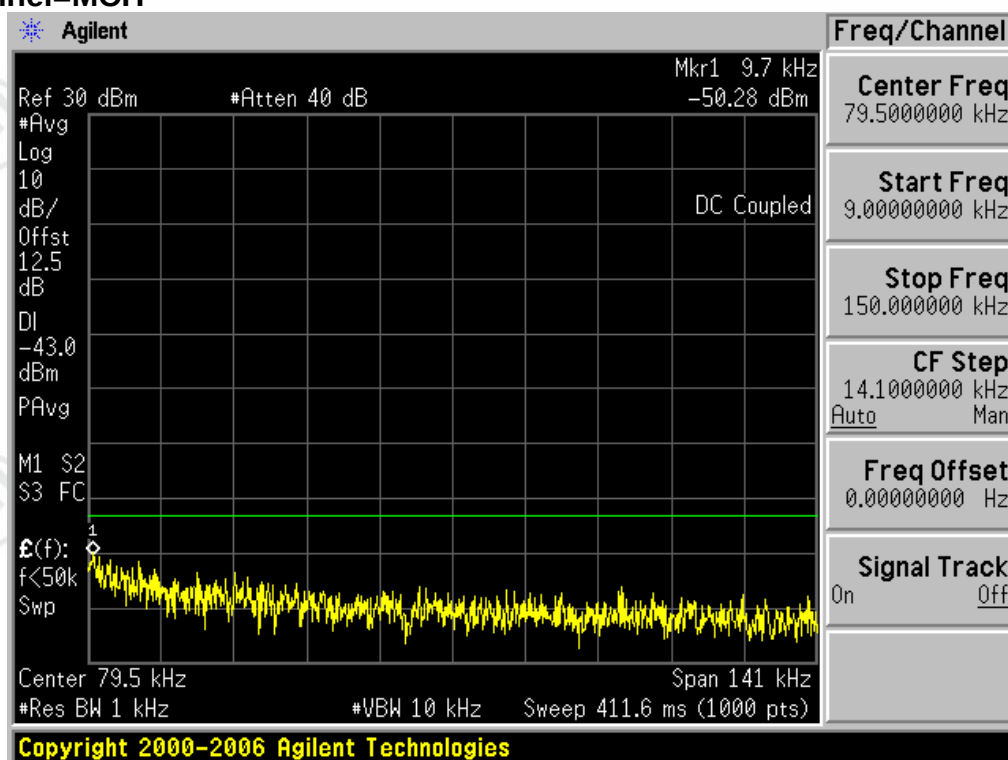
Test Channel=LCH

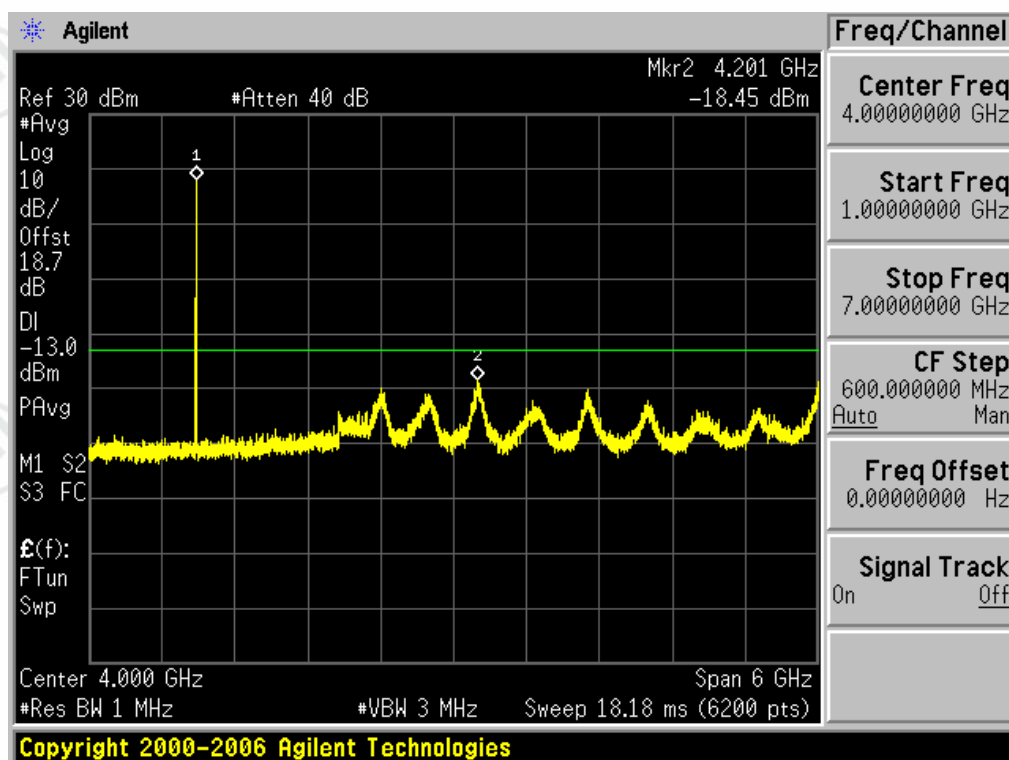
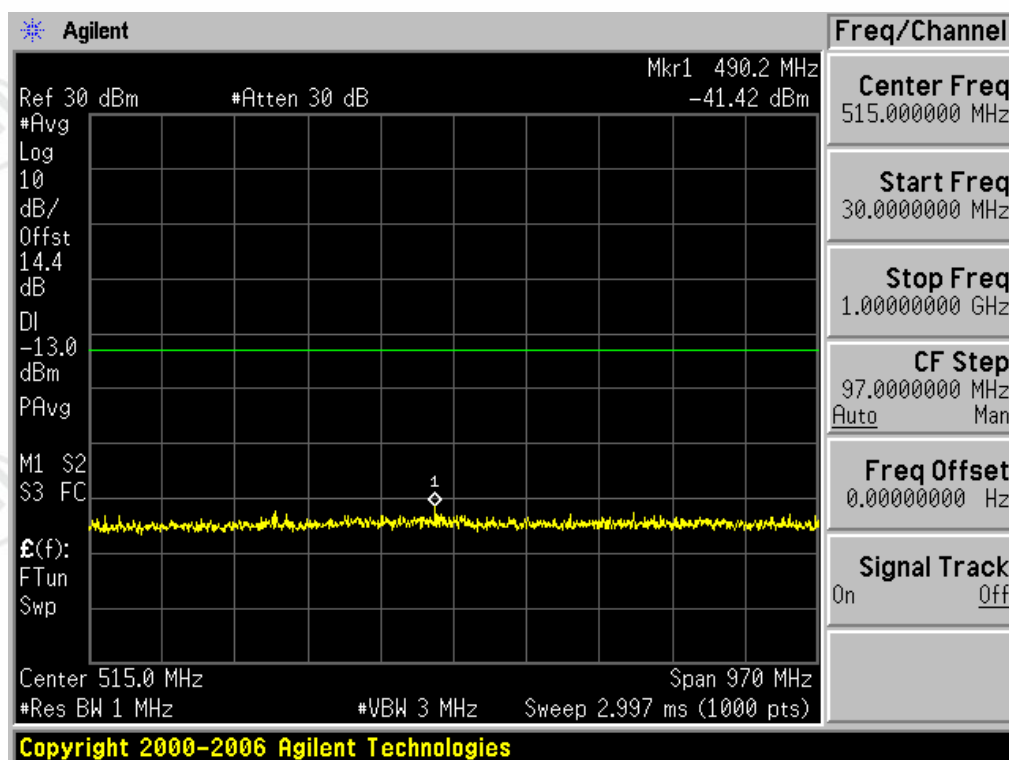


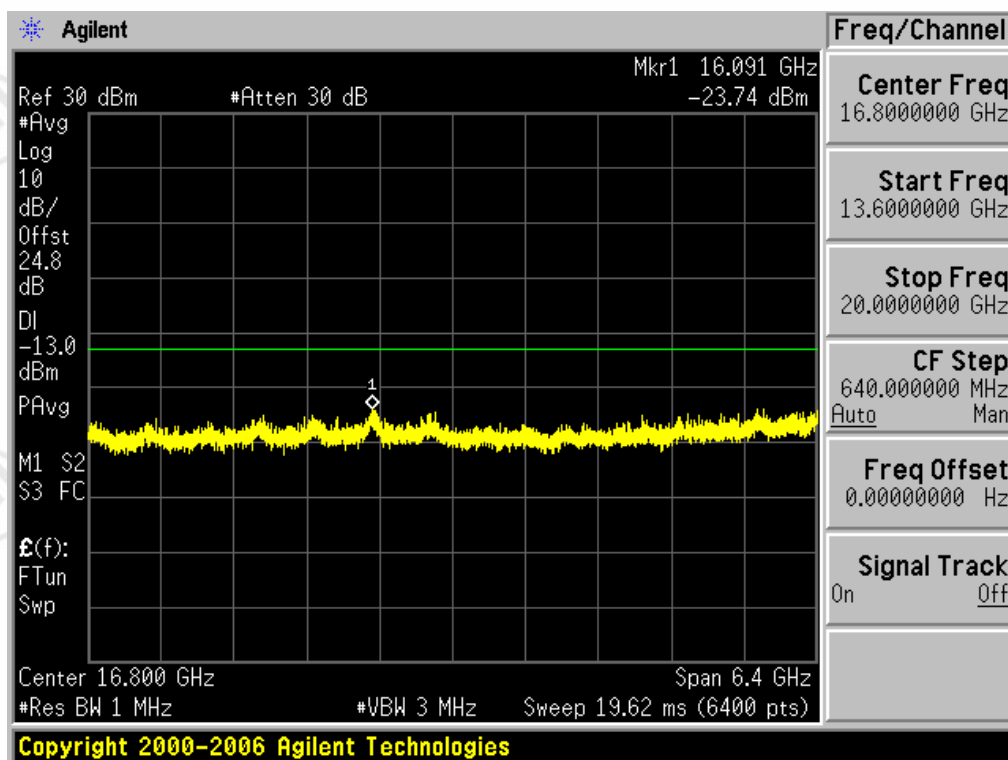
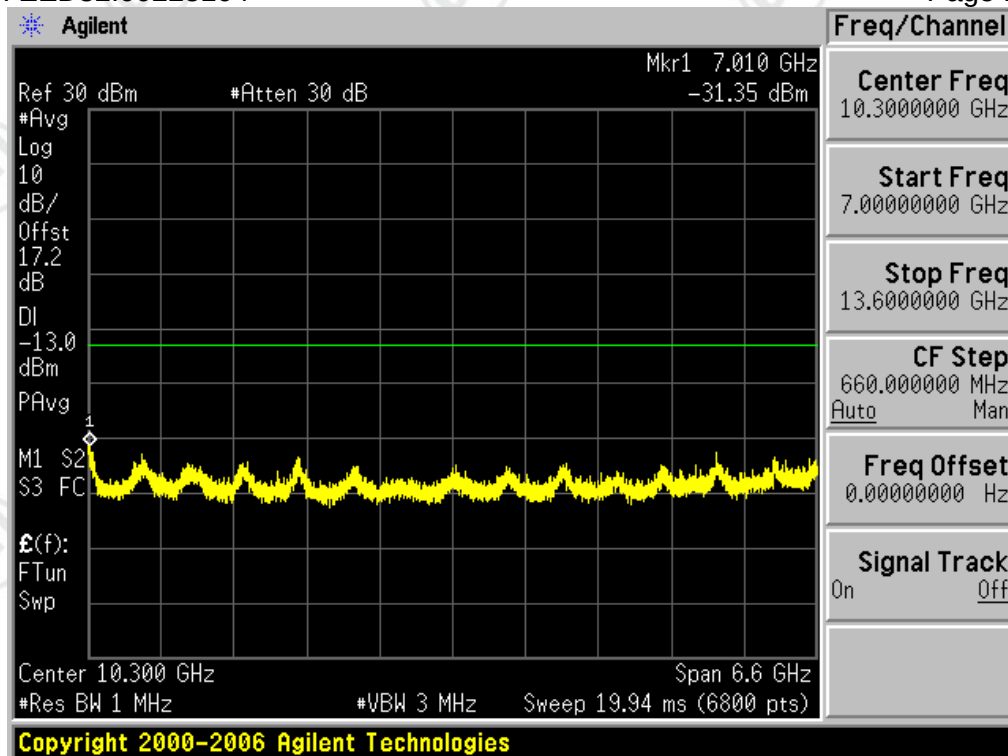




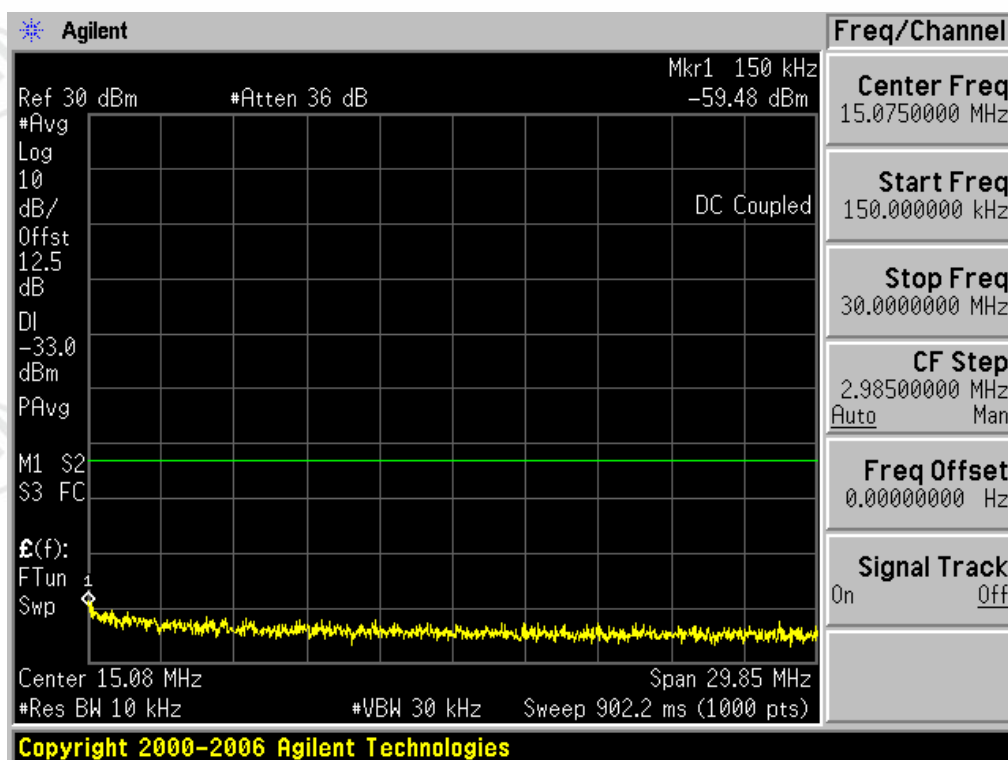
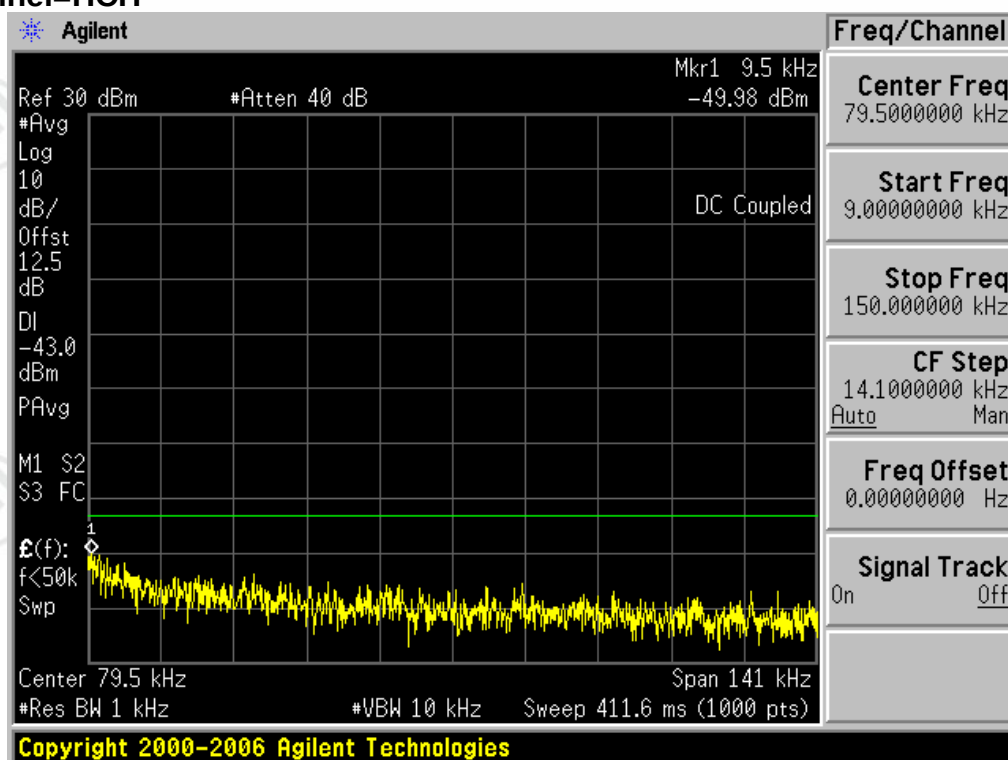
Test Channel=MCH

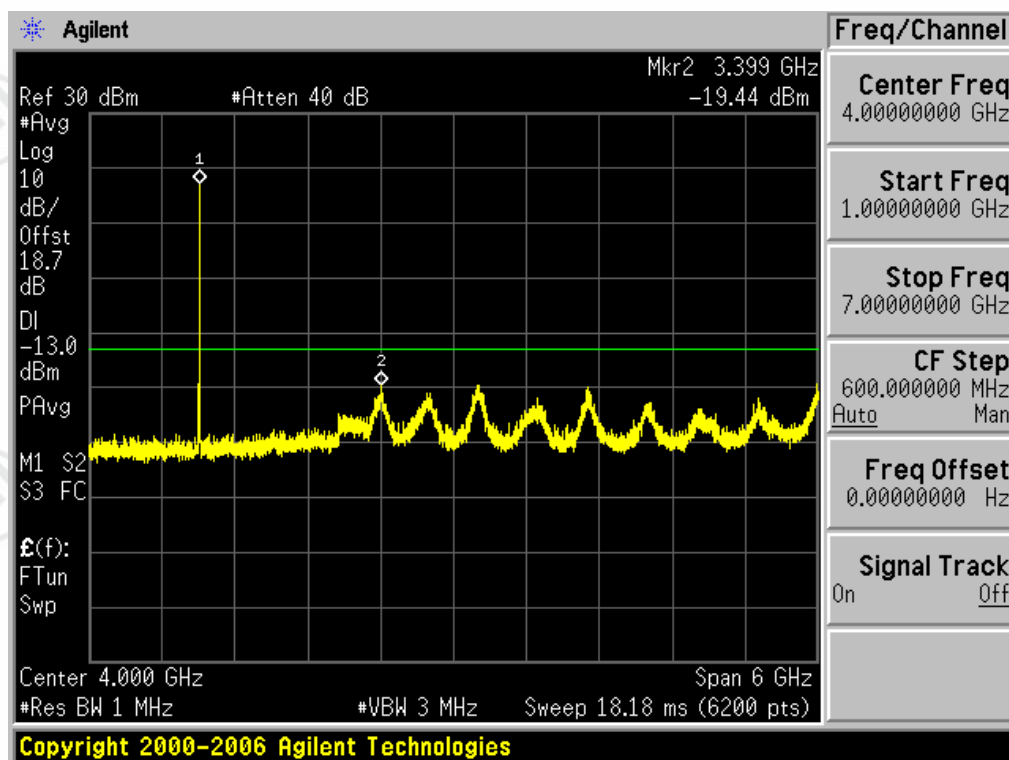
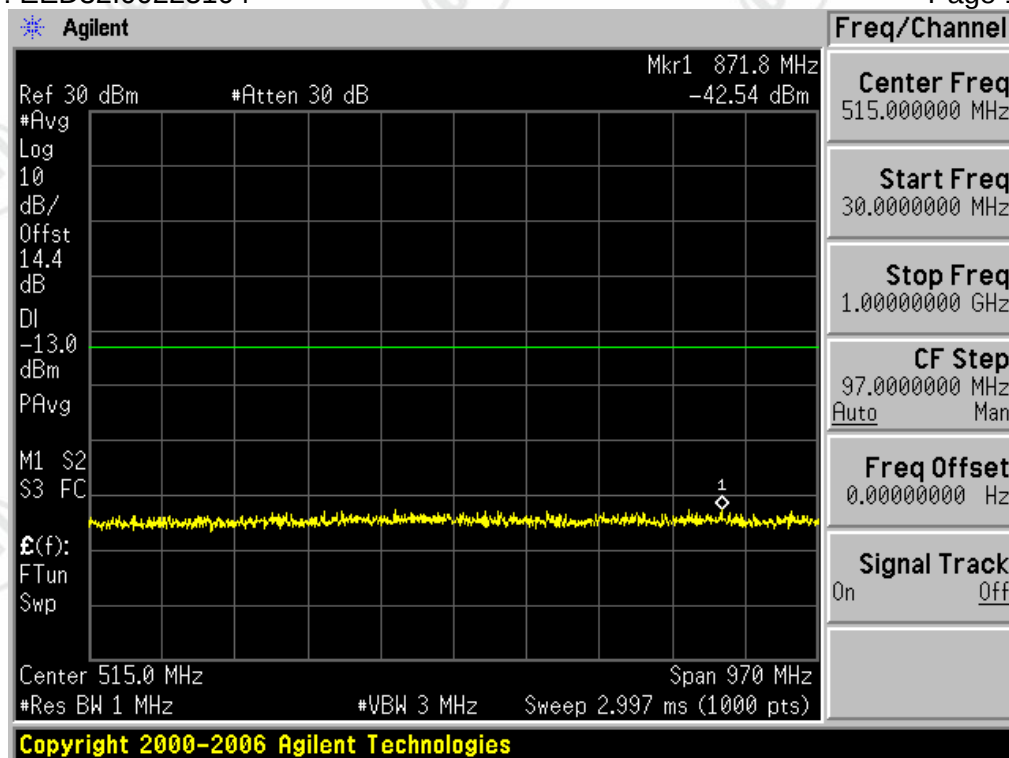


