

## TEST REPORT

**Product** : Intelligent Vehicle Network Gateway  
**Trade mark** : TN-IVS-8000  
**Model/Type reference** : TN-IVS-8000  
**Serial Number** : N/A  
**Report Number** : EED32I00216505  
**FCC ID** : 2AJDT-TNIVS8000  
**Date of Issue** : Sep. 28, 2016  
**Test Standards** : 47 CFR Part 2(2015)  
47 CFR Part 27 subpart C(2015)  
**Test result** : PASS

Prepared for:

**ZHEJIANG THIRD NET CO., LTD.**

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Date:

Sep. 28, 2016

Check No.: 2402635644



## 2 Version

| Version No. | Date          | Description |
|-------------|---------------|-------------|
| 00          | Sep. 28, 2016 | Original    |
|             |               |             |
|             |               |             |

### 3 Test Summary

| LTE band 4                                    |                                |                                      |        |
|-----------------------------------------------|--------------------------------|--------------------------------------|--------|
| Test Item                                     | Test Requirement               | Test method                          | Result |
| Conducted output power                        | Part 2.1046(a) /Part 27.50(d)  | TIA-603-D-2010&KDB 971168 D01v02r02  | PASS   |
| Effective Radiated Power of Transmitter(EIRP) | Part 2.1046(a) / Part 27.50(d) | TIA-603-D-2010 &KDB 971168 D01v02r02 | PASS   |
| peak-to-average ratio                         | Part 27.50(d)                  | KDB 971168 D01v02r02                 | PASS   |
| 99% &26dBOccupied Bandwidth                   | Part 2.1049(h)                 | Part 27.53(h) &KDB 971168 D01v02r02  | PASS   |
| Band Edge at antenna terminals                | Part 2.1051/ Part 27.53(h)     | Part 27.53(h) &KDB 971168 D01v02r02  | PASS   |
| Spurious emissions at antenna terminals       | Part 2.1051/ Part 27.53(h)     | TIA-603-D-2010 &KDB 971168 D01v02r02 | PASS   |
| Field strength of spurious radiation          | Part 2.1053/ Part 27.53(h)     | TIA-603-D-2010 &KDB 971168 D01v02r02 | PASS   |
| Frequency stability                           | Part 2.1055/Part 27.54         | TIA-603-D-2010 &KDB 971168 D01v02r02 | PASS   |

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

RF: In this whole report RF means Radiated Frequency.

CH: In this whole report CH means channel.

Volt: In this whole report Volt means Voltage.

Temp: In this whole report Temp means Temperature.

Humid: In this whole report Humid means humidity.

Press: In this whole report Press means Pressure.

N/A: In this whole report not application

Remark:

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

## 4 Content

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## 5 Test Requirement

### 5.1 Test setup

#### 5.1.1 For Radiated Emissions test setup

Radiated Emissions setup:

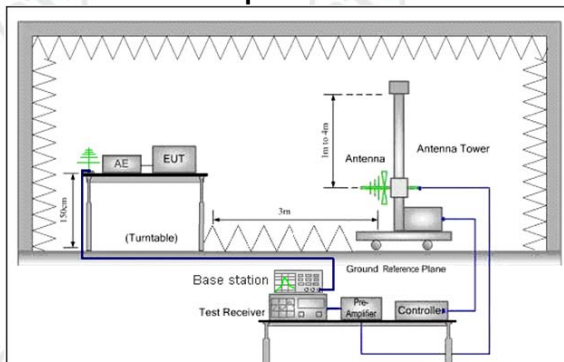


Figure 1.30MHz to 1GHz

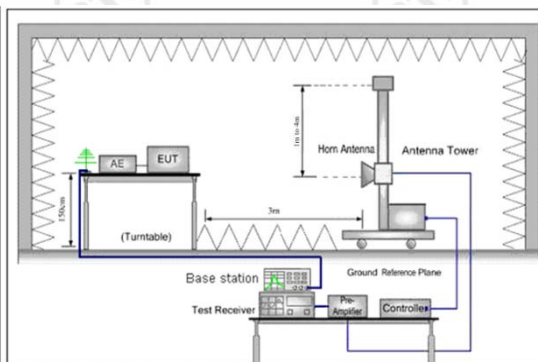


Figure 2. above 1GHz

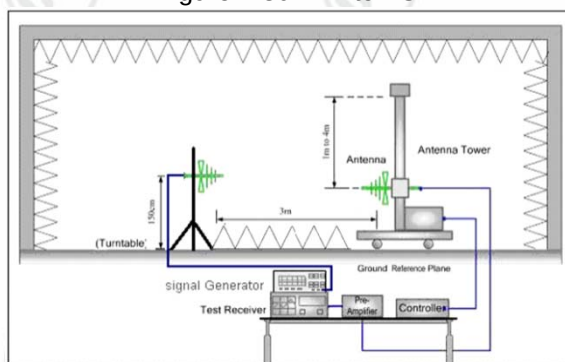


Figure 1. 30MHz to 1GHz

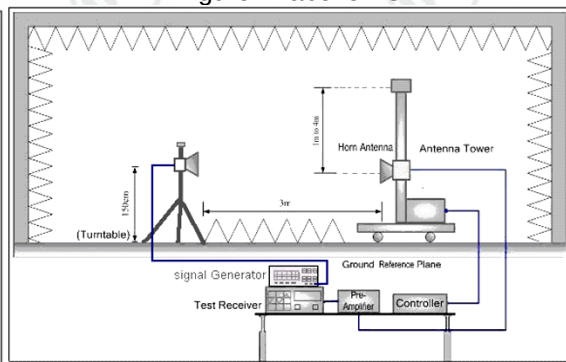


Figure 2. above 1GHz

## 5.2 Test Environment

### Operating Environment:

|                       |          |
|-----------------------|----------|
| Temperature:          | 24°C     |
| Humidity:             | 46% RH   |
| Atmospheric Pressure: | 1010mbar |

## 5.3 Test Condition

Test channel:

LTE

| Test Mode                                          | Test Frequency ID | Bandwidth (MHz)  | Number [UL] | Frequency of Uplink(MHz) | Number [DL] | Frequency of Downlink(MHz) |
|----------------------------------------------------|-------------------|------------------|-------------|--------------------------|-------------|----------------------------|
| LTE band 4<br>TX:1710–1755 MHz<br>RX: 2110–2155MHz | Low Range         | 1.4              | 19957       | 1710.7                   | 1957        | 2110.7                     |
|                                                    |                   | 3                | 19965       | 1711.5                   | 1965        | 2111.5                     |
|                                                    |                   | 5                | 19976       | 1712.5                   | 1975        | 2112.5                     |
|                                                    |                   | 10               | 20000       | 1715                     | 2000        | 2115.0                     |
|                                                    |                   | 15               | 20025       | 1717.5                   | 2026        | 2117.6                     |
|                                                    |                   | 20               | 20050       | 1720                     | 2050        | 2120.0                     |
|                                                    | Mid Range         | 1.4/3/5/10/15/20 | 20176       | 1732.5                   | 2175        | 2132.5                     |
|                                                    | High Range        | 1.4              | 20393       | 1754.3                   | 2393        | 2154.3                     |
|                                                    |                   | 3                | 20385       | 1753.5                   | 2386        | 2153.5                     |
|                                                    |                   | 5                | 20375       | 1752.5                   | 2376        | 2152.5                     |
|                                                    |                   | 10               | 20350       | 1750                     | 2350        | 2160.0                     |
|                                                    |                   | 15               | 20325       | 1747.5                   | 2325        | 2147.5                     |
|                                                    |                   | 20               | 20300       | 1745                     | 2300        | 2145.0                     |

## 6 General Information

### 6.1 Client Information

|                          |                                                                                                                 |
|--------------------------|-----------------------------------------------------------------------------------------------------------------|
| Applicant:               | ZHEJIANG THIRD NET CO., LTD.                                                                                    |
| Address of Applicant:    | 6th FL Building A, The Intelligence e Valley, No. 482 Qianmo Road, Binjiang District, Hangzhou, Zhejiang, china |
| Manufacturer:            | ZHEJIANG THIRD NET CO., LTD.                                                                                    |
| Address of Manufacturer: | 6th FL Building A, The Intelligence e Valley, No. 482 Qianmo Road, Binjiang District, Hangzhou, Zhejiang, china |

### 6.2 General Description of EUT

|                                 |                                                                                                                                                                 |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name:                   | Intelligent Vehicle Network Gateway                                                                                                                             |
| Model No.(EUT):                 | TN-IVS-8000                                                                                                                                                     |
| Trade Mark:                     | TN-IVS-8000                                                                                                                                                     |
| EUT Supports Radios application | GPS: 1575.42MHz<br>Wlan 2.4GHz 802.11b/g/n(HT20&HT40)<br>UMTS: Band II(1900MHz), Band IV(1700MHz), Band V(850MHz) WCDMA<br>LTE: Band 2, Band 4, Band 5, Band 17 |
| Power Supply:                   | DC 9-36V                                                                                                                                                        |
| Sample Received Date:           | Aug. 01, 2016                                                                                                                                                   |
| Sample tested Date:             | Aug. 01, 2016 to Sep. 27, 2016                                                                                                                                  |

### 6.3 Product Specification subjective to this standard

|                  |                                                                                |
|------------------|--------------------------------------------------------------------------------|
| Frequency Band:  | LTE Band 4:<br>Tx:1710–1755 MHz; Rx:2110–2155MHz                               |
| Modulation Type: | LTE Mode with QPSK,16QAM Modulation                                            |
| Sample Type:     | Fixed production                                                               |
| Antenna Type:    | Temporary antenna                                                              |
| Antenna Gain:    | LTE Band 2: 1.5dBi, LTE Band 4: 1.5dBi, LTE Band 5: 1dBi,<br>LTE Band 17: 1dBi |
| Test Voltage:    | DC 12V                                                                         |

### 6.4 Description of Support Units

The EUT has been tested with associated equipment below.

| Description | Manufacturer | Model No. | Certification | Supplied by |
|-------------|--------------|-----------|---------------|-------------|
| DC Source   | QIEKESI      | 10209898  | FCC DOC       | CTI         |

### 6.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd.

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

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

No tests were sub-contracted.

### 6.6 Test Facility

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

**CNAS-Lab Code: L1910**

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

**A2LA-Lab Cert. No. 3061.01**

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

**FCC-Registration No.: 886427**

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

**IC-Registration No.: 7408A-2**

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

**IC-Registration No.: 7408B-1**

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

**NEMKO-Aut. No.: ELA503**

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

**VCCI**

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

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

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

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

**6.7 Deviation from Standards**

None.

**6.8 Abnormalities from Standard Conditions**

None.

## 6.9 Other Information Requested by the Customer

None.

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

| No. | Item                            | Measurement Uncertainty |
|-----|---------------------------------|-------------------------|
| 1   | Radio Frequency                 | $7.9 \times 10^{-8}$    |
| 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                 | 9163-617      | 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                               | Sinoscite     | FL3CX03WG18NM12-0398-002 | ---           | 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     | 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 27 (2015) | PART 27 – MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES<br>Subpart C – Technical Standards |
| 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)/<br>Part 27.50(d)           | TIA-603-D&KDB<br>971168 D01v02r02      | Conducted output<br>power                          | PASS    | Appendix A) |
| Part 27.50(d)                              | KDB 971168<br>D01v02r02                | peak-to-average ratio                              | PASS    | Appendix B) |
| Part 2.1049(h)                             | Part 27.53(h) &KDB<br>971168 D01v02r02 | 99%<br>&26dB Occupied<br>Bandwidth                 | PASS    | Appendix C) |
| Part 2.1051/<br>Part 27.53(h)              | Part 27.53(h) &KDB<br>971168 D01v02r02 | Band Edge at<br>antenna terminals                  | PASS    | Appendix D) |
| Part 2.1051/ Part 2.1057/<br>Part 27.53(h) | TIA-603-D &KDB<br>971168 D01v02r02     | Spurious emissions<br>at antenna<br>terminals      | PASS    | Appendix E) |
| Part 2.1055/<br>Part 27.54                 | TIA-603-D &KDB<br>971168 D01v02r02     | Frequency stability                                | PASS    | Appendix F) |
| Part 2.1053/ Part 2.1057/<br>Part 27.53(h) | TIA-603-D &KDB<br>971168 D01v02r02     | Field strength of<br>spurious radiation            | PASS    | Appendix G) |
| Part 2.1046(a)/<br>Part 27.50(d)           | TIA-603-D &KDB<br>971168 D01v02r02     | Effective Radiated<br>Power of<br>Transmitter(ERP) | PASS    | Appendix H) |

## Appendix A: 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 1.5m high table at a 3 meter fully Anechoic Chamber. The antenna of the transmitter was extended to its maximum length. modulation mode and the measuring receiver shall be tuned to the frequency of the transmitter under test.</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) Repeat above procedures until all frequencies measured was complete.</li></ol> |           |            |        |              |        |            |      |        |        |      |            |      |      |      |      |
| Limit:                 | <table><tr><td>Mode</td><td>LTE band 4</td></tr><tr><td>Limit</td><td>30dBm ( 1W )</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Mode      | LTE band 4 | Limit  | 30dBm ( 1W ) |        |            |      |        |        |      |            |      |      |      |      |
| Mode                   | LTE band 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           |            |        |              |        |            |      |        |        |      |            |      |      |      |      |
| Limit                  | 30dBm ( 1W )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           |            |        |              |        |            |      |        |        |      |            |      |      |      |      |

**Test Result**

**Channel Bandwidth: 1.4 MHz**

| Channel Bandwidth: 1.4 MHz |         |                  |        |                     |               |         |
|----------------------------|---------|------------------|--------|---------------------|---------------|---------|
| Modulation                 | Channel | RB Configuration |        | Average Power [dBm] | E.i.r.p [dBm] | Verdict |
|                            |         | Size             | Offset |                     |               |         |
| QPSK                       | LCH     | 1                | 0      | 22.39               | 24.06         | PASS    |
|                            |         | 1                | 3      | 22.39               | 24.06         | PASS    |
|                            |         | 1                | 5      | 22.32               | 23.68         | PASS    |
|                            |         | 3                | 0      | 22.43               | 23.78         | PASS    |
|                            |         | 3                | 2      | 22.36               | 23.72         | PASS    |
|                            |         | 3                | 3      | 22.27               | 23.37         | PASS    |
|                            |         | 6                | 0      | 21.42               | 23.76         | PASS    |
|                            | MCH     | 1                | 0      | 22.71               | 23.96         | PASS    |
|                            |         | 1                | 3      | 22.63               | 23.83         | PASS    |
|                            |         | 1                | 5      | 22.69               | 23.90         | PASS    |
|                            |         | 3                | 0      | 22.53               | 23.73         | PASS    |
|                            |         | 3                | 2      | 22.55               | 23.60         | PASS    |
|                            |         | 3                | 3      | 22.62               | 23.69         | PASS    |
|                            |         | 6                | 0      | 21.55               | 23.55         | PASS    |
|                            | HCH     | 1                | 0      | 22.28               | 23.45         | PASS    |
|                            |         | 1                | 3      | 22.13               | 22.74         | PASS    |
|                            |         | 1                | 5      | 22.15               | 22.76         | PASS    |
|                            |         | 3                | 0      | 22.37               | 22.77         | PASS    |
|                            |         | 3                | 2      | 22.35               | 22.55         | PASS    |
|                            |         | 3                | 3      | 22.16               | 22.36         | PASS    |
|                            |         | 6                | 0      | 21.24               | 22.24         | PASS    |
| 16QAM                      | LCH     | 1                | 0      | 21.33               | 23.47         | PASS    |
|                            |         | 1                | 3      | 21.31               | 22.80         | PASS    |
|                            |         | 1                | 5      | 21.29               | 22.78         | PASS    |
|                            |         | 3                | 0      | 21.44               | 22.64         | PASS    |
|                            |         | 3                | 2      | 21.35               | 22.55         | PASS    |
|                            |         | 3                | 3      | 21.29               | 22.37         | PASS    |
|                            |         | 6                | 0      | 20.27               | 22.35         | PASS    |
|                            | MCH     | 1                | 0      | 21.66               | 23.30         | PASS    |
|                            |         | 1                | 3      | 21.60               | 23.02         | PASS    |
|                            |         | 1                | 5      | 21.74               | 23.00         | PASS    |
|                            |         | 3                | 0      | 21.63               | 22.99         | PASS    |
|                            |         | 3                | 2      | 21.55               | 22.75         | PASS    |
|                            |         | 3                | 3      | 21.59               | 22.76         | PASS    |
|                            |         | 6                | 0      | 20.44               | 21.98         | PASS    |
|                            | HCH     | 1                | 0      | 21.18               | 22.18         | PASS    |
|                            |         | 1                | 3      | 21.19               | 21.70         | PASS    |
|                            |         | 1                | 5      | 21.20               | 21.50         | PASS    |
|                            |         | 3                | 0      | 21.39               | 21.61         | PASS    |
|                            |         | 3                | 2      | 21.34               | 21.59         | PASS    |
|                            |         | 3                | 3      | 21.30               | 21.60         | PASS    |
|                            |         | 6                | 0      | 20.24               | 21.44         | PASS    |

**Channel Bandwidth: 3 MHz**

| Channel Bandwidth: 3 MHz |         |                  |        |                     |               |         |
|--------------------------|---------|------------------|--------|---------------------|---------------|---------|
| Modulation               | Channel | RB Configuration |        | Average Power [dBm] | E.i.r.p [dBm] | Verdict |
|                          |         | Size             | Offset |                     |               |         |
| QPSK                     | LCH     | 1                | 0      | 22.25               | 23.06         | PASS    |
|                          |         | 1                | 7      | 22.43               | 23.01         | PASS    |
|                          |         | 1                | 14     | 22.45               | 23.01         | PASS    |
|                          |         | 8                | 0      | 21.38               | 23.00         | PASS    |
|                          |         | 8                | 4      | 21.45               | 22.65         | PASS    |
|                          |         | 8                | 7      | 21.56               | 22.76         | PASS    |
|                          |         | 15               | 0      | 21.42               | 22.62         | PASS    |
|                          | MCH     | 1                | 0      | 22.56               | 22.84         | PASS    |
|                          |         | 1                | 7      | 22.62               | 22.45         | PASS    |
|                          |         | 1                | 14     | 22.59               | 22.44         | PASS    |
|                          |         | 8                | 0      | 21.74               | 22.12         | PASS    |
|                          |         | 8                | 4      | 21.56               | 22.05         | PASS    |
|                          |         | 8                | 7      | 21.51               | 22.01         | PASS    |
|                          |         | 15               | 0      | 21.49               | 22.00         | PASS    |
|                          | HCH     | 1                | 0      | 22.22               | 23.42         | PASS    |
|                          |         | 1                | 7      | 22.20               | 23.13         | PASS    |
|                          |         | 1                | 14     | 22.16               | 23.16         | PASS    |
|                          |         | 8                | 0      | 21.41               | 22.64         | PASS    |
|                          |         | 8                | 4      | 21.47               | 22.67         | PASS    |
|                          |         | 8                | 7      | 21.31               | 22.54         | PASS    |
|                          |         | 15               | 0      | 21.36               | 22.56         | PASS    |
| 16QAM                    | LCH     | 1                | 0      | 21.25               | 21.86         | PASS    |
|                          |         | 1                | 7      | 21.29               | 21.79         | PASS    |
|                          |         | 1                | 14     | 21.41               | 21.18         | PASS    |
|                          |         | 8                | 0      | 20.43               | 21.88         | PASS    |
|                          |         | 8                | 4      | 20.40               | 21.85         | PASS    |
|                          |         | 8                | 7      | 20.49               | 20.89         | PASS    |
|                          |         | 15               | 0      | 20.42               | 20.80         | PASS    |
|                          | MCH     | 1                | 0      | 21.42               | 22.04         | PASS    |
|                          |         | 1                | 7      | 21.79               | 21.84         | PASS    |
|                          |         | 1                | 14     | 22.14               | 21.15         | PASS    |
|                          |         | 8                | 0      | 20.45               | 21.05         | PASS    |
|                          |         | 8                | 4      | 20.61               | 21.00         | PASS    |
|                          |         | 8                | 7      | 20.57               | 21.83         | PASS    |
|                          |         | 15               | 0      | 20.48               | 21.80         | PASS    |
|                          | HCH     | 1                | 0      | 21.14               | 21.46         | PASS    |
|                          |         | 1                | 7      | 21.21               | 21.20         | PASS    |
|                          |         | 1                | 14     | 21.13               | 21.15         | PASS    |
|                          |         | 8                | 0      | 20.42               | 21.00         | PASS    |
|                          |         | 8                | 4      | 20.44               | 21.02         | PASS    |
|                          |         | 8                | 7      | 20.37               | 20.98         | PASS    |
|                          |         | 15               | 0      | 20.34               | 20.93         | PASS    |

**Channel Bandwidth: 5 MHz**

| Channel Bandwidth: 5 MHz |         |                  |        |                     |               |         |
|--------------------------|---------|------------------|--------|---------------------|---------------|---------|
| Modulation               | Channel | RB Configuration |        | Average Power [dBm] | E.i.r.p [dBm] | Verdict |
|                          |         | Size             | Offset |                     |               |         |
| QPSK                     | LCH     | 1                | 0      | 22.43               | 23.76         | PASS    |
|                          |         | 1                | 12     | 22.59               | 23.45         | PASS    |
|                          |         | 1                | 24     | 22.56               | 23.43         | PASS    |
|                          |         | 12               | 0      | 21.22               | 22.72         | PASS    |
|                          |         | 12               | 6      | 21.54               | 22.93         | PASS    |
|                          |         | 12               | 13     | 21.56               | 22.96         | PASS    |
|                          |         | 25               | 0      | 21.35               | 22.78         | PASS    |
|                          | MCH     | 1                | 0      | 22.67               | 23.73         | PASS    |
|                          |         | 1                | 12     | 22.72               | 22.80         | PASS    |
|                          |         | 1                | 24     | 22.64               | 22.60         | PASS    |
|                          |         | 12               | 0      | 21.57               | 22.55         | PASS    |
|                          |         | 12               | 6      | 21.59               | 22.58         | PASS    |
|                          |         | 12               | 13     | 21.55               | 21.93         | PASS    |
|                          |         | 25               | 0      | 21.44               | 21.82         | PASS    |
|                          | HCH     | 1                | 0      | 22.35               | 22.76         | PASS    |
|                          |         | 1                | 12     | 22.37               | 22.93         | PASS    |
|                          |         | 1                | 24     | 22.20               | 22.73         | PASS    |
|                          |         | 12               | 0      | 21.35               | 21.69         | PASS    |
|                          |         | 12               | 6      | 21.43               | 21.70         | PASS    |
|                          |         | 12               | 13     | 21.25               | 21.55         | PASS    |
|                          |         | 25               | 0      | 21.41               | 21.48         | PASS    |
| 16QAM                    | LCH     | 1                | 0      | 21.21               | 23.75         | PASS    |
|                          |         | 1                | 12     | 21.50               | 23.65         | PASS    |
|                          |         | 1                | 24     | 21.49               | 23.25         | PASS    |
|                          |         | 12               | 0      | 20.33               | 22.96         | PASS    |
|                          |         | 12               | 6      | 20.50               | 23.03         | PASS    |
|                          |         | 12               | 13     | 20.60               | 23.11         | PASS    |
|                          |         | 25               | 0      | 20.43               | 22.00         | PASS    |
|                          | MCH     | 1                | 0      | 21.56               | 22.48         | PASS    |
|                          |         | 1                | 12     | 21.61               | 22.52         | PASS    |
|                          |         | 1                | 24     | 21.51               | 22.40         | PASS    |
|                          |         | 12               | 0      | 20.42               | 22.32         | PASS    |
|                          |         | 12               | 6      | 20.46               | 22.34         | PASS    |
|                          |         | 12               | 13     | 20.52               | 22.44         | PASS    |
|                          |         | 25               | 0      | 20.38               | 22.03         | PASS    |
|                          | HCH     | 1                | 0      | 21.29               | 21.48         | PASS    |
|                          |         | 1                | 12     | 21.23               | 21.13         | PASS    |
|                          |         | 1                | 24     | 21.14               | 21.00         | PASS    |
|                          |         | 12               | 0      | 20.41               | 20.88         | PASS    |
|                          |         | 12               | 6      | 20.41               | 20.88         | PASS    |
|                          |         | 12               | 13     | 20.33               | 20.55         | PASS    |
|                          |         | 25               | 0      | 20.39               | 20.89         | PASS    |

**Channel Bandwidth: 10 MHz**

| Channel Bandwidth: 10 MHz |         |                  |        |                     |               |         |
|---------------------------|---------|------------------|--------|---------------------|---------------|---------|
| Modulation                | Channel | RB Configuration |        | Average Power [dBm] | E.i.r.p [dBm] | Verdict |
|                           |         | Size             | Offset |                     |               |         |
| QPSK                      | LCH     | 1                | 0      | 22.26               | 23.07         | PASS    |
|                           |         | 1                | 24     | 22.49               | 22.96         | PASS    |
|                           |         | 1                | 49     | 22.48               | 22.91         | PASS    |
|                           |         | 25               | 0      | 21.42               | 21.68         | PASS    |
|                           |         | 25               | 12     | 21.49               | 21.92         | PASS    |
|                           |         | 25               | 25     | 21.52               | 21.95         | PASS    |
|                           |         | 50               | 0      | 21.44               | 21.69         | PASS    |
|                           | MCH     | 1                | 0      | 22.63               | 23.14         | PASS    |
|                           |         | 1                | 24     | 22.48               | 22.92         | PASS    |
|                           |         | 1                | 49     | 22.76               | 22.03         | PASS    |
|                           |         | 25               | 0      | 21.43               | 21.70         | PASS    |
|                           |         | 25               | 12     | 21.50               | 21.75         | PASS    |
|                           |         | 25               | 25     | 21.53               | 21.76         | PASS    |
|                           |         | 50               | 0      | 21.39               | 21.68         | PASS    |
|                           | HCH     | 1                | 0      | 22.36               | 22.19         | PASS    |
|                           |         | 1                | 24     | 22.23               | 22.54         | PASS    |
|                           |         | 1                | 49     | 22.11               | 22.43         | PASS    |
|                           |         | 25               | 0      | 21.41               | 22.01         | PASS    |
|                           |         | 25               | 12     | 21.32               | 21.95         | PASS    |
|                           |         | 25               | 25     | 21.26               | 21.81         | PASS    |
|                           |         | 50               | 0      | 21.20               | 21.73         | PASS    |
| 16QAM                     | LCH     | 1                | 0      | 21.18               | 22.04         | PASS    |
|                           |         | 1                | 24     | 21.51               | 21.95         | PASS    |
|                           |         | 1                | 49     | 21.43               | 21.82         | PASS    |
|                           |         | 25               | 0      | 20.39               | 21.71         | PASS    |
|                           |         | 25               | 12     | 20.48               | 21.76         | PASS    |
|                           |         | 25               | 25     | 20.43               | 21.71         | PASS    |
|                           |         | 50               | 0      | 20.42               | 21.69         | PASS    |
|                           | MCH     | 1                | 0      | 21.46               | 22.00         | PASS    |
|                           |         | 1                | 24     | 21.40               | 21.95         | PASS    |
|                           |         | 1                | 49     | 21.56               | 21.99         | PASS    |
|                           |         | 25               | 0      | 20.44               | 22.31         | PASS    |
|                           |         | 25               | 12     | 20.45               | 22.35         | PASS    |
|                           |         | 25               | 25     | 20.56               | 22.46         | PASS    |
|                           |         | 50               | 0      | 20.41               | 22.30         | PASS    |
|                           | HCH     | 1                | 0      | 21.33               | 22.35         | PASS    |
|                           |         | 1                | 24     | 21.23               | 22.00         | PASS    |
|                           |         | 1                | 49     | 21.01               | 21.81         | PASS    |
|                           |         | 25               | 0      | 20.32               | 21.34         | PASS    |
|                           |         | 25               | 12     | 20.22               | 21.24         | PASS    |
|                           |         | 25               | 25     | 20.21               | 21.21         | PASS    |
|                           |         | 50               | 0      | 20.17               | 21.07         | PASS    |

**Channel Bandwidth: 15 MHz**

| Channel Bandwidth: 15 MHz |         |                  |        |                     |               |         |
|---------------------------|---------|------------------|--------|---------------------|---------------|---------|
| Modulation                | Channel | RB Configuration |        | Average Power [dBm] | E.i.r.p [dBm] | Verdict |
|                           |         | Size             | Offset |                     |               |         |
| QPSK                      | LCH     | 1                | 0      | 22.21               | 22.76         | PASS    |
|                           |         | 1                | 37     | 22.34               | 22.34         | PASS    |
|                           |         | 1                | 74     | 22.36               | 22.36         | PASS    |
|                           |         | 37               | 0      | 21.29               | 21.35         | PASS    |
|                           |         | 37               | 18     | 21.30               | 22.34         | PASS    |
|                           |         | 37               | 38     | 21.35               | 21.74         | PASS    |
|                           |         | 75               | 0      | 21.31               | 21.38         | PASS    |
|                           | MCH     | 1                | 0      | 22.44               | 23.41         | PASS    |
|                           |         | 1                | 37     | 22.46               | 23.36         | PASS    |
|                           |         | 1                | 74     | 22.47               | 23.37         | PASS    |
|                           |         | 37               | 0      | 21.38               | 22.35         | PASS    |
|                           |         | 37               | 18     | 21.39               | 22.24         | PASS    |
|                           |         | 37               | 38     | 21.48               | 21.52         | PASS    |
|                           |         | 75               | 0      | 21.35               | 21.40         | PASS    |
|                           | HCH     | 1                | 0      | 22.47               | 23.13         | PASS    |
|                           |         | 1                | 37     | 22.30               | 22.90         | PASS    |
|                           |         | 1                | 74     | 22.10               | 22.70         | PASS    |
|                           |         | 37               | 0      | 21.30               | 21.90         | PASS    |
|                           |         | 37               | 18     | 21.31               | 21.91         | PASS    |
|                           |         | 37               | 38     | 21.21               | 21.81         | PASS    |
|                           |         | 75               | 0      | 21.22               | 21.82         | PASS    |
| 16QAM                     | LCH     | 1                | 0      | 21.05               | 24.13         | PASS    |
|                           |         | 1                | 37     | 21.28               | 24.08         | PASS    |
|                           |         | 1                | 74     | 21.29               | 24.09         | PASS    |
|                           |         | 37               | 0      | 20.32               | 23.32         | PASS    |
|                           |         | 37               | 18     | 20.29               | 23.29         | PASS    |
|                           |         | 37               | 38     | 20.36               | 23.36         | PASS    |
|                           |         | 75               | 0      | 20.29               | 23.29         | PASS    |
|                           | MCH     | 1                | 0      | 21.36               | 22.66         | PASS    |
|                           |         | 1                | 37     | 21.42               | 22.72         | PASS    |
|                           |         | 1                | 74     | 21.38               | 22.68         | PASS    |
|                           |         | 37               | 0      | 20.36               | 21.66         | PASS    |
|                           |         | 37               | 18     | 20.36               | 21.66         | PASS    |
|                           |         | 37               | 38     | 20.46               | 21.76         | PASS    |
|                           |         | 75               | 0      | 20.38               | 21.68         | PASS    |
|                           | HCH     | 1                | 0      | 21.39               | 23.45         | PASS    |
|                           |         | 1                | 37     | 21.22               | 23.22         | PASS    |
|                           |         | 1                | 74     | 21.03               | 23.03         | PASS    |
|                           |         | 37               | 0      | 20.22               | 22.22         | PASS    |
|                           |         | 37               | 18     | 20.26               | 22.26         | PASS    |
|                           |         | 37               | 38     | 20.25               | 22.25         | PASS    |
|                           |         | 75               | 0      | 20.22               | 22.22         | PASS    |

**Channel Bandwidth: 20 MHz**

| Channel Bandwidth: 20 MHz |         |                  |        |                     |               |         |
|---------------------------|---------|------------------|--------|---------------------|---------------|---------|
| Modulation                | Channel | RB Configuration |        | Average Power [dBm] | E.i.r.p [dBm] | Verdict |
|                           |         | Size             | Offset |                     |               |         |
| QPSK                      | LCH     | 1                | 0      | 22.23               | 24.25         | PASS    |
|                           |         | 1                | 49     | 22.47               | 24.17         | PASS    |
|                           |         | 1                | 99     | 22.49               | 24.19         | PASS    |
|                           |         | 50               | 0      | 21.23               | 23.13         | PASS    |
|                           |         | 50               | 25     | 21.35               | 23.25         | PASS    |
|                           |         | 50               | 50     | 21.27               | 23.17         | PASS    |
|                           |         | 100              | 0      | 21.31               | 23.21         | PASS    |
|                           | MCH     | 1                | 0      | 22.50               | 22.93         | PASS    |
|                           |         | 1                | 49     | 22.63               | 22.83         | PASS    |
|                           |         | 1                | 99     | 22.56               | 22.76         | PASS    |
|                           |         | 50               | 0      | 21.33               | 21.53         | PASS    |
|                           |         | 50               | 25     | 21.38               | 21.58         | PASS    |
|                           |         | 50               | 50     | 21.41               | 21.61         | PASS    |
|                           |         | 100              | 0      | 21.39               | 21.59         | PASS    |
|                           | HCH     | 1                | 0      | 22.64               | 24.59         | PASS    |
|                           |         | 1                | 49     | 22.56               | 24.46         | PASS    |
|                           |         | 1                | 99     | 22.28               | 24.18         | PASS    |
|                           |         | 50               | 0      | 21.31               | 23.21         | PASS    |
|                           |         | 50               | 25     | 21.23               | 23.13         | PASS    |
|                           |         | 50               | 50     | 21.15               | 23.05         | PASS    |
|                           |         | 100              | 0      | 21.26               | 23.16         | PASS    |
| 16QAM                     | LCH     | 1                | 0      | 20.96               | 21.13         | PASS    |
|                           |         | 1                | 49     | 21.23               | 21.03         | PASS    |
|                           |         | 1                | 99     | 21.28               | 21.08         | PASS    |
|                           |         | 50               | 0      | 20.20               | 20.50         | PASS    |
|                           |         | 50               | 25     | 20.22               | 20.52         | PASS    |
|                           |         | 50               | 50     | 20.27               | 20.57         | PASS    |
|                           |         | 100              | 0      | 20.27               | 20.57         | PASS    |
|                           | MCH     | 1                | 0      | 21.21               | 21.21         | PASS    |
|                           |         | 1                | 49     | 21.26               | 21.16         | PASS    |
|                           |         | 1                | 99     | 21.32               | 21.12         | PASS    |
|                           |         | 50               | 0      | 20.25               | 20.42         | PASS    |
|                           |         | 50               | 25     | 20.28               | 20.47         | PASS    |
|                           |         | 50               | 50     | 20.32               | 20.58         | PASS    |
|                           |         | 100              | 0      | 20.38               | 20.79         | PASS    |
|                           | HCH     | 1                | 0      | 21.27               | 21.97         | PASS    |
|                           |         | 1                | 49     | 21.17               | 21.27         | PASS    |
|                           |         | 1                | 99     | 20.99               | 21.09         | PASS    |
|                           |         | 50               | 0      | 20.26               | 21.36         | PASS    |
|                           |         | 50               | 25     | 20.15               | 21.25         | PASS    |
|                           |         | 50               | 50     | 20.08               | 20.18         | PASS    |
|                           |         | 100              | 0      | 20.25               | 20.35         | PASS    |