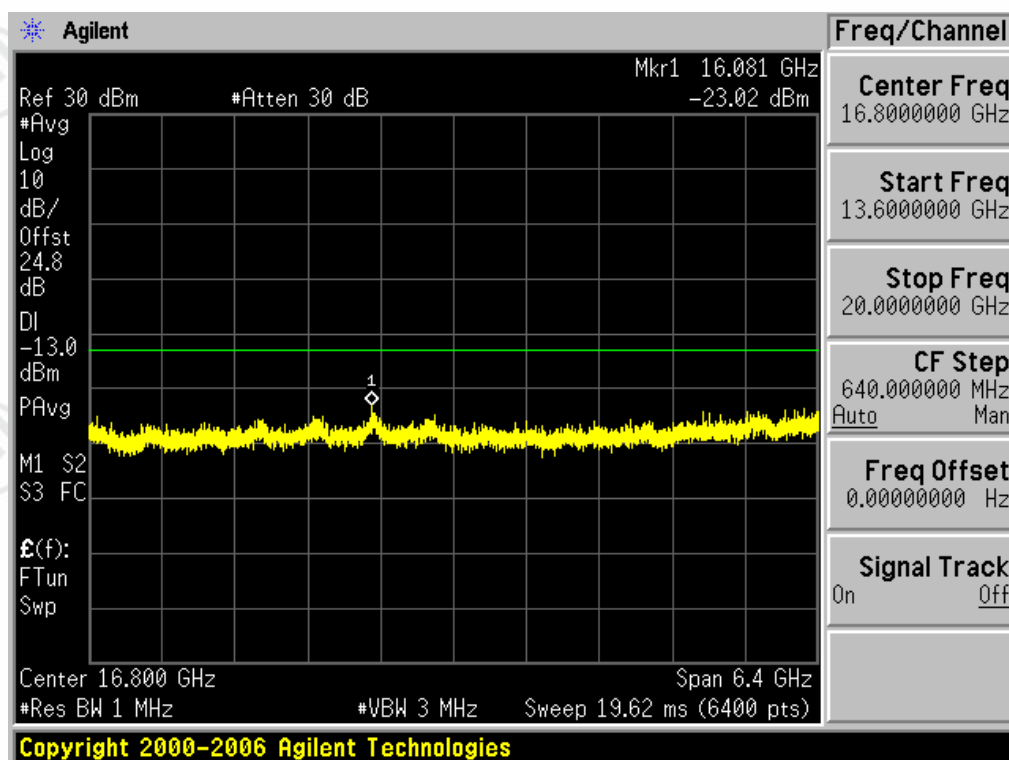
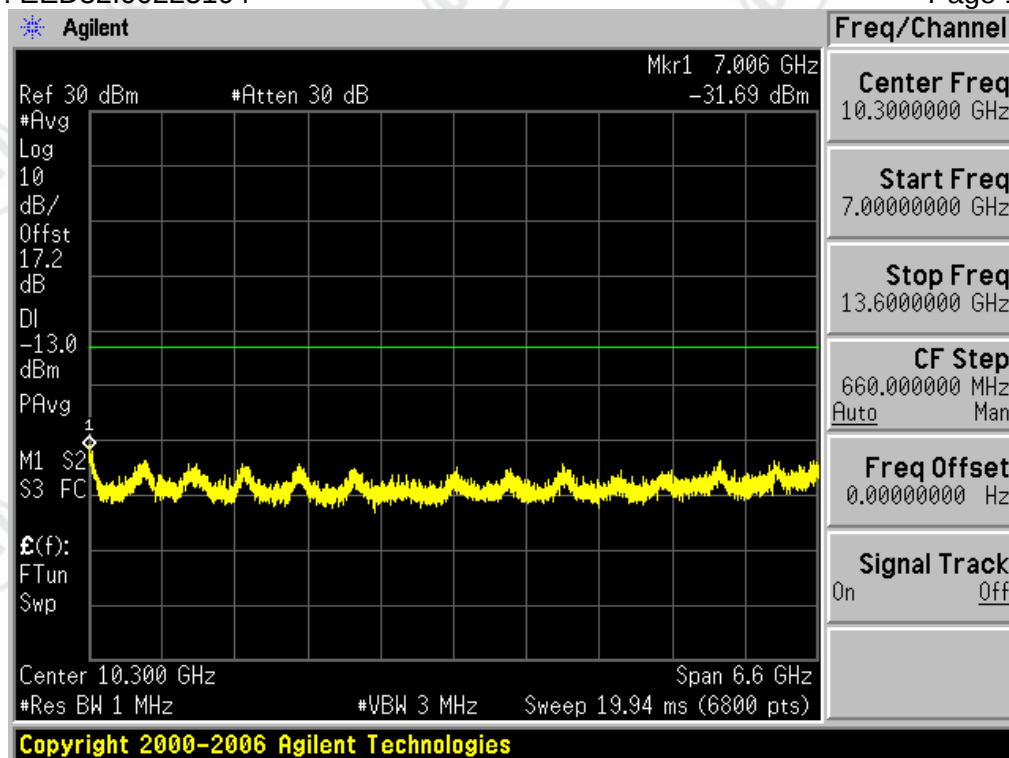




Test Channel=HCH

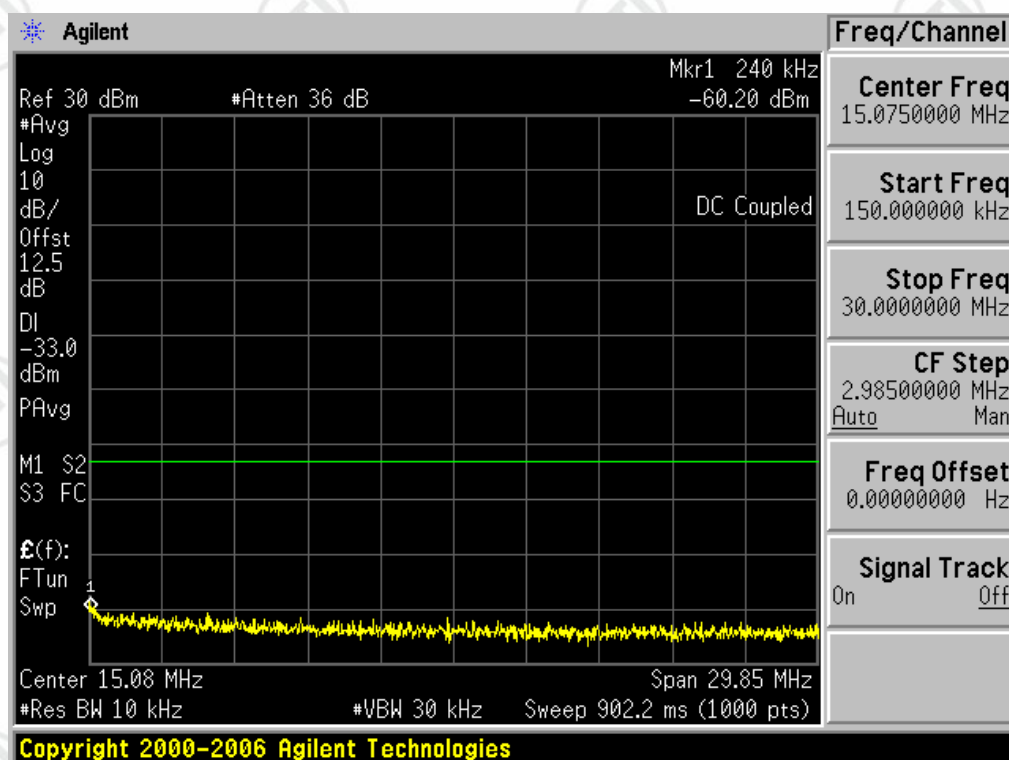
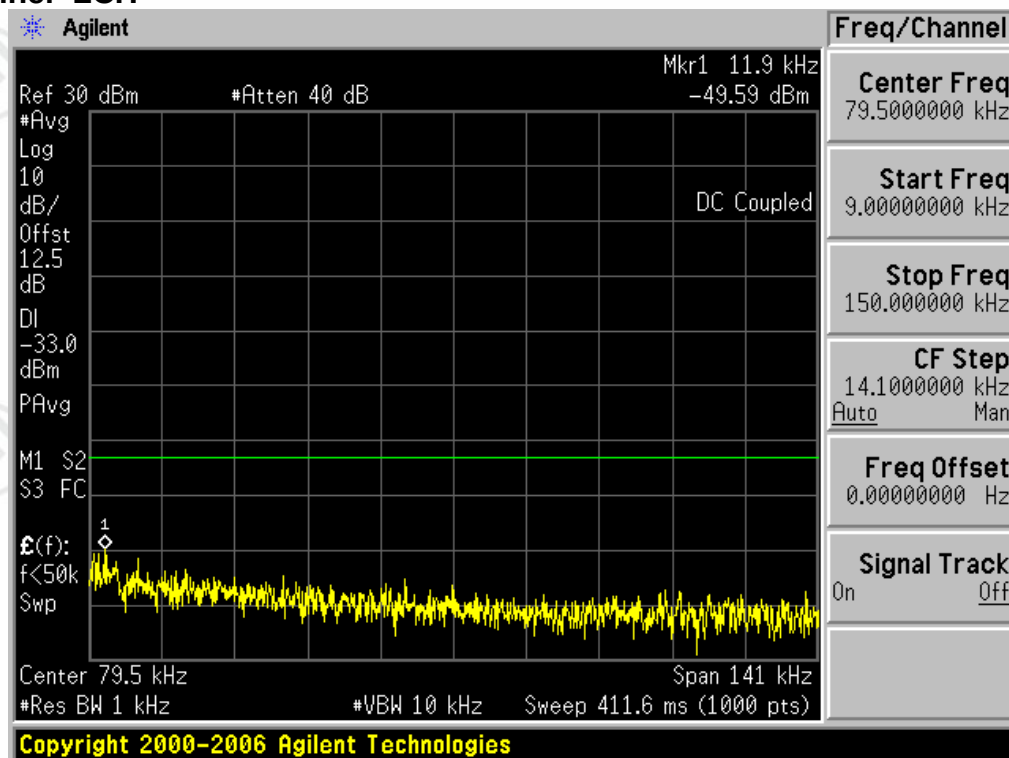


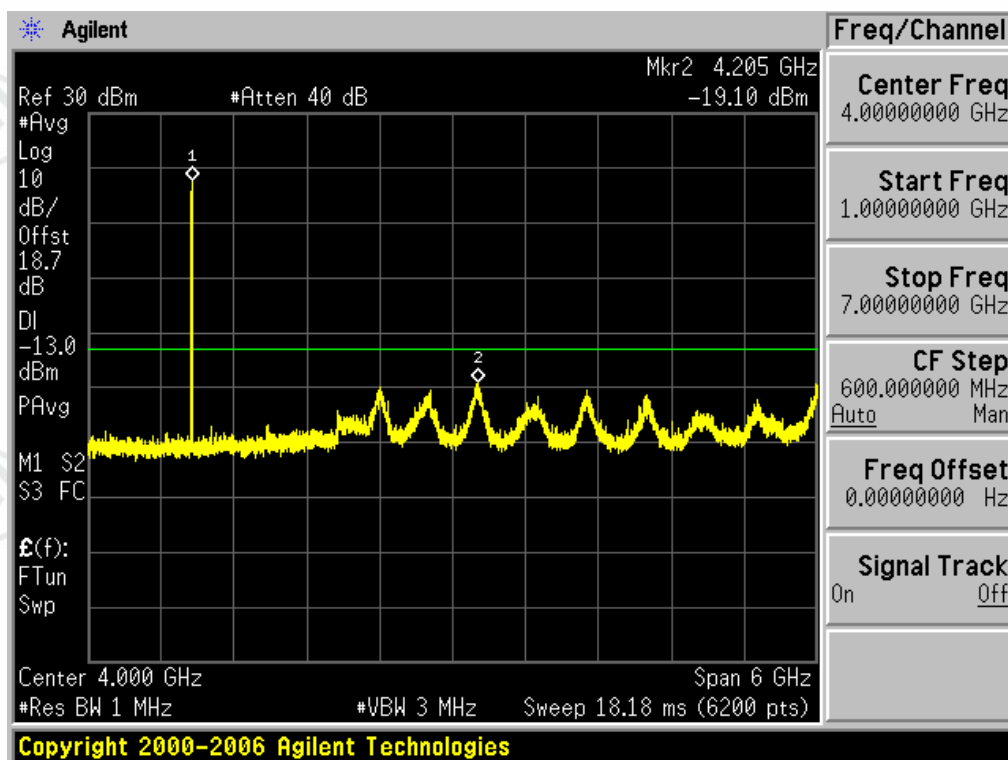
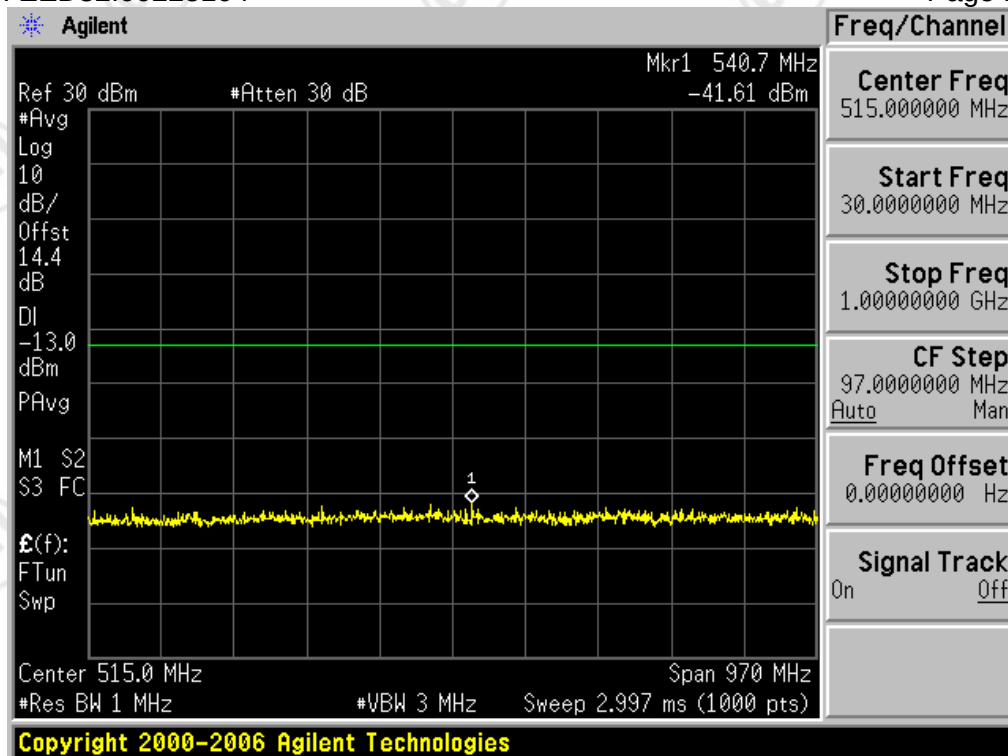


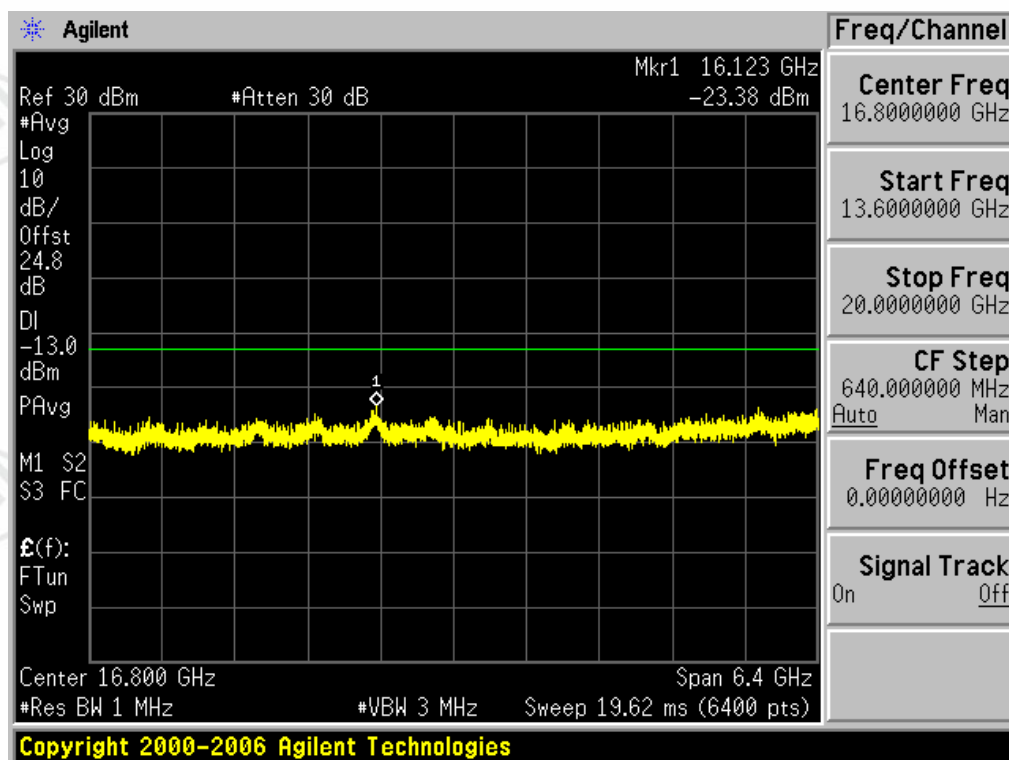
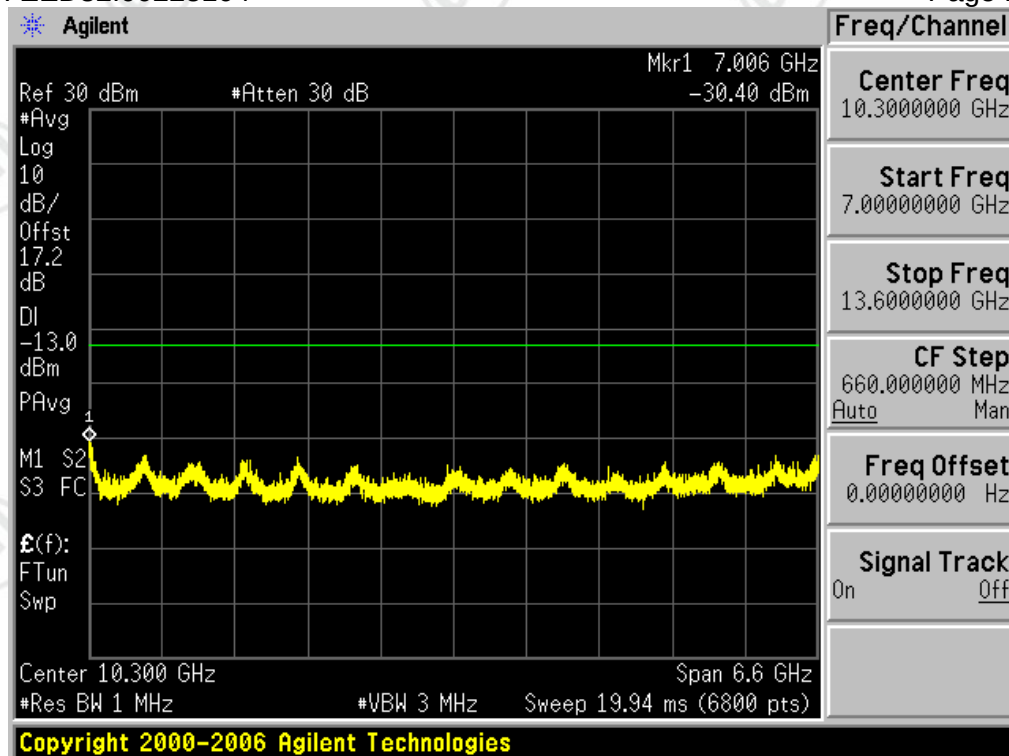


Test Mode=UMTS/TM3

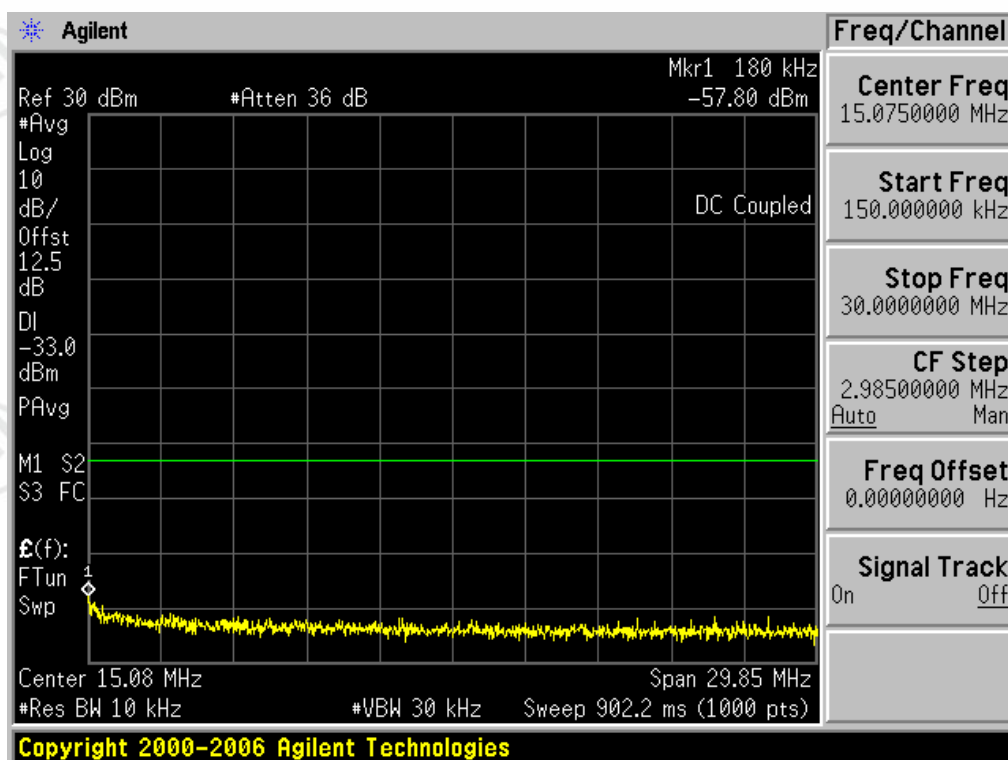
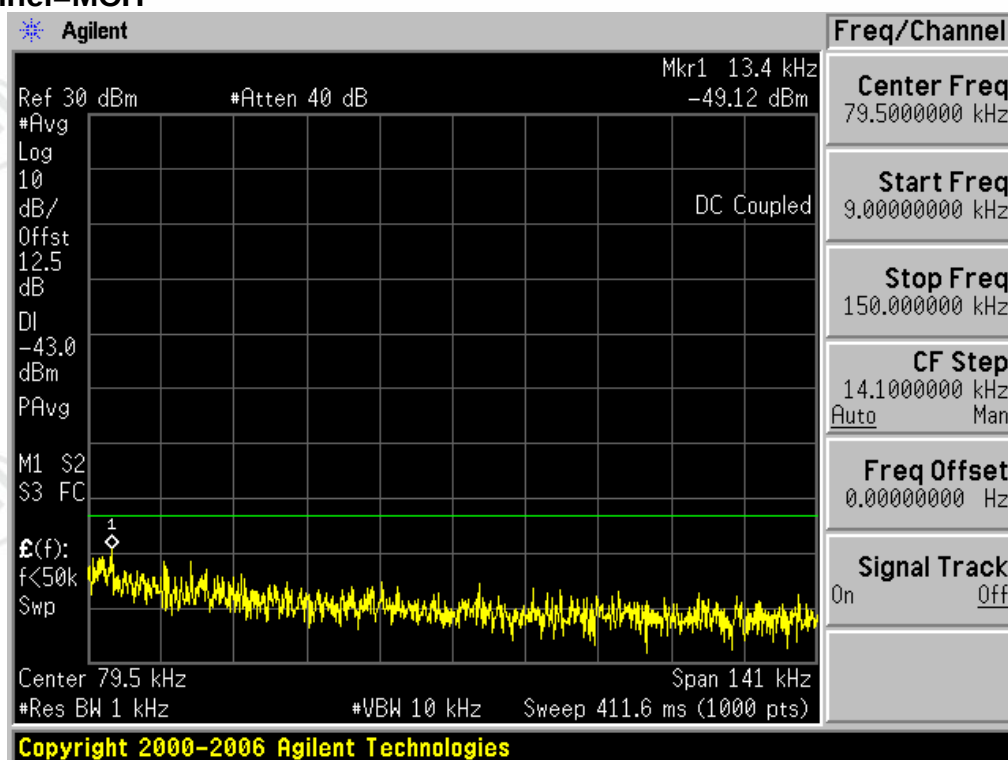
Test Channel=LCH

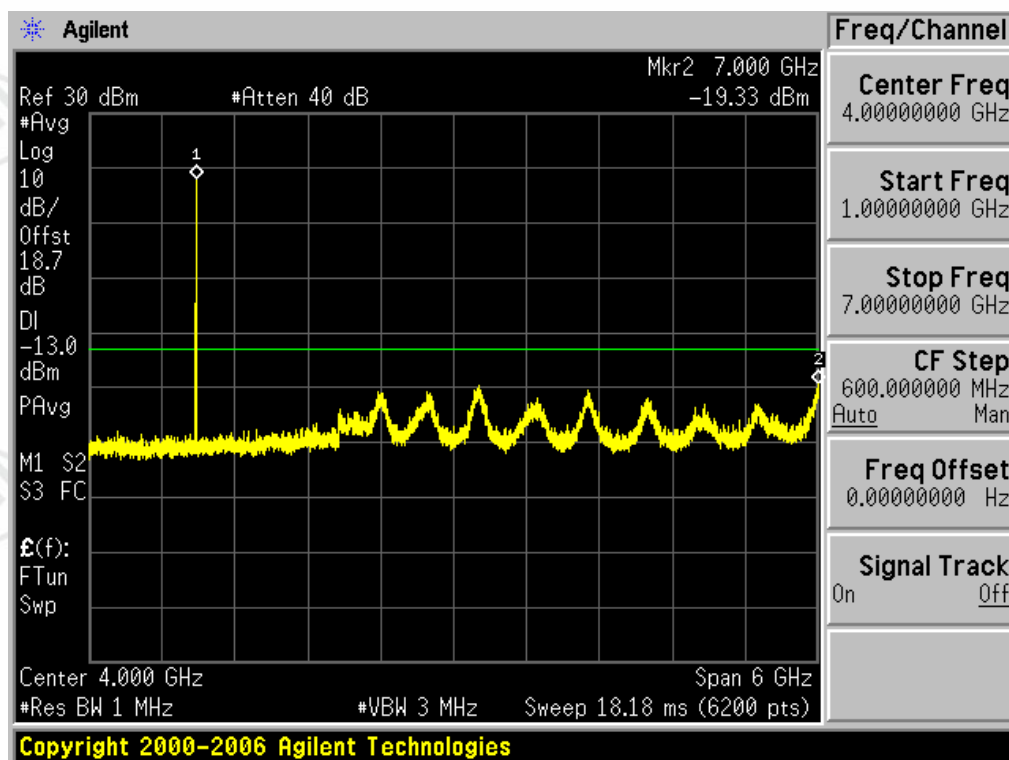
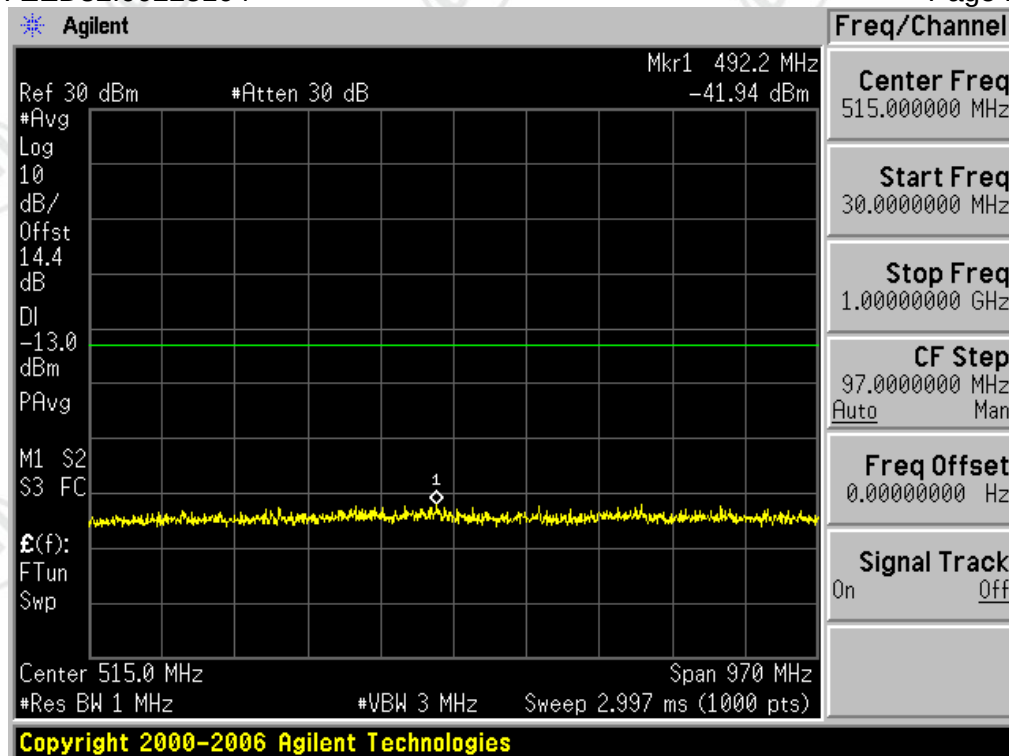


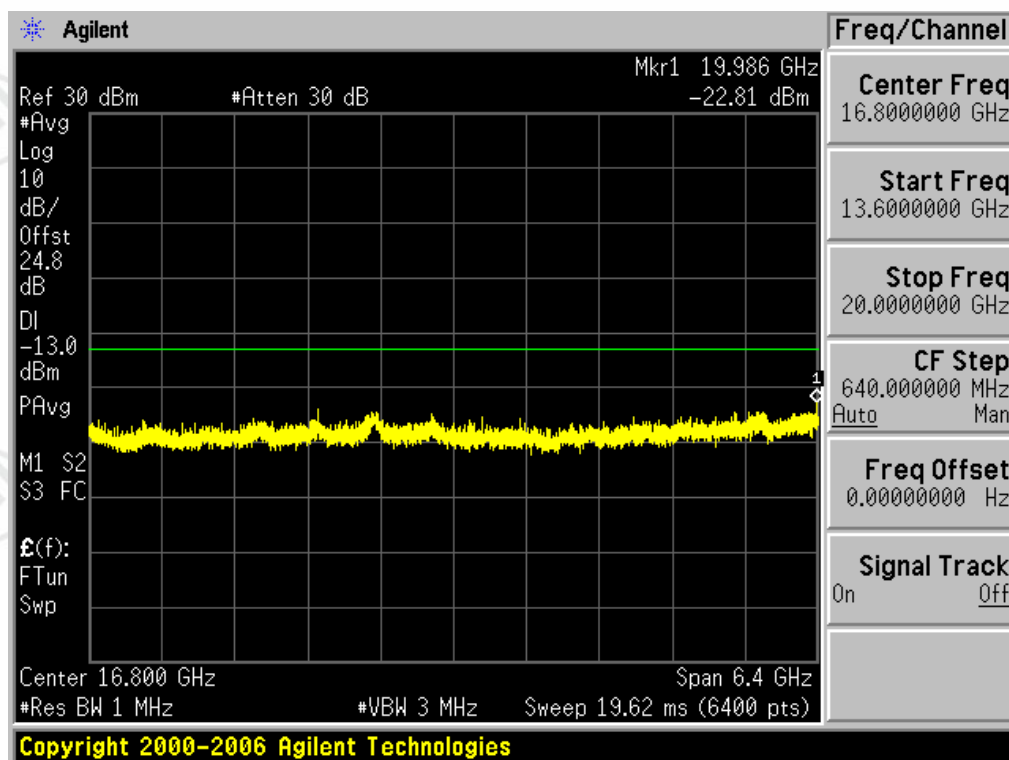
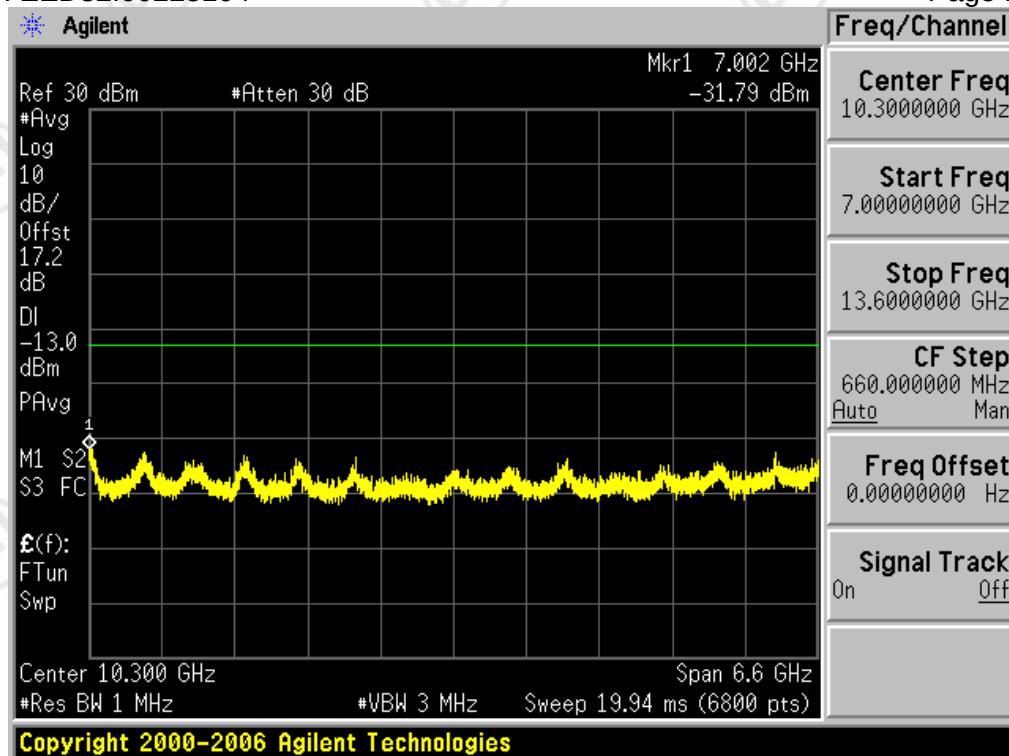




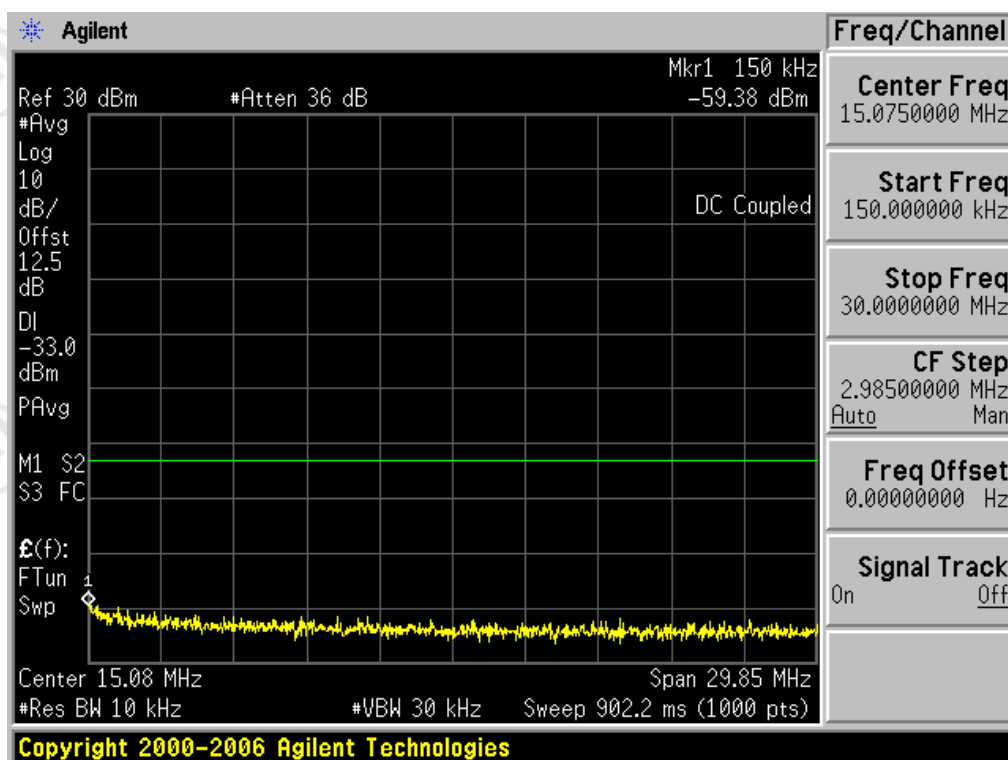
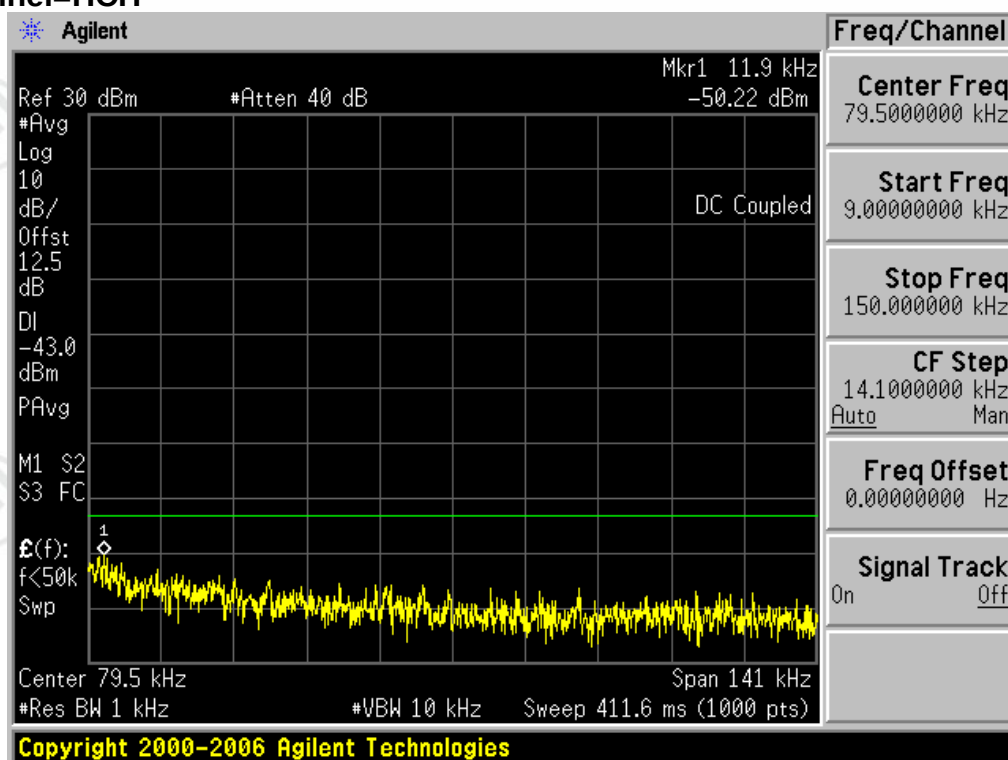
Test Channel=MCH