## Appendix B: Peak-to-Average Ratio

Test Result

Channel Bandwidth: 1.4 MHz

| Channel Bandwidth: 1.4 MHz |         |                  |        |                            |            |         |
|----------------------------|---------|------------------|--------|----------------------------|------------|---------|
| Modulation                 | Channel | RB Configuration |        | Peak-to-Average Ratio (dB) | Limit (dB) | Verdict |
|                            |         | Size             | Offset |                            |            |         |
| QPSK                       | LCH     | 1                | 0      | 4.72                       | <13        | PASS    |
|                            |         | 1                | 3      | 4.69                       | <13        | PASS    |
|                            |         | 1                | 5      | 4.53                       | <13        | PASS    |
|                            |         | 3                | 0      | 5.34                       | <13        | PASS    |
|                            |         | 3                | 2      | 5.37                       | <13        | PASS    |
|                            |         | 3                | 3      | 5.29                       | <13        | PASS    |
|                            |         | 6                | 0      | 5.43                       | <13        | PASS    |
|                            | MCH     | 1                | 0      | 5.55                       | <13        | PASS    |
|                            |         | 1                | 3      | 5.53                       | <13        | PASS    |
|                            |         | 1                | 5      | 5.62                       | <13        | PASS    |
|                            |         | 3                | 0      | 5.88                       | <13        | PASS    |
|                            |         | 3                | 2      | 5.88                       | <13        | PASS    |
|                            |         | 3                | 3      | 5.89                       | <13        | PASS    |
|                            |         | 6                | 0      | 6.03                       | <13        | PASS    |
|                            | HCH     | 1                | 0      | 5.32                       | <13        | PASS    |
|                            |         | 1                | 3      | 5.23                       | <13        | PASS    |
|                            |         | 1                | 5      | 5.29                       | <13        | PASS    |
|                            |         | 3                | 0      | 5.52                       | <13        | PASS    |
|                            |         | 3                | 2      | 5.56                       | <13        | PASS    |
|                            |         | 3                | 3      | 5.51                       | <13        | PASS    |
|                            |         | 6                | 0      | 6.08                       | <13        | PASS    |
| 16QAM                      | LCH     | 1                | 0      | 5.86                       | <13        | PASS    |
|                            |         | 1                | 3      | 5.7                        | <13        | PASS    |
|                            |         | 1                | 5      | 5.63                       | <13        | PASS    |
|                            |         | 3                | 0      | 6.05                       | <13        | PASS    |
|                            |         | 3                | 2      | 5.97                       | <13        | PASS    |
|                            |         | 3                | 3      | 5.93                       | <13        | PASS    |
|                            |         | 6                | 0      | 6.44                       | <13        | PASS    |
|                            | MCH     | 1                | 0      | 6.58                       | <13        | PASS    |
|                            |         | 1                | 3      | 6.28                       | <13        | PASS    |
|                            |         | 1                | 5      | 6.2                        | <13        | PASS    |
|                            |         | 3                | 0      | 6.96                       | <13        | PASS    |
|                            |         | 3                | 2      | 6.67                       | <13        | PASS    |
|                            |         | 3                | 3      | 6.97                       | <13        | PASS    |
|                            |         | 6                | 0      | 6.87                       | <13        | PASS    |
|                            | HCH     | 1                | 0      | 5.9                        | <13        | PASS    |
|                            |         | 1                | 3      | 5.83                       | <13        | PASS    |
|                            |         | 1                | 5      | 5.81                       | <13        | PASS    |
|                            |         | 3                | 0      | 6.41                       | <13        | PASS    |
|                            |         | 3                | 2      | 6.27                       | <13        | PASS    |
|                            |         | 3                | 3      | 6.57                       | <13        | PASS    |
|                            |         | 6                | 0      | 6.69                       | <13        | PASS    |

**Channel Bandwidth: 3 MHz**

| Channel Bandwidth: 3 MHz |         |                  |        |                            |            |         |
|--------------------------|---------|------------------|--------|----------------------------|------------|---------|
| Modulation               | Channel | RB Configuration |        | Peak-to-Average Ratio [dB] | Limit [dB] | Verdict |
|                          |         | Size             | Offset |                            |            |         |
| QPSK                     | LCH     | 1                | 0      | 5.13                       | <13        | PASS    |
|                          |         | 1                | 7      | 4.96                       | <13        | PASS    |
|                          |         | 1                | 14     | 4.93                       | <13        | PASS    |
|                          |         | 8                | 0      | 5.5                        | <13        | PASS    |
|                          |         | 8                | 4      | 5.36                       | <13        | PASS    |
|                          |         | 8                | 7      | 5.32                       | <13        | PASS    |
|                          |         | 15               | 0      | 5.25                       | <13        | PASS    |
|                          | MCH     | 1                | 0      | 5.64                       | <13        | PASS    |
|                          |         | 1                | 7      | 5.56                       | <13        | PASS    |
|                          |         | 1                | 14     | 5.75                       | <13        | PASS    |
|                          |         | 8                | 0      | 6.05                       | <13        | PASS    |
|                          |         | 8                | 4      | 6.04                       | <13        | PASS    |
|                          |         | 8                | 7      | 5.99                       | <13        | PASS    |
|                          |         | 15               | 0      | 5.72                       | <13        | PASS    |
|                          | HCH     | 1                | 0      | 5.08                       | <13        | PASS    |
|                          |         | 1                | 7      | 4.95                       | <13        | PASS    |
|                          |         | 1                | 14     | 5.1                        | <13        | PASS    |
|                          |         | 8                | 0      | 5.35                       | <13        | PASS    |
|                          |         | 8                | 4      | 5.48                       | <13        | PASS    |
|                          |         | 8                | 7      | 5.44                       | <13        | PASS    |
|                          |         | 15               | 0      | 5.25                       | <13        | PASS    |
| 16QAM                    | LCH     | 1                | 0      | 5.81                       | <13        | PASS    |
|                          |         | 1                | 7      | 5.7                        | <13        | PASS    |
|                          |         | 1                | 14     | 5.63                       | <13        | PASS    |
|                          |         | 8                | 0      | 6.28                       | <13        | PASS    |
|                          |         | 8                | 4      | 6.18                       | <13        | PASS    |
|                          |         | 8                | 7      | 6.13                       | <13        | PASS    |
|                          |         | 15               | 0      | 6.32                       | <13        | PASS    |
|                          | MCH     | 1                | 0      | 6.38                       | <13        | PASS    |
|                          |         | 1                | 7      | 6.23                       | <13        | PASS    |
|                          |         | 1                | 14     | 6.69                       | <13        | PASS    |
|                          |         | 8                | 0      | 6.73                       | <13        | PASS    |
|                          |         | 8                | 4      | 6.72                       | <13        | PASS    |
|                          |         | 8                | 7      | 6.8                        | <13        | PASS    |
|                          |         | 15               | 0      | 6.87                       | <13        | PASS    |
|                          | HCH     | 1                | 0      | 5.8                        | <13        | PASS    |
|                          |         | 1                | 7      | 5.64                       | <13        | PASS    |
|                          |         | 1                | 14     | 5.56                       | <13        | PASS    |
|                          |         | 8                | 0      | 6.37                       | <13        | PASS    |
|                          |         | 8                | 4      | 6.25                       | <13        | PASS    |
|                          |         | 8                | 7      | 6.13                       | <13        | PASS    |
|                          |         | 15               | 0      | 6.37                       | <13        | PASS    |

**Channel Bandwidth: 5 MHz**

| Channel Bandwidth: 5 MHz |         |                  |        |                            |            |         |
|--------------------------|---------|------------------|--------|----------------------------|------------|---------|
| Modulation               | Channel | RB Configuration |        | Peak-to-Average Ratio [dB] | Limit [dB] | Verdict |
|                          |         | Size             | Offset |                            |            |         |
| QPSK                     | LCH     | 1                | 0      | 5.22                       | <13        | PASS    |
|                          |         | 1                | 12     | 4.99                       | <13        | PASS    |
|                          |         | 1                | 24     | 4.92                       | <13        | PASS    |
|                          |         | 12               | 0      | 5.43                       | <13        | PASS    |
|                          |         | 12               | 6      | 5.42                       | <13        | PASS    |
|                          |         | 12               | 13     | 5.26                       | <13        | PASS    |
|                          |         | 25               | 0      | 5.48                       | <13        | PASS    |
|                          | MCH     | 1                | 0      | 5.68                       | <13        | PASS    |
|                          |         | 1                | 12     | 5.81                       | <13        | PASS    |
|                          |         | 1                | 24     | 5.89                       | <13        | PASS    |
|                          |         | 12               | 0      | 6.09                       | <13        | PASS    |
|                          |         | 12               | 6      | 6.14                       | <13        | PASS    |
|                          |         | 12               | 13     | 6.05                       | <13        | PASS    |
|                          |         | 25               | 0      | 5.93                       | <13        | PASS    |
|                          | HCH     | 1                | 0      | 5.33                       | <13        | PASS    |
|                          |         | 1                | 12     | 5.13                       | <13        | PASS    |
|                          |         | 1                | 24     | 5.1                        | <13        | PASS    |
|                          |         | 12               | 0      | 5.54                       | <13        | PASS    |
|                          |         | 12               | 6      | 5.58                       | <13        | PASS    |
|                          |         | 12               | 13     | 5.39                       | <13        | PASS    |
|                          |         | 25               | 0      | 5.56                       | <13        | PASS    |
| 16QAM                    | LCH     | 1                | 0      | 5.72                       | <13        | PASS    |
|                          |         | 1                | 12     | 5.49                       | <13        | PASS    |
|                          |         | 1                | 24     | 5.45                       | <13        | PASS    |
|                          |         | 12               | 0      | 6.28                       | <13        | PASS    |
|                          |         | 12               | 6      | 6.38                       | <13        | PASS    |
|                          |         | 12               | 13     | 6.18                       | <13        | PASS    |
|                          |         | 25               | 0      | 6.3                        | <13        | PASS    |
|                          | MCH     | 1                | 0      | 6.49                       | <13        | PASS    |
|                          |         | 1                | 12     | 6.51                       | <13        | PASS    |
|                          |         | 1                | 24     | 6.62                       | <13        | PASS    |
|                          |         | 12               | 0      | 6.99                       | <13        | PASS    |
|                          |         | 12               | 6      | 6.9                        | <13        | PASS    |
|                          |         | 12               | 13     | 6.87                       | <13        | PASS    |
|                          |         | 25               | 0      | 6.7                        | <13        | PASS    |
|                          | HCH     | 1                | 0      | 5.79                       | <13        | PASS    |
|                          |         | 1                | 12     | 5.56                       | <13        | PASS    |
|                          |         | 1                | 24     | 5.61                       | <13        | PASS    |
|                          |         | 12               | 0      | 6.49                       | <13        | PASS    |
|                          |         | 12               | 6      | 6.44                       | <13        | PASS    |
|                          |         | 12               | 13     | 6.52                       | <13        | PASS    |
|                          |         | 25               | 0      | 6.3                        | <13        | PASS    |

**Channel Bandwidth: 10 MHz**

| Channel Bandwidth: 10 MHz |         |                  |        |                            |            |         |
|---------------------------|---------|------------------|--------|----------------------------|------------|---------|
| Modulation                | Channel | RB Configuration |        | Peak-to-Average Ratio [dB] | Limit [dB] | Verdict |
|                           |         | Size             | Offset |                            |            |         |
| QPSK                      | LCH     | 1                | 0      | 5.47                       | <13        | PASS    |
|                           |         | 1                | 24     | 4.81                       | <13        | PASS    |
|                           |         | 1                | 49     | 5.05                       | <13        | PASS    |
|                           |         | 25               | 0      | 5.15                       | <13        | PASS    |
|                           |         | 25               | 12     | 5.53                       | <13        | PASS    |
|                           |         | 25               | 25     | 5.01                       | <13        | PASS    |
|                           |         | 50               | 0      | 5.17                       | <13        | PASS    |
|                           | MCH     | 1                | 0      | 6.58                       | <13        | PASS    |
|                           |         | 1                | 24     | 5.5                        | <13        | PASS    |
|                           |         | 1                | 49     | 5.61                       | <13        | PASS    |
|                           |         | 25               | 0      | 5.81                       | <13        | PASS    |
|                           |         | 25               | 12     | 6.25                       | <13        | PASS    |
|                           |         | 25               | 25     | 5.6                        | <13        | PASS    |
|                           |         | 50               | 0      | 5.48                       | <13        | PASS    |
|                           | HCH     | 1                | 0      | 7.05                       | <13        | PASS    |
|                           |         | 1                | 24     | 5.11                       | <13        | PASS    |
|                           |         | 1                | 49     | 5.01                       | <13        | PASS    |
|                           |         | 25               | 0      | 5.46                       | <13        | PASS    |
|                           |         | 25               | 12     | 5.85                       | <13        | PASS    |
|                           |         | 25               | 25     | 5.15                       | <13        | PASS    |
|                           |         | 50               | 0      | 5.35                       | <13        | PASS    |
| 16QAM                     | LCH     | 1                | 0      | 5.87                       | <13        | PASS    |
|                           |         | 1                | 24     | 5.44                       | <13        | PASS    |
|                           |         | 1                | 49     | 5.71                       | <13        | PASS    |
|                           |         | 25               | 0      | 6.21                       | <13        | PASS    |
|                           |         | 25               | 12     | 6.3                        | <13        | PASS    |
|                           |         | 25               | 25     | 6.11                       | <13        | PASS    |
|                           |         | 50               | 0      | 6.24                       | <13        | PASS    |
|                           | MCH     | 1                | 0      | 6.63                       | <13        | PASS    |
|                           |         | 1                | 24     | 6.6                        | <13        | PASS    |
|                           |         | 1                | 49     | 6.62                       | <13        | PASS    |
|                           |         | 25               | 0      | 6.73                       | <13        | PASS    |
|                           |         | 25               | 12     | 6.9                        | <13        | PASS    |
|                           |         | 25               | 25     | 6.63                       | <13        | PASS    |
|                           |         | 50               | 0      | 6.48                       | <13        | PASS    |
|                           | HCH     | 1                | 0      | 6.6                        | <13        | PASS    |
|                           |         | 1                | 24     | 5.79                       | <13        | PASS    |
|                           |         | 1                | 49     | 5.8                        | <13        | PASS    |
|                           |         | 25               | 0      | 6.56                       | <13        | PASS    |
|                           |         | 25               | 12     | 6.48                       | <13        | PASS    |
|                           |         | 25               | 25     | 6.24                       | <13        | PASS    |
|                           |         | 50               | 0      | 6.46                       | <13        | PASS    |

**Channel Bandwidth: 15 MHz**

| Channel Bandwidth: 15 MHz |         |                  |        |                            |            |         |
|---------------------------|---------|------------------|--------|----------------------------|------------|---------|
| Modulation                | Channel | RB Configuration |        | Peak-to-Average Ratio [dB] | Limit [dB] | Verdict |
|                           |         | Size             | Offset |                            |            |         |
| QPSK                      | LCH     | 1                | 0      | 5.59                       | <13        | PASS    |
|                           |         | 1                | 37     | 4.84                       | <13        | PASS    |
|                           |         | 1                | 74     | 5.93                       | <13        | PASS    |
|                           |         | 37               | 0      | 5.31                       | <13        | PASS    |
|                           |         | 37               | 18     | 5.75                       | <13        | PASS    |
|                           |         | 37               | 38     | 5.37                       | <13        | PASS    |
|                           |         | 75               | 0      | 5.5                        | <13        | PASS    |
|                           | MCH     | 1                | 0      | 5.81                       | <13        | PASS    |
|                           |         | 1                | 37     | 5.64                       | <13        | PASS    |
|                           |         | 1                | 74     | 6.18                       | <13        | PASS    |
|                           |         | 37               | 0      | 5.38                       | <13        | PASS    |
|                           |         | 37               | 18     | 6.06                       | <13        | PASS    |
|                           |         | 37               | 38     | 5.42                       | <13        | PASS    |
|                           |         | 75               | 0      | 5.46                       | <13        | PASS    |
|                           | HCH     | 1                | 0      | 7.85                       | <13        | PASS    |
|                           |         | 1                | 37     | 5.28                       | <13        | PASS    |
|                           |         | 1                | 74     | 5.63                       | <13        | PASS    |
|                           |         | 37               | 0      | 5.45                       | <13        | PASS    |
|                           |         | 37               | 18     | 6.02                       | <13        | PASS    |
|                           |         | 37               | 38     | 5.38                       | <13        | PASS    |
|                           |         | 75               | 0      | 5.51                       | <13        | PASS    |
| 16QAM                     | LCH     | 1                | 0      | 6.21                       | <13        | PASS    |
|                           |         | 1                | 37     | 5.5                        | <13        | PASS    |
|                           |         | 1                | 74     | 6.18                       | <13        | PASS    |
|                           |         | 37               | 0      | 6.4                        | <13        | PASS    |
|                           |         | 37               | 18     | 6.43                       | <13        | PASS    |
|                           |         | 37               | 38     | 6.51                       | <13        | PASS    |
|                           |         | 75               | 0      | 6.63                       | <13        | PASS    |
|                           | MCH     | 1                | 0      | 6.67                       | <13        | PASS    |
|                           |         | 1                | 37     | 6.58                       | <13        | PASS    |
|                           |         | 1                | 74     | 6.91                       | <13        | PASS    |
|                           |         | 37               | 0      | 6.65                       | <13        | PASS    |
|                           |         | 37               | 18     | 6.83                       | <13        | PASS    |
|                           |         | 37               | 38     | 6.69                       | <13        | PASS    |
|                           |         | 75               | 0      | 6.77                       | <13        | PASS    |
|                           | HCH     | 1                | 0      | 7.28                       | <13        | PASS    |
|                           |         | 1                | 37     | 5.99                       | <13        | PASS    |
|                           |         | 1                | 74     | 6.13                       | <13        | PASS    |
|                           |         | 37               | 0      | 6.62                       | <13        | PASS    |
|                           |         | 37               | 18     | 6.76                       | <13        | PASS    |
|                           |         | 37               | 38     | 6.52                       | <13        | PASS    |
|                           |         | 75               | 0      | 6.72                       | <13        | PASS    |

**Channel Bandwidth: 20 MHz**

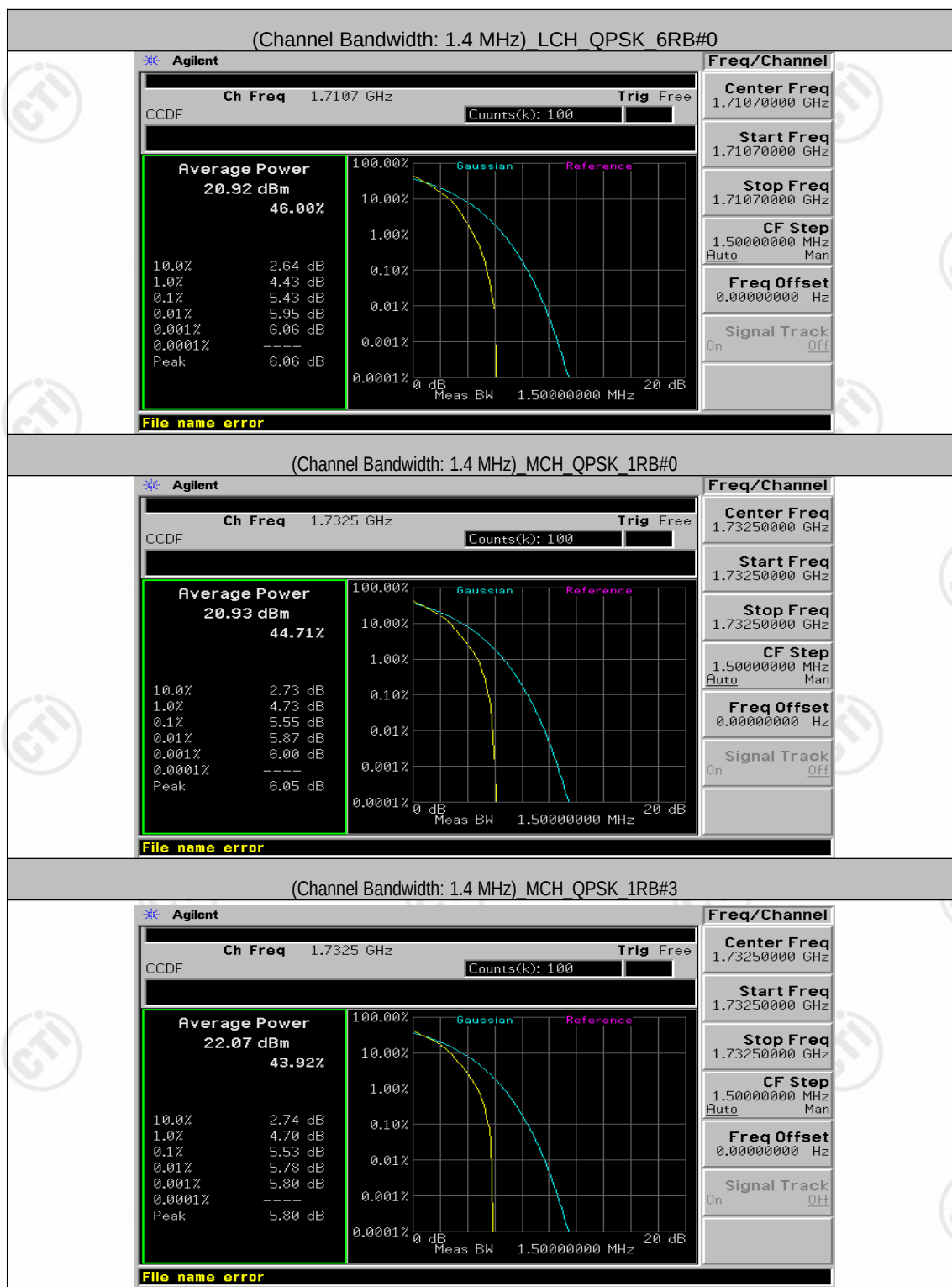
| Channel Bandwidth: 20 MHz |         |                  |        |                            |            |         |
|---------------------------|---------|------------------|--------|----------------------------|------------|---------|
| Modulation                | Channel | RB Configuration |        | Peak-to-Average Ratio [dB] | Limit [dB] | Verdict |
|                           |         | Size             | Offset |                            |            |         |
| QPSK                      | LCH     | 1                | 0      | 2.07                       | <13        | PASS    |
|                           |         | 1                | 49     | 4.88                       | <13        | PASS    |
|                           |         | 1                | 99     | 3.47                       | <13        | PASS    |
|                           |         | 50               | 0      | 5.91                       | <13        | PASS    |
|                           |         | 50               | 25     | 5.26                       | <13        | PASS    |
|                           |         | 50               | 50     | 6.31                       | <13        | PASS    |
|                           |         | 100              | 0      | 6.08                       | <13        | PASS    |
|                           | MCH     | 1                | 0      | 2.29                       | <13        | PASS    |
|                           |         | 1                | 49     | 5.64                       | <13        | PASS    |
|                           |         | 1                | 99     | 3.81                       | <13        | PASS    |
|                           |         | 50               | 0      | 6.04                       | <13        | PASS    |
|                           |         | 50               | 25     | 5.57                       | <13        | PASS    |
|                           |         | 50               | 50     | 6.32                       | <13        | PASS    |
|                           |         | 100              | 0      | 6.14                       | <13        | PASS    |
|                           | HCH     | 1                | 0      | 2.34                       | <13        | PASS    |
|                           |         | 1                | 49     | 5.32                       | <13        | PASS    |
|                           |         | 1                | 99     | 3.3                        | <13        | PASS    |
|                           |         | 50               | 0      | 6.03                       | <13        | PASS    |
|                           |         | 50               | 25     | 5.47                       | <13        | PASS    |
|                           |         | 50               | 50     | 6.33                       | <13        | PASS    |
|                           |         | 100              | 0      | 6.16                       | <13        | PASS    |
| 16QAM                     | LCH     | 1                | 0      | 1.96                       | <13        | PASS    |
|                           |         | 1                | 49     | 5.75                       | <13        | PASS    |
|                           |         | 1                | 99     | 3.27                       | <13        | PASS    |
|                           |         | 50               | 0      | 6.82                       | <13        | PASS    |
|                           |         | 50               | 25     | 6.35                       | <13        | PASS    |
|                           |         | 50               | 50     | 6.99                       | <13        | PASS    |
|                           |         | 100              | 0      | 7.11                       | <13        | PASS    |
|                           | MCH     | 1                | 0      | 2.15                       | <13        | PASS    |
|                           |         | 1                | 49     | 6.63                       | <13        | PASS    |
|                           |         | 1                | 99     | 3.91                       | <13        | PASS    |
|                           |         | 50               | 0      | 6.99                       | <13        | PASS    |
|                           |         | 50               | 25     | 6.66                       | <13        | PASS    |
|                           |         | 50               | 50     | 7.13                       | <13        | PASS    |
|                           |         | 100              | 0      | 7.19                       | <13        | PASS    |
|                           | HCH     | 1                | 0      | 2.31                       | <13        | PASS    |
|                           |         | 1                | 49     | 6.23                       | <13        | PASS    |
|                           |         | 1                | 99     | 3.07                       | <13        | PASS    |
|                           |         | 50               | 0      | 6.96                       | <13        | PASS    |
|                           |         | 50               | 25     | 6.48                       | <13        | PASS    |
|                           |         | 50               | 50     | 7                          | <13        | PASS    |
|                           |         | 100              | 0      | 7.19                       | <13        | PASS    |