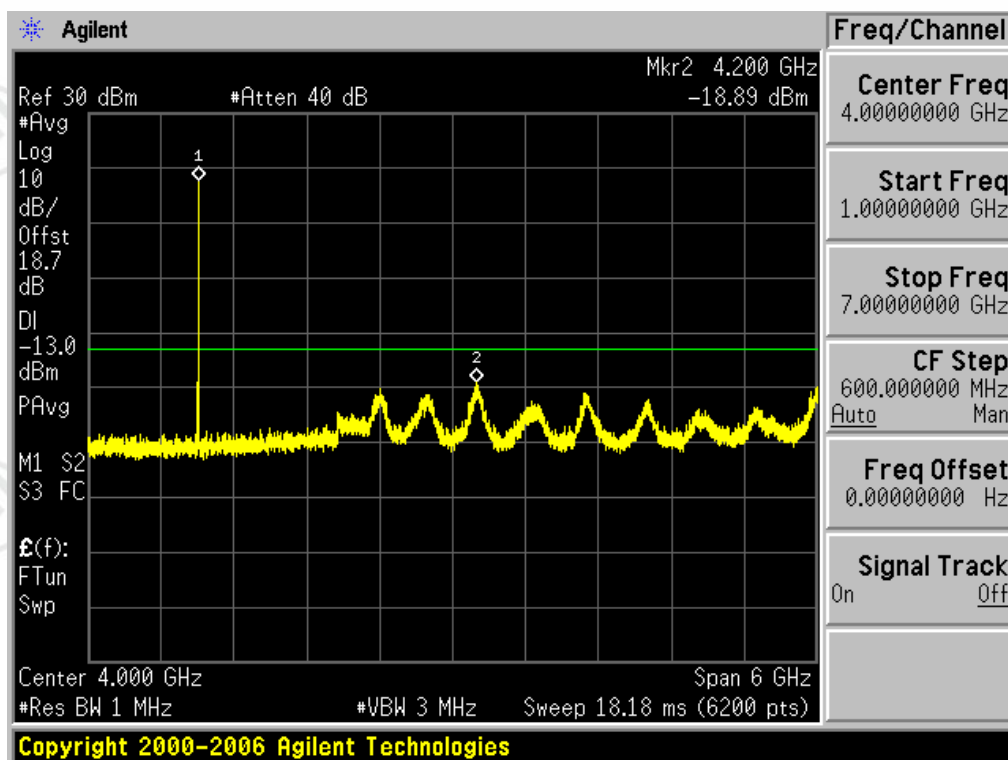
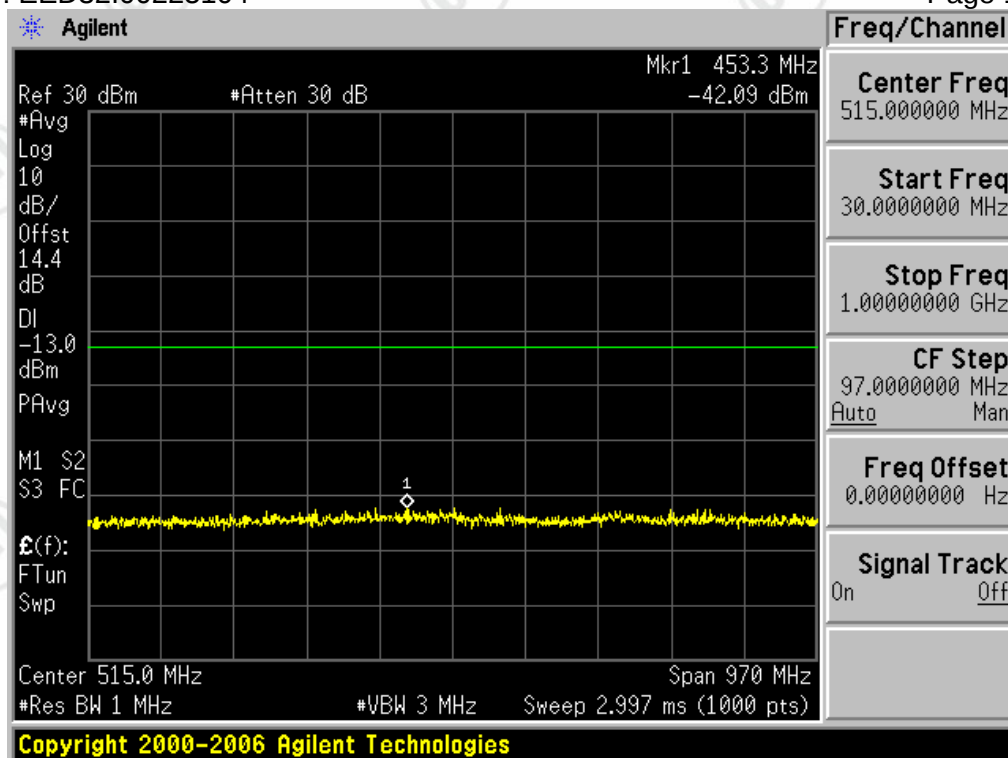


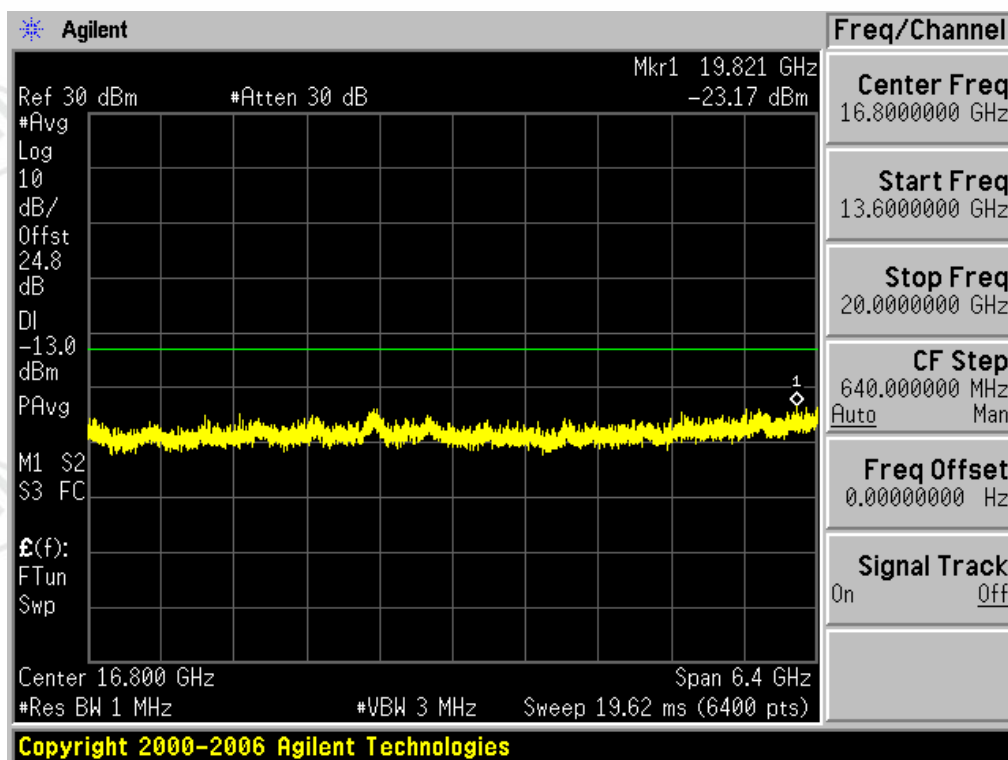
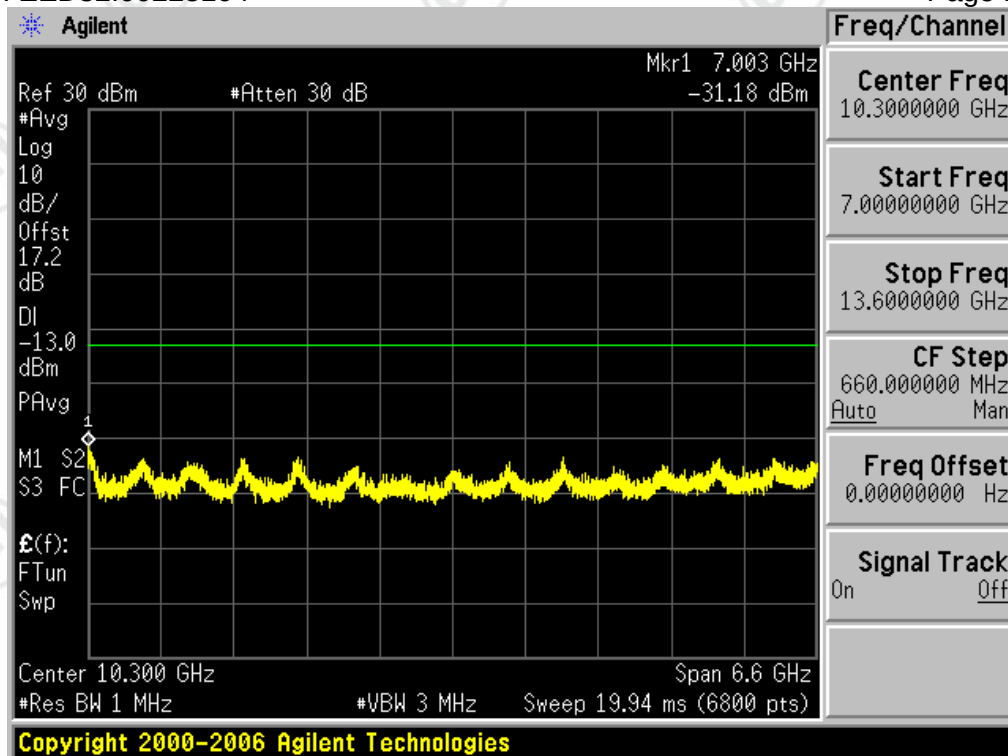




Test Channel=HCH







## Appendix F): Frequency Stability

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| <b>Test Requirement:</b>      | Part 2.1055                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                |
| <b>Test Method:</b>           | TIA-603-D-2010 Clause 2.2.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                |
| <b>Test Setup:</b>            | Refer to section 5 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                |
| <b>Measurement Procedure:</b> | 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. |                                |
| <b>Instruments Used:</b>      | Refer to section 7 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                |
| <b>Limit:</b>                 | Operation Band                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Frequency stability Limit(ppm) |
|                               | GSM/GPRS/EDGE/WCDMA 850                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ±2.5ppm                        |
|                               | GSM/GPRS/EDGE/WCDMA 1900                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ---                            |
| <b>Test Results:</b>          | Pass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                |

### Test Data:

#### Frequency Error vs. Voltage:

(VL is 102V, VH is 138V, VN is 120V)

| 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         | -6.13           | -0.01               | ±2.5        | PASS    |
|           |           |              | TN         | VN         | -5.81           | -0.01               | ±2.5        | PASS    |
|           |           |              | TN         | VH         | -6.13           | -0.01               | ±2.5        | PASS    |
|           |           | MCH          | TN         | VL         | -5.36           | -0.01               | ±2.5        | PASS    |
|           |           |              | TN         | VN         | -4.97           | -0.01               | ±2.5        | PASS    |
|           |           |              | TN         | VH         | -5.55           | -0.01               | ±2.5        | PASS    |
|           |           | HCH          | TN         | VL         | -8.07           | -0.01               | ±2.5        | PASS    |
|           |           |              | TN         | VN         | -7.75           | -0.01               | ±2.5        | PASS    |
|           |           |              | TN         | VH         | -7.49           | -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    | TM2       | LCH          | TN         | VL         | -5.88           | -0.007              | ±2.5        | PASS    |
|           |           |              | TN         | VN         | -3.75           | -0.004              | ±2.5        | PASS    |
|           |           |              | TN         | VH         | -3.23           | -0.003              | ±2.5        | PASS    |
|           |           | MCH          | TN         | VL         | -4.84           | -0.005              | ±2.5        | PASS    |
|           |           |              | TN         | VN         | -5.17           | -0.006              | ±2.5        | PASS    |
|           |           |              | TN         | VH         | -3.75           | -0.004              | ±2.5        | PASS    |
|           |           | HCH          | TN         | VL         | -5.04           | -0.005              | ±2.5        | PASS    |
|           |           |              | TN         | VN         | -5.29           | -0.006              | ±2.5        | PASS    |
|           |           |              | TN         | VH         | -4.26           | -0.005              | ±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         | 0.65            | 0.0003              | ±2.5        | PASS    |
|           |           |              | TN         | VN         | -5.36           | -0.002              | ±2.5        | PASS    |
|           |           |              | TN         | VH         | -4.07           | -0.002              | ±2.5        | PASS    |
|           |           | MCH          | TN         | VL         | -3.36           | -0.001              | ±2.5        | PASS    |
|           |           |              | TN         | VN         | -4.71           | -0.002              | ±2.5        | PASS    |
|           |           |              | TN         | VH         | -7.75           | -0.004              | ±2.5        | PASS    |
|           |           | HCH          | TN         | VL         | -2.00           | -0.001              | ±2.5        | PASS    |
|           |           |              | TN         | VN         | -3.29           | -0.001              | ±2.5        | PASS    |
|           |           |              | TN         | VH         | -5.23           | -0.002              | ±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         | 3.23            | 0.001               | ±2.5        | PASS    |
|           |           |              | TN         | VN         | 0.77            | 0.0004              | ±2.5        | PASS    |
|           |           |              | TN         | VH         | -2.00           | -0.001              | ±2.5        | PASS    |
|           |           | MCH          | TN         | VL         | 3.23            | 0.001               | ±2.5        | PASS    |
|           |           |              | TN         | VN         | -3.23           | -0.001              | ±2.5        | PASS    |
|           |           |              | TN         | VH         | 0.84            | 0.0004              | ±2.5        | PASS    |
|           |           | HCH          | TN         | VL         | -2.26           | -0.001              | ±2.5        | PASS    |
|           |           |              | TN         | VN         | -0.97           | -0.0005             | ±2.5        | PASS    |
|           |           |              | TN         | VH         | -3.10           | -0.001              | ±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        | -6.20           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | -20        | -6.01           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | -10        | -4.78           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 0          | -8.85           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 10         | -5.55           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 20         | -6.72           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 30         | -6.33           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 40         | -3.94           | -0.004              | ±2.5        | PASS    |
|           |           |              | VN         | 50         | -7.23           | -0.01               | ±2.5        | PASS    |
| GSM850    | TM1       | MCH          | VN         | -30        | -2.65           | -0.003              | ±2.5        | PASS    |
|           |           |              | VN         | -20        | -4.97           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | -10        | -7.36           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 0          | -3.42           | -0.004              | ±2.5        | PASS    |
|           |           |              | VN         | 10         | -6.20           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 20         | -4.84           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 30         | -8.33           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 40         | -5.94           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 50         | -5.36           | -0.01               | ±2.5        | PASS    |
| GSM850    | TM1       | HCH          | VN         | -30        | -5.23           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | -20        | -6.01           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | -10        | -7.23           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 0          | -8.39           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 10         | -5.81           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 20         | -9.23           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 30         | -5.49           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 40         | -6.33           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 50         | -5.81           | -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    | TM2       | LCH          | VN         | -30        | -4.58           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | -20        | -2.65           | -0.003              | ±2.5        | PASS    |
|           |           |              | VN         | -10        | -5.04           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 0          | -4.91           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 10         | -5.62           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 20         | -3.23           | 0.00                | ±2.5        | PASS    |
|           |           |              | VN         | 30         | -5.88           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 40         | -4.84           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 50         | -3.29           | -0.003              | ±2.5        | PASS    |
| GSM850    | TM2       | MCH          | VN         | -30        | -4.97           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | -20        | -7.55           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | -10        | -4.58           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 0          | -2.91           | -0.003              | ±2.5        | PASS    |
|           |           |              | VN         | 10         | -5.17           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 20         | -5.62           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 30         | -5.10           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 40         | -3.42           | 0.00                | ±2.5        | PASS    |
|           |           |              | VN         | 50         | -6.78           | -0.01               | ±2.5        | PASS    |
| GSM850    | TM2       | HCH          | VN         | -30        | -4.13           | -0.004              | ±2.5        | PASS    |
|           |           |              | VN         | -20        | -6.97           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | -10        | -4.00           | -0.004              | ±2.5        | PASS    |
|           |           |              | VN         | 0          | -6.65           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 10         | -7.94           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 20         | -6.97           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 30         | -6.33           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 40         | -4.71           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 50         | -6.20           | -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   | TM1       | LCH          | VN         | -30        | -5.42           | -0.002              | ±2.5        | PASS    |
|           |           |              | VN         | -20        | -3.16           | -0.001              | ±2.5        | PASS    |
|           |           |              | VN         | -10        | 1.94            | 0.001               | ±2.5        | PASS    |
|           |           |              | VN         | 0          | 2.65            | 0.001               | ±2.5        | PASS    |
|           |           |              | VN         | 10         | 1.29            | 0.0006              | ±2.5        | PASS    |
|           |           |              | VN         | 20         | 4.78            | 0.002               | ±2.5        | PASS    |
|           |           |              | VN         | 30         | -0.65           | -0.0003             | ±2.5        | PASS    |
|           |           |              | VN         | 40         | -3.23           | -0.001              | ±2.5        | PASS    |
|           |           |              | VN         | 50         | 3.81            | 0.002               | ±2.5        | PASS    |
| GSM1900   | TM1       | MCH          | VN         | -30        | 1.55            | 0.0008              | ±2.5        | PASS    |
|           |           |              | VN         | -20        | -4.33           | -0.002              | ±2.5        | PASS    |
|           |           |              | VN         | -10        | -2.91           | -0.001              | ±2.5        | PASS    |
|           |           |              | VN         | 0          | -2.52           | -0.001              | ±2.5        | PASS    |
|           |           |              | VN         | 10         | -6.84           | -0.003              | ±2.5        | PASS    |
|           |           |              | VN         | 20         | -0.52           | -0.0002             | ±2.5        | PASS    |
|           |           |              | VN         | 30         | -0.19           | -0.0001             | ±2.5        | PASS    |
|           |           |              | VN         | 40         | -5.88           | -0.003              | ±2.5        | PASS    |
|           |           |              | VN         | 50         | -6.01           | -0.003              | ±2.5        | PASS    |
| GSM1900   | TM1       | HCH          | VN         | -30        | -6.59           | -0.003              | ±2.5        | PASS    |
|           |           |              | VN         | -20        | -6.07           | -0.003              | ±2.5        | PASS    |
|           |           |              | VN         | -10        | -7.04           | -0.003              | ±2.5        | PASS    |
|           |           |              | VN         | 0          | -6.84           | -0.003              | ±2.5        | PASS    |
|           |           |              | VN         | 10         | -8.59           | -0.004              | ±2.5        | PASS    |
|           |           |              | VN         | 20         | -5.94           | -0.003              | ±2.5        | PASS    |
|           |           |              | VN         | 30         | 1.10            | 0.0005              | ±2.5        | PASS    |
|           |           |              | VN         | 40         | -3.49           | -0.001              | ±2.5        | PASS    |
|           |           |              | VN         | 50         | -2.20           | -0.001              | ±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        | 1.42            | 0.0007              | ±2.5        | PASS    |
|           |           |              | VN         | -20        | 7.75            | 0.004               | ±2.5        | PASS    |
|           |           |              | VN         | -10        | -2.52           | -0.001              | ±2.5        | PASS    |
|           |           |              | VN         | 0          | 0.32            | 0.0001              | ±2.5        | PASS    |
|           |           |              | VN         | 10         | -3.75           | -0.002              | ±2.5        | PASS    |
|           |           |              | VN         | 20         | 1.29            | 0.0006              | ±2.5        | PASS    |
|           |           |              | VN         | 30         | -2.07           | -0.001              | ±2.5        | PASS    |
|           |           |              | VN         | 40         | 4.00            | 0.002               | ±2.5        | PASS    |
|           |           |              | VN         | 50         | -1.16           | -0.0006             | ±2.5        | PASS    |
| GSM1900   | TM2       | MCH          | VN         | -30        | -5.04           | -0.002              | ±2.5        | PASS    |
|           |           |              | VN         | -20        | -4.07           | -0.002              | ±2.5        | PASS    |
|           |           |              | VN         | -10        | 0.06            | 0.00003             | ±2.5        | PASS    |
|           |           |              | VN         | 0          | -4.91           | -0.002              | ±2.5        | PASS    |
|           |           |              | VN         | 10         | -2.26           | -0.001              | ±2.5        | PASS    |
|           |           |              | VN         | 20         | -0.97           | -0.0005             | ±2.5        | PASS    |
|           |           |              | VN         | 30         | 1.81            | 0.0009              | ±2.5        | PASS    |
|           |           |              | VN         | 40         | -6.39           | -0.003              | ±2.5        | PASS    |
|           |           |              | VN         | 50         | -7.88           | -0.004              | ±2.5        | PASS    |
| GSM1900   | TM2       | HCH          | VN         | -30        | -0.84           | -0.0004             | ±2.5        | PASS    |
|           |           |              | VN         | -20        | 0.45            | 0.0002              | ±2.5        | PASS    |
|           |           |              | VN         | -10        | 0.52            | 0.0002              | ±2.5        | PASS    |
|           |           |              | VN         | 0          | 0.77            | 0.0004              | ±2.5        | PASS    |
|           |           |              | VN         | 10         | -3.75           | -0.001              | ±2.5        | PASS    |
|           |           |              | VN         | 20         | 2.26            | 0.001               | ±2.5        | PASS    |
|           |           |              | VN         | 30         | -7.75           | -0.004              | ±2.5        | PASS    |
|           |           |              | VN         | 40         | -6.07           | -0.003              | ±2.5        | PASS    |
|           |           |              | VN         | 50         | -3.42           | -0.001              | ±2.5        | PASS    |

**Frequency Error vs. Voltage:**

| Test Band | Test Mode | Test Channel | Test Temp. | Test Volt. | Freq.Error (Hz) | Freq.vs.rated (ppm) | Limit (ppm) | Verdict |
|-----------|-----------|--------------|------------|------------|-----------------|---------------------|-------------|---------|
| WCDMA 850 | TM1       | LCH          | TN         | VL         | -11.32          | -0.01               | ±2.5        | PASS    |
|           |           |              | TN         | VN         | 149.70          | 0.18                | ±2.5        | PASS    |
|           |           |              | TN         | VH         | -4.09           | -0.004              | ±2.5        | PASS    |
|           |           | MCH          | TN         | VL         | 20.78           | 0.02                | ±2.5        | PASS    |
|           |           |              | TN         | VN         | 149.70          | 0.88                | ±2.5        | PASS    |
|           |           |              | TN         | VH         | 157.29          | 0.19                | ±2.5        | PASS    |
|           |           | HCH          | TN         | VL         | 1129.07         | 1.33                | ±2.5        | PASS    |
|           |           |              | TN         | VN         | 149.70          | 0.74                | ±2.5        | PASS    |
|           |           |              | TN         | VH         | 262.82          | 0.31                | ±2.5        | PASS    |
|           | TM2       | LCH          | TN         | VL         | 37.49           | 0.05                | ±2.5        | PASS    |
|           |           |              | TN         | VN         | 27.28           | 0.03                | ±2.5        | PASS    |
|           |           |              | TN         | VH         | -84.49          | 0.10                | ±2.5        | PASS    |
|           |           | MCH          | TN         | VL         | -110.78         | -0.13               | ±2.5        | PASS    |
|           |           |              | TN         | VN         | 501.30          | 0.60                | ±2.5        | PASS    |
|           |           |              | TN         | VH         | -15.06          | -0.02               | ±2.5        | PASS    |
|           |           | HCH          | TN         | VL         | -52.14          | 0.06                | ±2.5        | PASS    |
|           |           |              | TN         | VN         | -133.83         | -0.16               | ±2.5        | PASS    |
|           |           |              | TN         | VH         | -67.52          | -0.08               | ±2.5        | PASS    |

|           |     |     |    |    |        |       |      |      |
|-----------|-----|-----|----|----|--------|-------|------|------|
| WCDMA 850 | TM3 | LCH | TN | VL | -7.43  | -0.01 | ±2.5 | PASS |
|           |     |     | TN | VN | 3.04   | 0.003 | ±2.5 | PASS |
|           |     |     | TN | VH | 68.22  | 0.08  | ±2.5 | PASS |
|           |     | MCH | TN | VL | -65.93 | -0.08 | ±2.5 | PASS |
|           |     |     | TN | VN | -25.73 | -0.03 | ±2.5 | PASS |
|           |     |     | TN | VH | 21.33  | 0.03  | ±2.5 | PASS |
|           |     | HCH | TN | VL | -24.69 | -0.03 | ±2.5 | PASS |
|           |     |     | TN | VN | -5.40  | -0.01 | ±2.5 | PASS |
|           |     |     | TN | VH | 78.57  | 0.09  | ±2.5 | PASS |

| Test Band  | Test Mode | Test Channel | Test Temp. | Test Volt. | Freq.Error (Hz) | Freq.vs.rated (ppm) | Limit (ppm) | Verdict |
|------------|-----------|--------------|------------|------------|-----------------|---------------------|-------------|---------|
| WCDMA 1900 | TM1       | LCH          | TN         | VL         | 427.19          | 0.23                | ±2.5        | PASS    |
|            |           |              | TN         | VN         | 262.36          | 0.14                | ±2.5        | PASS    |
|            |           |              | TN         | VH         | 259.49          | 0.14                | ±2.5        | PASS    |
|            |           | MCH          | TN         | VL         | 1247.91         | 0.66                | ±2.5        | PASS    |
|            |           |              | TN         | VN         | 262.36          | 0.50                | ±2.5        | PASS    |
|            |           |              | TN         | VH         | 949.01          | 0.50                | ±2.5        | PASS    |
|            |           | HCH          | TN         | VL         | 1827.88         | 0.96                | ±2.5        | PASS    |
|            |           |              | TN         | VN         | 262.36          | 0.97                | ±2.5        | PASS    |
|            |           |              | TN         | VH         | 2386.22         | 1.25                | ±2.5        | PASS    |
|            | TM2       | LCH          | TN         | VL         | -42.66          | -0.02               | ±2.5        | PASS    |
|            |           |              | TN         | VN         | -35.20          | 0.02                | ±2.5        | PASS    |
|            |           |              | TN         | VH         | 50.95           | 0.03                | ±2.5        | PASS    |
|            |           | MCH          | TN         | VL         | -32.96          | -0.02               | ±2.5        | PASS    |
|            |           |              | TN         | VN         | -50.54          | -0.03               | ±2.5        | PASS    |
|            |           |              | TN         | VH         | -23.24          | -0.01               | ±2.5        | PASS    |
|            |           | HCH          | TN         | VL         | 47.10           | 0.02                | ±2.5        | PASS    |
|            |           |              | TN         | VN         | -38.96          | -0.02               | ±2.5        | PASS    |
|            |           |              | TN         | VH         | -4.53           | -0.002              | ±2.5        | PASS    |

|            |     |     |    |    |         |          |      |      |
|------------|-----|-----|----|----|---------|----------|------|------|
| WCDMA 1900 | TM3 | LCH | TN | VL | 23.97   | 0.01     | ±2.5 | PASS |
|            |     |     | TN | VN | 124.63  | 0.07     | ±2.5 | PASS |
|            |     |     | TN | VH | -29.83  | 0.02     | ±2.5 | PASS |
|            |     | MCH | TN | VL | -32.59  | -0.02    | ±2.5 | PASS |
|            |     |     | TN | VN | -17.12  | 0.01     | ±2.5 | PASS |
|            |     |     | TN | VH | -108.98 | -0.06    | ±2.5 | PASS |
|            |     | HCH | TN | VL | -0.05   | -0.00002 | ±2.5 | PASS |
|            |     |     | TN | VN | 6.53    | 0.003    | ±2.5 | PASS |
|            |     |     | TN | VH | -102.08 | -0.05    | ±2.5 | PASS |

**Frequency Error vs. Temperature:**

| Test Band | Test Mode | Test Channel | Test Volt. | Test Temp | Freq.Error (Hz) | Freq.vs.rated (ppm) | Limit (ppm) | Verdict |
|-----------|-----------|--------------|------------|-----------|-----------------|---------------------|-------------|---------|
| WCDMA 850 | TM1       | LCH          | VN         | -30       | -0.67           | -0.0008             | ±2.5        | PASS    |
|           |           |              | VN         | -20       | 194.82          | 0.24                | ±2.5        | PASS    |
|           |           |              | VN         | -10       | 1.56            | 0.001               | ±2.5        | PASS    |
|           |           |              | VN         | 0         | -13.60          | -0.02               | ±2.5        | PASS    |
|           |           |              | VN         | 10        | 126.91          | 0.15                | ±2.5        | PASS    |
|           |           |              | VN         | 20        | 131.85          | 0.16                | ±2.5        | PASS    |
|           |           |              | VN         | 30        | -9.84           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 40        | 133.73          | 0.16                | ±2.5        | PASS    |
|           |           |              | VN         | 50        | 1.88            | 0.002               | ±2.5        | PASS    |
| WCDMA 850 | TM1       | MCH          | VN         | -30       | 154.63          | 0.18                | ±2.5        | PASS    |
|           |           |              | VN         | -20       | 13.18           | 0.02                | ±2.5        | PASS    |
|           |           |              | VN         | -10       | 440.61          | 0.53                | ±2.5        | PASS    |
|           |           |              | VN         | 0         | 9.06            | 0.01                | ±2.5        | PASS    |
|           |           |              | VN         | 10        | 143.57          | 0.17                | ±2.5        | PASS    |
|           |           |              | VN         | 20        | -5.91           | -0.01               | ±2.5        | PASS    |
|           |           |              | VN         | 30        | 136.99          | 0.16                | ±2.5        | PASS    |
|           |           |              | VN         | 40        | -18.20          | -0.02               | ±2.5        | PASS    |
|           |           |              | VN         | 50        | -20.55          | -0.02               | ±2.5        | PASS    |
| WCDMA 850 | TM1       | HCH          | VN         | -30       | 747.59          | 0.88                | ±2.5        | PASS    |
|           |           |              | VN         | -20       | 1062.82         | 1.26                | ±2.5        | PASS    |
|           |           |              | VN         | -10       | 126.24          | 0.15                | ±2.5        | PASS    |
|           |           |              | VN         | 0         | 139.40          | 0.16                | ±2.5        | PASS    |
|           |           |              | VN         | 10        | 575.67          | 0.68                | ±2.5        | PASS    |
|           |           |              | VN         | 20        | 137.34          | 0.16                | ±2.5        | PASS    |
|           |           |              | VN         | 30        | 269.55          | 0.32                | ±2.5        | PASS    |
|           |           |              | VN         | 40        | 574.78          | 0.68                | ±2.5        | PASS    |
|           |           |              | VN         | 50        | -6.07           | -0.01               | ±2.5        | PASS    |

|              |     |     |    |     |     |       |      |      |
|--------------|-----|-----|----|-----|-----|-------|------|------|
| WCDMA<br>850 | TM2 | LCH | VN | -30 | 3   | 0.003 | ±2.5 | PASS |
|              |     |     | VN | -20 | 49  | 0.06  | ±2.5 | PASS |
|              |     |     | VN | -10 | 89  | 0.11  | ±2.5 | PASS |
|              |     |     | VN | 0   | 39  | 0.05  | ±2.5 | PASS |
|              |     |     | VN | 10  | 77  | 0.09  | ±2.5 | PASS |
|              |     |     | VN | 20  | 62  | 0.07  | ±2.5 | PASS |
|              |     |     | VN | 30  | -67 | -0.08 | ±2.5 | PASS |
|              |     |     | VN | 40  | 26  | 0.03  | ±2.5 | PASS |
|              |     |     | VN | 50  | 47  | 0.06  | ±2.5 | PASS |
|              |     | MCH | VN | -30 | -80 | -0.10 | ±2.5 | PASS |
|              |     |     | VN | -20 | 112 | 0.13  | ±2.5 | PASS |
|              |     |     | VN | -10 | 137 | 0.16  | ±2.5 | PASS |
|              |     |     | VN | 0   | 93  | 0.11  | ±2.5 | PASS |
|              |     |     | VN | 10  | 79  | 0.09  | ±2.5 | PASS |
|              |     |     | VN | 20  | 115 | 0.14  | ±2.5 | PASS |
|              |     |     | VN | 30  | 71  | 0.08  | ±2.5 | PASS |
|              |     |     | VN | 40  | -55 | -0.07 | ±2.5 | PASS |
|              |     |     | VN | 50  | -8  | -0.01 | ±2.5 | PASS |
|              |     | HCH | VN | -30 | -50 | -0.06 | ±2.5 | PASS |
|              |     |     | VN | -20 | 54  | 0.06  | ±2.5 | PASS |
|              |     |     | VN | -10 | 62  | 0.07  | ±2.5 | PASS |
|              |     |     | VN | 0   | 50  | 0.06  | ±2.5 | PASS |
|              |     |     | VN | 10  | 41  | 0.05  | ±2.5 | PASS |
|              |     |     | VN | 20  | -22 | -0.03 | ±2.5 | PASS |
|              |     |     | VN | 30  | -65 | -0.08 | ±2.5 | PASS |
|              |     |     | VN | 40  | 61  | 0.07  | ±2.5 | PASS |
|              |     |     | VN | 50  | 24  | 0.03  | ±2.5 | PASS |

|              |     |     |    |     |      |        |      |      |
|--------------|-----|-----|----|-----|------|--------|------|------|
| WCDMA8<br>50 | TM3 | LCH | VN | -30 | -152 | -0.18  | ±2.5 | PASS |
|              |     |     | VN | -20 | 45   | 0.05   | ±2.5 | PASS |
|              |     |     | VN | -10 | 18   | 0.02   | ±2.5 | PASS |
|              |     |     | VN | 0   | 80   | 0.1    | ±2.5 | PASS |
|              |     |     | VN | 10  | -84  | -0.1   | ±2.5 | PASS |
|              |     |     | VN | 20  | -25  | -0.03  | ±2.5 | PASS |
|              |     |     | VN | 30  | 16   | 0.02   | ±2.5 | PASS |
|              |     |     | VN | 40  | -135 | -0.16  | ±2.5 | PASS |
|              |     |     | VN | 50  | 292  | 0.35   | ±2.5 | PASS |
|              |     | MCH | VN | -30 | 38   | 0.05   | ±2.5 | PASS |
|              |     |     | VN | -20 | 20   | 0.02   | ±2.5 | PASS |
|              |     |     | VN | -10 | -29  | -0.03  | ±2.5 | PASS |
|              |     |     | VN | 0   | 136  | 0.16   | ±2.5 | PASS |
|              |     |     | VN | 10  | -73  | -0.09  | ±2.5 | PASS |
|              |     |     | VN | 20  | -21  | -0.02  | ±2.5 | PASS |
|              |     |     | VN | 30  | -33  | -0.04  | ±2.5 | PASS |
|              |     |     | VN | 40  | 100  | 0.12   | ±2.5 | PASS |
|              |     |     | VN | 50  | -27  | -0.03  | ±2.5 | PASS |
|              |     | HCH | VN | -30 | -77  | -0.09  | ±2.5 | PASS |
|              |     |     | VN | -20 | -70  | -0.08  | ±2.5 | PASS |
|              |     |     | VN | -10 | -20  | -0.02  | ±2.5 | PASS |
|              |     |     | VN | 0   | 69   | 0.08   | ±2.5 | PASS |
|              |     |     | VN | 10  | -3   | -0.003 | ±2.5 | PASS |
|              |     |     | VN | 20  | -17  | -0.02  | ±2.5 | PASS |
|              |     |     | VN | 30  | -89  | -0.11  | ±2.5 | PASS |
|              |     |     | VN | 40  | 77   | 0.09   | ±2.5 | PASS |
|              |     |     | VN | 50  | 0    | 0      | ±2.5 | PASS |

| Test Band  | Test Mode | Test Channel | Test Volt. | Test Temp | Freq.Error (Hz) | Freq.vs.rated (ppm) | Limit (ppm) | Verdict |
|------------|-----------|--------------|------------|-----------|-----------------|---------------------|-------------|---------|
| WCDMA 1900 | TM1       | LCH          | VN         | -30       | 268.31          | -0.14               | ±2.5        | PASS    |
|            |           |              | VN         | -20       | 554.21          | -0.30               | ±2.5        | PASS    |
|            |           |              | VN         | -10       | 690.63          | 0.37                | ±2.5        | PASS    |
|            |           |              | VN         | 0         | 420.44          | 0.23                | ±2.5        | PASS    |
|            |           |              | VN         | 10        | 687.88          | 0.37                | ±2.5        | PASS    |
|            |           |              | VN         | 20        | 563.42          | 0.30                | ±2.5        | PASS    |
|            |           |              | VN         | 30        | 704.88          | 0.38                | ±2.5        | PASS    |
|            |           |              | VN         | 40        | 685.13          | 0.37                | ±2.5        | PASS    |
|            |           |              | VN         | 50        | 720.90          | 0.39                | ±2.5        | PASS    |
| WCDMA 1900 | TM1       | MCH          | VN         | -30       | 1286.33         | 0.68                | ±2.5        | PASS    |
|            |           |              | VN         | -20       | 809.62          | 0.43                | ±2.5        | PASS    |
|            |           |              | VN         | -10       | 1434.04         | 0.76                | ±2.5        | PASS    |
|            |           |              | VN         | 0         | 14.56           | 0.01                | ±2.5        | PASS    |
|            |           |              | VN         | 10        | 4.62            | 0.00                | ±2.5        | PASS    |
|            |           |              | VN         | 20        | 101.90          | 0.05                | ±2.5        | PASS    |
|            |           |              | VN         | 30        | 198.17          | 0.11                | ±2.5        | PASS    |
|            |           |              | VN         | 40        | -1.01           | -0.0005             | ±2.5        | PASS    |
|            |           |              | VN         | 50        | 620.68          | 0.33                | ±2.5        | PASS    |
| WCDMA 1900 | TM1       | HCH          | VN         | -30       | 2105.07         | 1.10                | ±2.5        | PASS    |
|            |           |              | VN         | -20       | 1755.04         | 0.92                | ±2.5        | PASS    |
|            |           |              | VN         | -10       | 2665.86         | 1.40                | ±2.5        | PASS    |
|            |           |              | VN         | 0         | 1391.80         | 0.73                | ±2.5        | PASS    |
|            |           |              | VN         | 10        | 3592.55         | 1.88                | ±2.5        | PASS    |
|            |           |              | VN         | 20        | 2799.00         | 1.47                | ±2.5        | PASS    |
|            |           |              | VN         | 30        | 3249.04         | 1.70                | ±2.5        | PASS    |
|            |           |              | VN         | 40        | 2327.97         | 1.22                | ±2.5        | PASS    |
|            |           |              | VN         | 50        | 1404.04         | 0.74                | ±2.5        | PASS    |