# Test Graphs

Channel Bandwidth: 1.4 MHz

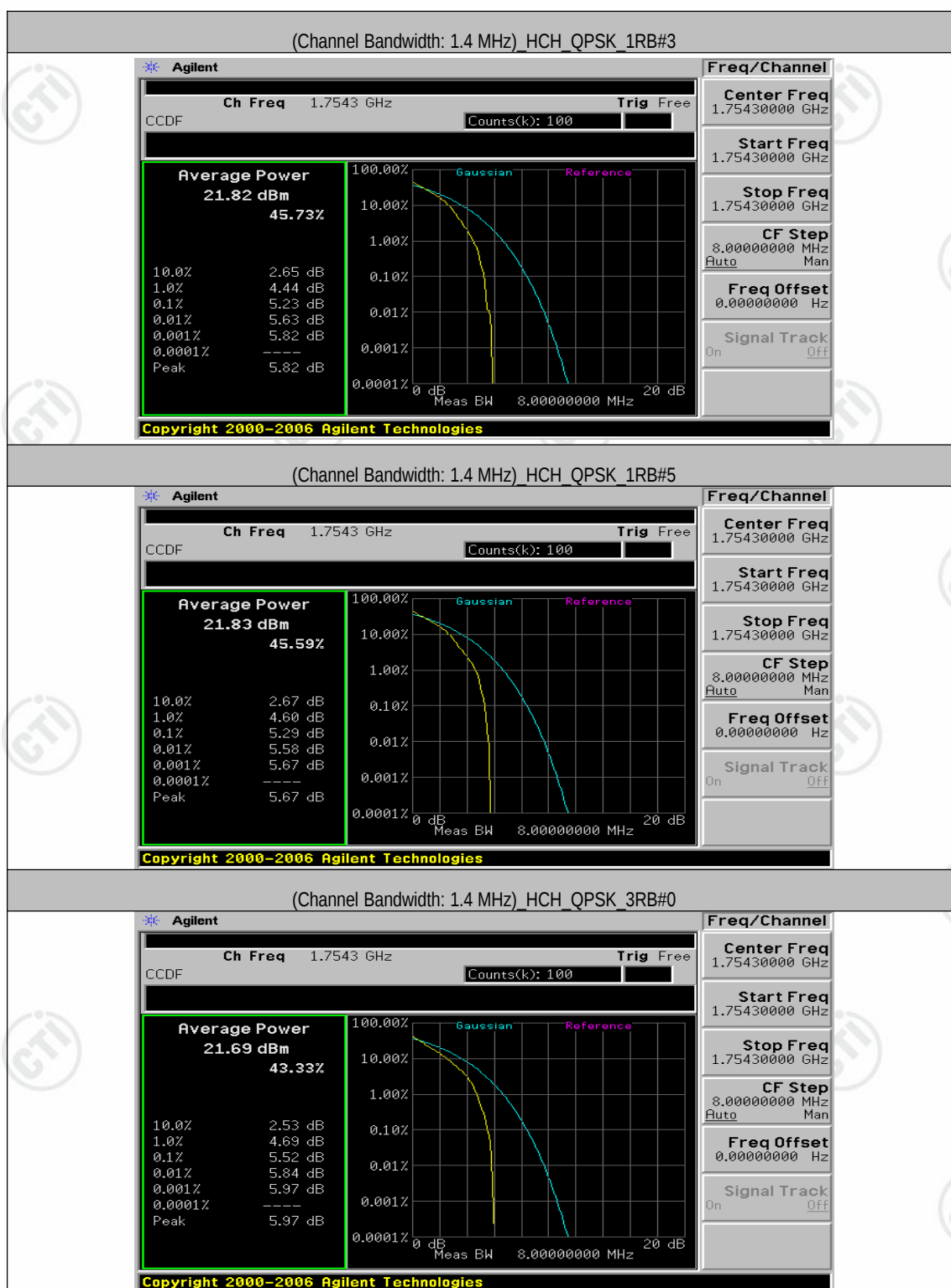




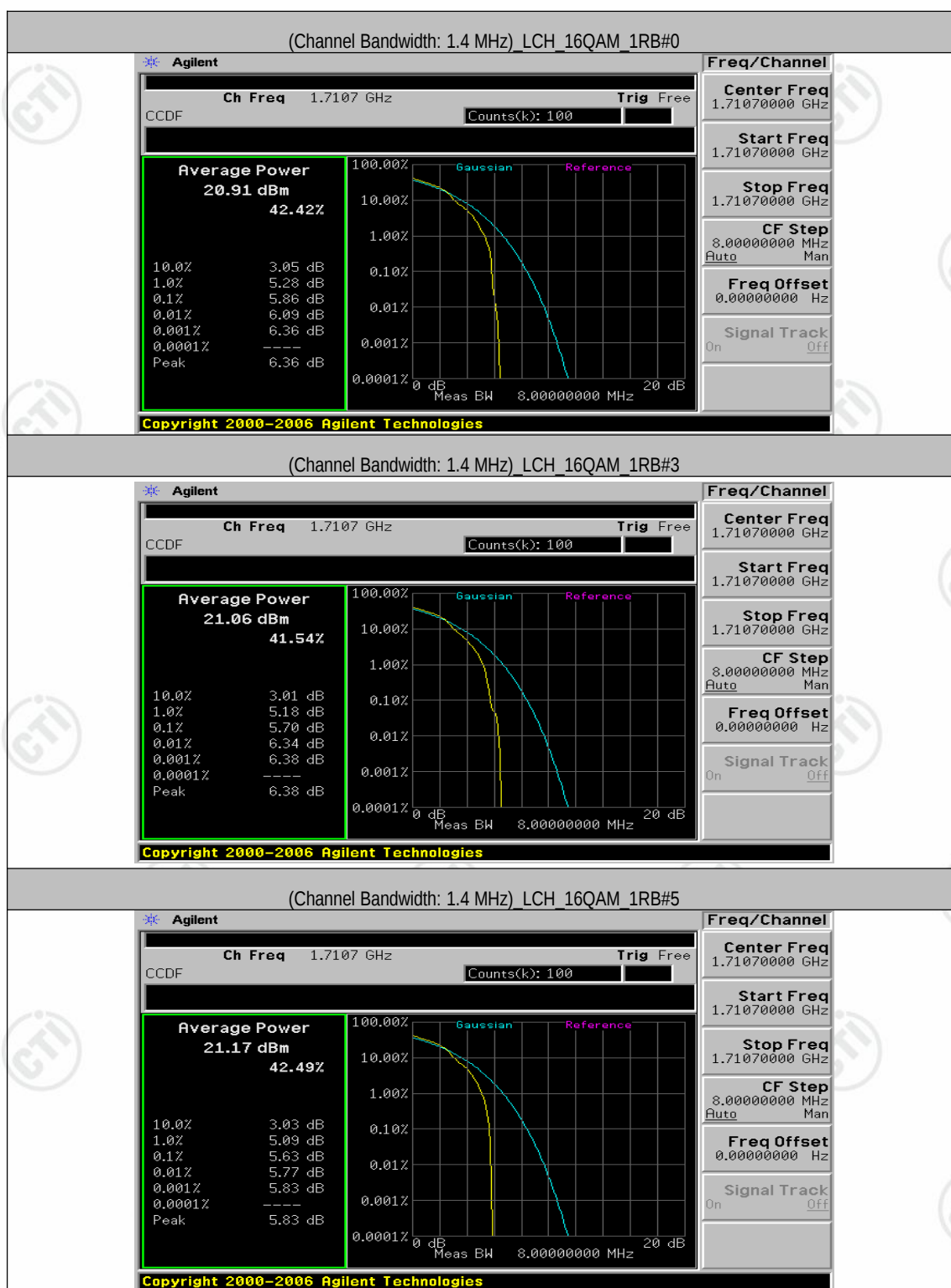




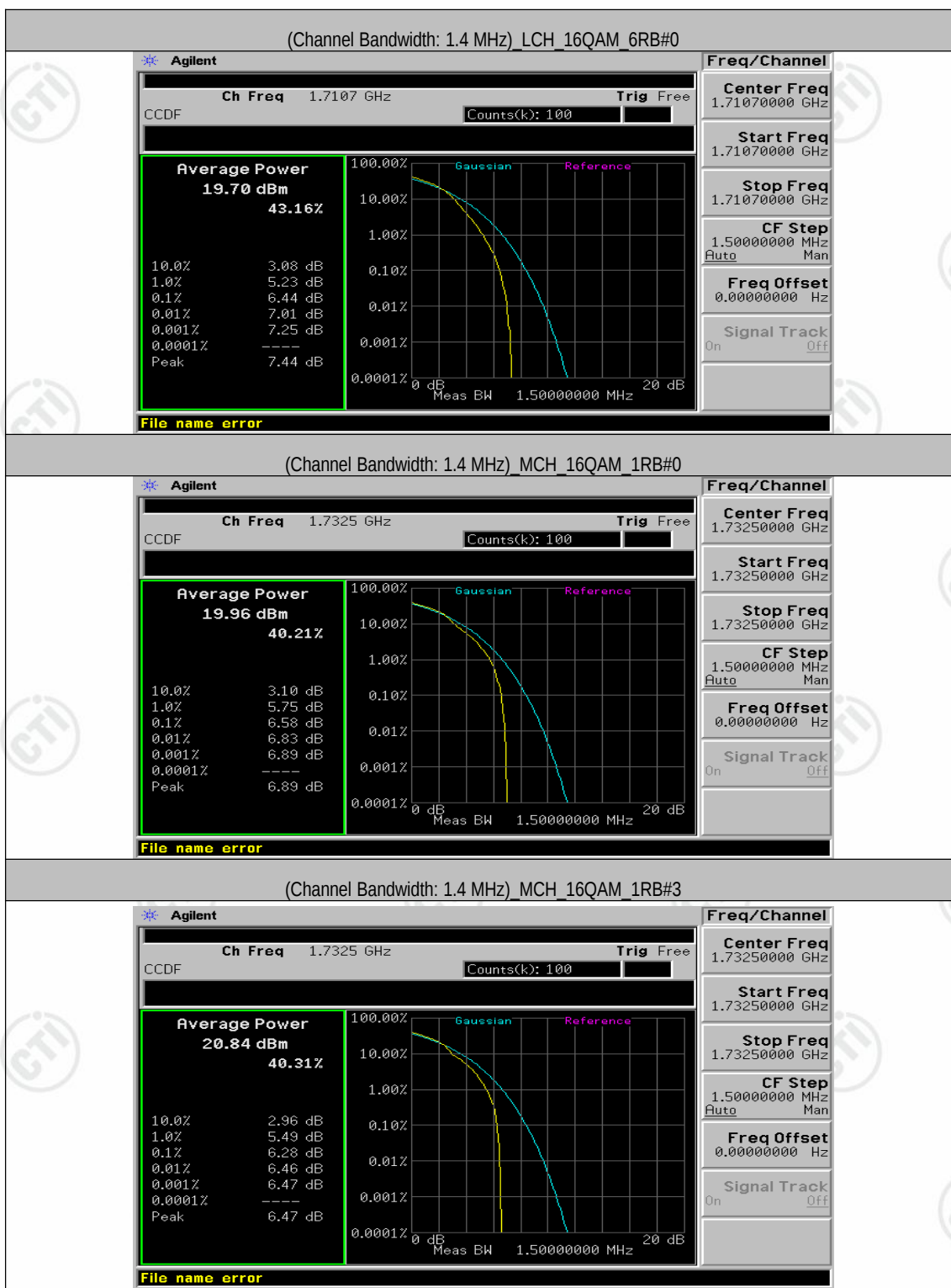












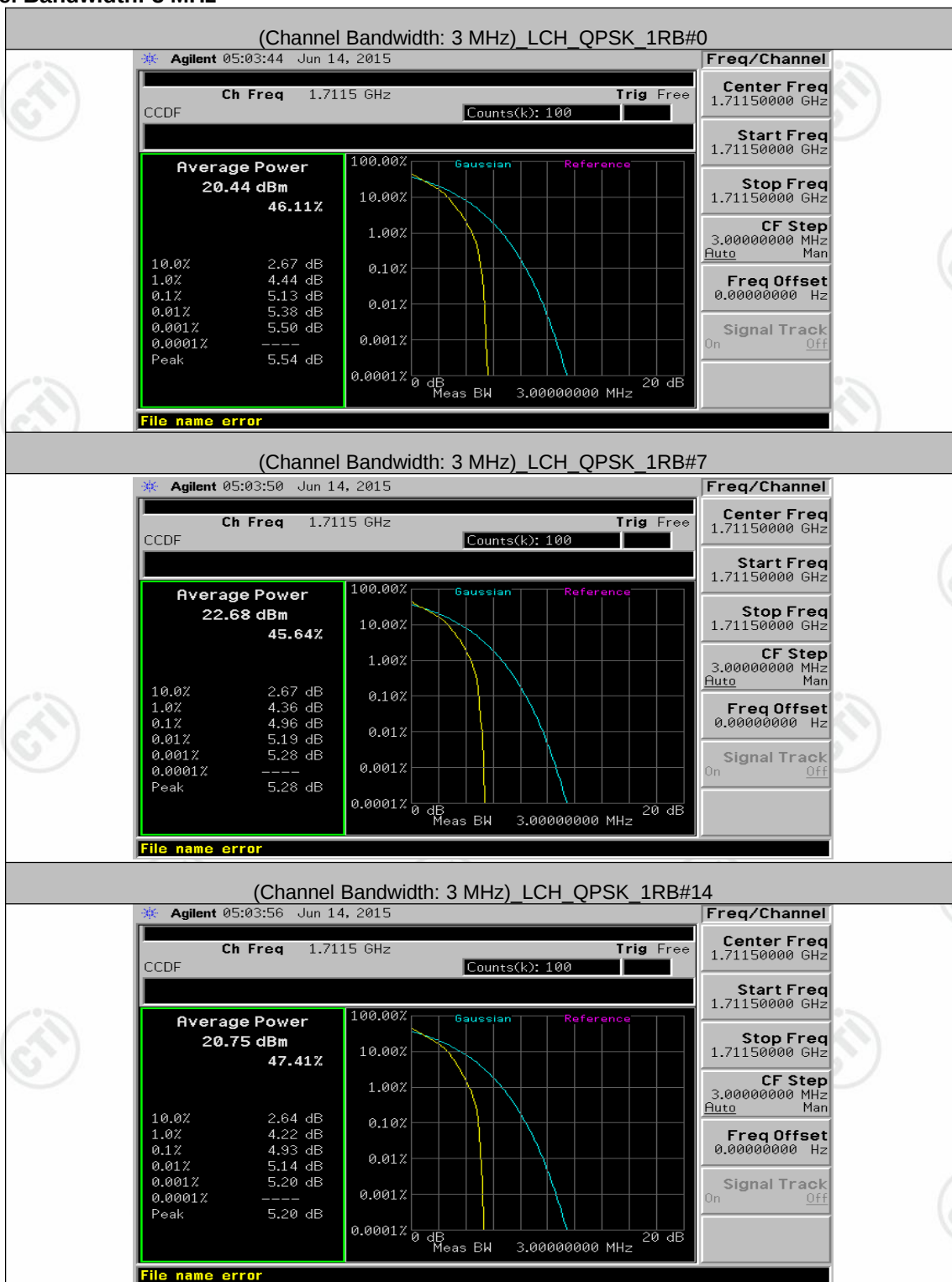






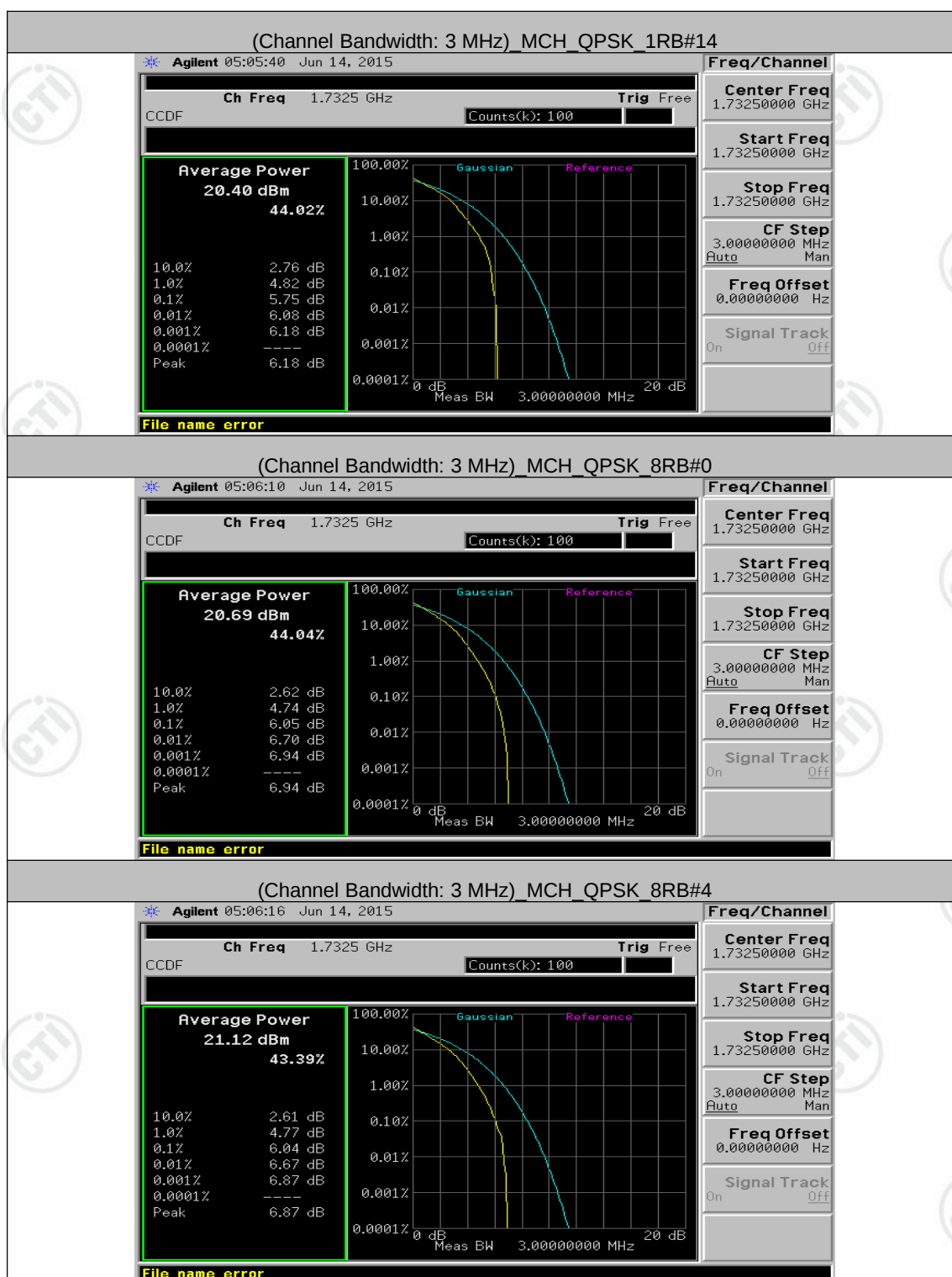


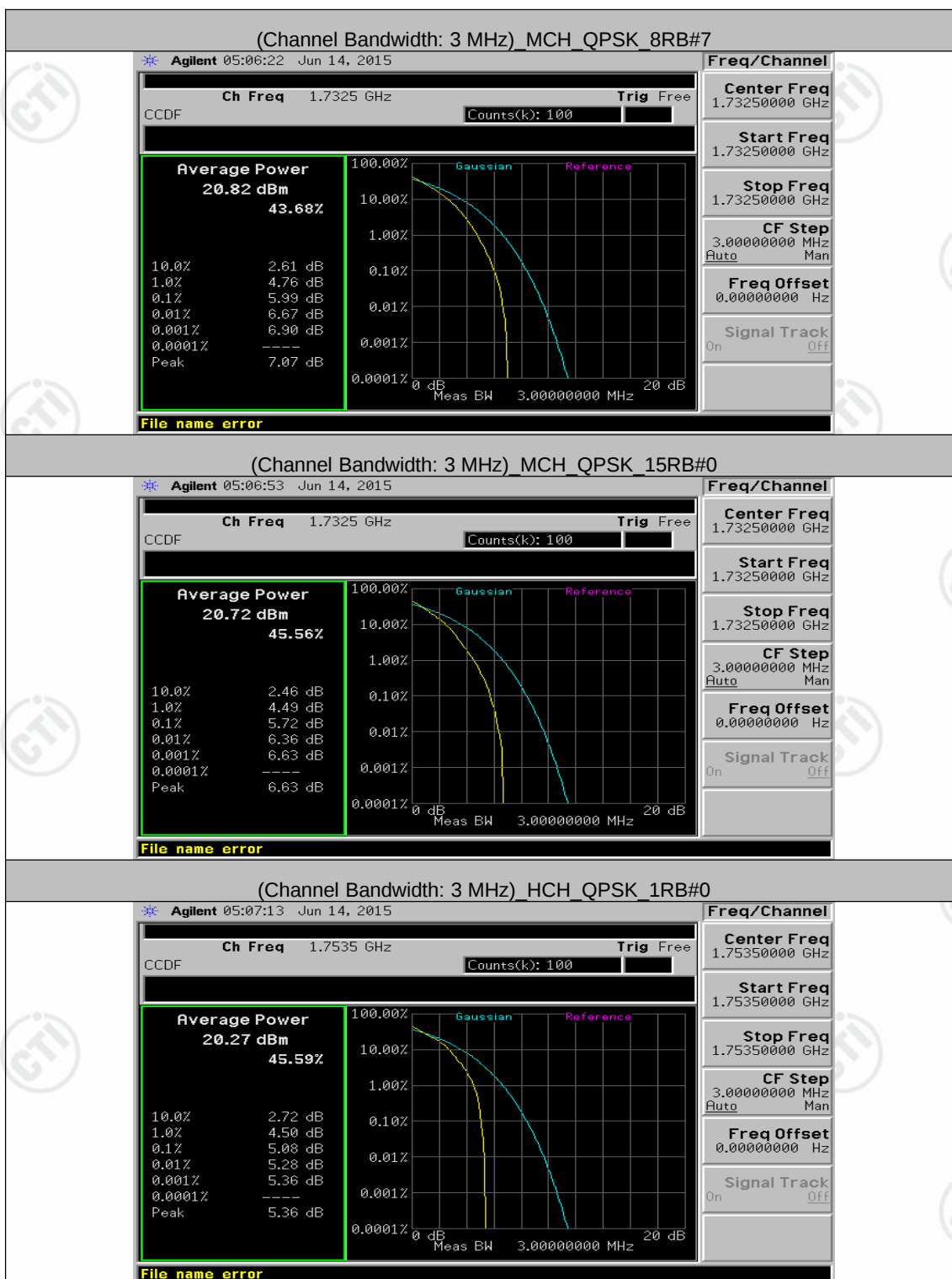
Channel Bandwidth: 3 MHz

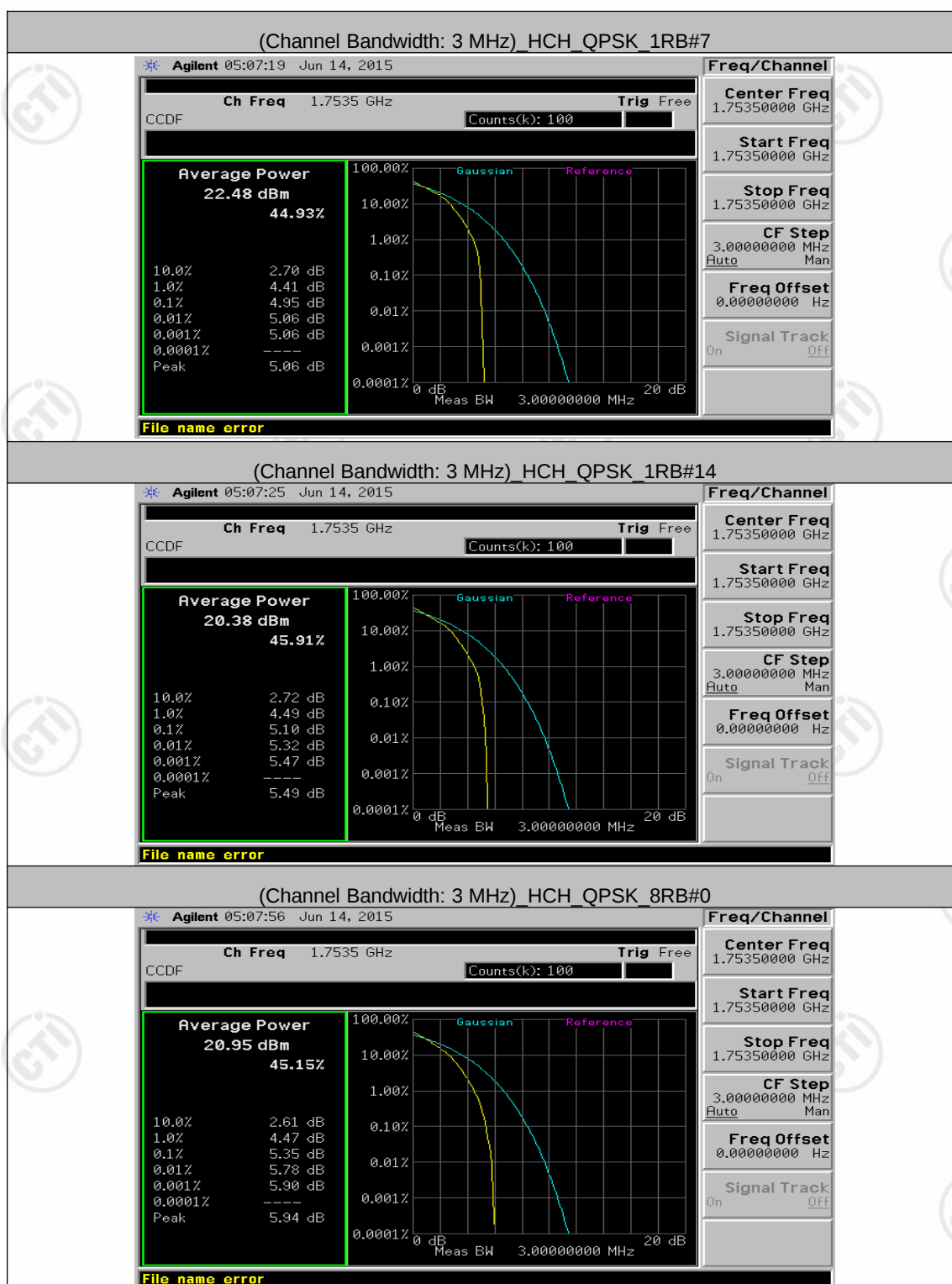




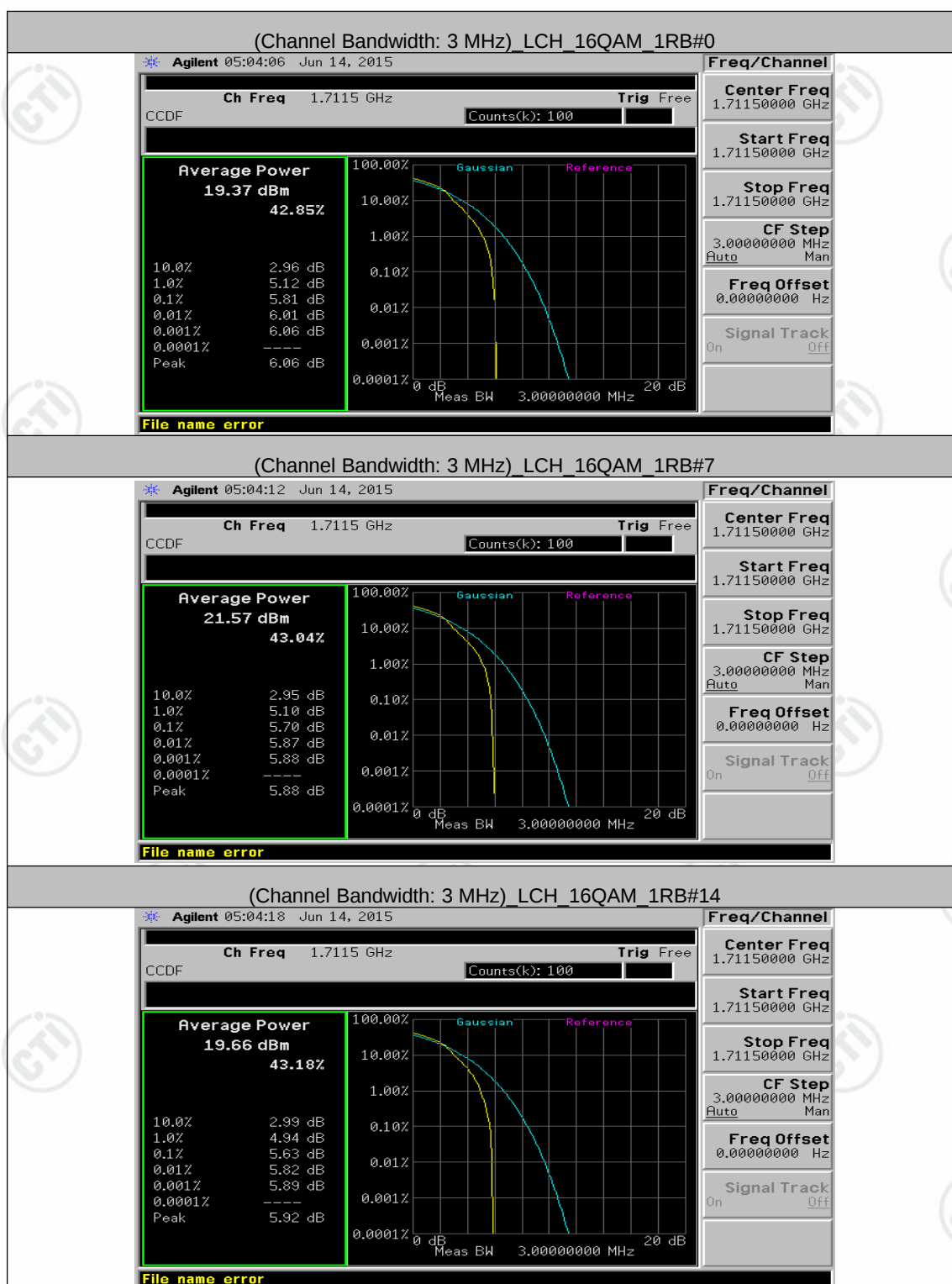