|               |     |     |    |     |      |        |      |      |
|---------------|-----|-----|----|-----|------|--------|------|------|
| WCDMA1<br>900 | TM2 | LCH | VN | -30 | 25   | 0.01   | ±2.5 | PASS |
|               |     |     | VN | -20 | 50   | 0.03   | ±2.5 | PASS |
|               |     |     | VN | -10 | -111 | -0.06  | ±2.5 | PASS |
|               |     |     | VN | 0   | 51   | 0.03   | ±2.5 | PASS |
|               |     |     | VN | 10  | 156  | 0.08   | ±2.5 | PASS |
|               |     |     | VN | 20  | 87   | 0.05   | ±2.5 | PASS |
|               |     |     | VN | 30  | 1    | 0.0005 | ±2.5 | PASS |
|               |     |     | VN | 40  | -27  | -0.01  | ±2.5 | PASS |
|               |     |     | VN | 50  | -26  | -0.01  | ±2.5 | PASS |
|               |     | MCH | VN | -30 | -45  | -0.02  | ±2.5 | PASS |
|               |     |     | VN | -20 | 219  | 0.12   | ±2.5 | PASS |
|               |     |     | VN | -10 | -124 | -0.07  | ±2.5 | PASS |
|               |     |     | VN | 0   | 43   | 0.02   | ±2.5 | PASS |
|               |     |     | VN | 10  | -28  | -0.01  | ±2.5 | PASS |
|               |     |     | VN | 20  | -28  | -0.01  | ±2.5 | PASS |
|               |     |     | VN | 30  | -144 | -0.08  | ±2.5 | PASS |
|               |     |     | VN | 40  | 40   | 0.02   | ±2.5 | PASS |
|               |     |     | VN | 50  | -96  | -0.05  | ±2.5 | PASS |
|               |     | HCH | VN | -30 | 22   | 0.01   | ±2.5 | PASS |
|               |     |     | VN | -20 | 121  | 0.06   | ±2.5 | PASS |
|               |     |     | VN | -10 | -20  | -0.01  | ±2.5 | PASS |
|               |     |     | VN | 0   | 39   | 0.02   | ±2.5 | PASS |
|               |     |     | VN | 10  | 75   | 0.04   | ±2.5 | PASS |
|               |     |     | VN | 20  | 71   | 0.04   | ±2.5 | PASS |
|               |     |     | VN | 30  | -63  | -0.03  | ±2.5 | PASS |
|               |     |     | VN | 40  | -15  | -0.01  | ±2.5 | PASS |
|               |     |     | VN | 50  | 65   | 0.03   | ±2.5 | PASS |

|               |     |     |    |     |      |        |      |      |
|---------------|-----|-----|----|-----|------|--------|------|------|
| WCDMA1<br>900 | TM3 | LCH | VN | -30 | -26  | -0.01  | ±2.5 | PASS |
|               |     |     | VN | -20 | 76   | 0.04   | ±2.5 | PASS |
|               |     |     | VN | -10 | -44  | -0.02  | ±2.5 | PASS |
|               |     |     | VN | 0   | -110 | -0.06  | ±2.5 | PASS |
|               |     |     | VN | 10  | -14  | -0.01  | ±2.5 | PASS |
|               |     |     | VN | 20  | -18  | -0.04  | ±2.5 | PASS |
|               |     |     | VN | 30  | -72  | -0.04  | ±2.5 | PASS |
|               |     |     | VN | 40  | 28   | 0.01   | ±2.5 | PASS |
|               |     |     | VN | 50  | -86  | -0.05  | ±2.5 | PASS |
|               |     | MCH | VN | -30 | 62   | 0.03   | ±2.5 | PASS |
|               |     |     | VN | -20 | 57   | 0.03   | ±2.5 | PASS |
|               |     |     | VN | -10 | 40   | 0.02   | ±2.5 | PASS |
|               |     |     | VN | 0   | 97   | 0.05   | ±2.5 | PASS |
|               |     |     | VN | 10  | 36   | 0.02   | ±2.5 | PASS |
|               |     |     | VN | 20  | 83   | 0.04   | ±2.5 | PASS |
|               |     |     | VN | 30  | -16  | -0.01  | ±2.5 | PASS |
|               |     |     | VN | 40  | 51   | 0.03   | ±2.5 | PASS |
|               |     |     | VN | 50  | -5   | -0.002 | ±2.5 | PASS |
|               |     | HCH | VN | -30 | 51   | 0.03   | ±2.5 | PASS |
|               |     |     | VN | -20 | 156  | 0.08   | ±2.5 | PASS |
|               |     |     | VN | -10 | 87   | 0.05   | ±2.5 | PASS |
|               |     |     | VN | 0   | 1    | 0.0005 | ±2.5 | PASS |
|               |     |     | VN | 10  | -27  | -0.01  | ±2.5 | PASS |
|               |     |     | VN | 20  | -26  | -0.01  | ±2.5 | PASS |
|               |     |     | VN | 30  | -45  | -0.02  | ±2.5 | PASS |
|               |     |     | VN | 40  | 38   | 0.05   | ±2.5 | PASS |
|               |     |     | VN | 50  | 20   | 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: | <p>Test procedure as below:</p> <ol style="list-style-type: none"><li>1) The EUT was powered ON and placed on a 0.8m 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.</li><li>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.</li><li>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.</li><li>4) Steps 1) to 3) were performed with the EUT and the receive antenna in both vertical and horizontal polarization.</li><li>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.</li><li>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.</li><li>7) The output power into the substitution antenna was then measured.</li><li>8) Steps 6) and 7)were repeated with both antennas polarized.</li><li>9) Calculate power in dBm by the following formula:<br/>ERP(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dBd)<br/>EIRP(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dBi)<br/>EIRP=ERP+2.15dB<br/>where:<br/>Pg is the generator output power into the substitution antenna.</li><li>10) Test the EUT in the lowest channel, the middle channel the Highest channel</li><li>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.</li><li>12) Repeat above procedures until all frequencies measured was complete.</li></ol> |                                     |        |        |  |           |                                   |                                     |           |              |                |       |                 |                 |      |            |      |      |      |      |
| 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        | 100         | 261           | 32.48     | 38.45       | -5.97           | Pass   | H                |
|                  | 100         | 20            | 31.10     | 38.45       | -7.35           | Pass   | V                |
| 190/836.6        | 100         | 360           | 32.48     | 38.45       | -5.97           | Pass   | H                |
|                  | 100         | 78            | 33.50     | 38.45       | -4.95           | Pass   | V                |
| 251/848.8        | 100         | 247           | 32.48     | 38.45       | -5.97           | Pass   | H                |
|                  | 150         | 26            | 31.99     | 38.45       | -6.46           | Pass   | V                |

| GPRS 850         |             |               |           |             |                 |        |                  |
|------------------|-------------|---------------|-----------|-------------|-----------------|--------|------------------|
| Channel/fc (MHz) | Height (cm) | Azimuth (deg) | ERP (dBm) | Limit (dBm) | Over Limit (dB) | Result | Antenna Polaxis. |
| 128/824.2        | 100         | 116           | 31.98     | 38.45       | -6.47           | Pass   | H                |
|                  | 100         | 247           | 23.95     | 38.45       | -14.50          | Pass   | V                |
| 190/836.6        | 100         | 20            | 33.82     | 38.45       | -4.63           | Pass   | H                |
|                  | 100         | 360           | 30.51     | 38.45       | -7.94           | Pass   | V                |
| 251/848.8        | 150         | 78            | 33.00     | 38.45       | -5.45           | Pass   | H                |
|                  | 100         | 20            | 30.67     | 38.45       | -7.78           | 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       | 100         | 315           | 22.73     | 38.45       | -15.72          | Pass   | H                |
|                  | 100         | 80            | 22.57     | 38.45       | -15.88          | Pass   | V                |
| 4182/836.6       | 100         | 22            | 23.06     | 38.45       | -15.39          | Pass   | H                |
|                  | 100         | 357           | 23.28     | 38.45       | -15.17          | Pass   | V                |
| 4233/846.6       | 100         | 201           | 21.67     | 38.45       | -16.78          | Pass   | H                |
|                  | 100         | 47            | 23.32     | 38.45       | -15.13          | 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       | 100         | 316           | 23.26     | 38.45       | -15.19          | Pass   | H                |
|                  | 100         | 227           | 23.26     | 38.45       | -15.19          | Pass   | V                |
| 4182/836.6       | 100         | 45            | 23.86     | 38.45       | -14.59          | Pass   | H                |
|                  | 100         | 38            | 24.57     | 38.45       | -13.88          | Pass   | V                |
| 4233/846.6       | 100         | 105           | 21.84     | 38.45       | -16.61          | Pass   | H                |
|                  | 100         | 60            | 23.52     | 38.45       | -14.93          | Pass   | V                |

| HSUPA band V     |             |               |           |             |                 |        |                  |
|------------------|-------------|---------------|-----------|-------------|-----------------|--------|------------------|
| Channel/fc (MHz) | Height (cm) | Azimuth (deg) | ERP (dBm) | Limit (dBm) | Over Limit (dB) | Result | Antenna Polaxis. |
| 4132/826.4       | 100         | 76            | 23.05     | 38.45       | -15.40          | Pass   | H                |
|                  | 100         | 204           | 23.16     | 38.45       | -15.29          | Pass   | V                |
| 4182/836.6       | 100         | 71            | 23.98     | 38.45       | -14.47          | Pass   | H                |
|                  | 100         | 100           | 24.46     | 38.45       | -13.99          | Pass   | V                |
| 4233/846.6       | 100         | 261           | 21.79     | 38.45       | -16.66          | Pass   | H                |
|                  | 100         | 89            | 23.45     | 38.45       | -15.00          | 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       | 100         | 352           | 30.70      | 33.01       | -2.31           | Pass   | H                |
|                  | 100         | 161           | 30.40      | 33.01       | -2.61           | Pass   | V                |
| 661/1880.0       | 100         | 200           | 31.20      | 33.01       | -1.81           | Pass   | H                |
|                  | 100         | 78            | 31.04      | 33.01       | -1.97           | Pass   | V                |
| 810/1909.8       | 100         | 14            | 31.36      | 33.01       | -1.65           | Pass   | H                |
|                  | 100         | 279           | 31.73      | 33.01       | -1.28           | Pass   | V                |

| GPRS 1900        |             |               |            |             |                 |        |                  |
|------------------|-------------|---------------|------------|-------------|-----------------|--------|------------------|
| Channel/fc (MHz) | Height (cm) | Azimuth (deg) | EIRP (dBm) | Limit (dBm) | Over Limit (dB) | Result | Antenna Polaxis. |
| 512/1850.2       | 100         | 336           | 30.34      | 33.01       | -2.67           | Pass   | H                |
|                  | 100         | 147           | 30.96      | 33.01       | -2.05           | Pass   | V                |
| 661/1880.0       | 100         | 20            | 30.93      | 33.01       | -2.08           | Pass   | H                |
|                  | 100         | 98            | 30.94      | 33.01       | -2.07           | Pass   | V                |
| 810/1909.8       | 100         | 201           | 29.08      | 33.01       | -3.93           | Pass   | H                |
|                  | 100         | 32            | 30.96      | 33.01       | -2.05           | 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      | 100         | 132           | 22.21      | 33.01       | -10.80          | Pass   | H                |
|                  | 100         | 205           | 24.14      | 33.01       | -8.87           | Pass   | V                |
| 9400/1880.0      | 100         | 100           | 20.75      | 33.01       | -12.26          | Pass   | H                |
|                  | 100         | 360           | 22.63      | 33.01       | -10.38          | Pass   | V                |
| 9538/1907.6      | 100         | 89            | 21.01      | 33.01       | -12.00          | Pass   | H                |
|                  | 100         | 24            | 24.54      | 33.01       | -8.47           | Pass   | V                |

| HSDPA band II    |             |               |            |             |                 |        |                  |
|------------------|-------------|---------------|------------|-------------|-----------------|--------|------------------|
| Channel/fc (MHz) | Height (cm) | Azimuth (deg) | EIRP (dBm) | Limit (dBm) | Over Limit (dB) | Result | Antenna Polaxis. |
| 9262/1852.4      | 100         | 154           | 23.21      | 33.01       | -9.80           | Pass   | H                |
|                  | 150         | 61            | 24.14      | 33.01       | -8.87           | Pass   | V                |
| 9400/1880.0      | 100         | 200           | 20.15      | 33.01       | -12.86          | Pass   | H                |
|                  | 100         | 78            | 23.09      | 33.01       | -9.92           | Pass   | V                |
| 9538/1907.6      | 100         | 360           | 21.31      | 33.01       | -11.70          | Pass   | H                |
|                  | 100         | 49            | 20.31      | 33.01       | -12.70          | Pass   | V                |

| HSUPA band II    |             |               |            |             |                 |        |                  |
|------------------|-------------|---------------|------------|-------------|-----------------|--------|------------------|
| Channel/fc (MHz) | Height (cm) | Azimuth (deg) | EIRP (dBm) | Limit (dBm) | Over Limit (dB) | Result | Antenna Polaxis. |
| 9262/1852.4      | 100         | 54            | 24.84      | 33.01       | -8.17           | Pass   | H                |
|                  | 100         | 15            | 22.81      | 33.01       | -10.20          | Pass   | V                |
| 9400/1880.0      | 100         | 360           | 18.89      | 33.01       | -14.12          | Pass   | H                |
|                  | 100         | 17            | 21.24      | 33.01       | -11.77          | Pass   | V                |
| 9538/1907.6      | 100         | 80            | 19.65      | 33.01       | -13.36          | Pass   | H                |
|                  | 100         | 229           | 24.54      | 33.01       | -8.47           | 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: | <p>1. Scan up to 10<sup>th</sup> harmonic, find the maximum radiation frequency to measure.</p> <p>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.</p> <p>Test procedure as below:</p> <p>1) The EUT was powered ON and placed on a 0.8m 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.</p> <p>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.</p> <p>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.</p> <p>4) Steps 1) to 3) were performed with the EUT and the receive antenna in both vertical and horizontal polarization.</p> <p>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.</p> <p>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.</p> <p>7) The output power into the substitution antenna was then measured.</p> <p>8) Steps 6) and 7) were repeated with both antennas polarized.</p> <p>9) Calculate power in dBm by the following formula:<br/> <math display="block">\text{ERP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dBd)}</math> <math display="block">\text{EIRP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dBi)}</math> <math display="block">\text{EIRP} = \text{ERP} + 2.15\text{dB}</math> <p>where:<br/> Pg is the generator output power into the substitution antenna.</p> <p>10) Test the EUT in the lowest channel, the middle channel the Highest channel</p> <p>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.</p> <p>12) Repeat above procedures until all frequencies measured was complete.</p> </p> |          |        |        |        |
| 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                                    | 100         | 247           | -49.19                        | -13.00      | -36.19          | Pass   | H                |
| 2468.631                                    | 100         | 245           | -42.65                        | -13.00      | -29.65          | Pass   | H                |
| 4117.785                                    | 100         | 221           | -42.59                        | -13.00      | -29.59          | Pass   | H                |
| 4946.072                                    | 100         | 70            | -40.57                        | -13.00      | -27.57          | Pass   | H                |
| 6594.518                                    | 100         | 300           | -43.13                        | -13.00      | -30.13          | Pass   | H                |
| 9393.966                                    | 100         | 119           | -46.55                        | -13.00      | -33.55          | Pass   | H                |
| 1646.948                                    | 150         | 360           | -49.19                        | -13.00      | -36.19          | Pass   | V                |
| 1889.633                                    | 100         | 245           | -46.30                        | -13.00      | -33.30          | Pass   | V                |
| 2468.631                                    | 100         | 175           | -43.02                        | -13.00      | -30.02          | Pass   | V                |
| 3299.775                                    | 100         | 70            | -44.72                        | -13.00      | -31.72          | Pass   | V                |
| 4117.785                                    | 150         | 119           | -43.03                        | -13.00      | -30.03          | Pass   | V                |
| 4946.072                                    | 100         | 360           | -41.06                        | -13.00      | -28.06          | 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. |
| 1672.296                                    | 100         | 54            | -53.23                        | -13.00      | -40.23          | Pass   | H                |
| 3233.257                                    | 100         | 100           | -51.36                        | -13.00      | -38.36          | Pass   | H                |
| 4181.159                                    | 100         | 254           | -42.18                        | -13.00      | -29.18          | Pass   | H                |
| 5880.782                                    | 100         | 100           | -47.45                        | -13.00      | -34.45          | Pass   | H                |
| 6611.326                                    | 120         | 360           | -46.56                        | -13.00      | -33.56          | Pass   | H                |
| 12303.620                                   | 100         | 70            | -46.17                        | -13.00      | -33.17          | Pass   | H                |
| 1672.296                                    | 100         | 162           | -47.91                        | -13.00      | -34.91          | Pass   | V                |
| 2506.624                                    | 100         | 95            | -42.77                        | -13.00      | -29.77          | Pass   | V                |
| 3342.042                                    | 100         | 54            | -47.50                        | -13.00      | -34.50          | Pass   | V                |
| 4181.159                                    | 120         | 335           | -38.56                        | -13.00      | -25.56          | Pass   | V                |
| 5022.194                                    | 100         | 175           | -39.12                        | -13.00      | -26.12          | Pass   | V                |
| 7527.826                                    | 100         | 70            | -44.27                        | -13.00      | -31.27          | 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                                     | 100         | 119           | -45.82                        | -13.00      | -32.82          | Pass   | H                |
| 1884.829                                     | 100         | 54            | -49.26                        | -13.00      | -36.26          | Pass   | H                |
| 2577.803                                     | 100         | 100           | -46.16                        | -13.00      | -33.16          | Pass   | H                |
| 3393.477                                     | 100         | 254           | -42.24                        | -13.00      | -29.24          | Pass   | H                |
| 4245.509                                     | 120         | 100           | -39.40                        | -13.00      | -26.40          | Pass   | H                |
| 5099.487                                     | 100         | 360           | -41.55                        | -13.00      | -28.55          | Pass   | H                |
| 1698.033                                     | 100         | 70            | -43.70                        | -13.00      | -30.70          | Pass   | V                |
| 1894.450                                     | 110         | 119           | -47.99                        | -13.00      | -34.99          | Pass   | V                |
| 2545.202                                     | 100         | 54            | -45.93                        | -13.00      | -32.93          | Pass   | V                |
| 4245.509                                     | 100         | 100           | -38.02                        | -13.00      | -25.02          | Pass   | V                |
| 5099.487                                     | 100         | 254           | -40.76                        | -13.00      | -27.76          | Pass   | V                |
| 6799.064                                     | 100         | 100           | -44.48                        | -13.00      | -31.48          | 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                                     | 100         | 247           | -45.12                        | -13.00      | -32.12          | Pass   | H                |
| 1894.450                                     | 100         | 245           | -43.94                        | -13.00      | -30.94          | Pass   | H                |
| 2474.923                                     | 100         | 221           | -32.94                        | -13.00      | -19.94          | Pass   | H                |
| 4117.785                                     | 100         | 70            | -34.82                        | -13.00      | -21.82          | Pass   | H                |
| 4946.072                                     | 100         | 300           | -44.56                        | -13.00      | -31.56          | Pass   | H                |
| 6527.712                                     | 100         | 335           | -46.12                        | -13.00      | -33.12          | Pass   | H                |
| 1646.948                                     | 100         | 68            | -50.21                        | -13.00      | -37.21          | Pass   | V                |
| 2468.631                                     | 100         | 347           | -42.65                        | -13.00      | -29.65          | Pass   | V                |
| 3299.775                                     | 100         | 14            | -47.30                        | -13.00      | -34.30          | Pass   | V                |
| 4117.785                                     | 100         | 100           | -39.09                        | -13.00      | -26.09          | Pass   | V                |
| 4946.072                                     | 100         | 335           | -43.16                        | -13.00      | -30.16          | Pass   | V                |
| 6594.518                                     | 100         | 68            | -42.68                        | -13.00      | -29.68          | 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. |
| 1668.044                                     | 100         | 345           | -52.84                        | -13.00      | -39.84          | Pass   | H                |
| 1889.633                                     | 100         | 68            | -40.73                        | -13.00      | -27.73          | Pass   | H                |
| 2506.624                                     | 100         | 316           | -43.90                        | -13.00      | -30.90          | Pass   | H                |
| 4181.159                                     | 100         | 25            | -36.52                        | -13.00      | -23.52          | Pass   | H                |
| 5022.194                                     | 100         | 36            | -44.80                        | -13.00      | -31.80          | Pass   | H                |
| 8837.241                                     | 100         | 80            | -46.58                        | -13.00      | -33.58          | Pass   | H                |
| 1672.296                                     | 100         | 119           | -49.99                        | -13.00      | -36.99          | Pass   | V                |
| 1899.278                                     | 100         | 221           | -45.30                        | -13.00      | -32.30          | Pass   | V                |
| 2506.624                                     | 100         | 56            | -48.27                        | -13.00      | -35.27          | Pass   | V                |
| 4181.159                                     | 100         | 328           | -43.20                        | -13.00      | -30.20          | Pass   | V                |
| 5022.194                                     | 100         | 328           | -40.84                        | -13.00      | -27.84          | Pass   | V                |
| 6696.010                                     | 100         | 119           | -43.97                        | -13.00      | -30.97          | 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                                      | 100         | 221           | -47.53                        | -13.00      | -34.53          | Pass   | H                |
| 1899.278                                      | 100         | 162           | -44.51                        | -13.00      | -31.51          | Pass   | H                |
| 2545.202                                      | 100         | 100           | -36.63                        | -13.00      | -23.63          | Pass   | H                |
| 4245.509                                      | 100         | 240           | -36.61                        | -13.00      | -23.61          | Pass   | H                |
| 5099.487                                      | 100         | 286           | -40.30                        | -13.00      | -27.30          | Pass   | H                |
| 6799.064                                      | 100         | 360           | -40.76                        | -13.00      | -27.76          | Pass   | H                |
| 1904.119                                      | 120         | 56            | -48.84                        | -13.00      | -35.84          | Pass   | V                |
| 2545.202                                      | 100         | 36            | -41.86                        | -13.00      | -28.86          | Pass   | V                |
| 3393.477                                      | 100         | 286           | -49.04                        | -13.00      | -36.04          | Pass   | V                |
| 4245.509                                      | 100         | 221           | -36.61                        | -13.00      | -23.61          | Pass   | V                |
| 5099.487                                      | 150         | 328           | -40.30                        | -13.00      | -27.30          | Pass   | V                |
| 6799.064                                      | 100         | 56            | -40.76                        | -13.00      | -27.76          | 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. |
| 1668.044                                      | 100         | 314           | -55.12                        | -13.00      | -42.12          | Pass   | H                |
| 1948.245                                      | 100         | 52            | -51.49                        | -13.00      | -38.49          | Pass   | H                |
| 3700.260                                      | 100         | 100           | -40.20                        | -13.00      | -27.20          | Pass   | H                |
| 5546.364                                      | 100         | 127           | -39.59                        | -13.00      | -26.59          | Pass   | H                |
| 6730.187                                      | 100         | 46            | -46.01                        | -13.00      | -33.01          | Pass   | H                |
| 9251.580                                      | 100         | 70            | -35.82                        | -13.00      | -22.82          | Pass   | H                |
| 1280.072                                      | 100         | 300           | -57.49                        | -13.00      | -44.49          | Pass   | V                |
| 3700.260                                      | 100         | 59            | -43.25                        | -13.00      | -30.25          | Pass   | V                |
| 5244.295                                      | 100         | 64            | -49.74                        | -13.00      | -36.74          | Pass   | V                |
| 6494.564                                      | 100         | 100           | -46.45                        | -13.00      | -33.45          | Pass   | V                |
| 9251.580                                      | 100         | 257           | -41.70                        | -13.00      | -28.70          | Pass   | V                |
| 12303.620                                     | 100         | 67            | -45.22                        | -13.00      | -32.22          | 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. |
| 1668.044                                    | 100         | 200           | -54.94                        | -13.00      | -41.94          | Pass   | H                |
| 1948.245                                    | 100         | 288           | -51.26                        | -13.00      | -38.26          | Pass   | H                |
| 3757.208                                    | 100         | 214           | -45.20                        | -13.00      | -32.20          | Pass   | H                |
| 5646.079                                    | 100         | 300           | -42.62                        | -13.00      | -29.62          | Pass   | H                |
| 6527.712                                    | 120         | 127           | -46.42                        | -13.00      | -33.42          | Pass   | H                |
| 9417.908                                    | 100         | 46            | -40.31                        | -13.00      | -27.31          | Pass   | H                |
| 1510.402                                    | 100         | 10            | -55.09                        | -13.00      | -42.09          | Pass   | V                |
| 2462.355                                    | 100         | 70            | -52.36                        | -13.00      | -39.36          | Pass   | V                |
| 3757.208                                    | 100         | 300           | -40.87                        | -13.00      | -27.87          | Pass   | V                |
| 4785.075                                    | 100         | 125           | -49.00                        | -13.00      | -36.00          | Pass   | V                |
| 5646.079                                    | 100         | 100           | -43.52                        | -13.00      | -30.52          | Pass   | V                |
| 9393.966                                    | 100         | 54            | -46.10                        | -13.00      | -33.10          | 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. |
| 1668.044                                       | 100         | 332           | -55.03                        | -13.00      | -42.03          | Pass   | H                |
| 2310.537                                       | 100         | 100           | -53.54                        | -13.00      | -40.54          | Pass   | H                |
| 3266.346                                       | 100         | 156           | -50.75                        | -13.00      | -37.75          | Pass   | H                |
| 3824.757                                       | 100         | 47            | -45.57                        | -13.00      | -32.57          | Pass   | H                |
| 4310.849                                       | 120         | 254           | -49.56                        | -13.00      | -36.56          | Pass   | H                |
| 6511.117                                       | 100         | 107           | -46.16                        | -13.00      | -33.16          | Pass   | H                |

|           |     |     |        |        |        |      |   |
|-----------|-----|-----|--------|--------|--------|------|---|
| 1280.072  | 100 | 360 | -57.86 | -13.00 | -44.86 | Pass | V |
| 3507.652  | 100 | 21  | -51.03 | -13.00 | -38.03 | Pass | V |
| 3824.757  | 100 | 100 | -44.05 | -13.00 | -31.05 | Pass | V |
| 6561.030  | 100 | 360 | -46.21 | -13.00 | -33.21 | Pass | V |
| 8042.903  | 100 | 71  | -46.80 | -13.00 | -33.80 | Pass | V |
| 12303.620 | 100 | 56  | -44.63 | -13.00 | -31.63 | 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. |
| 1663.803                                      | 100         | 245           | -55.32                        | -13.00      | -42.32          | Pass   | H                |
| 3700.260                                      | 100         | 119           | -41.46                        | -13.00      | -28.46          | Pass   | H                |
| 5546.364                                      | 100         | 221           | -39.76                        | -13.00      | -26.76          | Pass   | H                |
| 6511.117                                      | 120         | 56            | -46.18                        | -13.00      | -33.18          | Pass   | H                |
| 9251.580                                      | 100         | 328           | -36.81                        | -13.00      | -23.81          | Pass   | H                |
| 12148.020                                     | 100         | 328           | -45.66                        | -13.00      | -32.66          | Pass   | H                |
| 1638.585                                      | 100         | 221           | -57.58                        | -13.00      | -44.58          | Pass   | V                |
| 2462.355                                      | 100         | 162           | -51.66                        | -13.00      | -38.66          | Pass   | V                |
| 3700.260                                      | 100         | 100           | -41.73                        | -13.00      | -28.73          | Pass   | V                |
| 5560.500                                      | 100         | 240           | -46.52                        | -13.00      | -33.52          | Pass   | V                |
| 9251.580                                      | 100         | 286           | -38.02                        | -13.00      | -25.02          | Pass   | V                |
| 12303.620                                     | 100         | 360           | -45.47                        | -13.00      | -32.47          | 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. |
| 1663.803                                    | 100         | 56            | -54.69                        | -13.00      | -41.69          | Pass   | H                |
| 1948.245                                    | 100         | 36            | -50.52                        | -13.00      | -37.52          | Pass   | H                |
| 3738.129                                    | 100         | 286           | -42.93                        | -13.00      | -29.93          | Pass   | H                |
| 6283.164                                    | 100         | 221           | -46.39                        | -13.00      | -33.39          | Pass   | H                |
| 9393.966                                    | 100         | 328           | -47.47                        | -13.00      | -34.47          | Pass   | H                |
| 11842.690                                   | 100         | 221           | -47.28                        | -13.00      | -34.28          | Pass   | H                |
| 1746.251                                    | 100         | 100           | -49.28                        | -13.00      | -36.28          | Pass   | V                |
| 2462.355                                    | 100         | 360           | -47.68                        | -13.00      | -34.68          | Pass   | V                |
| 3516.592                                    | 100         | 70            | -50.65                        | -13.00      | -37.65          | Pass   | V                |
| 4559.152                                    | 100         | 69            | -49.59                        | -13.00      | -36.59          | Pass   | V                |
| 6511.117                                    | 100         | 58            | -46.05                        | -13.00      | -33.05          | Pass   | V                |
| 9393.966                                    | 100         | 100           | -47.05                        | -13.00      | -34.05          | 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. |
| 1764.123                                       | 100         | 335           | -45.81                        | -13.00      | -32.81          | Pass   | H                |
| 2462.355                                       | 100         | 68            | -44.53                        | -13.00      | -31.53          | Pass   | H                |
| 3824.757                                       | 100         | 347           | -46.57                        | -13.00      | -33.57          | Pass   | H                |
| 6172.197                                       | 100         | 14            | -46.28                        | -13.00      | -33.28          | Pass   | H                |
| 9562.854                                       | 100         | 100           | -46.37                        | -13.00      | -33.37          | Pass   | H                |
| 12334.980                                      | 100         | 345           | -45.38                        | -13.00      | -32.38          | Pass   | H                |
| 1759.638                                       | 100         | 68            | -52.11                        | -13.00      | -39.11          | Pass   | V                |
| 2462.355                                       | 120         | 316           | -44.53                        | -13.00      | -31.53          | Pass   | V                |
| 3824.757                                       | 100         | 25            | -47.51                        | -13.00      | -34.51          | Pass   | V                |
| 6299.178                                       | 100         | 36            | -46.55                        | -13.00      | -33.55          | Pass   | V                |
| 8950.438                                       | 100         | 80            | -47.15                        | -13.00      | -34.15          | Pass   | V                |
| 12334.980                                      | 100         | 100           | -45.38                        | -13.00      | -32.38          | 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. |
| 1360.714                                           | 100         | 316           | -56.65                        | -13.00      | -43.65          | Pass   | H                |
| 1764.123                                           | 100         | 11            | -45.03                        | -13.00      | -32.03          | Pass   | H                |
| 2519.418                                           | 100         | 251           | -48.81                        | -13.00      | -35.81          | Pass   | H                |
| 4570.772                                           | 100         | 47            | -49.42                        | -13.00      | -36.42          | Pass   | H                |
| 6251.257                                           | 100         | 100           | -45.56                        | -13.00      | -32.56          | Pass   | H                |
| 9417.908                                           | 100         | 36            | -45.80                        | -13.00      | -32.80          | Pass   | H                |
| 1028.397                                           | 100         | 200           | -56.35                        | -13.00      | -43.35          | Pass   | V                |
| 1899.278                                           | 100         | 214           | -50.15                        | -13.00      | -37.15          | Pass   | V                |
| 2456.095                                           | 100         | 300           | -47.74                        | -13.00      | -34.74          | Pass   | V                |
| 4582.422                                           | 120         | 360           | -49.62                        | -13.00      | -36.62          | Pass   | V                |
| 6347.466                                           | 100         | 27            | -45.70                        | -13.00      | -32.70          | Pass   | V                |
| 9417.908                                           | 100         | 97            | -45.89                        | -13.00      | -32.89          | 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. |
| 1118.517                                           | 100         | 151           | -54.94                        | -13.00      | -41.94          | Pass   | H                |
| 2519.418                                           | 100         | 47            | -49.33                        | -13.00      | -36.33          | Pass   | H                |
| 3728.625                                           | 100         | 60            | -49.81                        | -13.00      | -36.81          | Pass   | H                |
| 6251.257                                           | 100         | 21            | -45.41                        | -13.00      | -32.41          | Pass   | H                |
| 8419.999                                           | 100         | 200           | -46.09                        | -13.00      | -33.09          | Pass   | H                |
| 11370.050                                          | 100         | 360           | -45.18                        | -13.00      | -32.18          | Pass   | H                |

|          |     |     |        |        |        |      |   |
|----------|-----|-----|--------|--------|--------|------|---|
| 1118.517 | 100 | 147 | -56.47 | -13.00 | -43.47 | Pass | V |
| 1668.044 | 100 | 10  | -52.81 | -13.00 | -39.81 | Pass | V |
| 2456.095 | 100 | 58  | -46.62 | -13.00 | -33.62 | Pass | V |
| 3738.129 | 100 | 79  | -50.41 | -13.00 | -37.41 | Pass | V |
| 5204.399 | 100 | 200 | -49.01 | -13.00 | -36.01 | Pass | V |
| 6494.564 | 100 | 14  | -45.63 | -13.00 | -32.63 | 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. |
|-----------------|-------------|---------------|-------------------------------|-------------|-----------------|--------|------------------|
| 1118.517        | 100         | 335           | -55.55                        | -13.00      | -42.55          | Pass   | H                |
| 2577.803        | 100         | 319           | -48.10                        | -13.00      | -35.10          | Pass   | H                |
| 4724.558        | 100         | 38            | -49.31                        | -13.00      | -36.31          | Pass   | H                |
| 6478.053        | 100         | 100           | -45.51                        | -13.00      | -32.51          | Pass   | H                |
| 9019.050        | 100         | 24            | -45.51                        | -13.00      | -32.51          | Pass   | H                |
| 11226.250       | 100         | 61            | -45.23                        | -13.00      | -32.23          | Pass   | H                |
| 1129.964        | 100         | 200           | -55.88                        | -13.00      | -42.88          | Pass   | V                |
| 1759.638        | 150         | 140           | -54.36                        | -13.00      | -41.36          | Pass   | V                |
| 2532.277        | 100         | 79            | -43.37                        | -13.00      | -30.37          | Pass   | V                |
| 4223.950        | 100         | 60            | -49.51                        | -13.00      | -36.51          | Pass   | V                |
| 6511.117        | 100         | 200           | -46.20                        | -13.00      | -33.20          | Pass   | V                |
| 9322.501        | 100         | 11            | -46.15                        | -13.00      | -33.15          | 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. |
|-----------------|-------------|---------------|-------------------------------|-------------|-----------------|--------|------------------|
| 1118.517        | 100         | 54            | -55.61                        | -13.00      | -42.61          | Pass   | H                |
| 1668.044        | 100         | 78            | -54.01                        | -13.00      | -41.01          | Pass   | H                |
| 2474.923        | 100         | 214           | -46.36                        | -13.00      | -33.36          | Pass   | H                |
| 4128.280        | 100         | 288           | -46.45                        | -13.00      | -33.45          | Pass   | H                |
| 6396.125        | 100         | 214           | -45.26                        | -13.00      | -32.26          | Pass   | H                |
| 9111.353        | 100         | 125           | -46.01                        | -13.00      | -33.01          | Pass   | H                |
| 1118.517        | 100         | 112           | -56.43                        | -13.00      | -43.43          | Pass   | V                |
| 1668.044        | 100         | 10            | -54.22                        | -13.00      | -41.22          | Pass   | V                |
| 2481.231        | 100         | 47            | -47.61                        | -13.00      | -34.61          | Pass   | V                |
| 4128.280        | 100         | 100           | -47.42                        | -13.00      | -34.42          | Pass   | V                |
| 6396.125        | 120         | 360           | -45.61                        | -13.00      | -32.61          | Pass   | V                |
| 9111.353        | 100         | 10            | -45.51                        | -13.00      | -32.51          | 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. |
| 1118.517                                           | 100         | 351           | -55.96                        | -13.00      | -42.96          | Pass   | H                |
| 1668.044                                           | 100         | 200           | -53.78                        | -13.00      | -40.78          | Pass   | H                |
| 2519.418                                           | 100         | 214           | -47.34                        | -13.00      | -34.34          | Pass   | H                |
| 3738.129                                           | 100         | 69            | -49.36                        | -13.00      | -36.36          | Pass   | H                |
| 5762.235                                           | 100         | 360           | -46.90                        | -13.00      | -33.90          | Pass   | H                |
| 9441.913                                           | 100         | 79            | -44.98                        | -13.00      | -31.98          | Pass   | H                |
| 1118.517                                           | 100         | 214           | -56.53                        | -13.00      | -43.53          | Pass   | V                |
| 1894.450                                           | 100         | 14            | -47.21                        | -13.00      | -34.21          | Pass   | V                |
| 2519.418                                           | 100         | 51            | -45.36                        | -13.00      | -32.36          | Pass   | V                |
| 4617.550                                           | 100         | 100           | -49.18                        | -13.00      | -36.18          | Pass   | V                |
| 6267.190                                           | 100         | 104           | -45.20                        | -13.00      | -32.20          | Pass   | V                |
| 9465.979                                           | 100         | 51            | -44.89                        | -13.00      | -31.89          | 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. |
| 1118.517                                           | 100         | 55            | -55.93                        | -13.00      | -42.93          | Pass   | H                |
| 2538.731                                           | 100         | 36            | -47.13                        | -13.00      | -34.13          | Pass   | H                |
| 3393.477                                           | 100         | 360           | -49.40                        | -13.00      | -36.40          | Pass   | H                |
| 4234.716                                           | 120         | 211           | -48.46                        | -13.00      | -35.46          | Pass   | H                |
| 6283.164                                           | 100         | 20            | -45.90                        | -13.00      | -32.90          | Pass   | H                |
| 8904.986                                           | 100         | 179           | -45.58                        | -13.00      | -32.58          | Pass   | H                |
| 1118.517                                           | 100         | 61            | -55.41                        | -13.00      | -42.41          | Pass   | V                |
| 2538.731                                           | 100         | 10            | -43.86                        | -13.00      | -30.86          | Pass   | V                |
| 5244.295                                           | 100         | 257           | -48.54                        | -13.00      | -35.54          | Pass   | V                |
| 6527.712                                           | 100         | 11            | -45.99                        | -13.00      | -32.99          | Pass   | V                |
| 8973.250                                           | 100         | 360           | -45.90                        | -13.00      | -32.90          | Pass   | V                |
| 11370.050                                          | 100         | 70            | -45.14                        | -13.00      | -32.14          | Pass   | V                |

| HSUPA band V 4132 channel/826.4MHz(lowest channel) |             |               |                               |             |                 |        |                  |
|----------------------------------------------------|-------------|---------------|-------------------------------|-------------|-----------------|--------|------------------|
| Frequency (MHz)                                    | Height (cm) | Azimuth (deg) | Spurious Emission Level (dBm) | Limit (dBm) | Over Limit (dB) | Result | Antenna Polaxis. |
| 1118.517                                           | 100         | 315           | -57.30                        | -13.00      | -44.30          | Pass   | H                |
| 2519.418                                           | 100         | 100           | -51.33                        | -13.00      | -38.33          | Pass   | H                |
| 3728.625                                           | 100         | 261           | -51.71                        | -13.00      | -38.71          | Pass   | H                |
| 5204.399                                           | 100         | 200           | -50.56                        | -13.00      | -37.56          | Pass   | H                |
| 6283.164                                           | 100         | 310           | -47.32                        | -13.00      | -34.32          | Pass   | H                |
| 9298.801                                           | 100         | 254           | -47.90                        | -13.00      | -34.90          | Pass   | H                |
| 1357.254                                           | 100         | 27            | -57.62                        | -13.00      | -44.62          | Pass   | V                |
| 2519.418                                           | 100         | 100           | -50.41                        | -13.00      | -37.41          | Pass   | V                |
| 4202.500                                           | 100         | 254           | -51.11                        | -13.00      | -38.11          | Pass   | V                |
| 6331.329                                           | 100         | 91            | -47.07                        | -13.00      | -34.07          | Pass   | V                |
| 8904.986                                           | 100         | 87            | -47.86                        | -13.00      | -34.86          | Pass   | V                |
| 12303.620                                          | 100         | 100           | -46.35                        | -13.00      | -33.35          | Pass   | V                |