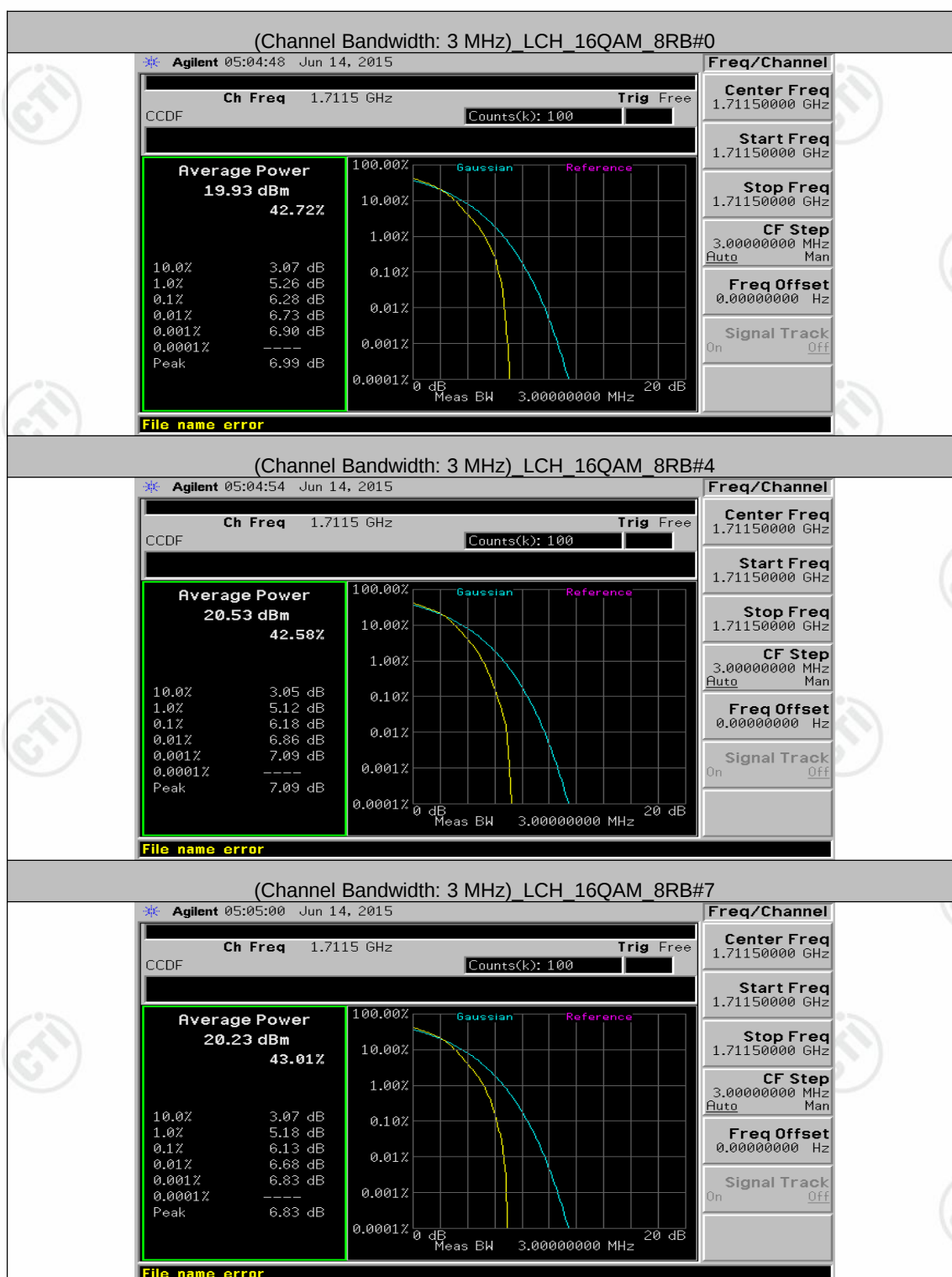


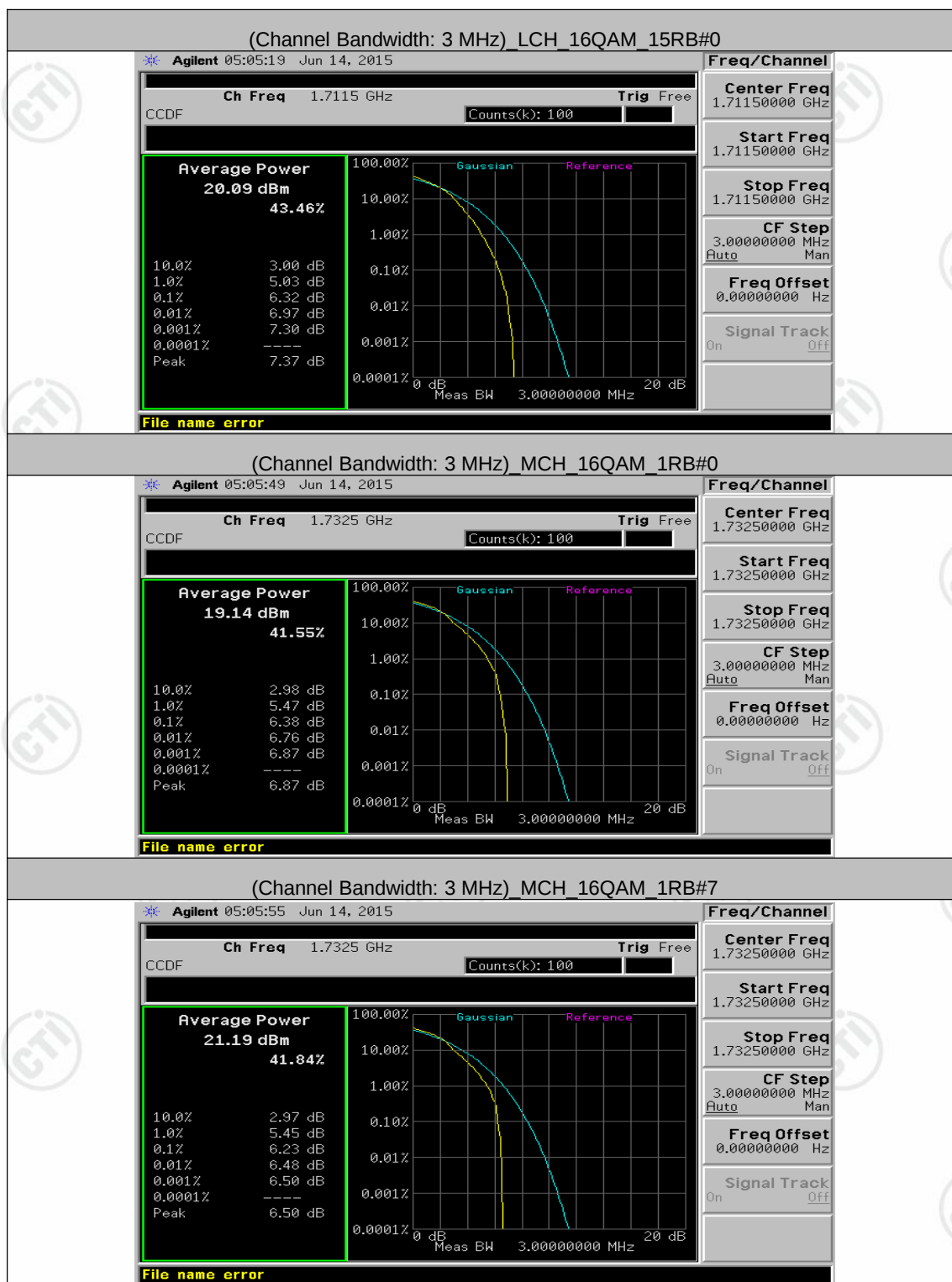






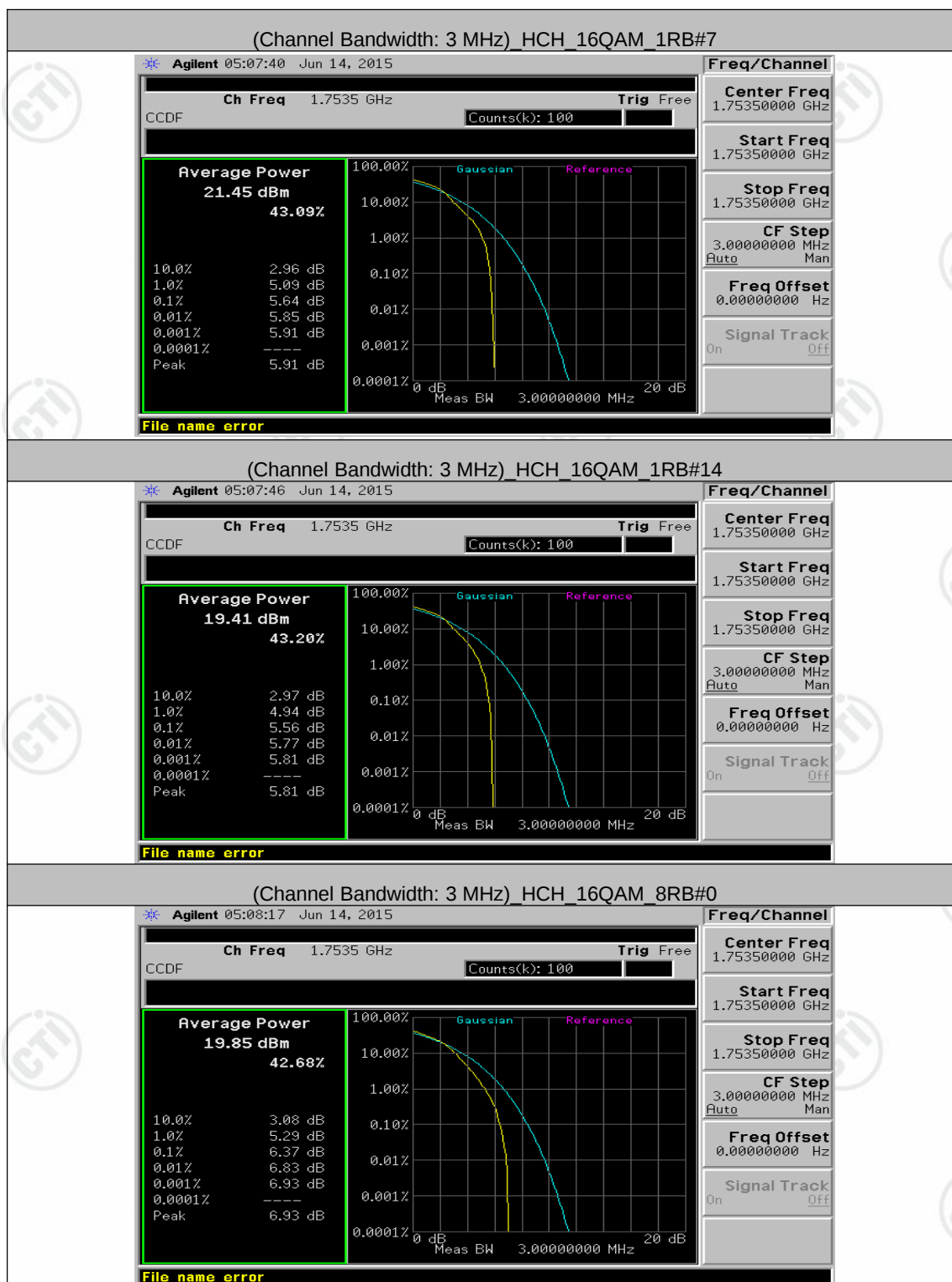


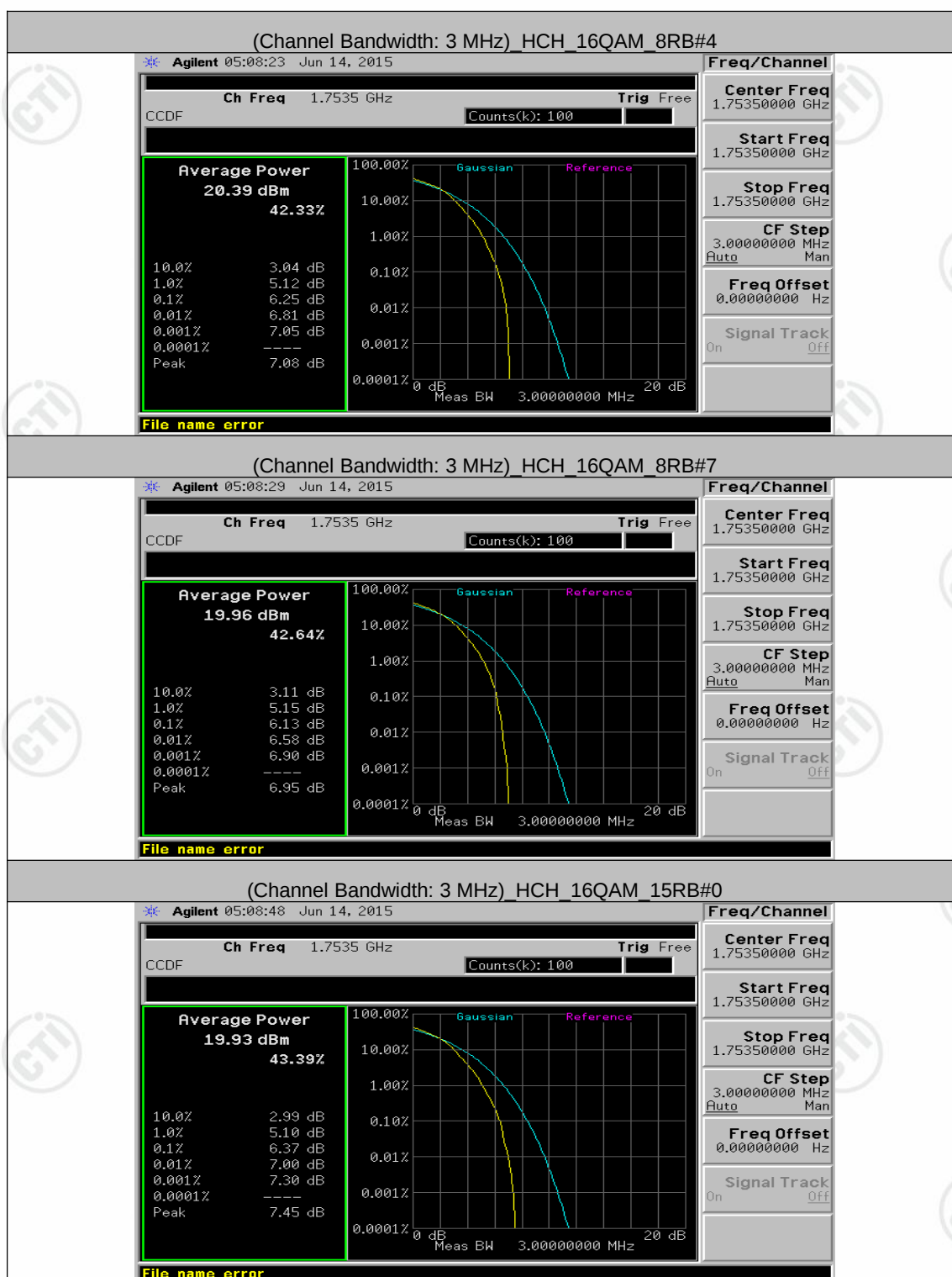




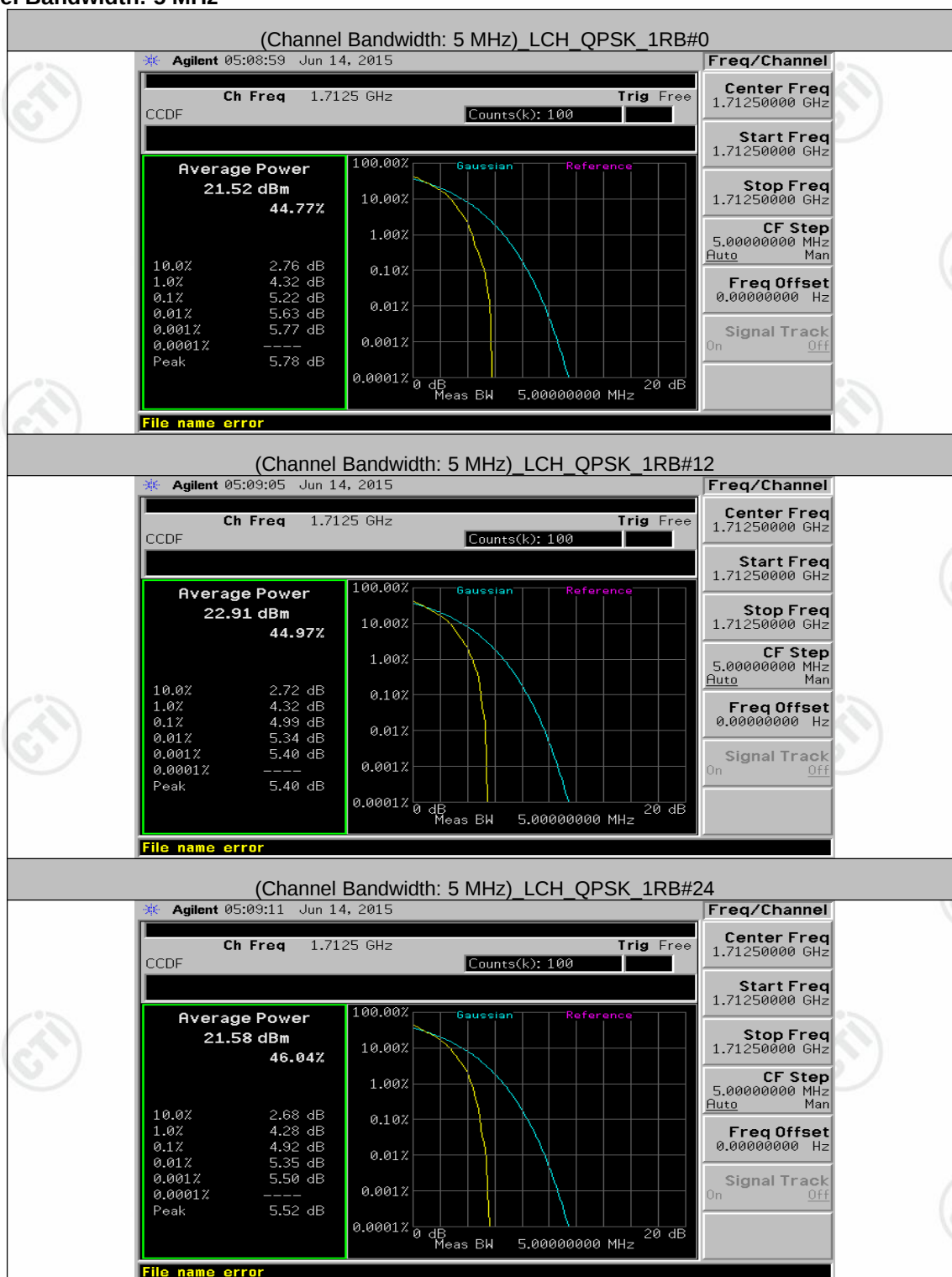


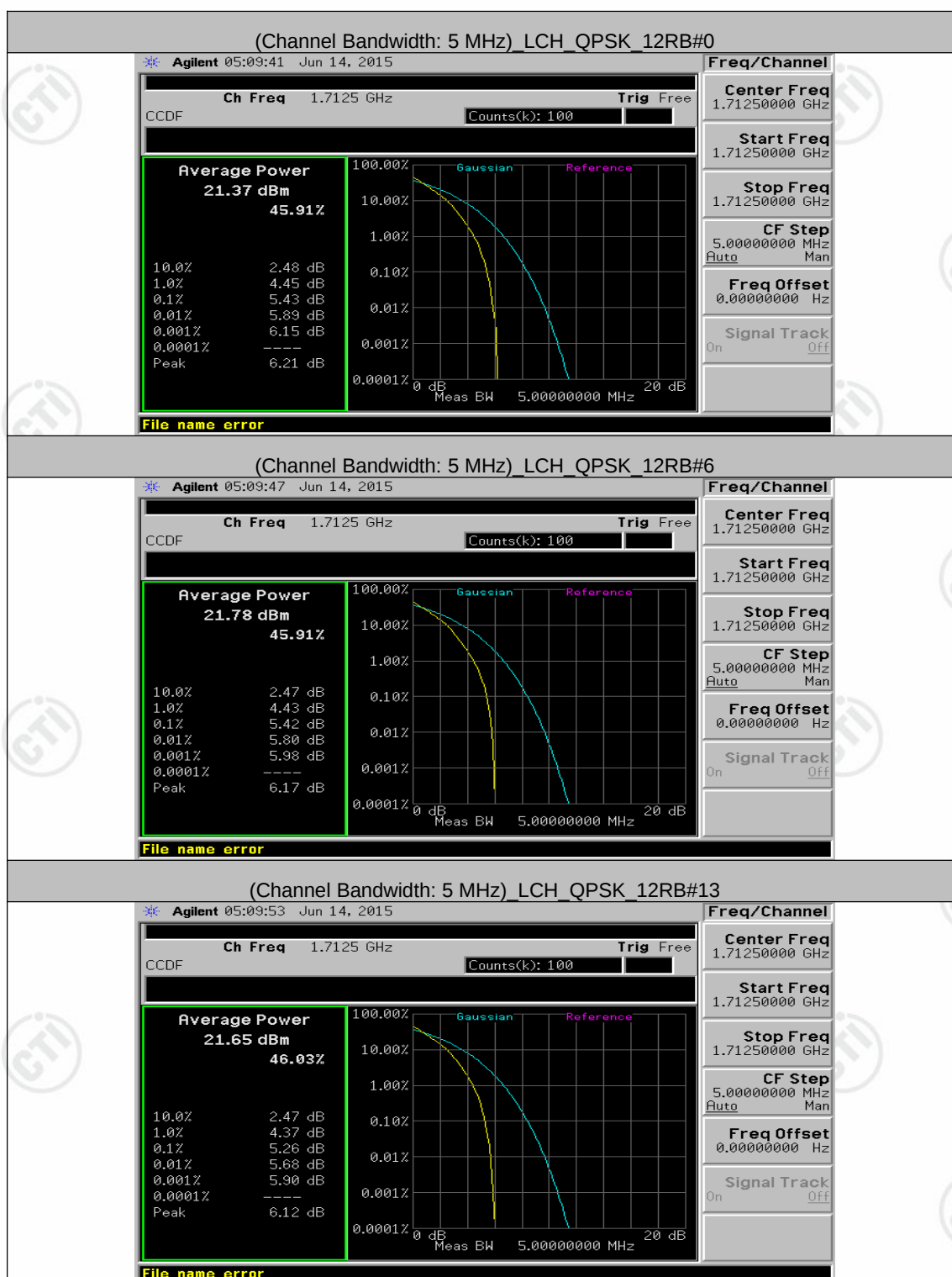


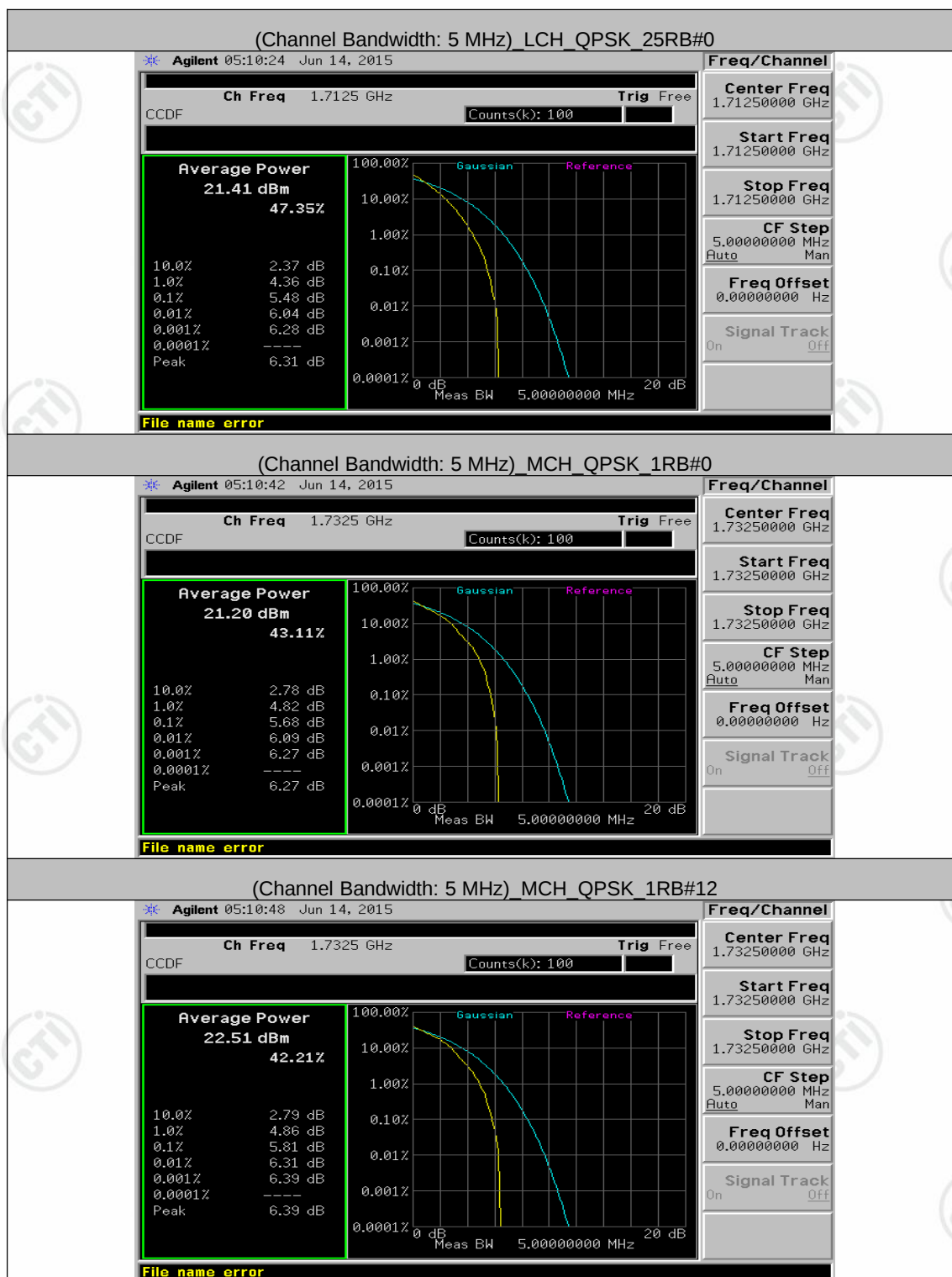


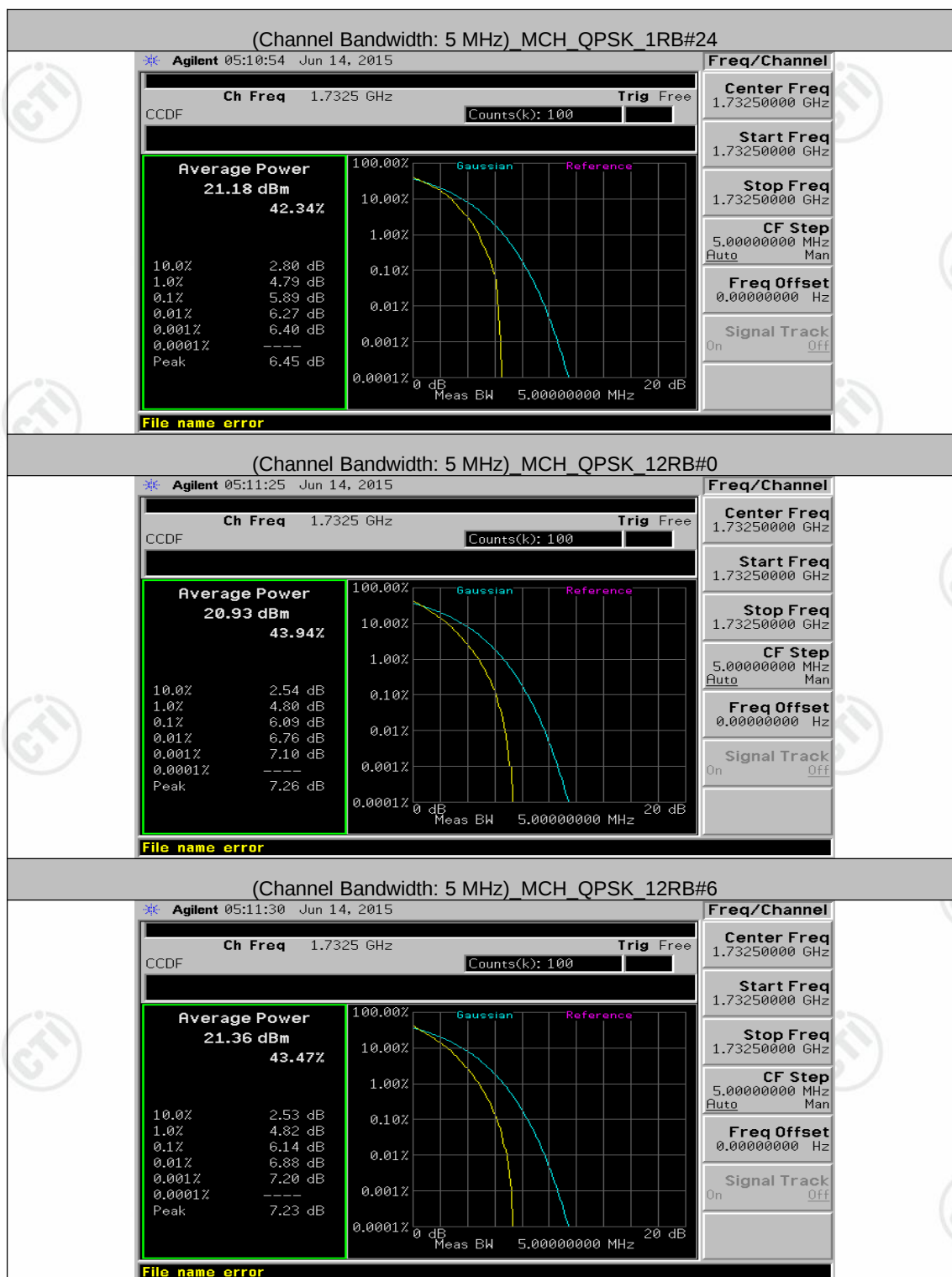


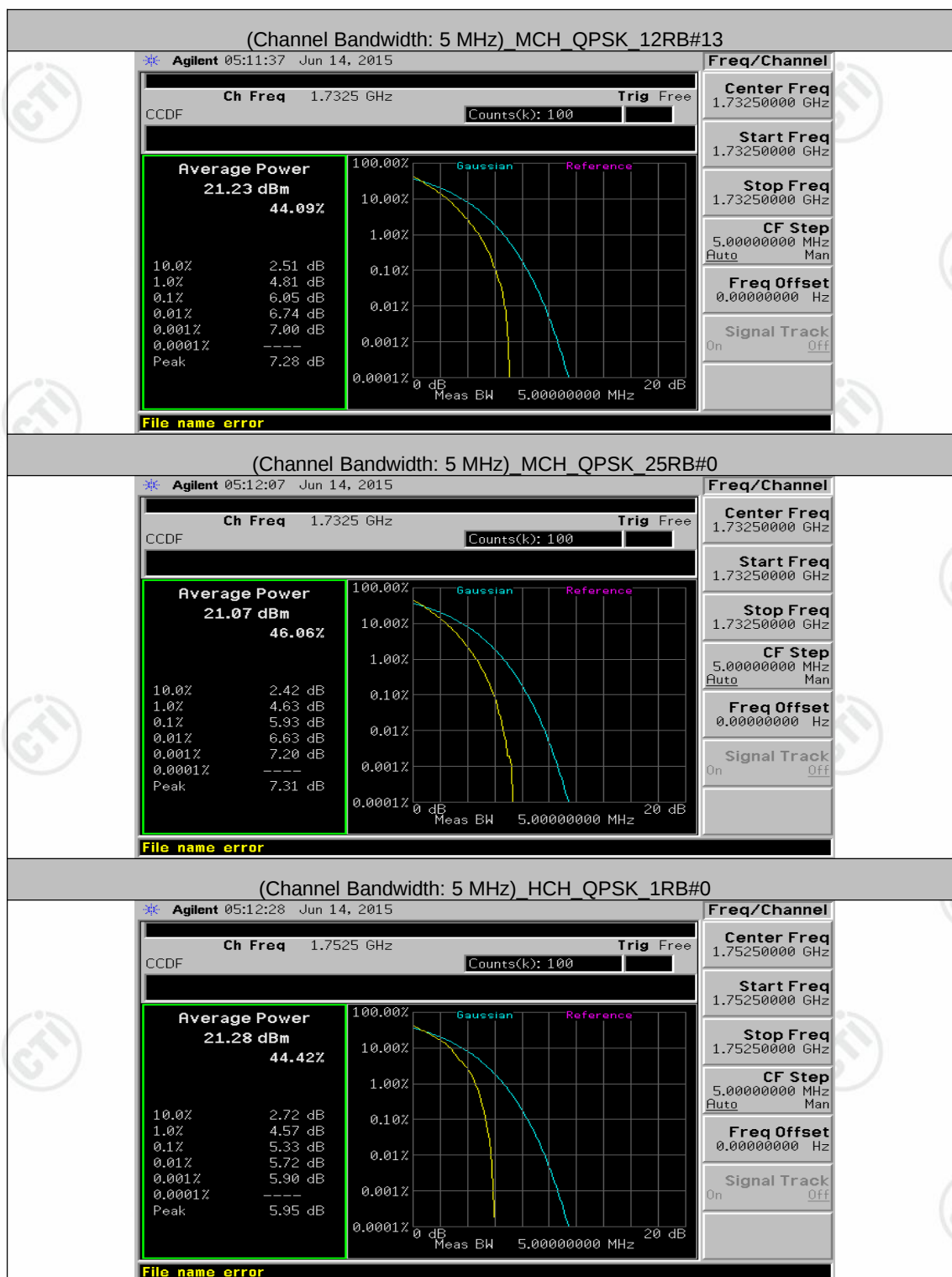
Channel Bandwidth: 5 MHz

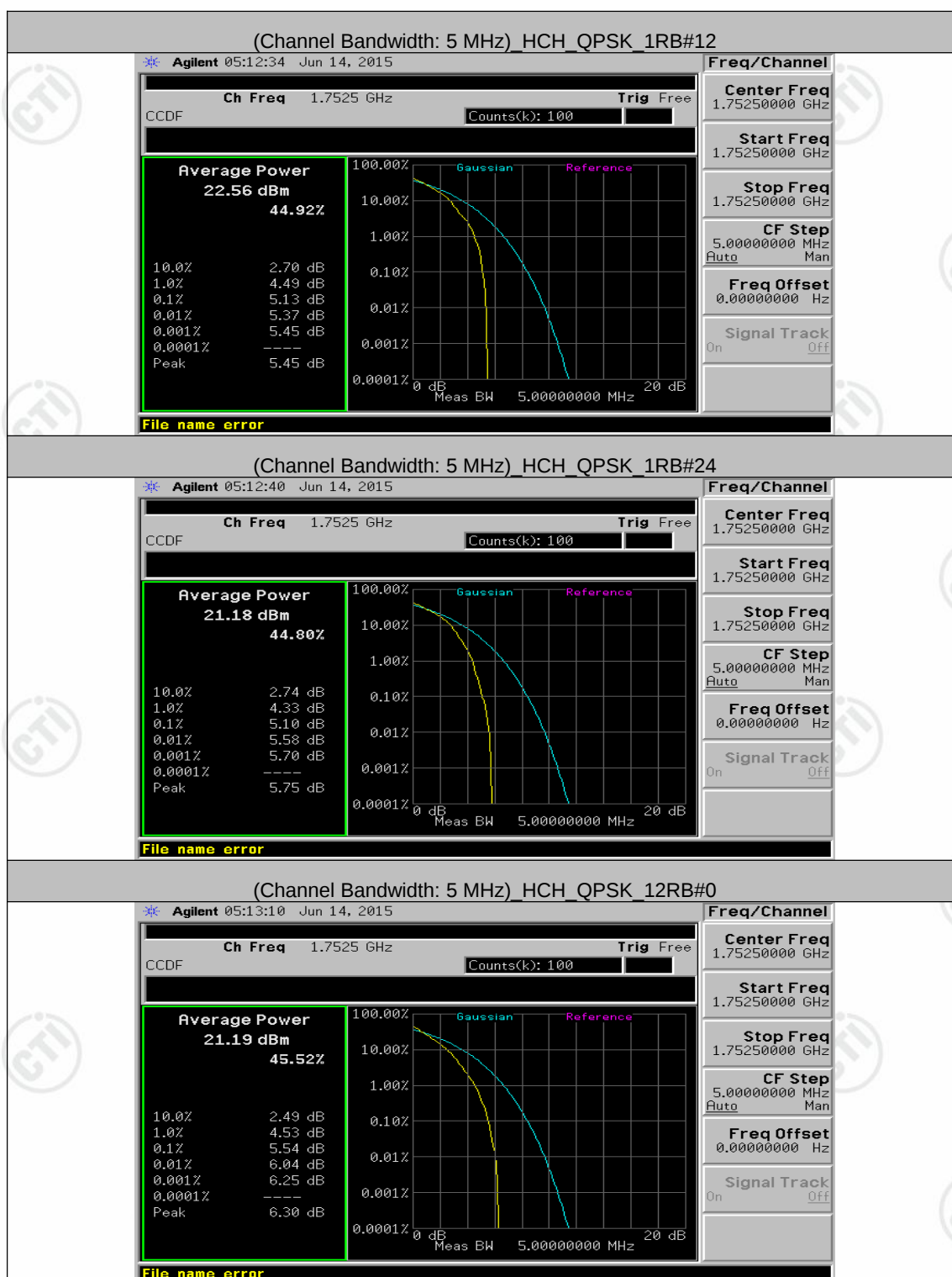


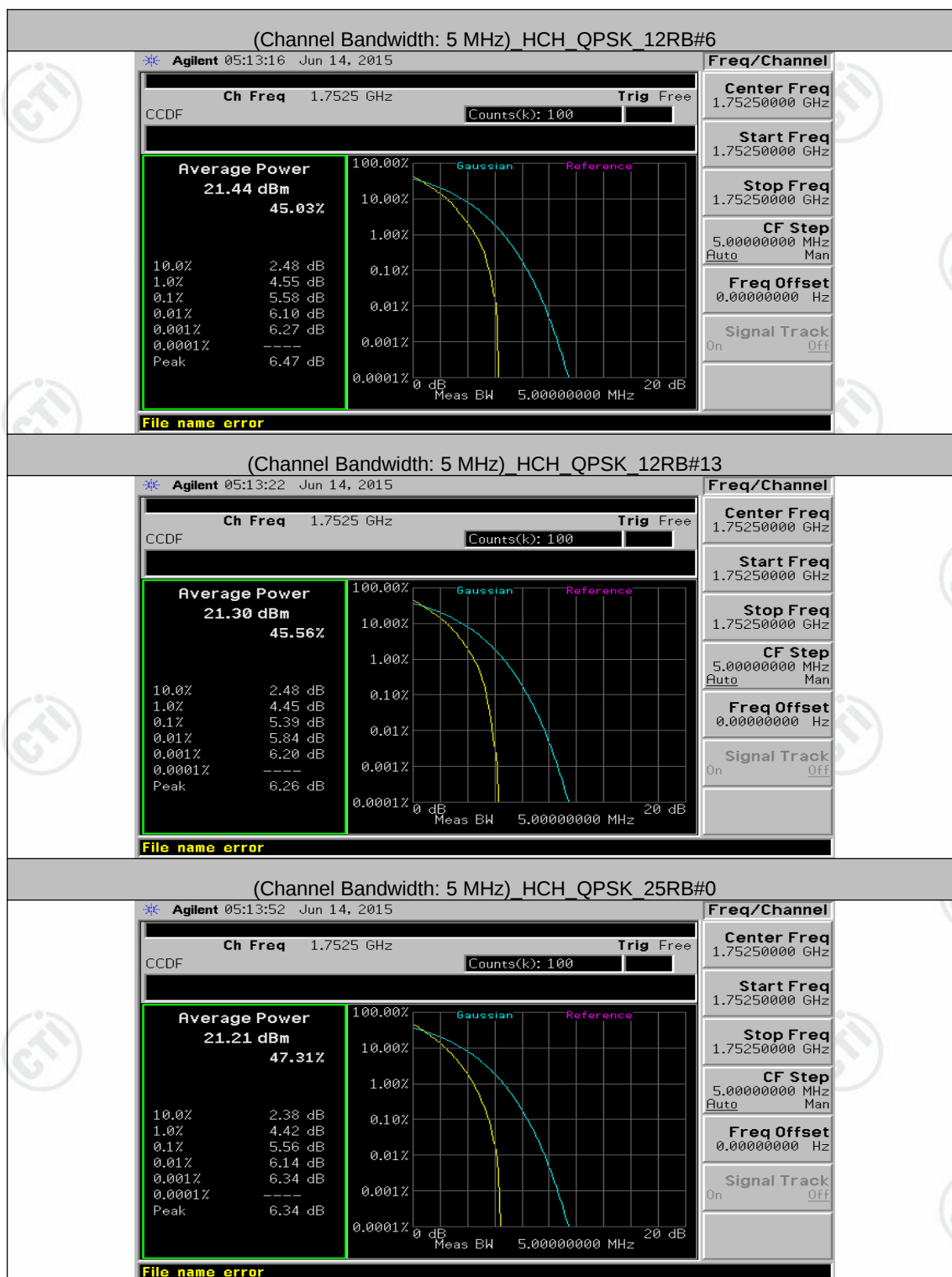


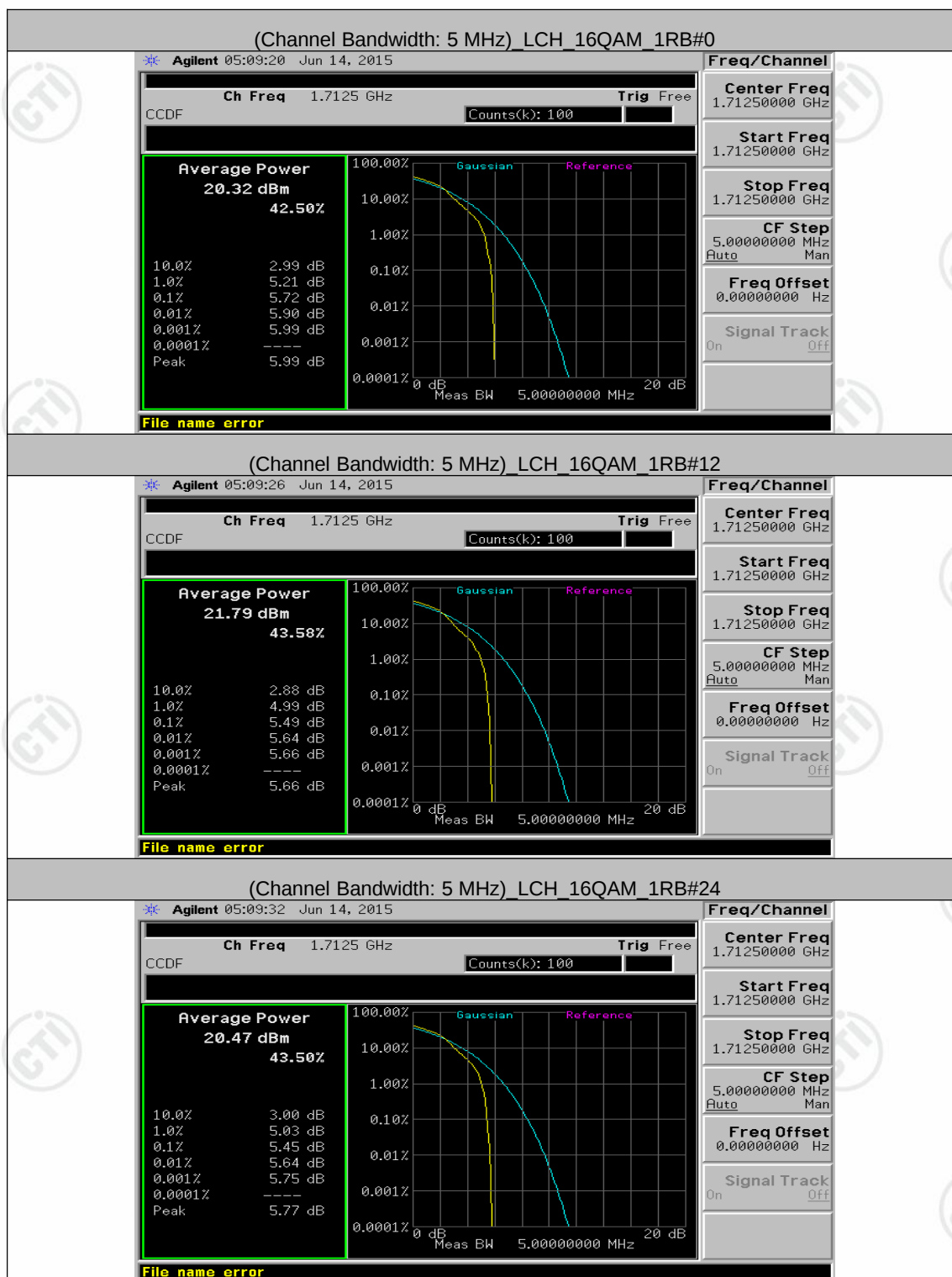


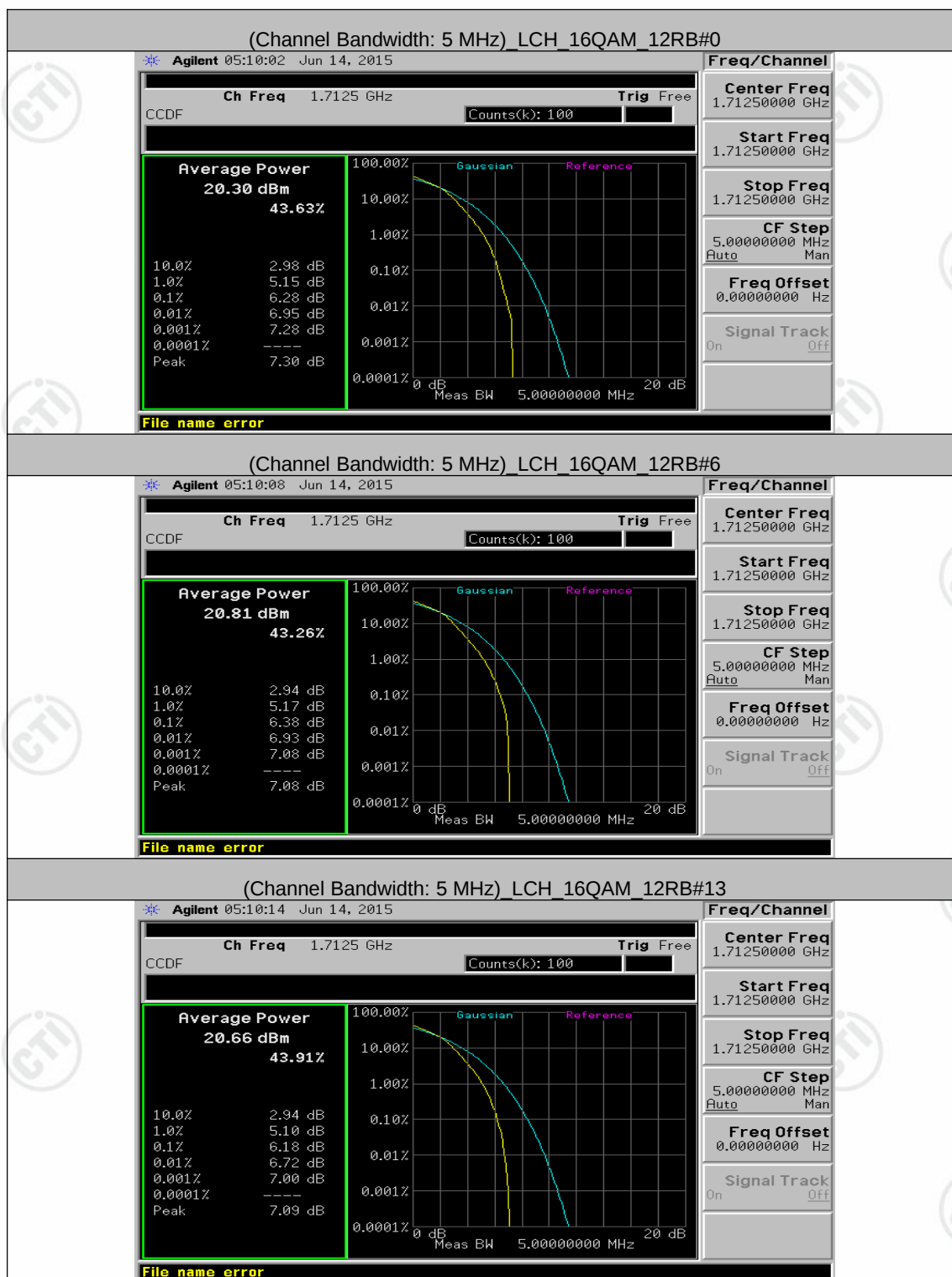


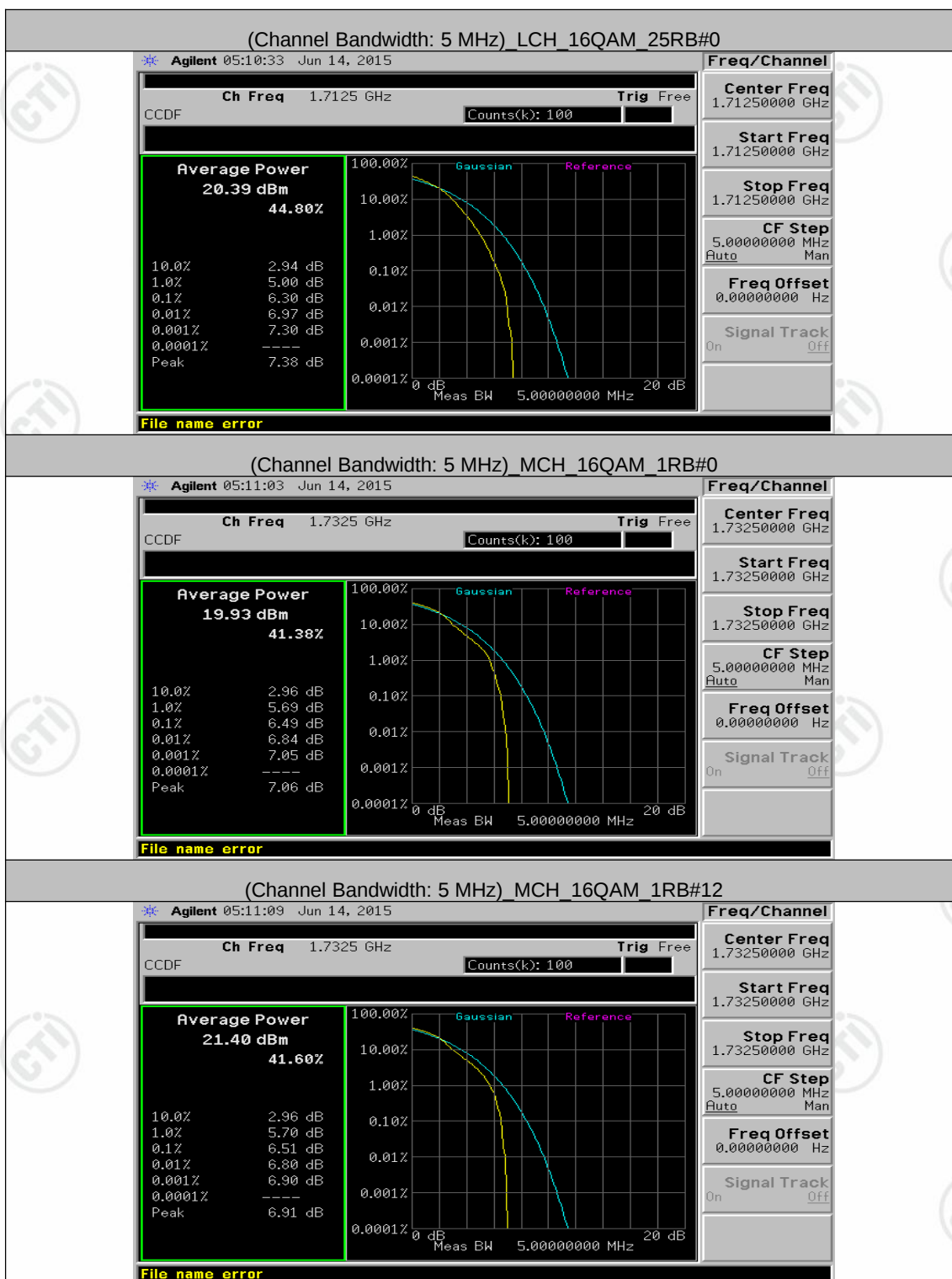


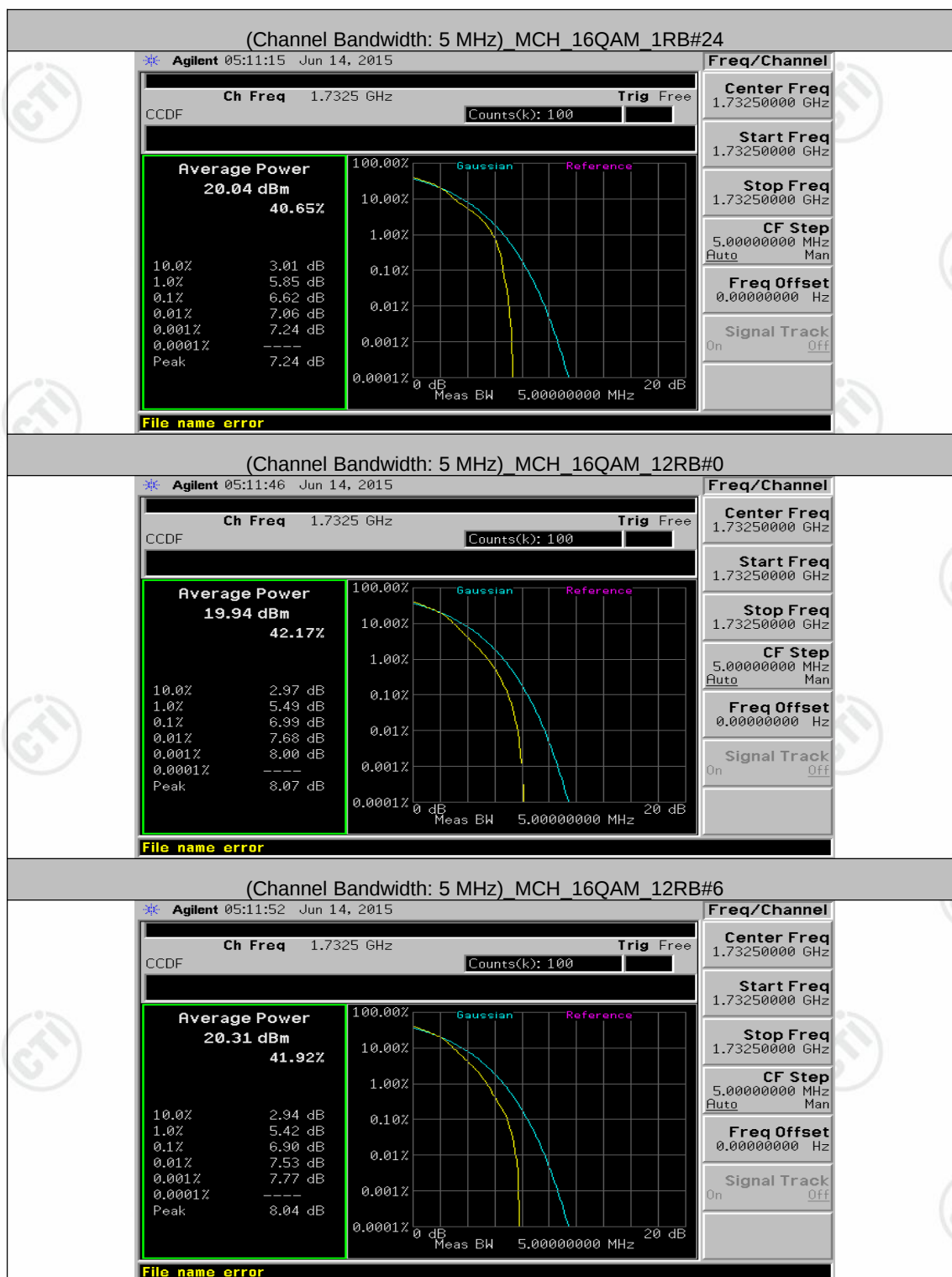




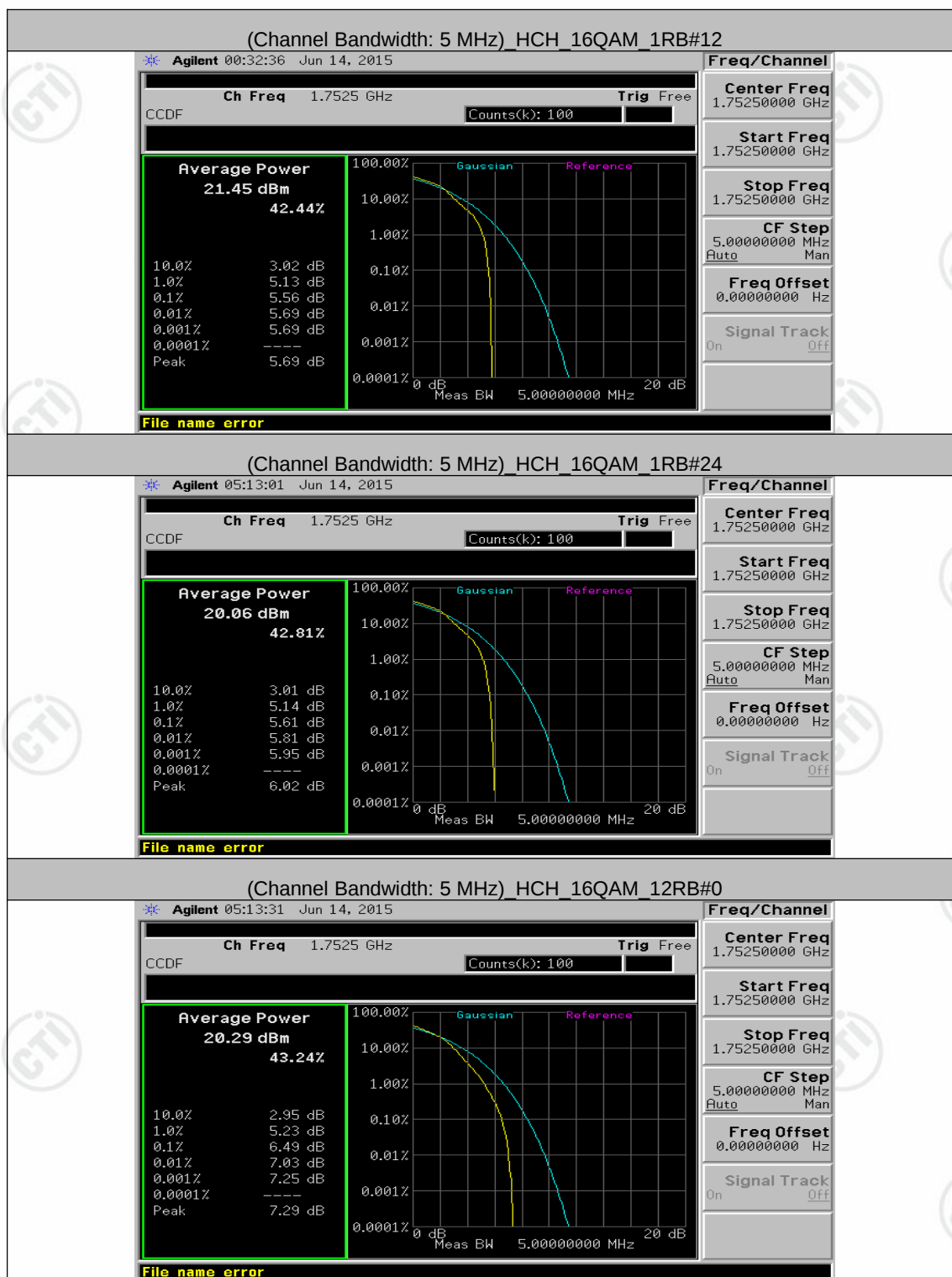


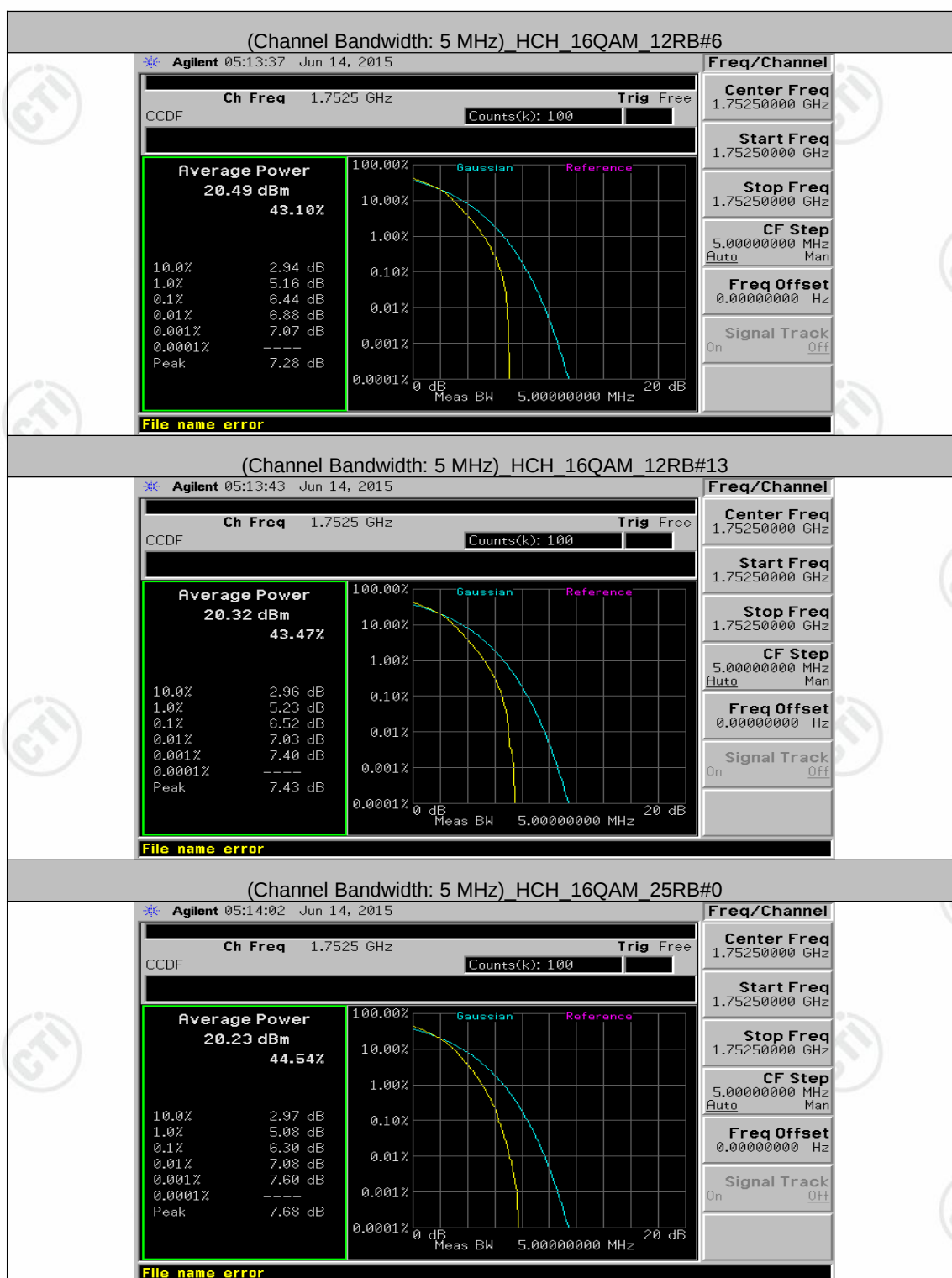




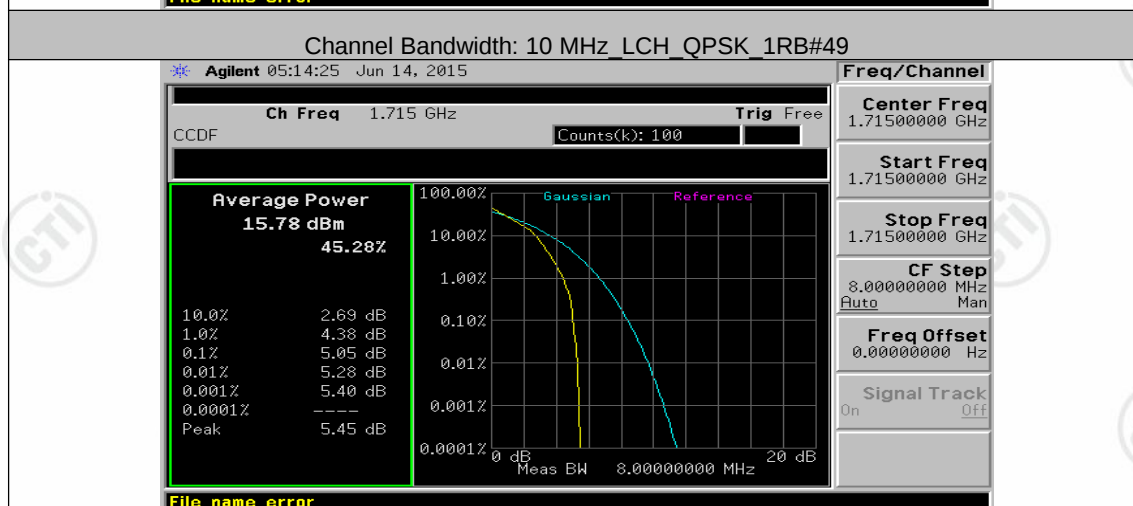
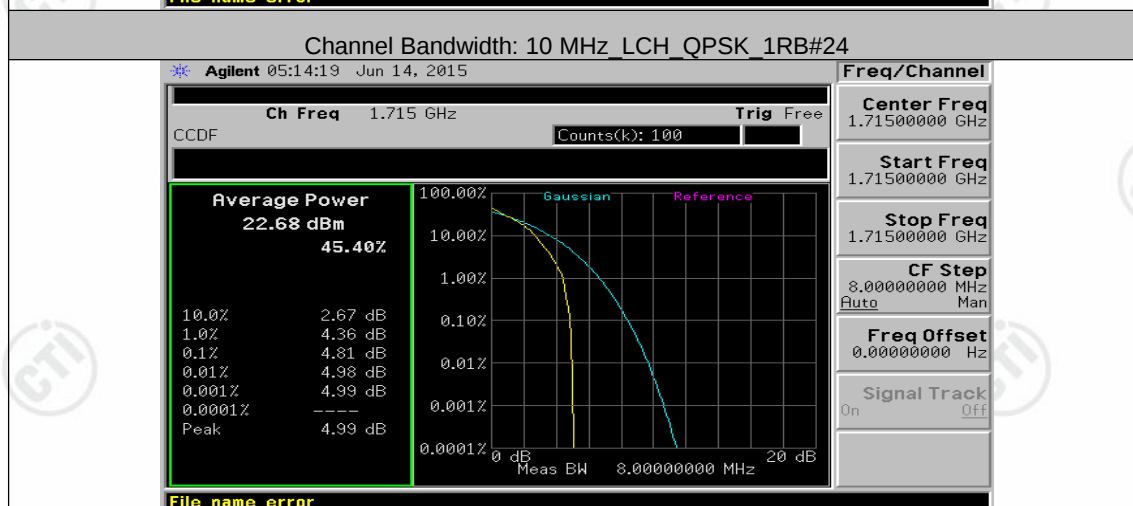
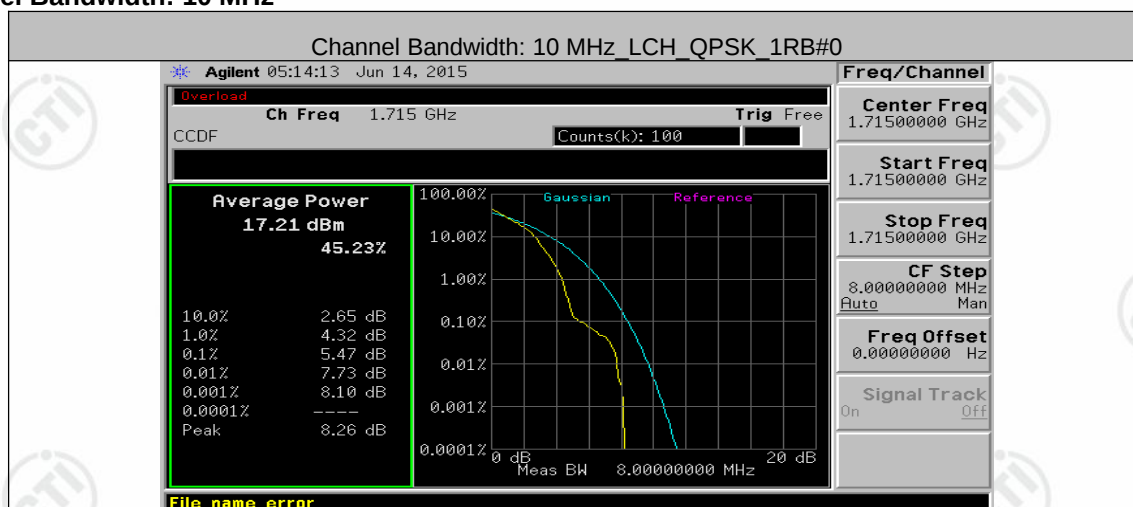