| HSUPA band V 4182 channel/836.4MHz(middle channel) |             |               |                               |             |                 |        |                  |
|----------------------------------------------------|-------------|---------------|-------------------------------|-------------|-----------------|--------|------------------|
| Frequency (MHz)                                    | Height (cm) | Azimuth (deg) | Spurious Emission Level (dBm) | Limit (dBm) | Over Limit (dB) | Result | Antenna Polaxis. |
| 1118.517                                           | 100         | 54            | -57.43                        | -13.00      | -44.43          | Pass   | H                |
| 1663.803                                           | 100         | 111           | -56.35                        | -13.00      | -43.35          | Pass   | H                |
| 2637.542                                           | 100         | 101           | -53.77                        | -13.00      | -40.77          | Pass   | H                |
| 4191.816                                           | 100         | 100           | -51.21                        | -13.00      | -38.21          | Pass   | H                |
| 6267.190                                           | 100         | 254           | -46.91                        | -13.00      | -33.91          | Pass   | H                |
| 8950.438                                           | 100         | 226           | -47.58                        | -13.00      | -34.58          | Pass   | H                |
| 1135.731                                           | 100         | 227           | -57.66                        | -13.00      | -44.66          | Pass   | V                |
| 1663.803                                           | 100         | 100           | -56.51                        | -13.00      | -43.51          | Pass   | V                |
| 2394.363                                           | 100         | 360           | -53.13                        | -13.00      | -40.13          | Pass   | V                |
| 3728.625                                           | 100         | 70            | -51.10                        | -13.00      | -38.10          | Pass   | V                |
| 6379.864                                           | 100         | 20            | -47.29                        | -13.00      | -34.29          | Pass   | V                |
| 9298.801                                           | 100         | 54            | -46.54                        | -13.00      | -33.54          | Pass   | V                |

| HSUPA band V 4233channel/846.6MHz(highest channel) |             |               |                               |             |                 |        |                  |
|----------------------------------------------------|-------------|---------------|-------------------------------|-------------|-----------------|--------|------------------|
| Frequency (MHz)                                    | Height (cm) | Azimuth (deg) | Spurious Emission Level (dBm) | Limit (dBm) | Over Limit (dB) | Result | Antenna Polaxis. |
| 1118.517                                           | 100         | 354           | -57.72                        | -13.00      | -44.72          | Pass   | H                |
| 2519.418                                           | 100         | 54            | -51.40                        | -13.00      | -38.40          | Pass   | H                |
| 3588.939                                           | 100         | 124           | -51.16                        | -13.00      | -38.16          | Pass   | H                |
| 6283.164                                           | 100         | 100           | -46.59                        | -13.00      | -33.59          | Pass   | H                |
| 9441.913                                           | 100         | 254           | -46.80                        | -13.00      | -33.80          | Pass   | H                |
| 12272.340                                          | 100         | 67            | -47.20                        | -13.00      | -34.20          | Pass   | H                |
| 1118.517                                           | 100         | 90            | -55.94                        | -13.00      | -42.94          | Pass   | V                |
| 1668.044                                           | 100         | 147           | -54.66                        | -13.00      | -41.66          | Pass   | V                |
| 2538.731                                           | 100         | 300           | -43.70                        | -13.00      | -30.70          | Pass   | V                |
| 3709.691                                           | 100         | 214           | -49.27                        | -13.00      | -36.27          | Pass   | V                |
| 6799.064                                           | 100         | 100           | -45.40                        | -13.00      | -32.40          | Pass   | V                |
| 9088.188                                           | 100         | 214           | -46.18                        | -13.00      | -33.18          | 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. |
| 1118.517                                             | 100         | 351           | -53.81                        | -13.00      | -40.81          | Pass   | H                |
| 2519.418                                             | 100         | 78            | -48.28                        | -13.00      | -35.28          | Pass   | H                |
| 3719.146                                             | 100         | 69            | -48.40                        | -13.00      | -35.40          | Pass   | H                |
| 5776.922                                             | 100         | 141           | -45.95                        | -13.00      | -32.95          | Pass   | H                |
| 8002.061                                             | 100         | 21            | -45.97                        | -13.00      | -32.97          | Pass   | H                |
| 9298.801                                             | 100         | 336           | -44.92                        | -13.00      | -31.92          | Pass   | H                |
| 1118.517                                             | 100         | 21            | -54.48                        | -13.00      | -41.48          | Pass   | V                |
| 1510.402                                             | 100         | 332           | -53.56                        | -13.00      | -40.56          | Pass   | V                |
| 3728.625                                             | 100         | 100           | -49.51                        | -13.00      | -36.51          | Pass   | V                |
| 4724.558                                             | 100         | 24            | -48.00                        | -13.00      | -35.00          | Pass   | V                |
| 6527.712                                             | 100         | 57            | -44.25                        | -13.00      | -31.25          | Pass   | V                |
| 7941.185                                             | 100         | 11            | -45.40                        | -13.00      | -32.40          | 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. |
| 1118.517                                           | 100         | 352           | -54.53                        | -13.00      | -41.53          | Pass   | H                |
| 2519.418                                           | 100         | 178           | -48.80                        | -13.00      | -35.80          | Pass   | H                |
| 3757.208                                           | 100         | 97            | -44.31                        | -13.00      | -31.31          | Pass   | H                |
| 6412.427                                           | 100         | 99            | -45.06                        | -13.00      | -32.06          | Pass   | H                |
| 9181.198                                           | 100         | 100           | -44.59                        | -13.00      | -31.59          | Pass   | H                |
| 11994.380                                          | 100         | 254           | -43.87                        | -13.00      | -30.87          | Pass   | H                |
| 1118.517                                           | 100         | 100           | -55.63                        | -13.00      | -42.63          | Pass   | V                |
| 1510.402                                           | 100         | 254           | -53.81                        | -13.00      | -40.81          | Pass   | V                |
| 3719.146                                           | 100         | 100           | -49.16                        | -13.00      | -36.16          | Pass   | V                |
| 6379.864                                           | 100         | 25            | -45.00                        | -13.00      | -32.00          | Pass   | V                |
| 9204.600                                           | 100         | 61            | -45.50                        | -13.00      | -32.50          | Pass   | V                |
| 11994.380                                          | 100         | 42            | -44.48                        | -13.00      | -31.48          | 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. |
| 1201.149                                              | 100         | 55            | -56.20                        | -13.00      | -43.20          | Pass   | H                |
| 3815.033                                              | 100         | 161           | -43.02                        | -13.00      | -30.02          | Pass   | H                |
| 5732.974                                              | 100         | 21            | -44.65                        | -13.00      | -31.65          | Pass   | H                |
| 6363.645                                              | 100         | 78            | -44.43                        | -13.00      | -31.43          | Pass   | H                |
| 7961.425                                              | 100         | 360           | -45.16                        | -13.00      | -32.16          | Pass   | H                |
| 11312.310                                             | 100         | 147           | -44.06                        | -13.00      | -31.06          | Pass   | H                |
| 1118.517                                              | 100         | 100           | -56.09                        | -13.00      | -43.09          | Pass   | V                |
| 1510.402                                              | 100         | 214           | -54.29                        | -13.00      | -41.29          | Pass   | V                |
| 3815.033                                              | 100         | 100           | -41.03                        | -13.00      | -28.03          | Pass   | V                |
| 5732.974                                              | 100         | 251           | -45.21                        | -13.00      | -32.21          | Pass   | V                |
| 6594.518                                              | 100         | 70            | -44.44                        | -13.00      | -31.44          | Pass   | V                |
| 9251.580                                              | 100         | 88            | -45.03                        | -13.00      | -32.03          | 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. |
| 1118.517                                             | 100         | 79            | -55.84                        | -13.00      | -42.84          | Pass   | H                |
| 1541.476                                             | 100         | 136           | -56.86                        | -13.00      | -43.86          | Pass   | H                |
| 3728.625                                             | 100         | 83            | -49.75                        | -13.00      | -36.75          | Pass   | H                |
| 6561.030                                             | 100         | 102           | -45.73                        | -13.00      | -32.73          | Pass   | H                |
| 9157.857                                             | 100         | 94            | -45.90                        | -13.00      | -32.90          | Pass   | H                |
| 12272.340                                            | 100         | 201           | -45.24                        | -13.00      | -32.24          | Pass   | H                |
| 1514.252                                             | 100         | 218           | -54.50                        | -13.00      | -41.50          | Pass   | V                |
| 3719.146                                             | 100         | 92            | -49.94                        | -13.00      | -36.94          | Pass   | V                |
| 5880.782                                             | 100         | 16            | -47.16                        | -13.00      | -34.16          | Pass   | V                |
| 6331.329                                             | 100         | 83            | -45.55                        | -13.00      | -32.55          | Pass   | V                |
| 8615.126                                             | 100         | 106           | -45.66                        | -13.00      | -32.66          | Pass   | V                |
| 11341.140                                            | 100         | 217           | -45.54                        | -13.00      | -32.54          | 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. |
| 1118.517                                           | 100         | 69            | -55.09                        | -13.00      | -42.09          | Pass   | H                |
| 1510.402                                           | 100         | 228           | -57.30                        | -13.00      | -44.30          | Pass   | H                |
| 3709.691                                           | 100         | 304           | -49.60                        | -13.00      | -36.60          | Pass   | H                |
| 4736.600                                           | 100         | 83            | -48.89                        | -13.00      | -35.89          | Pass   | H                |
| 6594.518                                           | 100         | 183           | -45.39                        | -13.00      | -32.39          | Pass   | H                |
| 8022.456                                           | 100         | 218           | -46.14                        | -13.00      | -33.14          | Pass   | H                |
| 1118.517                                           | 100         | 137           | -57.02                        | -13.00      | -44.02          | Pass   | V                |
| 1510.402                                           | 100         | 73            | -55.44                        | -13.00      | -42.44          | Pass   | V                |
| 3690.853                                           | 100         | 28            | -49.54                        | -13.00      | -36.54          | Pass   | V                |
| 5138.579                                           | 100         | 37            | -48.39                        | -13.00      | -35.39          | Pass   | V                |
| 6363.645                                           | 100         | 83            | -45.66                        | -13.00      | -32.66          | Pass   | V                |
| 9157.857                                           | 100         | 103           | -45.53                        | -13.00      | -32.53          | 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. |
| 1510.402                                              | 100         | 252           | -57.27                        | -13.00      | -44.27          | Pass   | H                |
| 3728.625                                              | 100         | 18            | -48.88                        | -13.00      | -35.88          | Pass   | H                |
| 4748.673                                              | 100         | 64            | -49.13                        | -13.00      | -36.13          | Pass   | H                |
| 6396.125                                              | 100         | 312           | -45.54                        | -13.00      | -32.54          | Pass   | H                |
| 7961.425                                              | 100         | 75            | -46.57                        | -13.00      | -33.57          | Pass   | H                |
| 9465.979                                              | 100         | 25            | -45.91                        | -13.00      | -32.91          | Pass   | H                |
| 1118.517                                              | 100         | 63            | -55.64                        | -13.00      | -42.64          | Pass   | V                |
| 3700.260                                              | 100         | 84            | -49.55                        | -13.00      | -36.55          | Pass   | V                |
| 4736.600                                              | 100         | 254           | -48.83                        | -13.00      | -35.83          | Pass   | V                |
| 6544.350                                              | 100         | 53            | -45.45                        | -13.00      | -32.45          | Pass   | V                |
| 9181.198                                              | 100         | 217           | -45.49                        | -13.00      | -32.49          | Pass   | V                |
| 11312.310                                             | 100         | 321           | -45.58                        | -13.00      | -32.58          | Pass   | V                |

| HSUPA band II 9262 channel/1852.4MHz(lowest channel) |             |               |                               |             |                 |        |                  |
|------------------------------------------------------|-------------|---------------|-------------------------------|-------------|-----------------|--------|------------------|
| Frequency (MHz)                                      | Height (cm) | Azimuth (deg) | Spurious Emission Level (dBm) | Limit (dBm) | Over Limit (dB) | Result | Antenna Polaxis. |
| 1118.517                                             | 100         | 112           | -55.61                        | -13.00      | -42.61          | Pass   | H                |
| 2519.418                                             | 100         | 312           | -48.92                        | -13.00      | -35.92          | Pass   | H                |
| 3728.625                                             | 100         | 350           | -49.65                        | -13.00      | -36.65          | Pass   | H                |
| 4748.673                                             | 100         | 310           | -48.75                        | -13.00      | -35.75          | Pass   | H                |
| 6594.518                                             | 100         | 301           | -45.03                        | -13.00      | -32.03          | Pass   | H                |
| 9204.600                                             | 100         | 306           | -45.06                        | -13.00      | -32.06          | Pass   | H                |
| 1198.095                                             | 100         | 152           | -56.09                        | -13.00      | -43.09          | Pass   | V                |
| 3709.691                                             | 100         | 164           | -49.61                        | -13.00      | -36.61          | Pass   | V                |
| 5806.408                                             | 100         | 20            | -47.87                        | -13.00      | -34.87          | Pass   | V                |
| 6594.518                                             | 100         | 360           | -46.41                        | -13.00      | -33.41          | Pass   | V                |
| 8022.456                                             | 100         | 70            | -46.05                        | -13.00      | -33.05          | Pass   | V                |
| 11112.520                                            | 100         | 88            | -44.61                        | -13.00      | -31.61          | Pass   | V                |

| HSUPA band II 9400 channel/1880MHz(middle channel) |             |               |                               |             |                 |        |                  |
|----------------------------------------------------|-------------|---------------|-------------------------------|-------------|-----------------|--------|------------------|
| Frequency (MHz)                                    | Height (cm) | Azimuth (deg) | Spurious Emission Level (dBm) | Limit (dBm) | Over Limit (dB) | Result | Antenna Polaxis. |
| 1118.517                                           | 100         | 55            | -55.89                        | -13.00      | -42.89          | Pass   | H                |
| 1510.402                                           | 100         | 200           | -55.93                        | -13.00      | -42.93          | Pass   | H                |
| 3766.785                                           | 100         | 360           | -45.51                        | -13.00      | -32.51          | Pass   | H                |
| 5880.782                                           | 100         | 79            | -46.52                        | -13.00      | -33.52          | Pass   | H                |
| 8571.377                                           | 100         | 21            | -45.94                        | -13.00      | -32.94          | Pass   | H                |
| 11283.550                                          | 100         | 334           | -44.81                        | -13.00      | -31.81          | Pass   | H                |
| 1280.072                                           | 100         | 57            | -56.35                        | -13.00      | -43.35          | Pass   | V                |
| 3709.691                                           | 100         | 100           | -49.41                        | -13.00      | -36.41          | Pass   | V                |
| 5177.971                                           | 100         | 254           | -49.01                        | -13.00      | -36.01          | Pass   | V                |
| 6331.329                                           | 100         | 10            | -45.29                        | -13.00      | -32.29          | Pass   | V                |
| 9298.801                                           | 100         | 360           | -45.90                        | -13.00      | -32.90          | Pass   | V                |
| 11370.050                                          | 100         | 78            | -44.37                        | -13.00      | -31.37          | Pass   | V                |

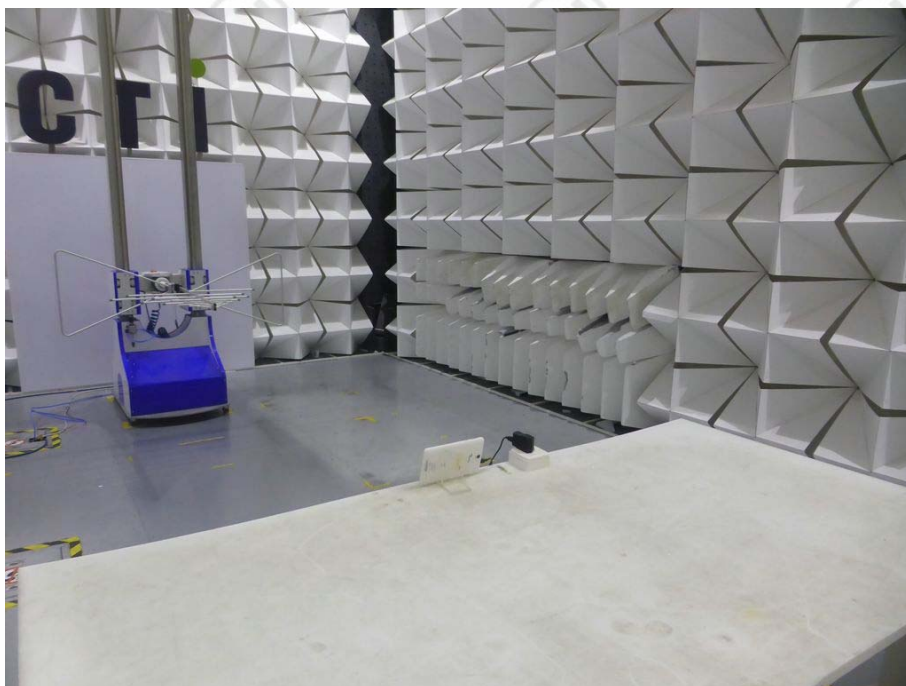
| HSUPA band II 9538 channel/1907.6MHz(highest channel) |             |               |                               |             |                 |        |                  |
|-------------------------------------------------------|-------------|---------------|-------------------------------|-------------|-----------------|--------|------------------|
| Frequency (MHz)                                       | Height (cm) | Azimuth (deg) | Spurious Emission Level (dBm) | Limit (dBm) | Over Limit (dB) | Result | Antenna Polaxis. |
| 1118.517                                              | 100         | 56            | -55.90                        | -13.00      | -42.90          | Pass   | H                |
| 3815.033                                              | 100         | 221           | -40.60                        | -13.00      | -27.60          | Pass   | H                |
| 5732.974                                              | 100         | 360           | -45.70                        | -13.00      | -32.70          | Pass   | H                |
| 6396.125                                              | 100         | 79            | -45.99                        | -13.00      | -32.99          | Pass   | H                |
| 9111.353                                              | 120         | 20            | -46.26                        | -13.00      | -33.26          | Pass   | H                |
| 12272.340                                             | 100         | 45            | -45.16                        | -13.00      | -32.16          | Pass   | H                |
| 1118.517                                              | 100         | 55            | -56.17                        | -13.00      | -43.17          | Pass   | V                |
| 1510.402                                              | 100         | 10            | -55.32                        | -13.00      | -42.32          | Pass   | V                |
| 3815.033                                              | 100         | 79            | -40.02                        | -13.00      | -27.02          | Pass   | V                |
| 6511.117                                              | 100         | 332           | -46.00                        | -13.00      | -33.00          | Pass   | V                |
| 9019.050                                              | 100         | 58            | -46.03                        | -13.00      | -33.03          | Pass   | V                |
| 11197.710                                             | 100         | 10            | -46.11                        | -13.00      | -33.11          | Pass   | V                |

Note:

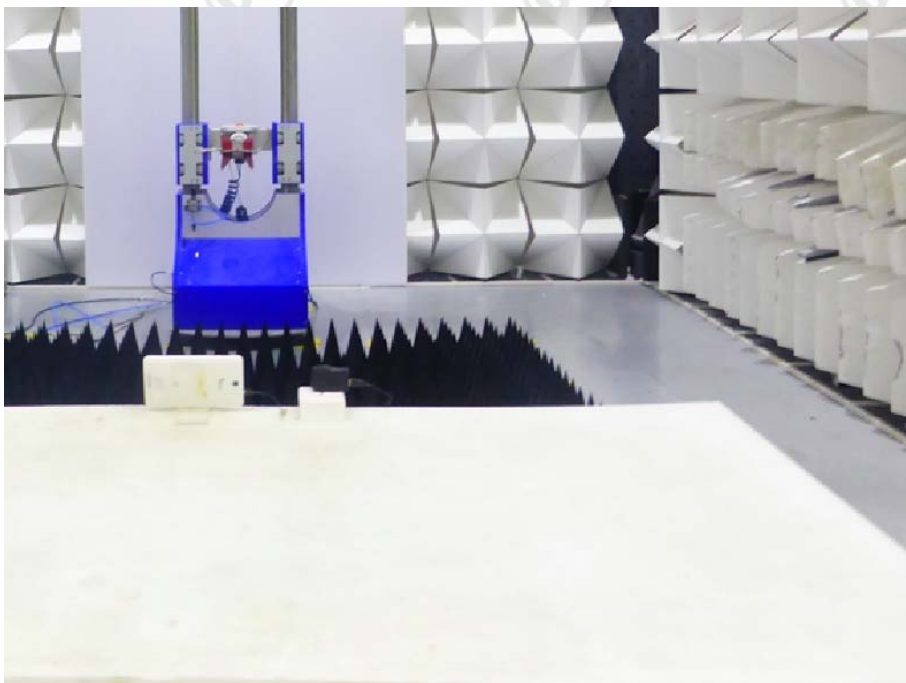
1) Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below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

## PHOTOGRAPHS OF TEST SETUP

Test model No.: S7



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



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

## PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32I00225101 for EUT external and internal photos.

\*\*\* End of Report \*\*\*

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