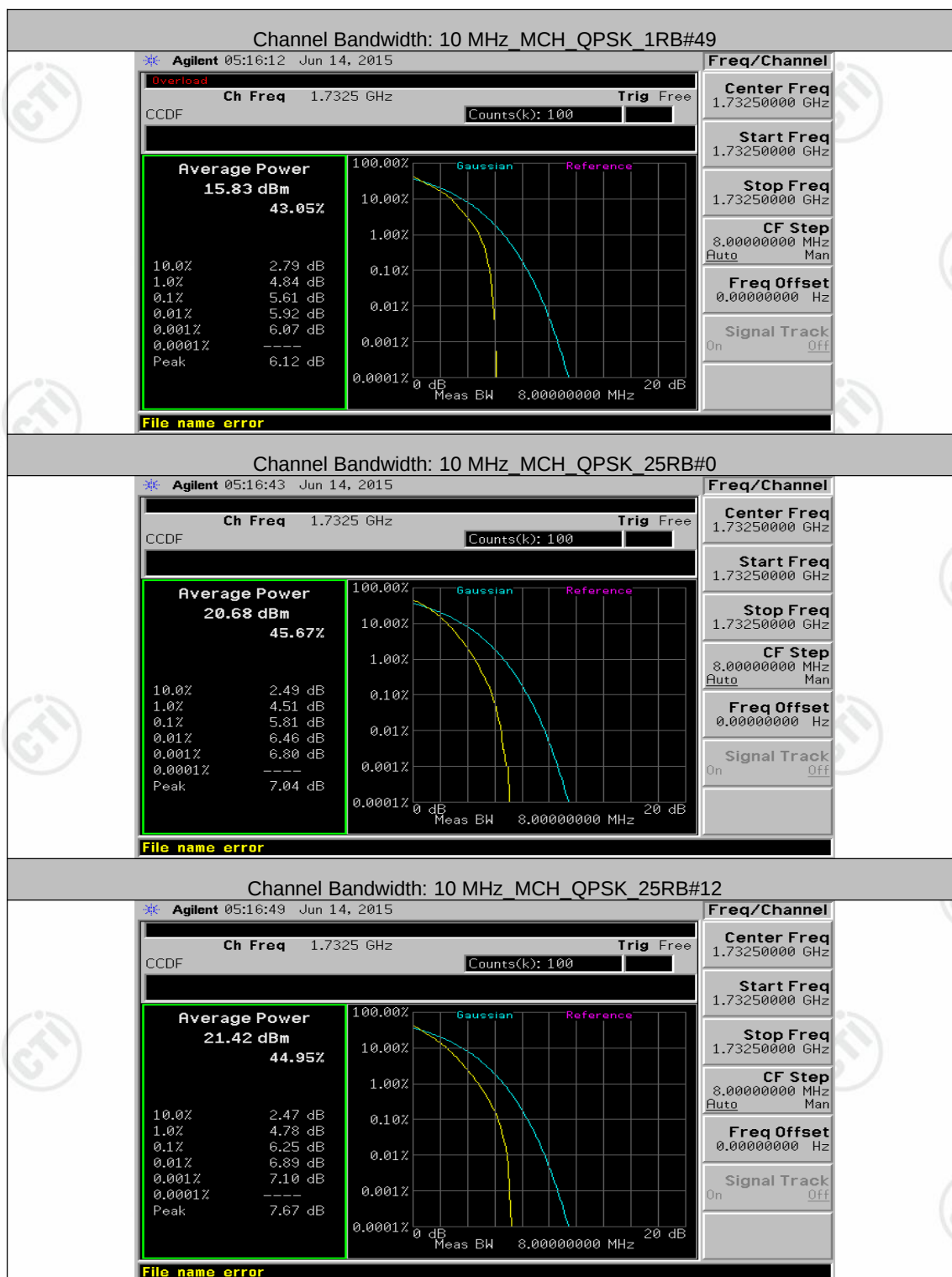


Channel Bandwidth: 10 MHz

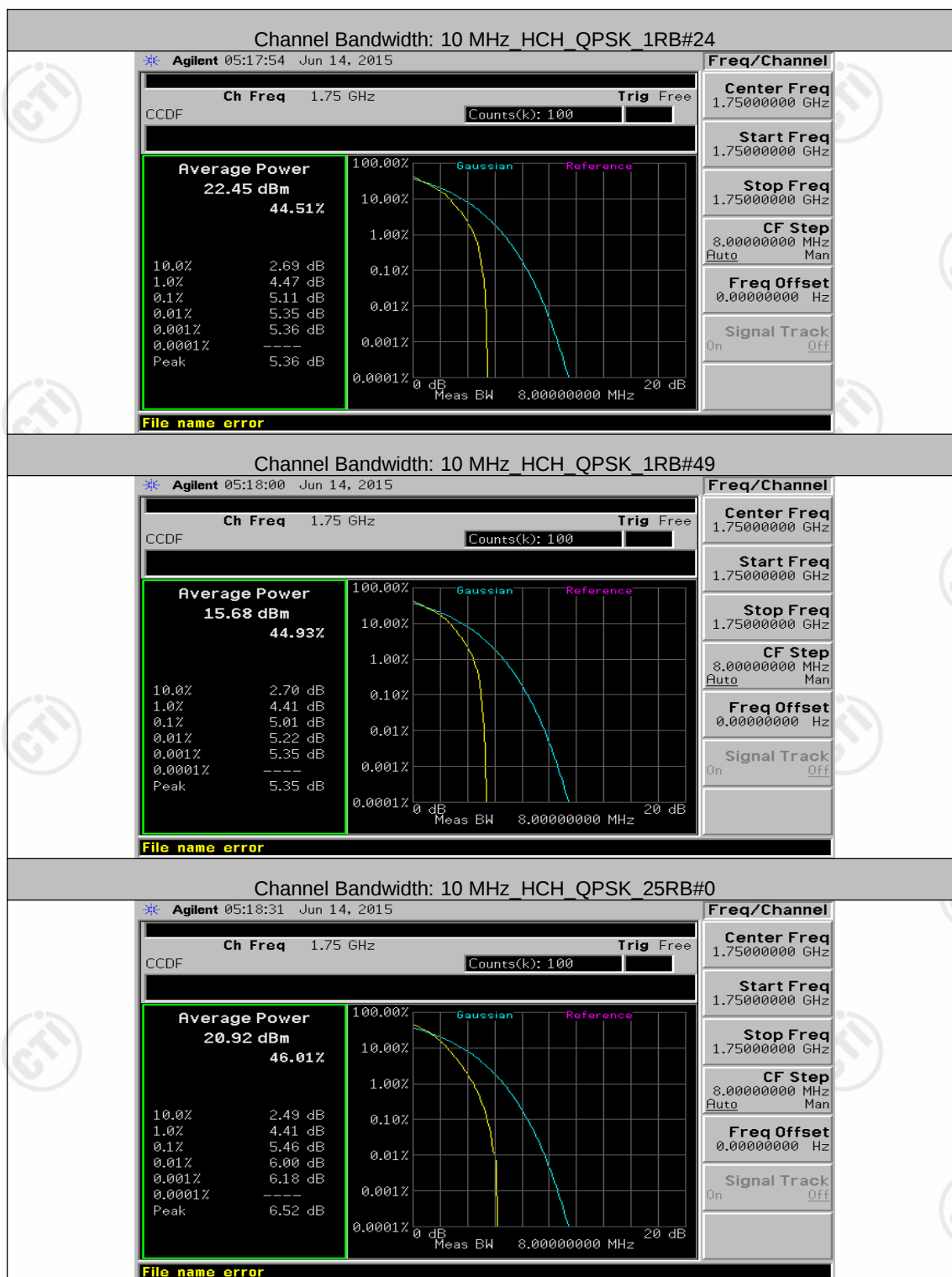


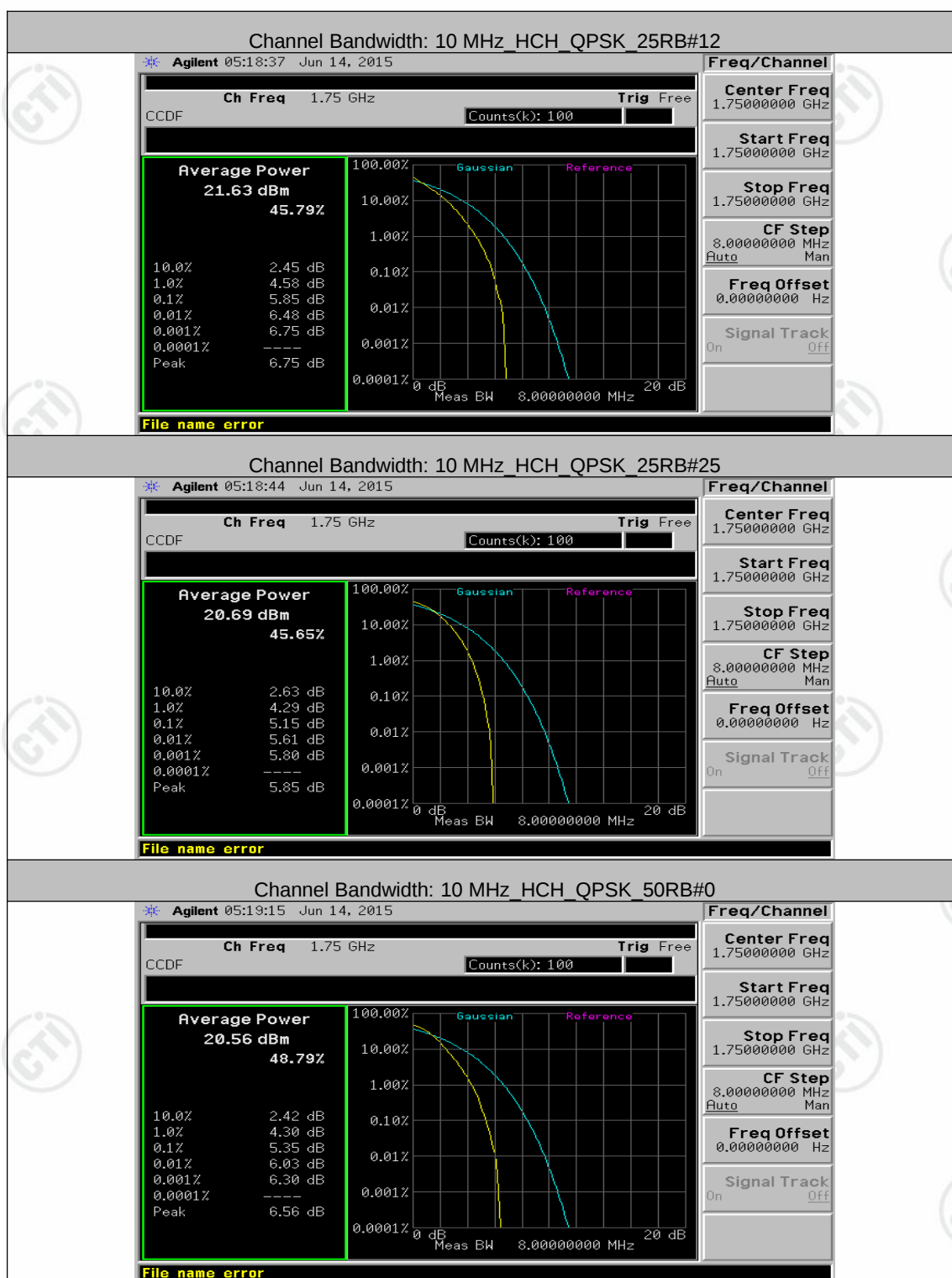


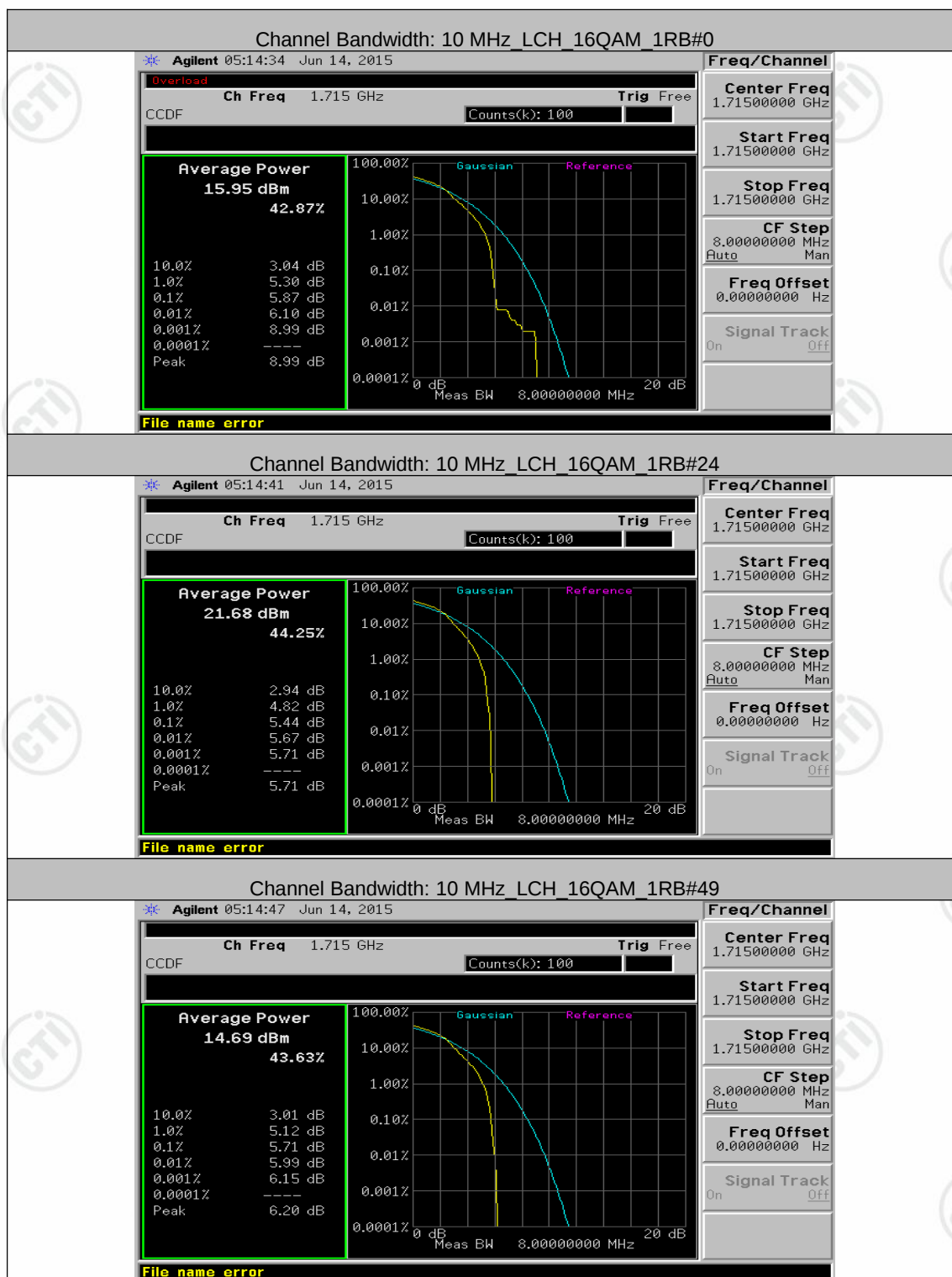


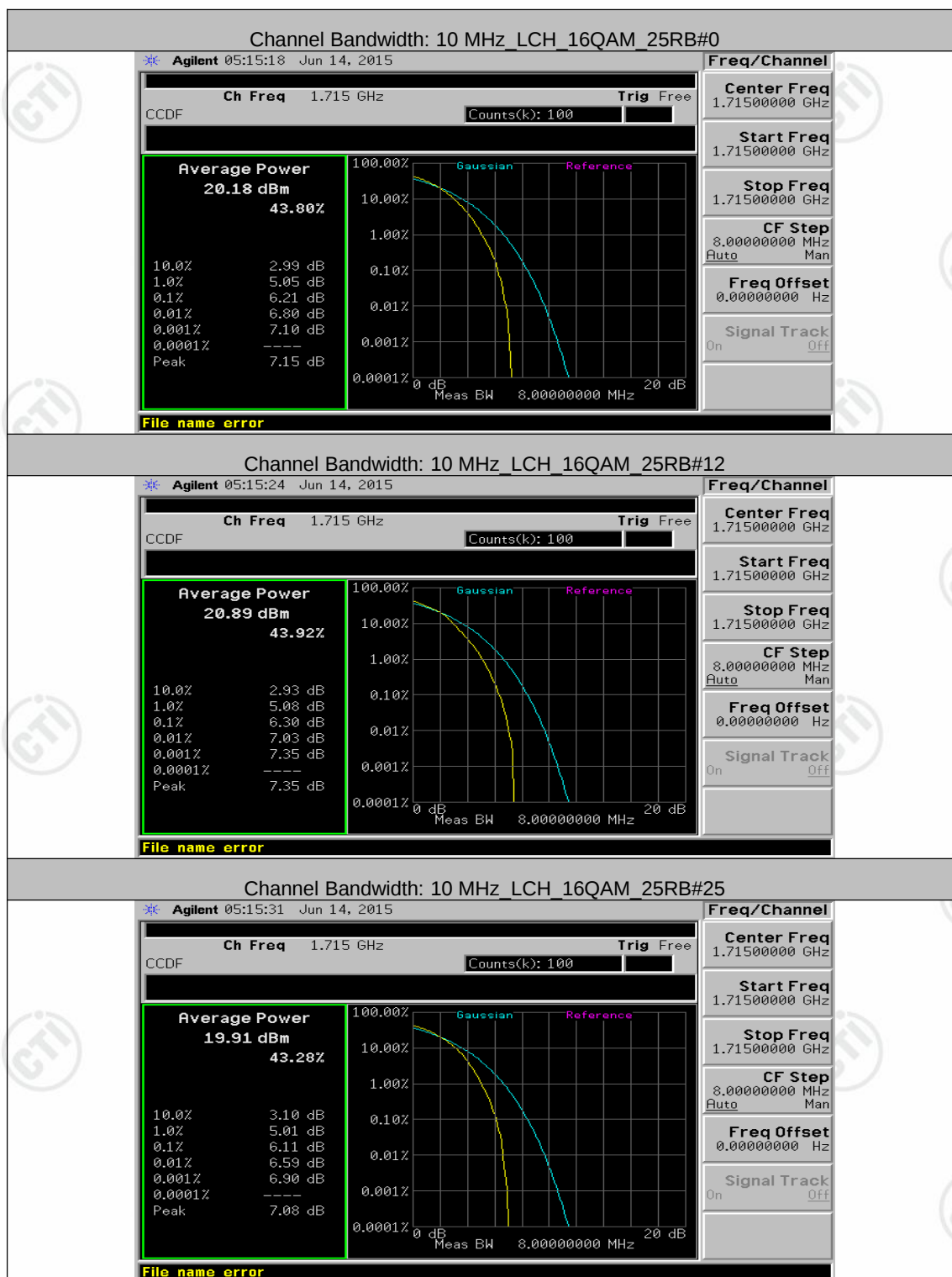




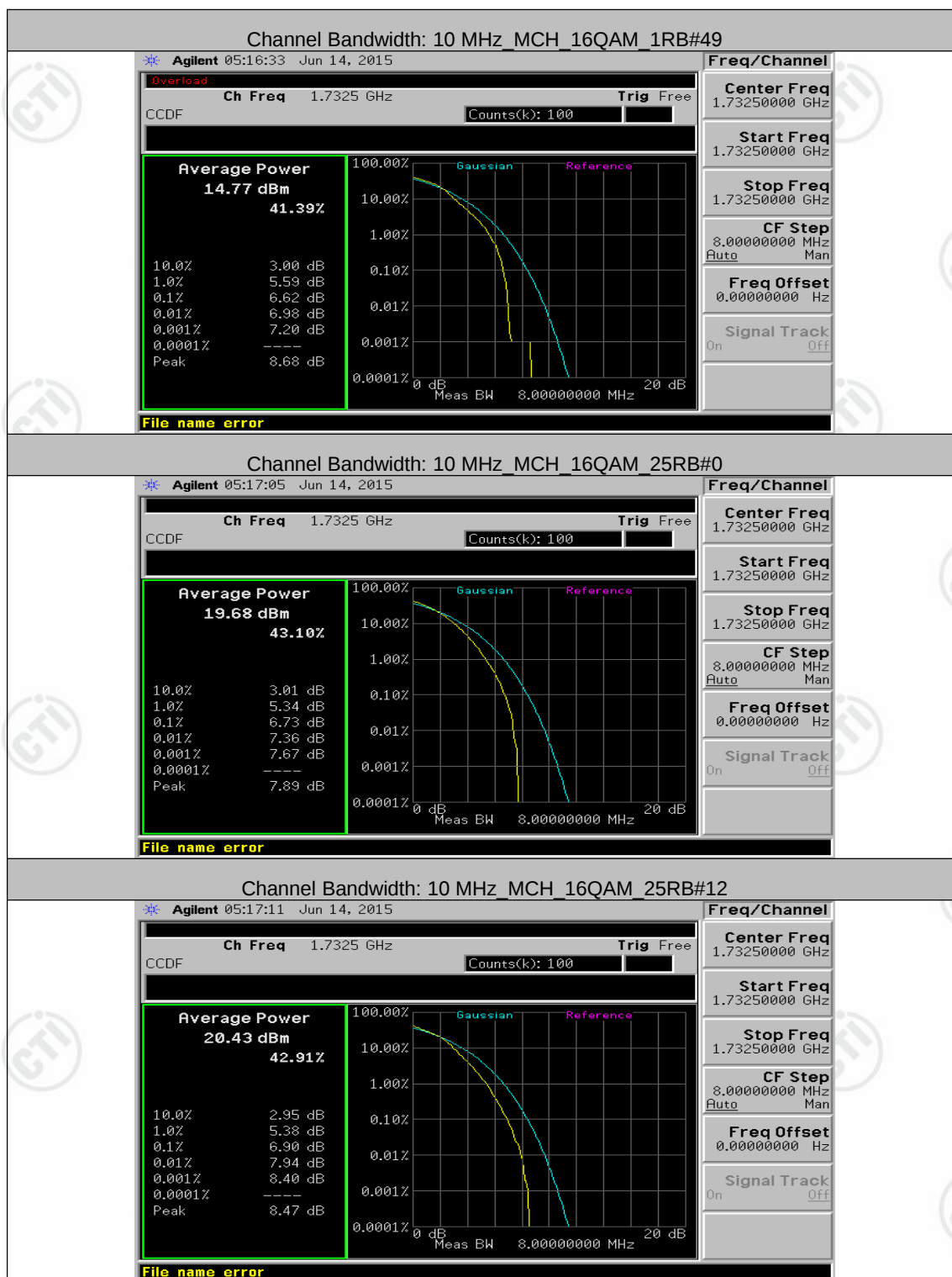






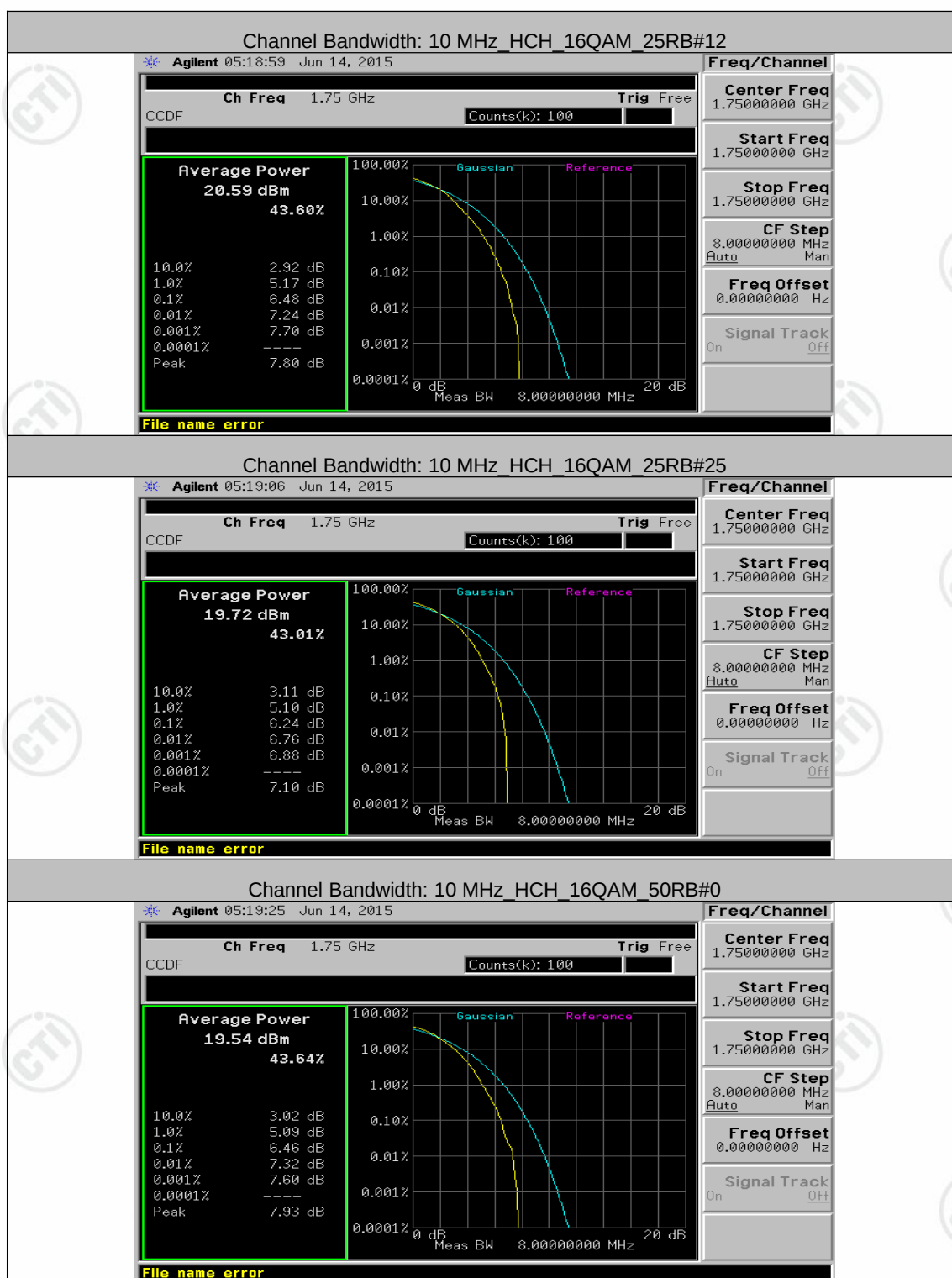




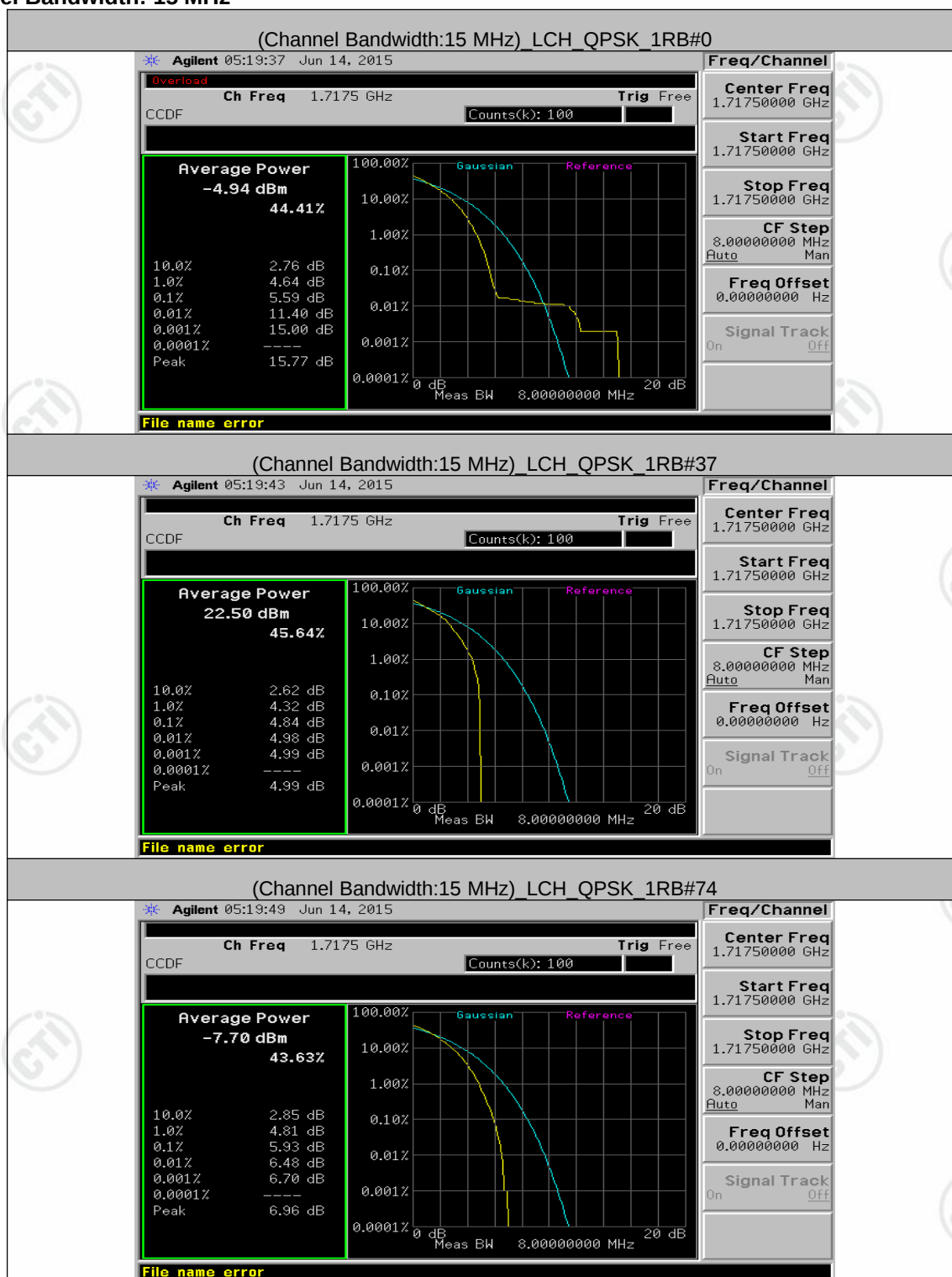


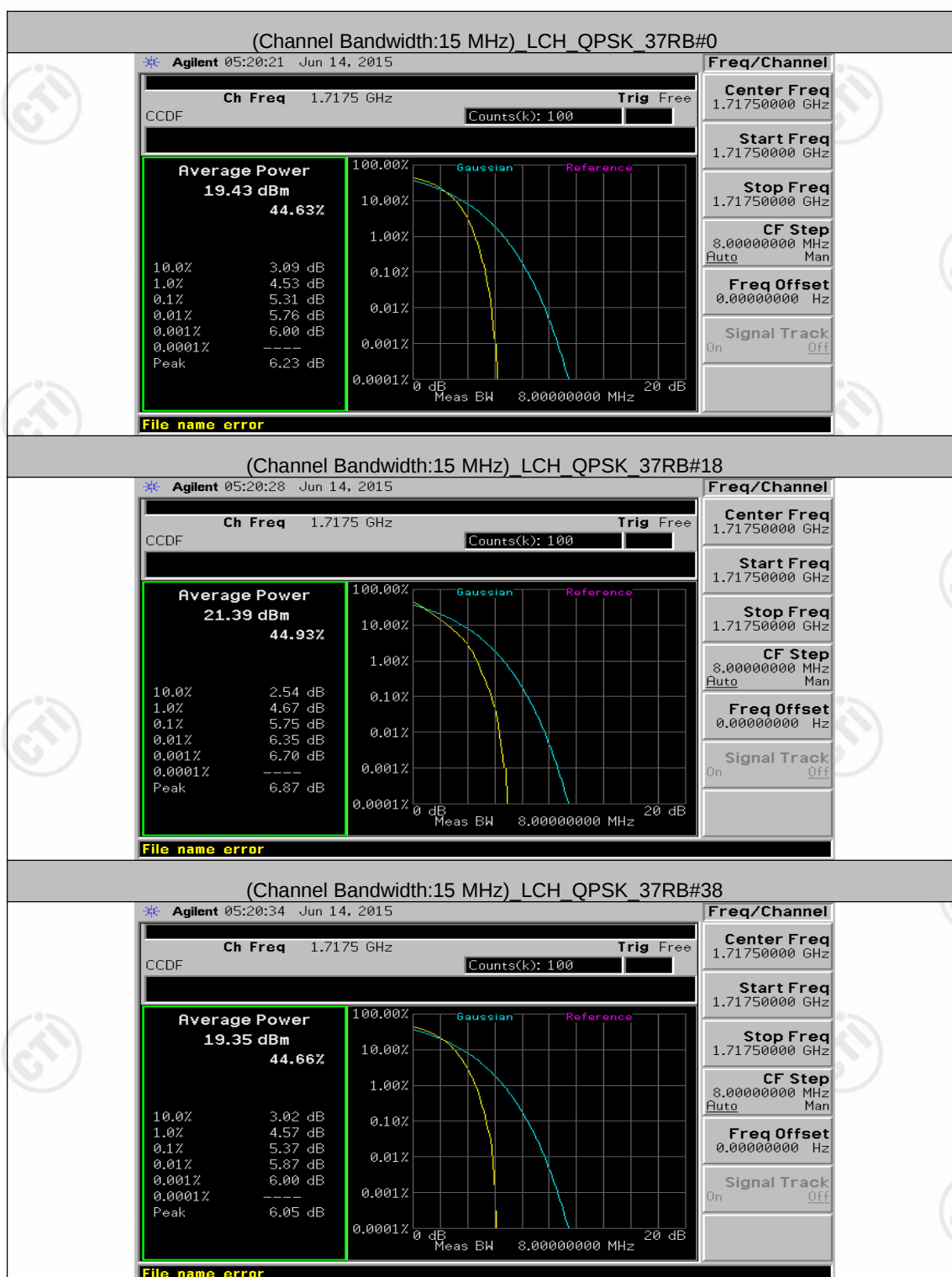




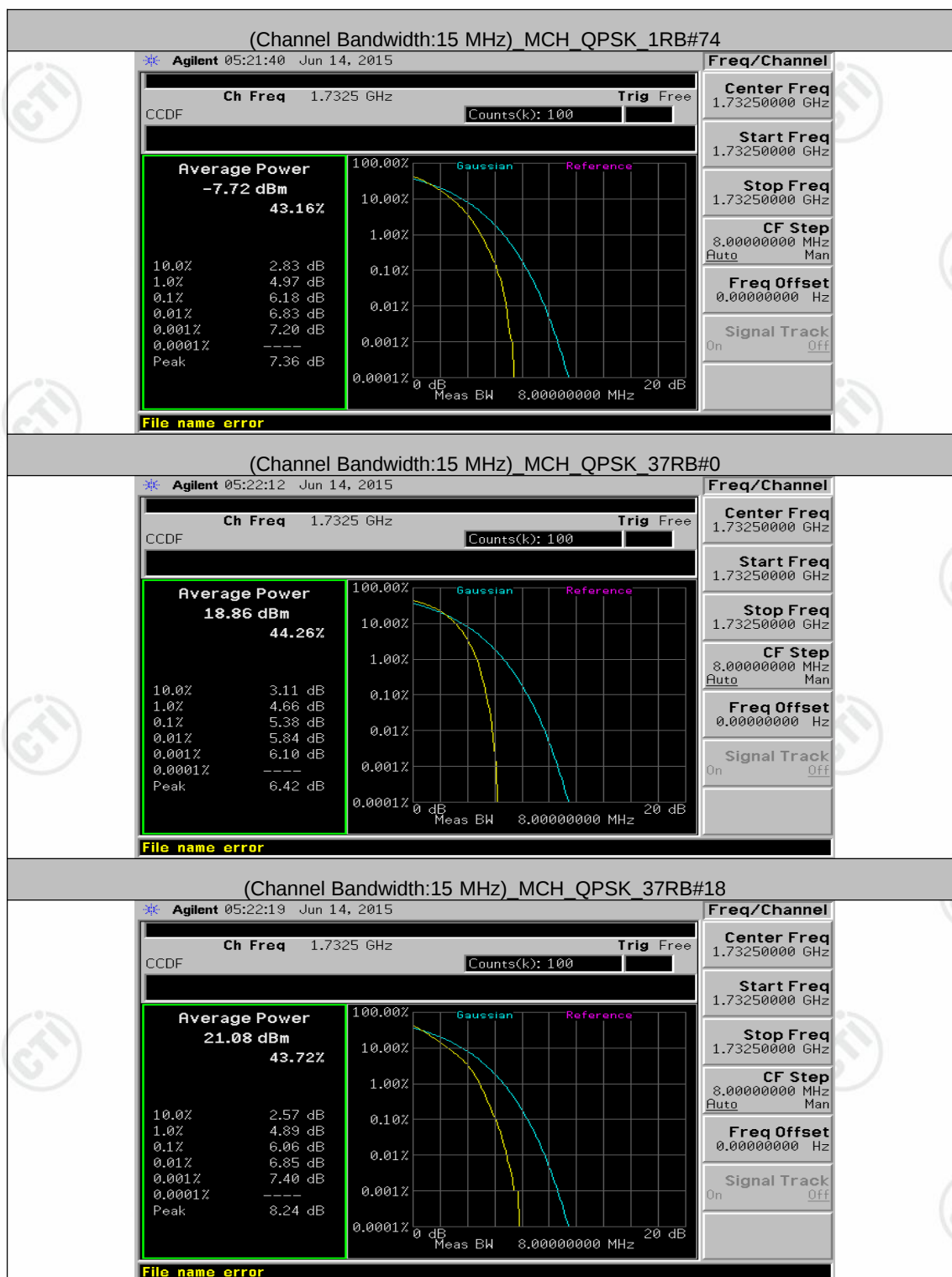


Channel Bandwidth: 15 MHz

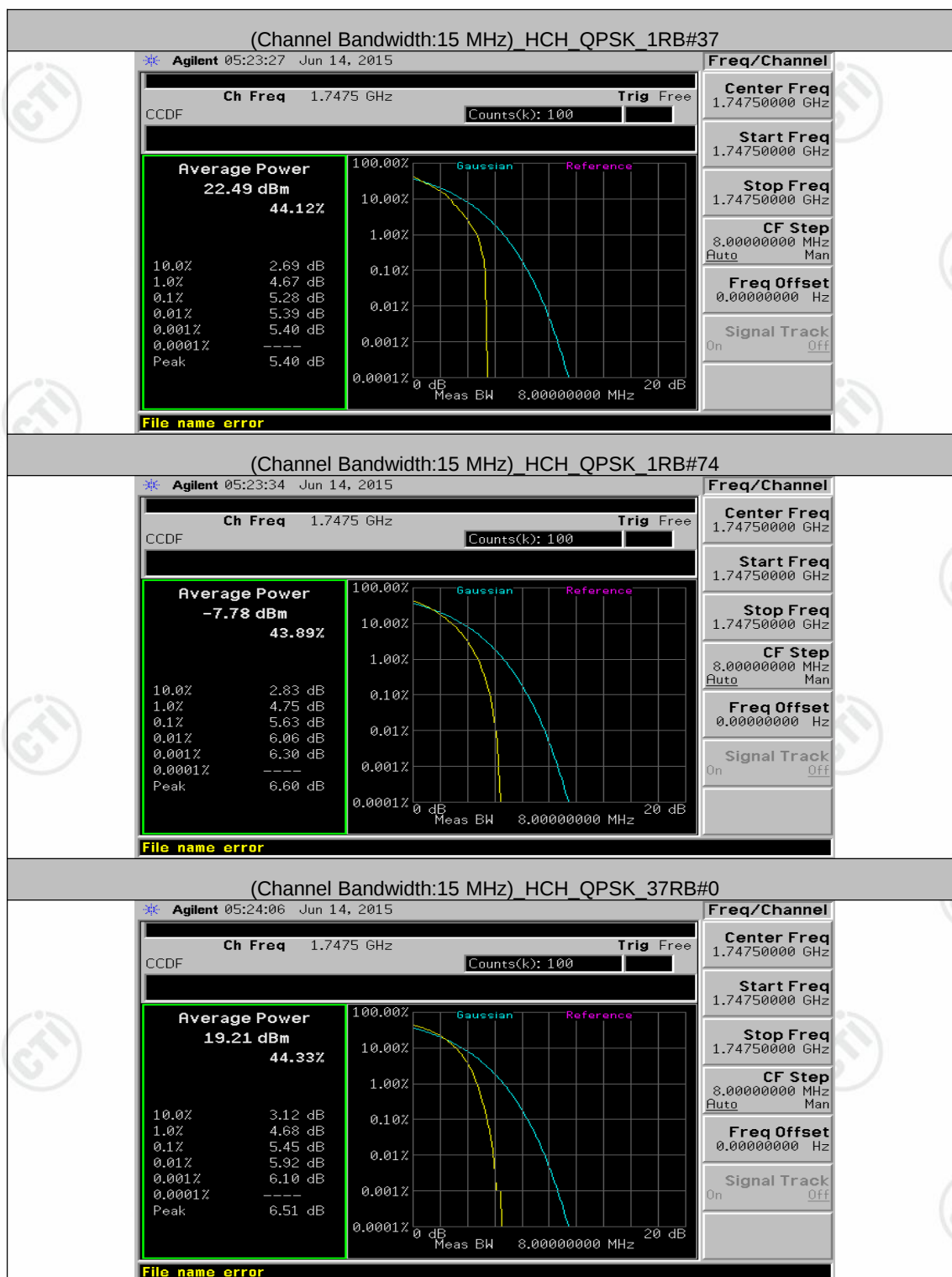


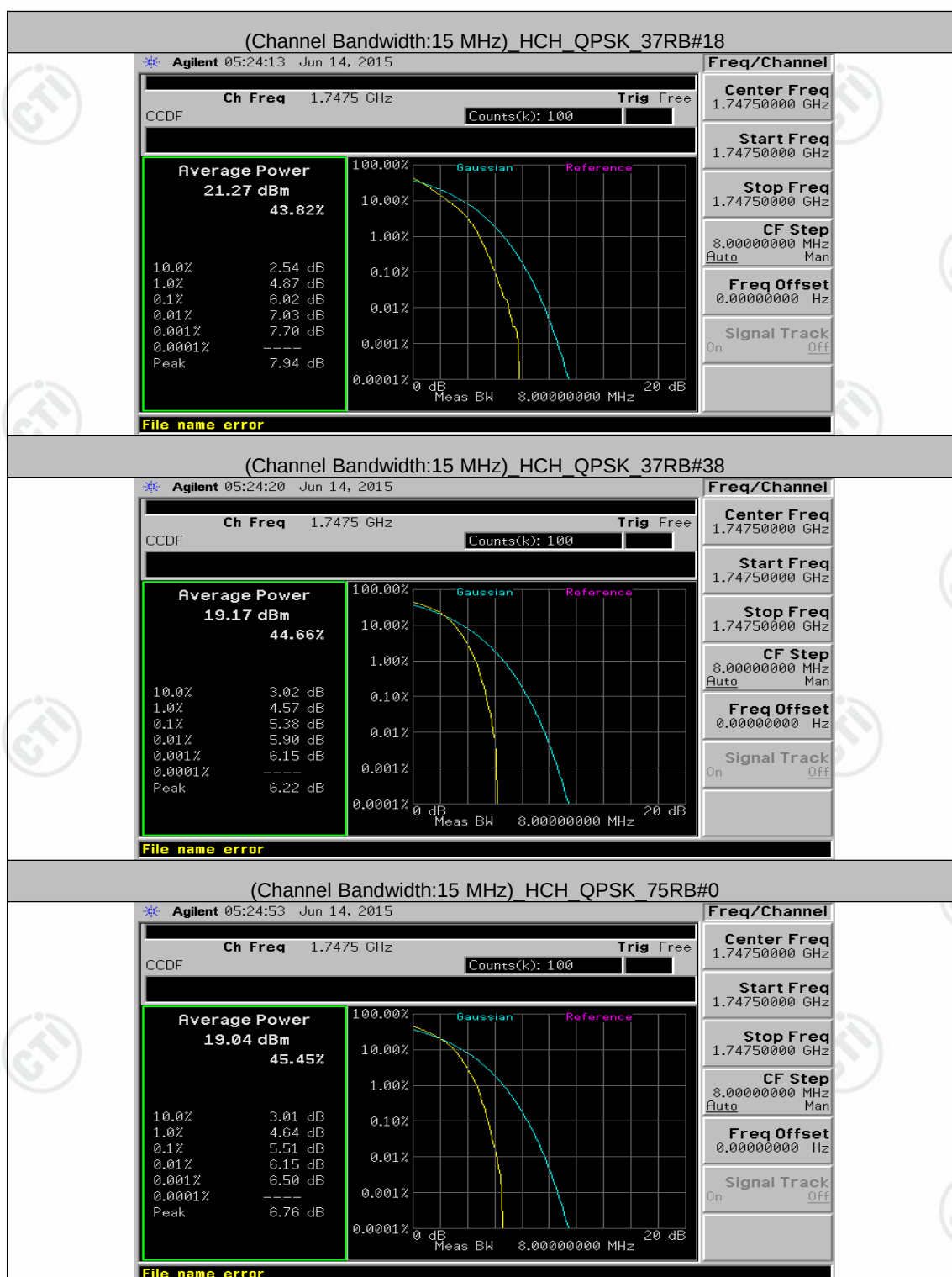


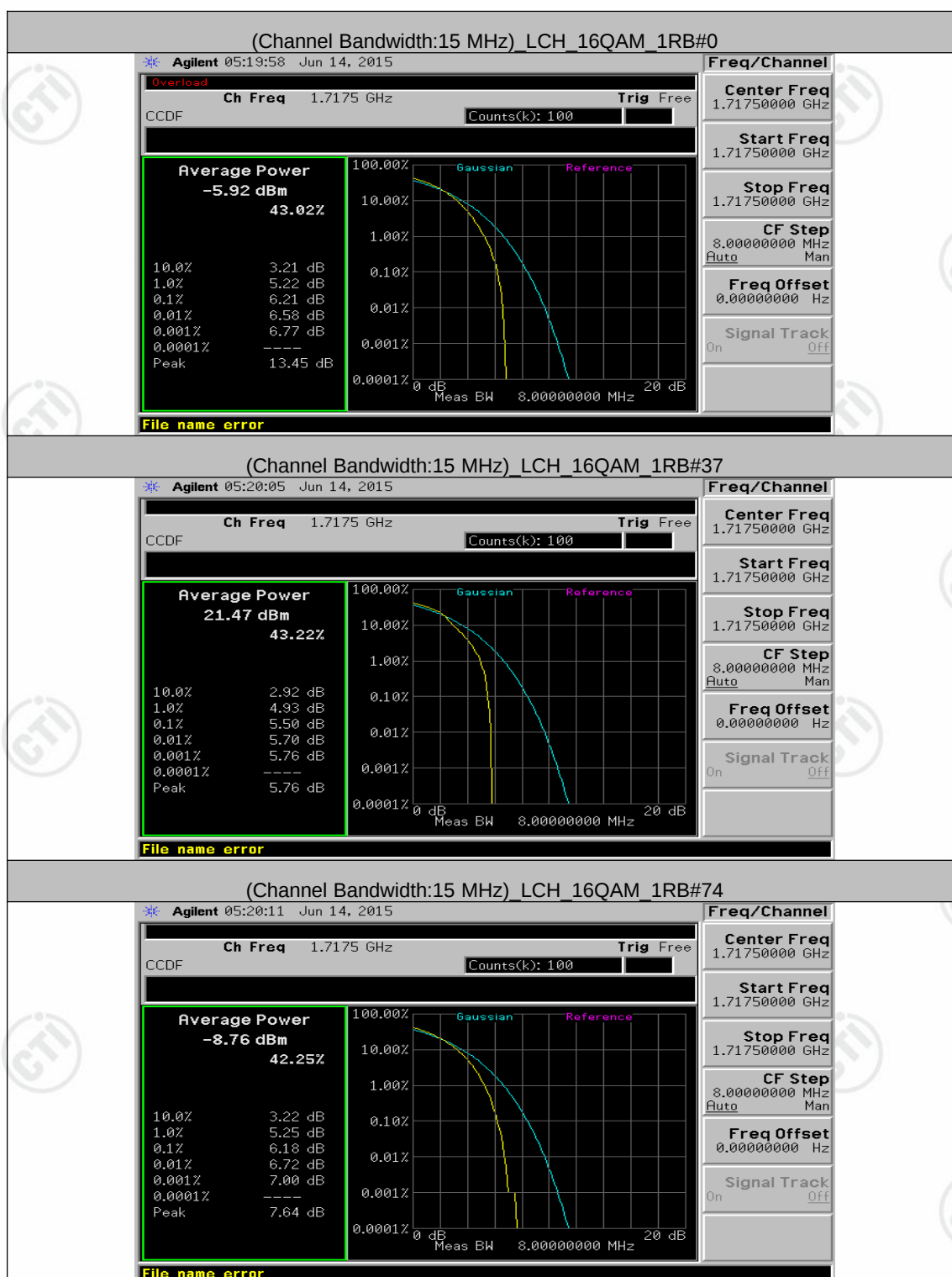


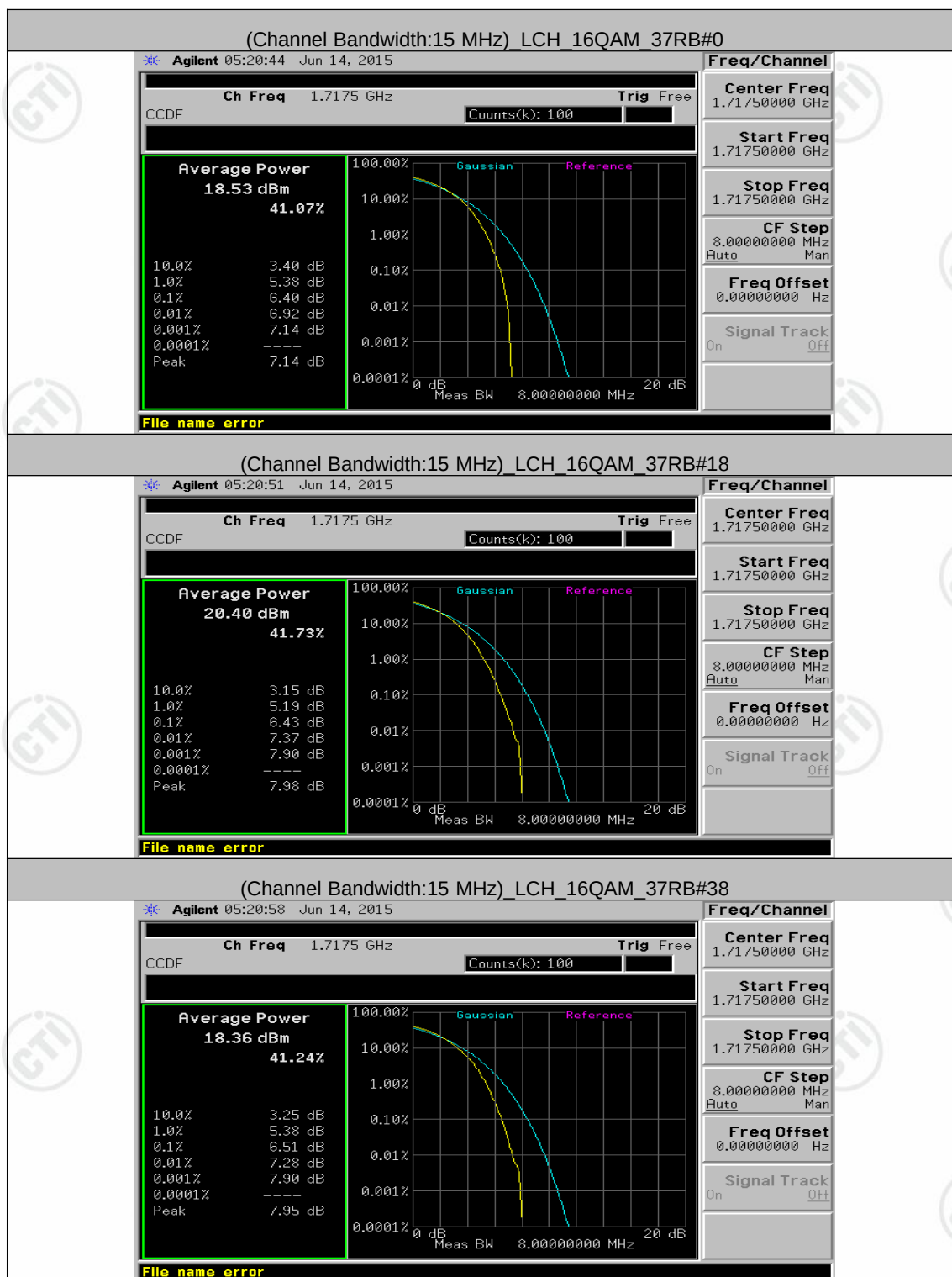




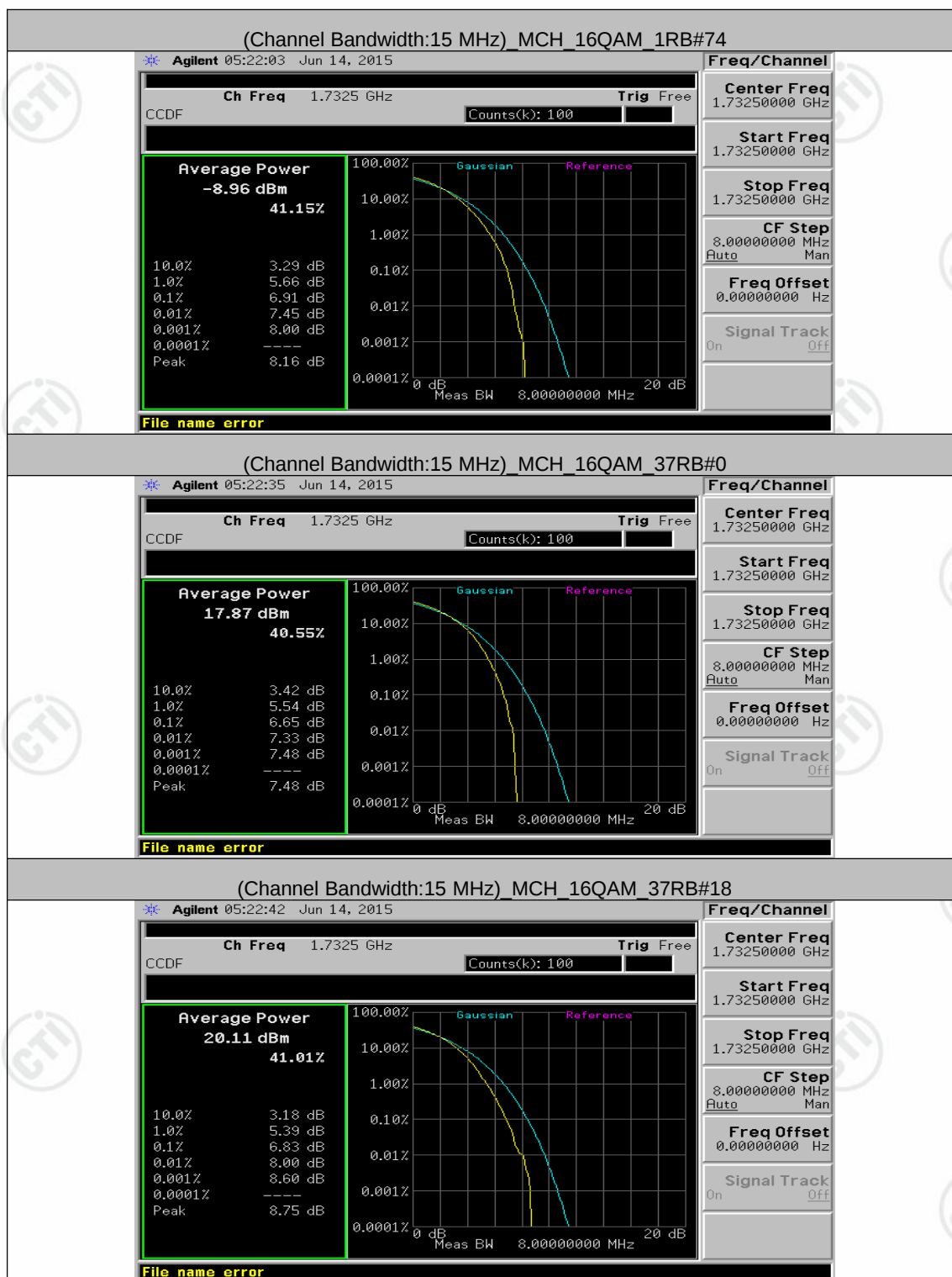




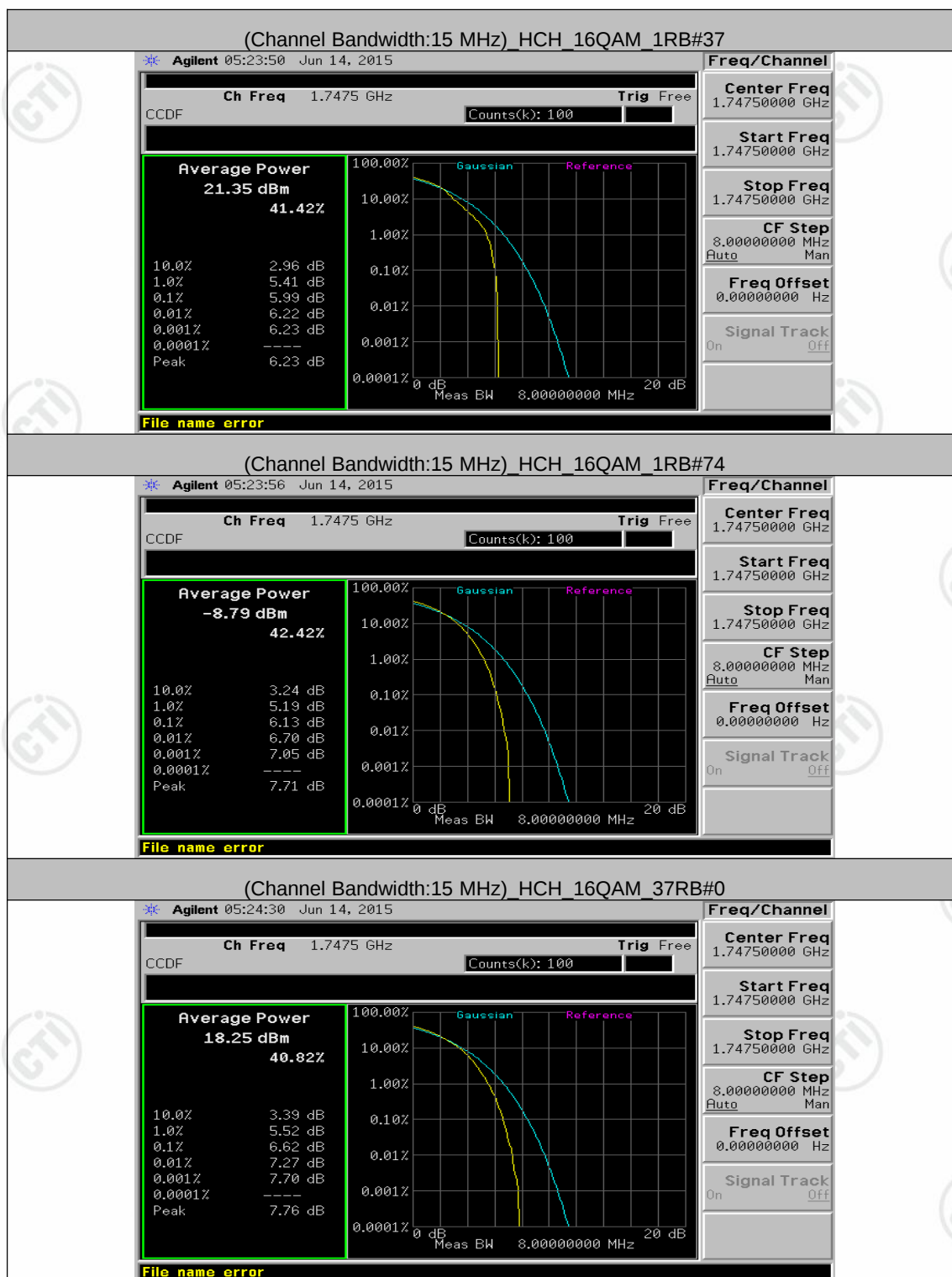


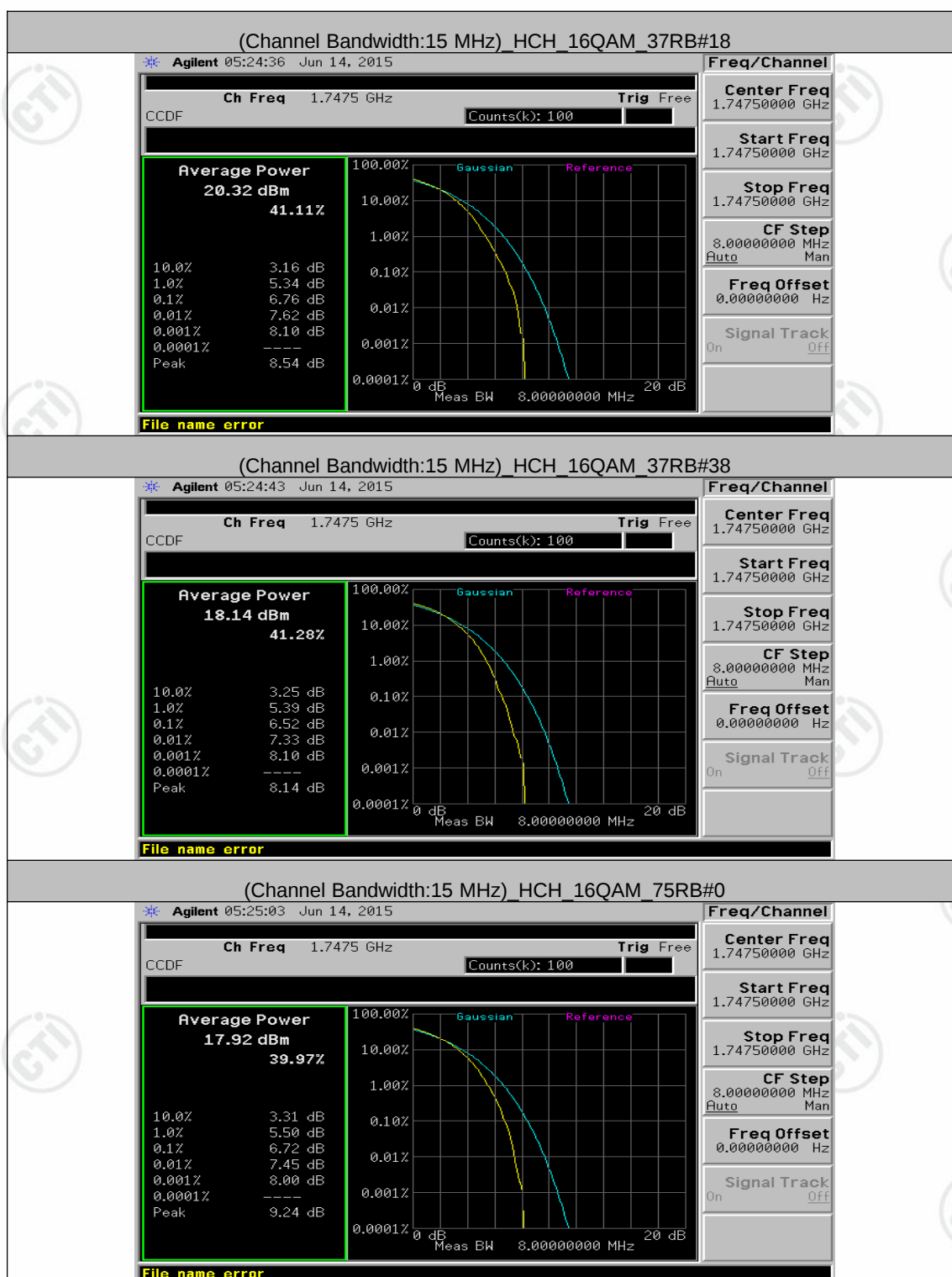




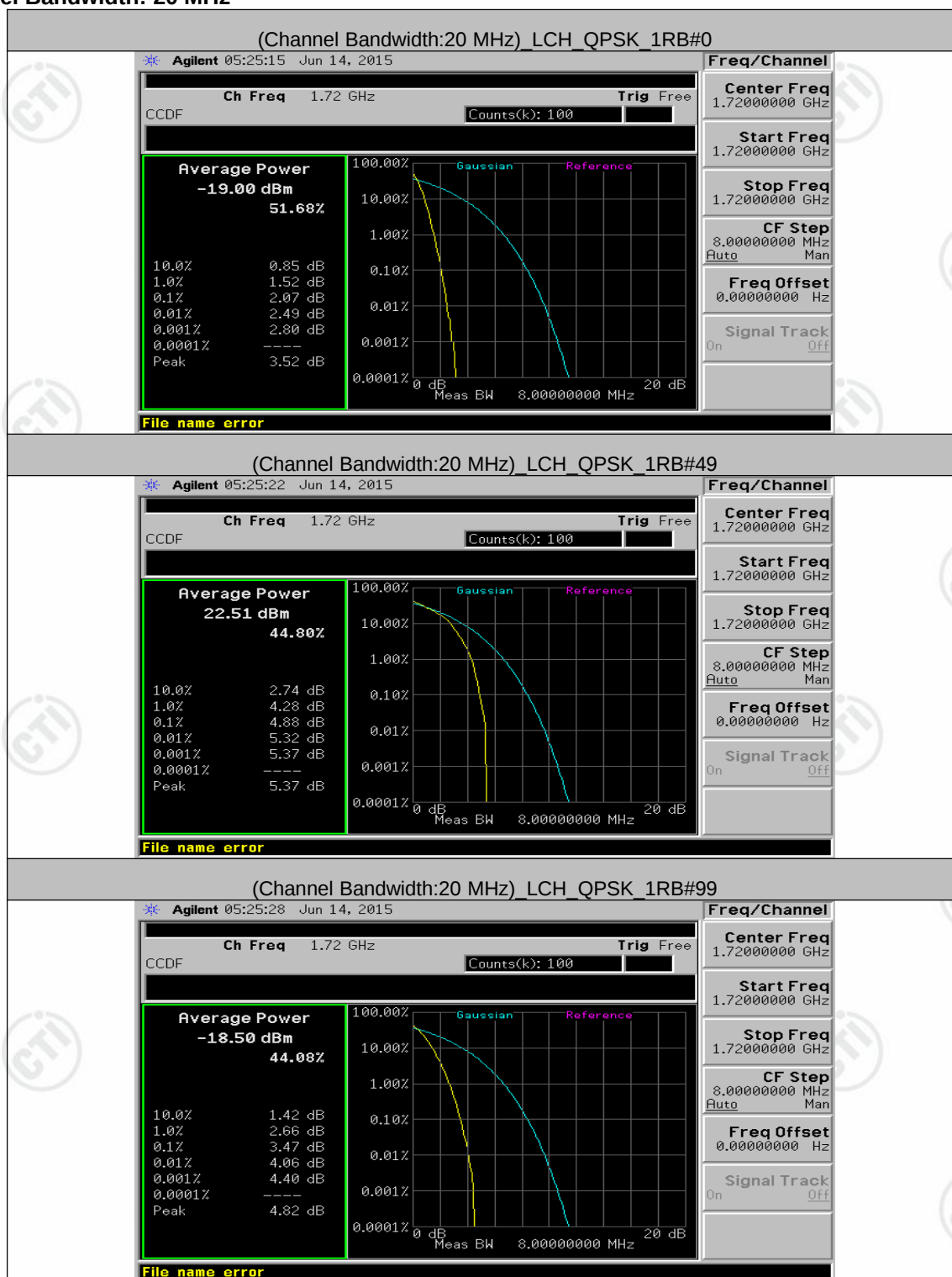


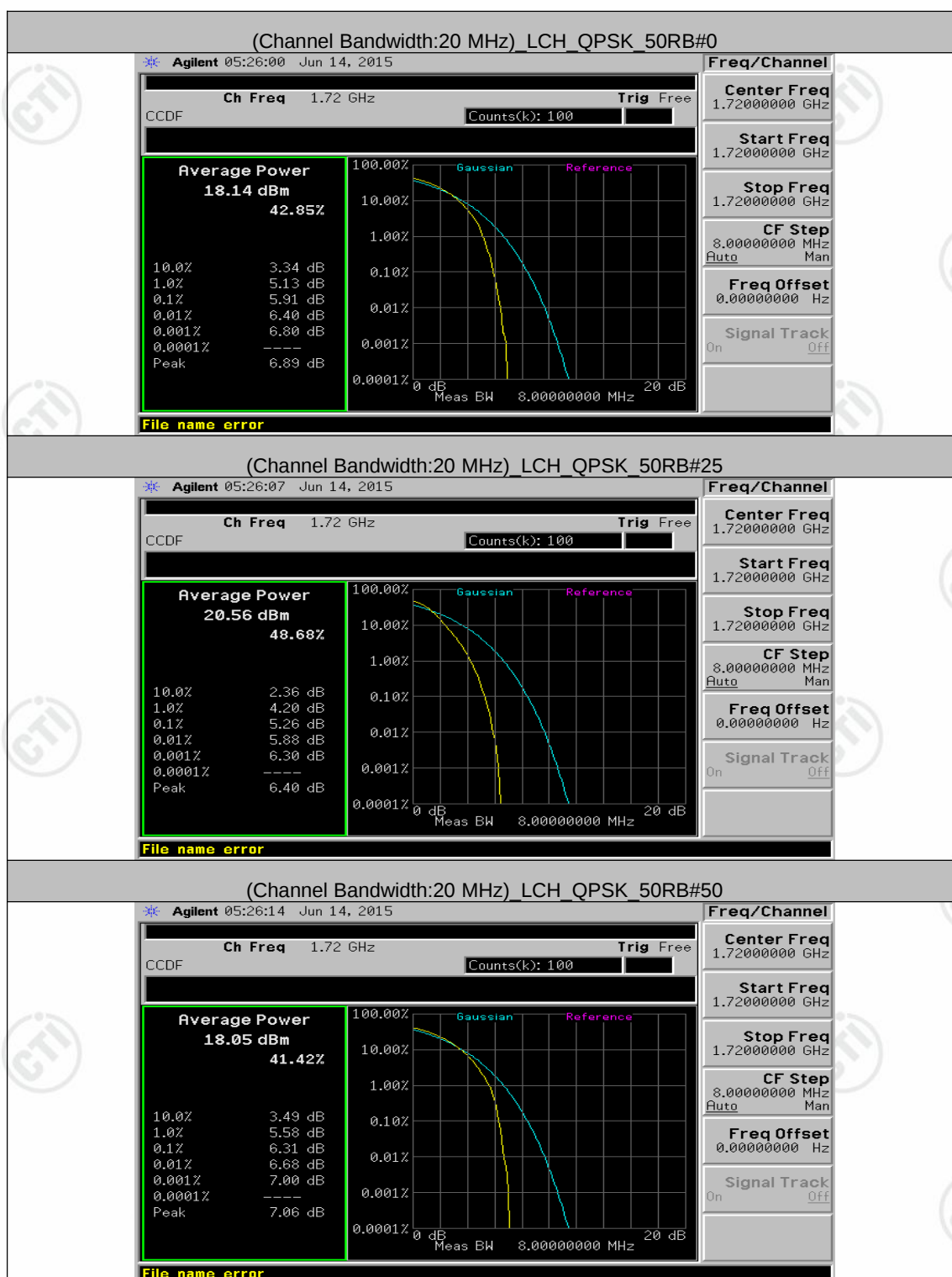




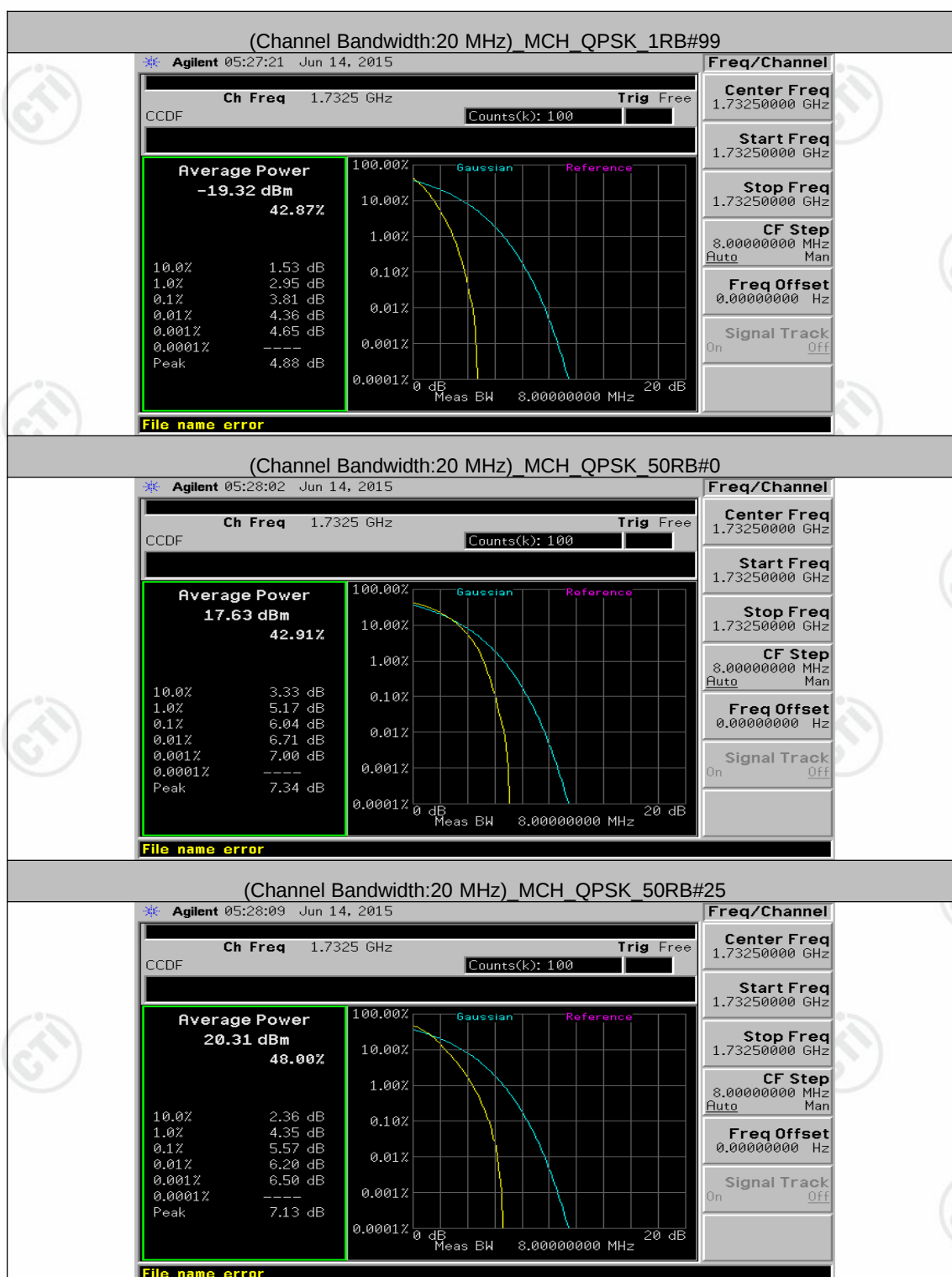


Channel Bandwidth: 20 MHz



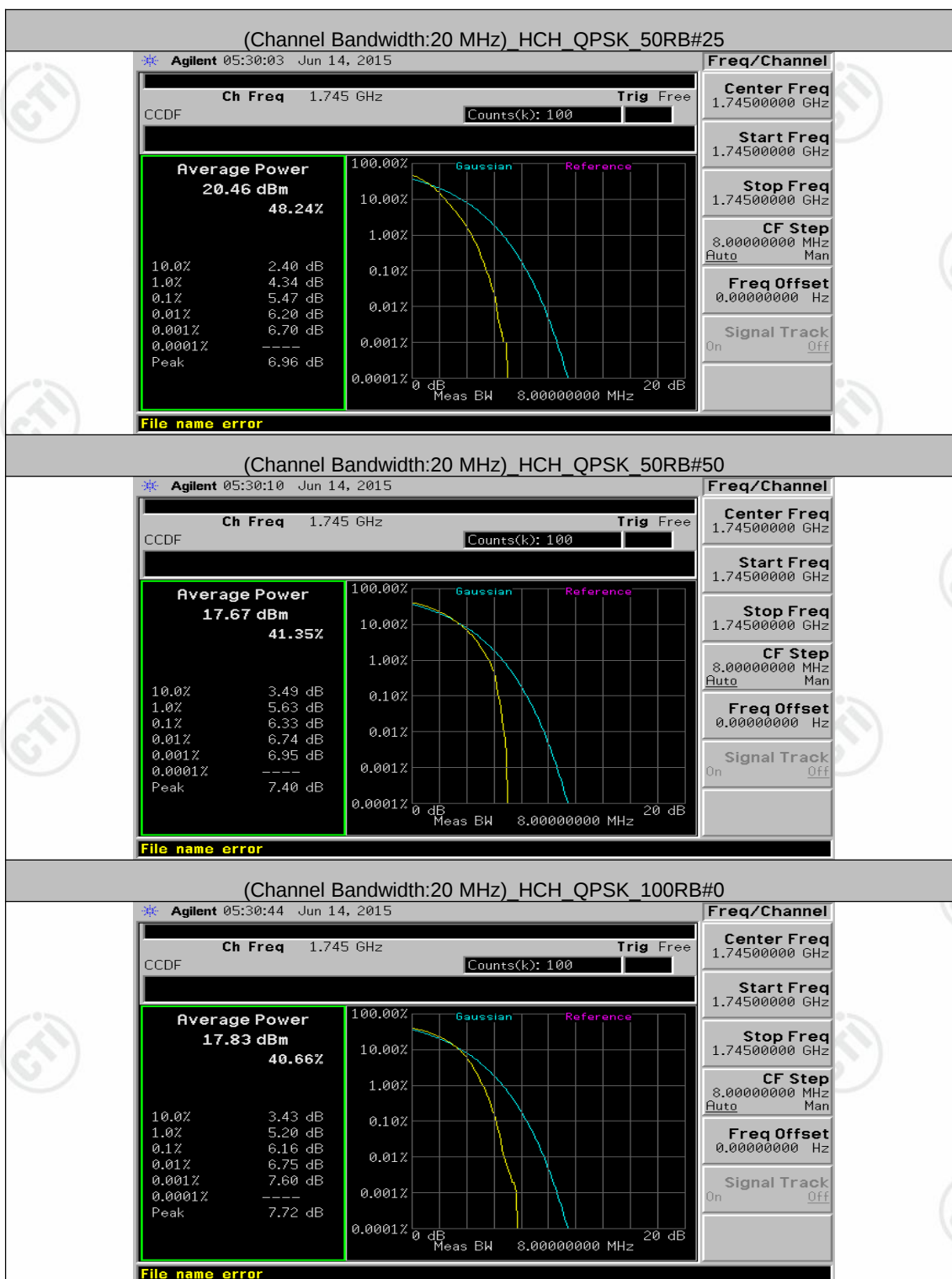




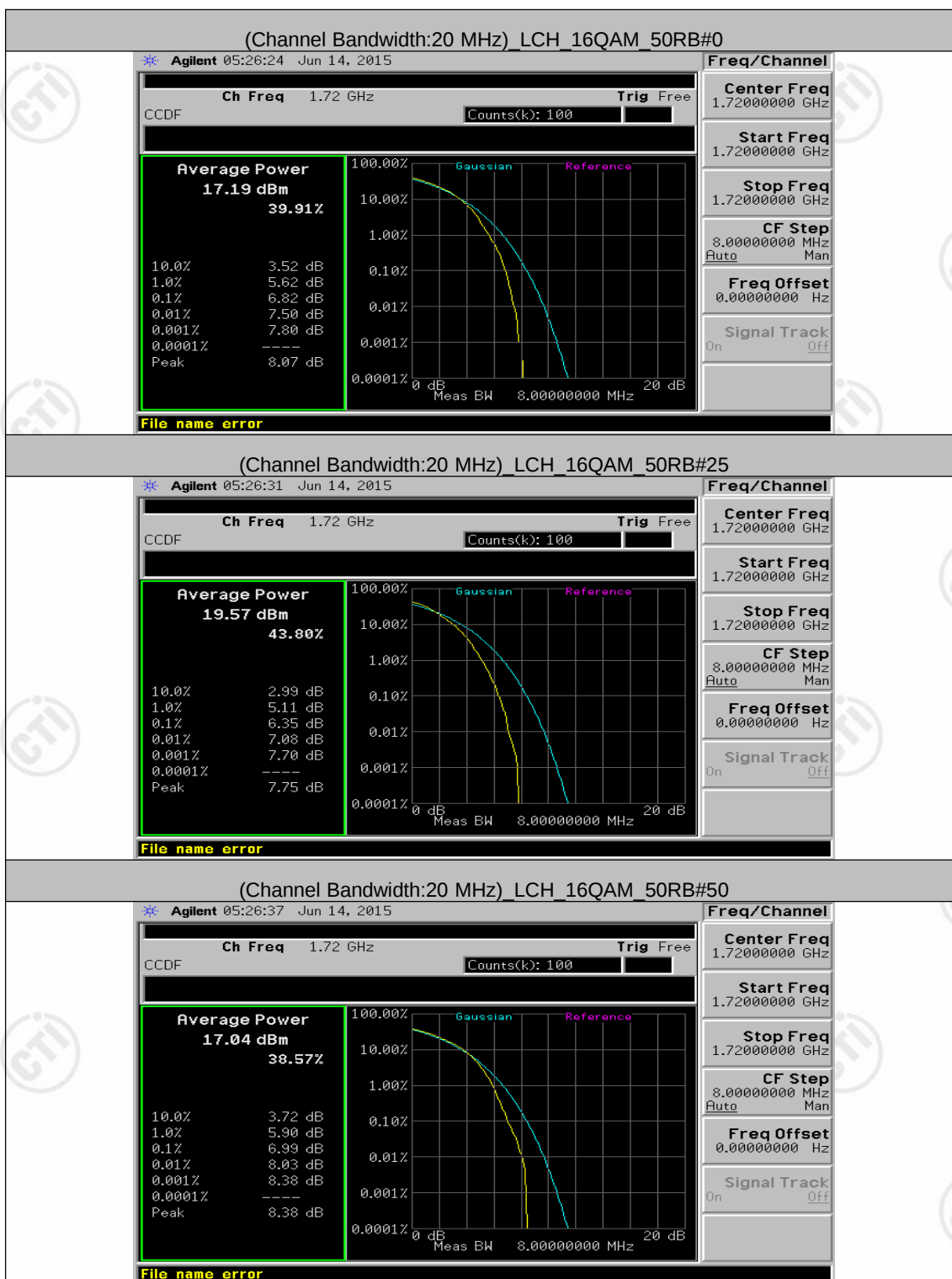




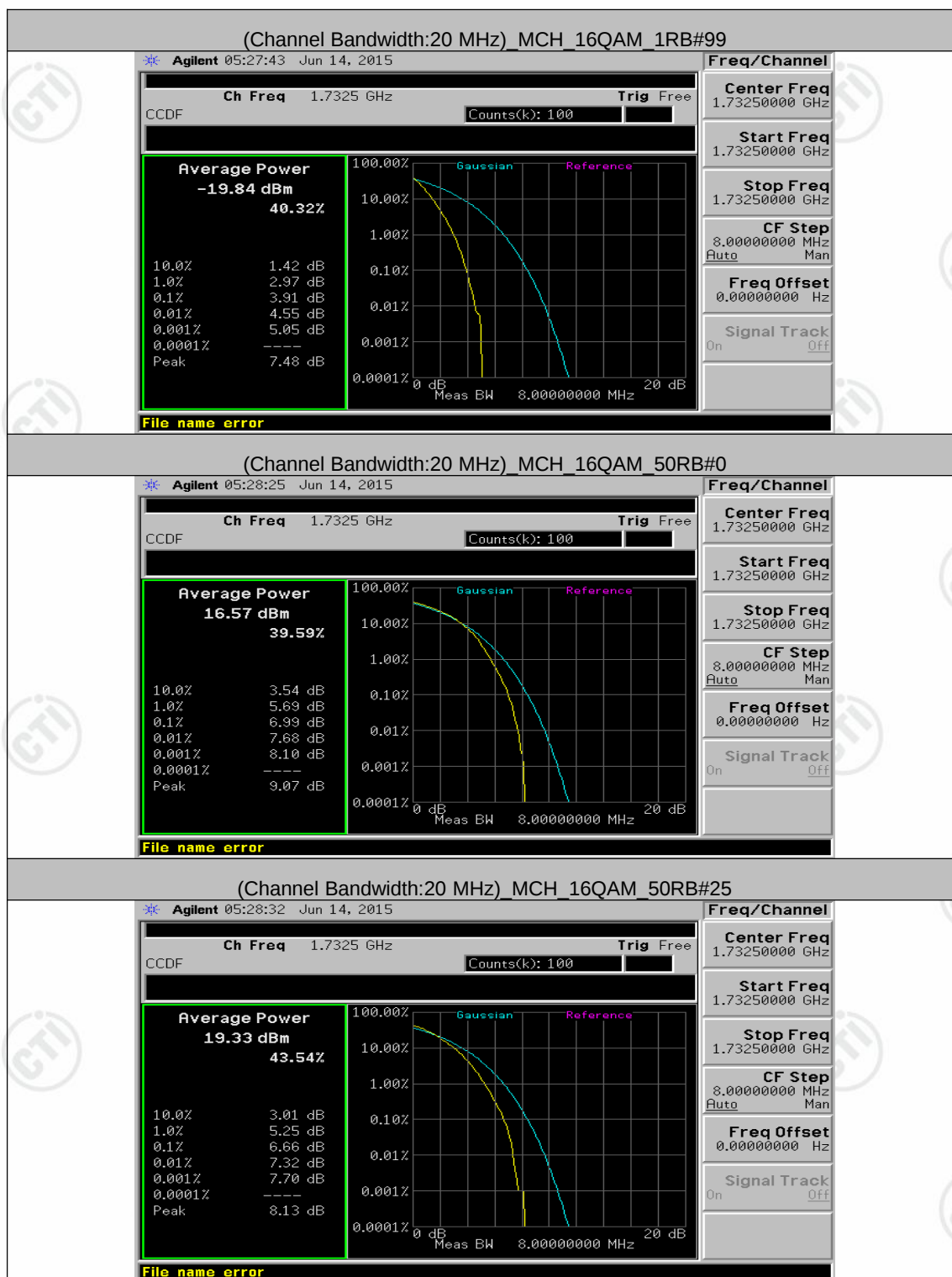




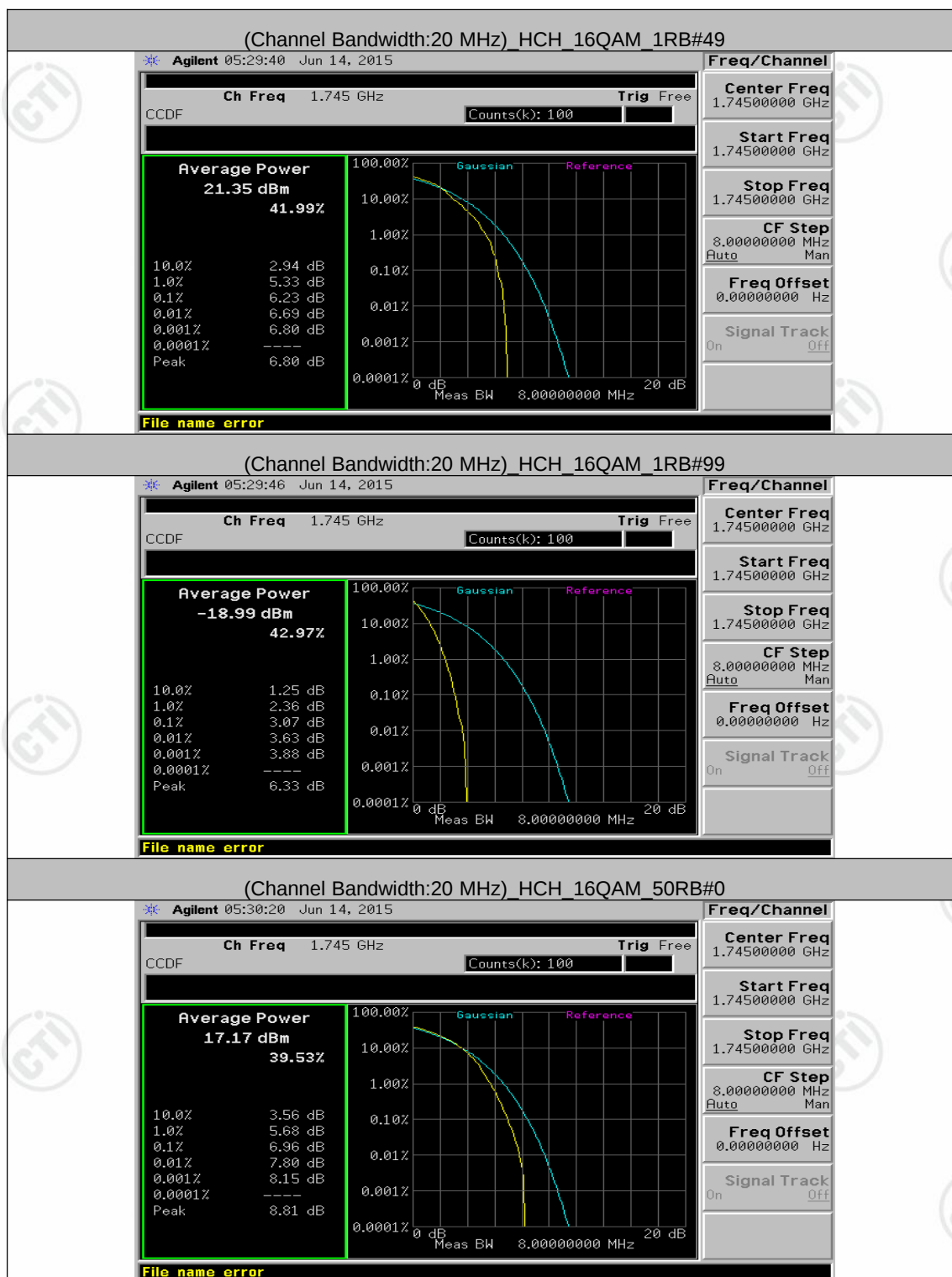


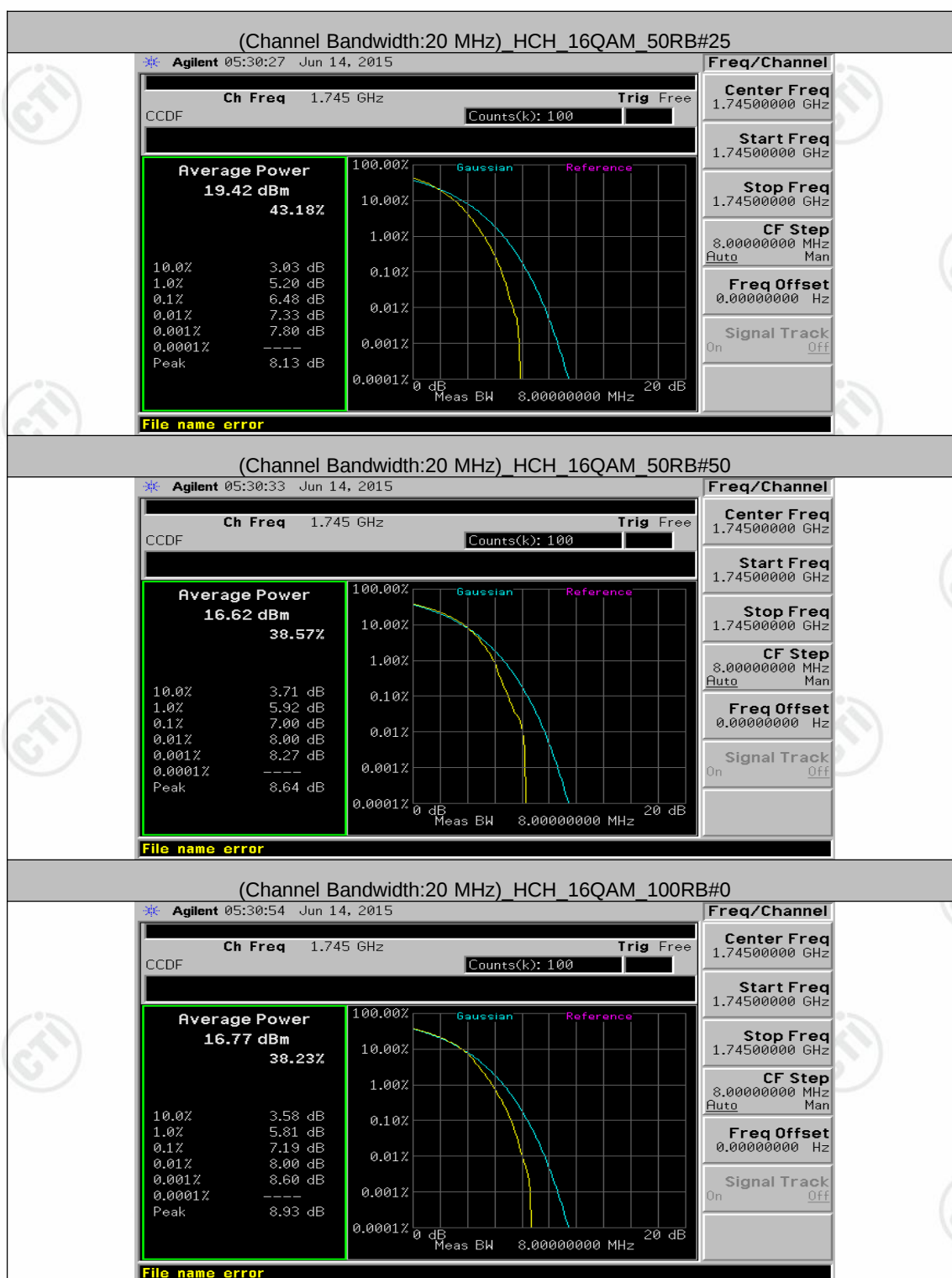












## Appendix C: 26dB Bandwidth and Occupied Bandwidth

### Test Result

#### Channel Bandwidth: 1.4 MHz

| Channel Bandwidth: 1.4 MHz |         |                  |        |                          |                      |         |
|----------------------------|---------|------------------|--------|--------------------------|----------------------|---------|
| Modulation                 | Channel | RB Configuration |        | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
|                            |         | Size             | Offset |                          |                      |         |
| QPSK                       | LCH     | 6                | 0      | 1.0776                   | 1.248                | PASS    |
|                            | MCH     | 6                | 0      | 1.0811                   | 1.269                | PASS    |
|                            | HCH     | 6                | 0      | 1.0797                   | 1.260                | PASS    |
| 16QAM                      | LCH     | 6                | 0      | 1.0773                   | 1.273                | PASS    |
|                            | MCH     | 6                | 0      | 1.0795                   | 1.275                | PASS    |
|                            | HCH     | 6                | 0      | 1.0794                   | 1.268                | PASS    |

#### Channel Bandwidth: 3 MHz

| Channel Bandwidth: 3MHz |         |                  |        |                          |                      |         |
|-------------------------|---------|------------------|--------|--------------------------|----------------------|---------|
| Modulation              | Channel | RB Configuration |        | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
|                         |         | Size             | Offset |                          |                      |         |
| QPSK                    | LCH     | 15               | 0      | 2.6756                   | 2.978                | PASS    |
|                         | MCH     | 15               | 0      | 2.6813                   | 3.005                | PASS    |
|                         | HCH     | 15               | 0      | 2.6822                   | 2.979                | PASS    |
| 16QAM                   | LCH     | 15               | 0      | 2.6846                   | 2.992                | PASS    |
|                         | MCH     | 15               | 0      | 2.6824                   | 2.992                | PASS    |
|                         | HCH     | 15               | 0      | 2.6827                   | 2.969                | PASS    |

#### Channel Bandwidth: 5 MHz

| Channel Bandwidth: 5MHz |         |                  |        |                          |                      |         |
|-------------------------|---------|------------------|--------|--------------------------|----------------------|---------|
| Modulation              | Channel | RB Configuration |        | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
|                         |         | Size             | Offset |                          |                      |         |
| QPSK                    | LCH     | 25               | 0      | 4.4700                   | 4.992                | PASS    |
|                         | MCH     | 25               | 0      | 4.4871                   | 5.017                | PASS    |
|                         | HCH     | 25               | 0      | 4.4647                   | 4.984                | PASS    |
| 16QAM                   | LCH     | 25               | 0      | 4.4698                   | 5.015                | PASS    |
|                         | MCH     | 25               | 0      | 4.4674                   | 5.031                | PASS    |
|                         | HCH     | 25               | 0      | 4.4716                   | 5.037                | PASS    |

**Channel Bandwidth: 10 MHz**

| Channel Bandwidth: 10MHz |         |                  |        |                          |                      |         |
|--------------------------|---------|------------------|--------|--------------------------|----------------------|---------|
| Modulation               | Channel | RB Configuration |        | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
|                          |         | Size             | Offset |                          |                      |         |
| QPSK                     | LCH     | 50               | 0      | 8.9207                   | 9.842                | PASS    |
|                          | MCH     | 50               | 0      | 8.9321                   | 9.838                | PASS    |
|                          | HCH     | 50               | 0      | 8.9277                   | 9.877                | PASS    |
| 16QAM                    | LCH     | 50               | 0      | 8.9371                   | 9.711                | PASS    |
|                          | MCH     | 50               | 0      | 8.9531                   | 9.788                | PASS    |
|                          | HCH     | 50               | 0      | 8.9444                   | 9.703                | PASS    |

**Channel Bandwidth: 15 MHz**

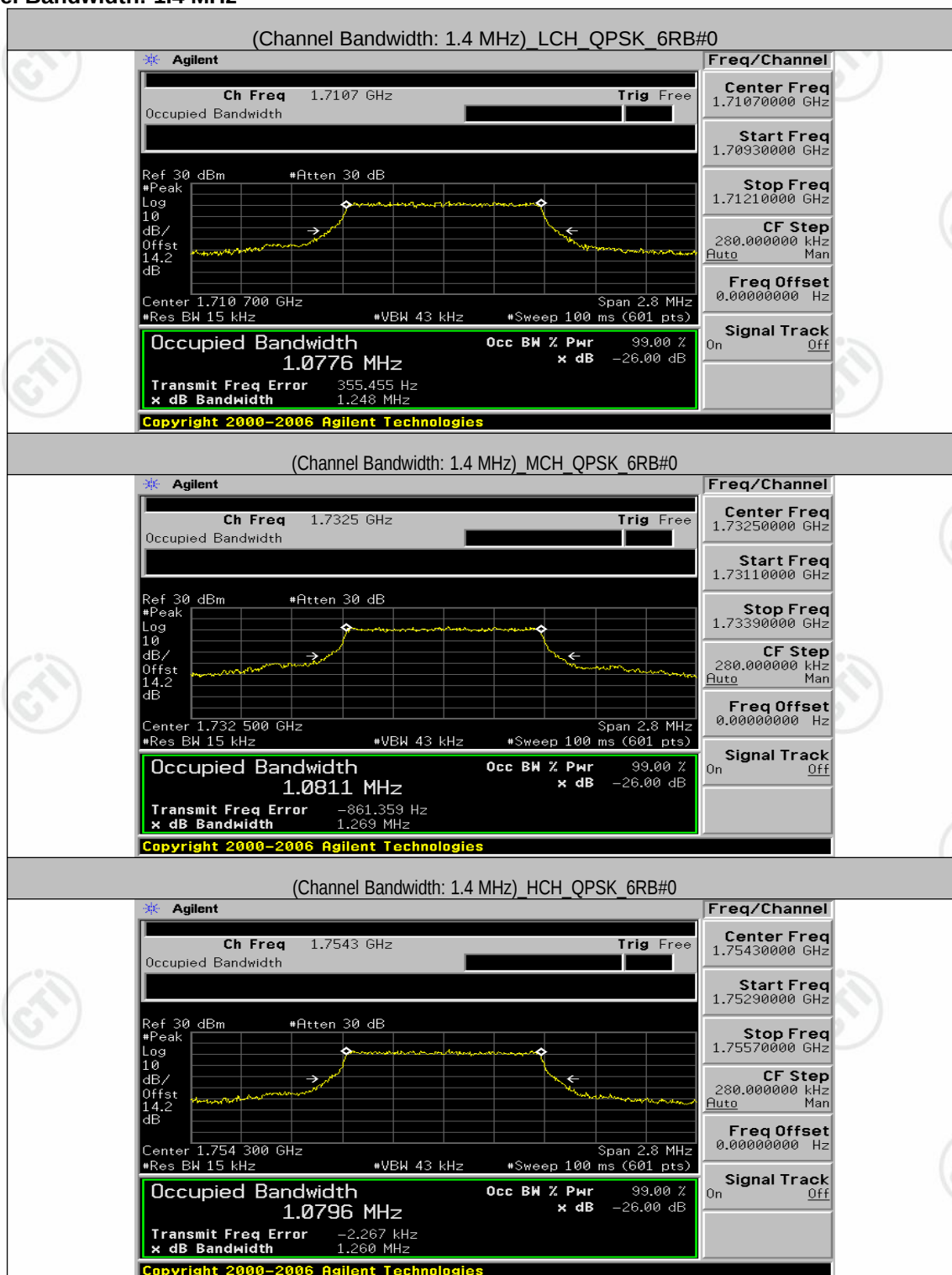
| Channel Bandwidth: 15MHz |         |                  |        |                          |                      |         |
|--------------------------|---------|------------------|--------|--------------------------|----------------------|---------|
| Modulation               | Channel | RB Configuration |        | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
|                          |         | Size             | Offset |                          |                      |         |
| QPSK                     | LCH     | 75               | 0      | 13.3567                  | 14.597               | PASS    |
|                          | MCH     | 75               | 0      | 13.3971                  | 14.614               | PASS    |
|                          | HCH     | 75               | 0      | 13.3666                  | 14.556               | PASS    |
| 16QAM                    | LCH     | 75               | 0      | 13.3666                  | 14.590               | PASS    |
|                          | MCH     | 75               | 0      | 13.3979                  | 14.447               | PASS    |
|                          | HCH     | 75               | 0      | 13.3736                  | 14.603               | PASS    |

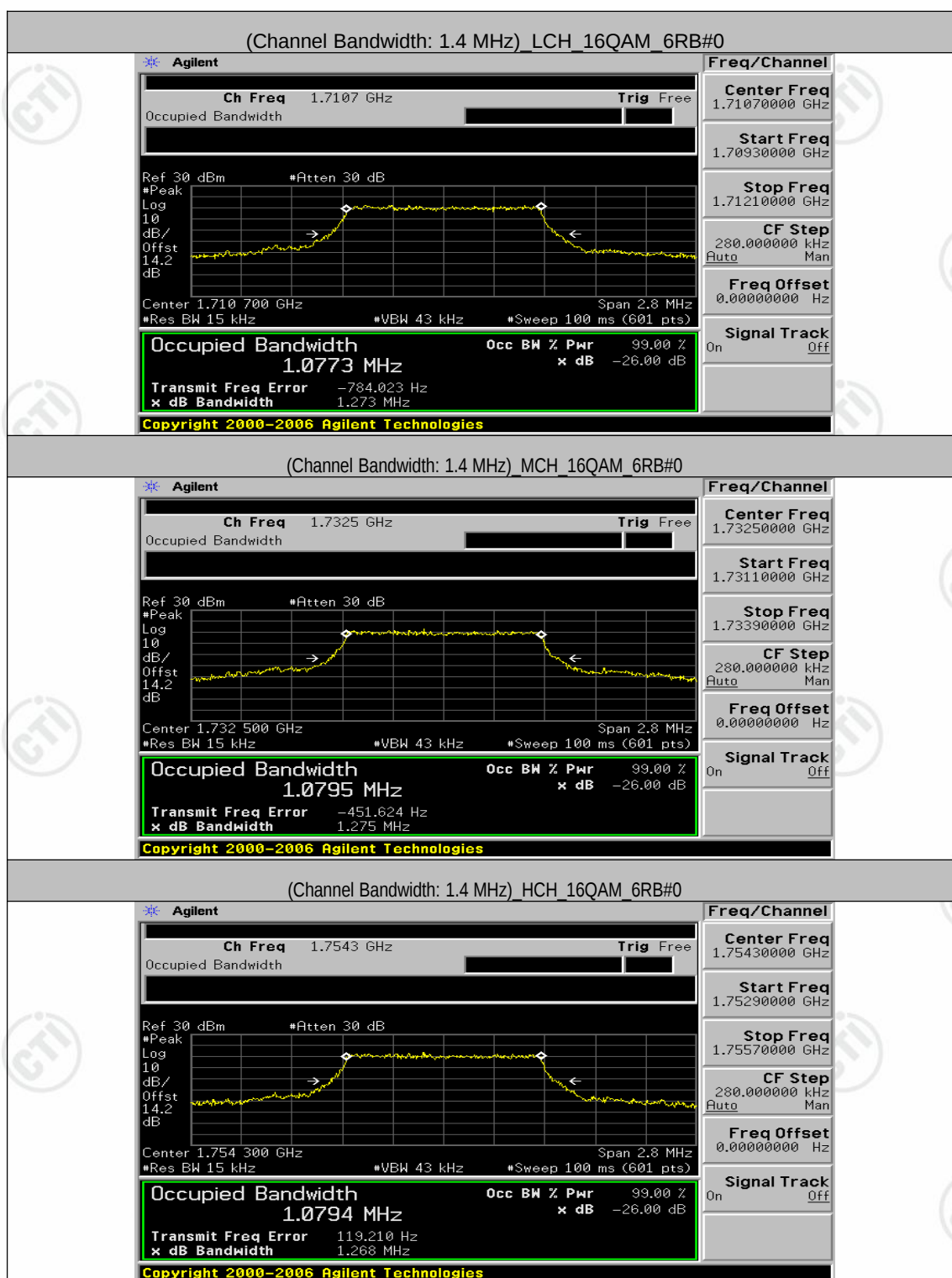
**Channel Bandwidth: 20 MHz**

| Channel Bandwidth: 20MHz |         |                  |        |                          |                      |         |
|--------------------------|---------|------------------|--------|--------------------------|----------------------|---------|
| Modulation               | Channel | RB Configuration |        | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
|                          |         | Size             | Offset |                          |                      |         |
| QPSK                     | LCH     | 100              | 0      | 17.7828                  | 19.162               | PASS    |
|                          | MCH     | 100              | 0      | 17.8260                  | 19.278               | PASS    |
|                          | HCH     | 100              | 0      | 17.8402                  | 19.104               | PASS    |
| 16QAM                    | LCH     | 100              | 0      | 17.7866                  | 19.195               | PASS    |
|                          | MCH     | 100              | 0      | 17.8363                  | 19.322               | PASS    |
|                          | HCH     | 100              | 0      | 17.8053                  | 19.304               | PASS    |

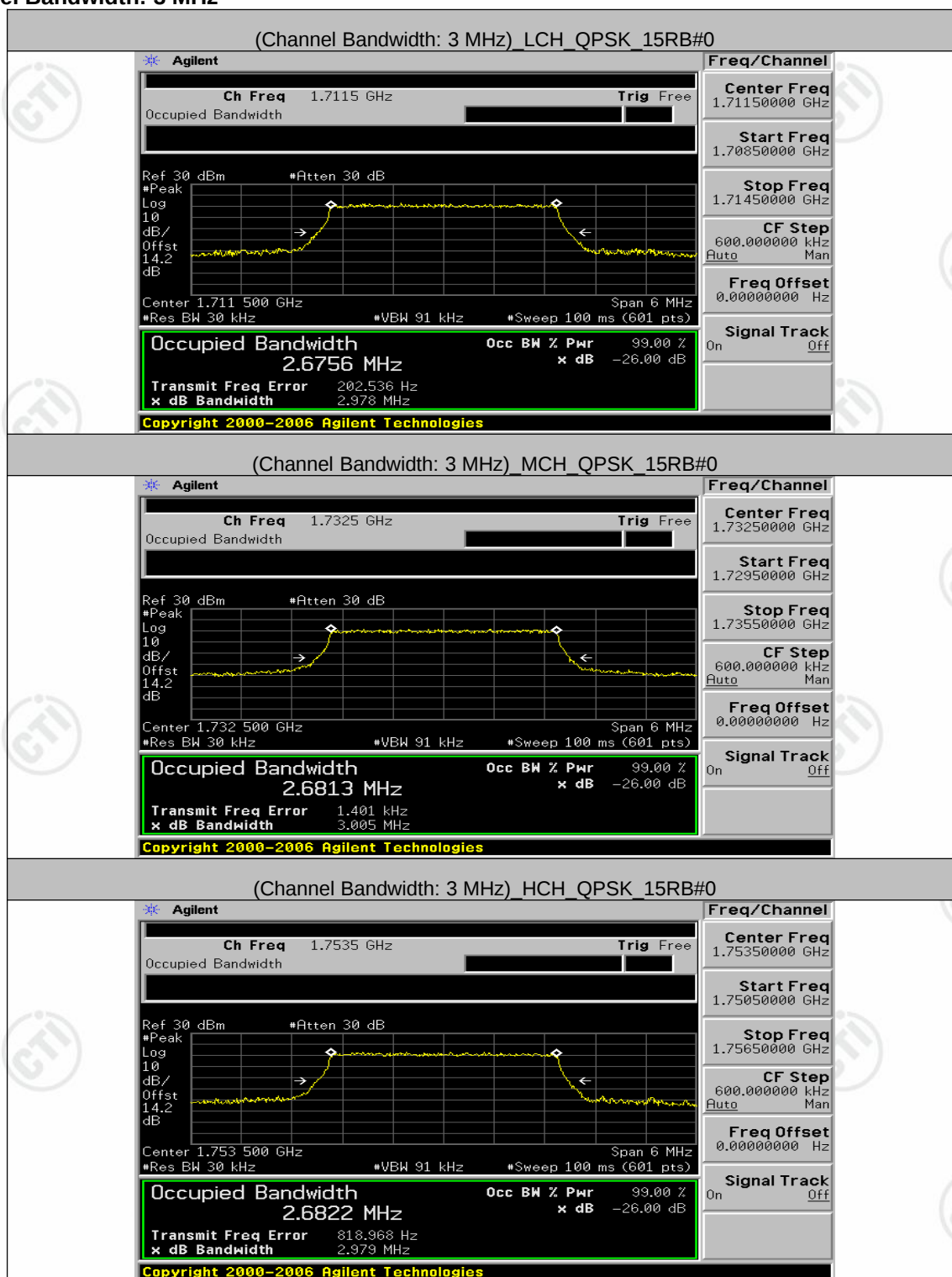
# Test Graphs

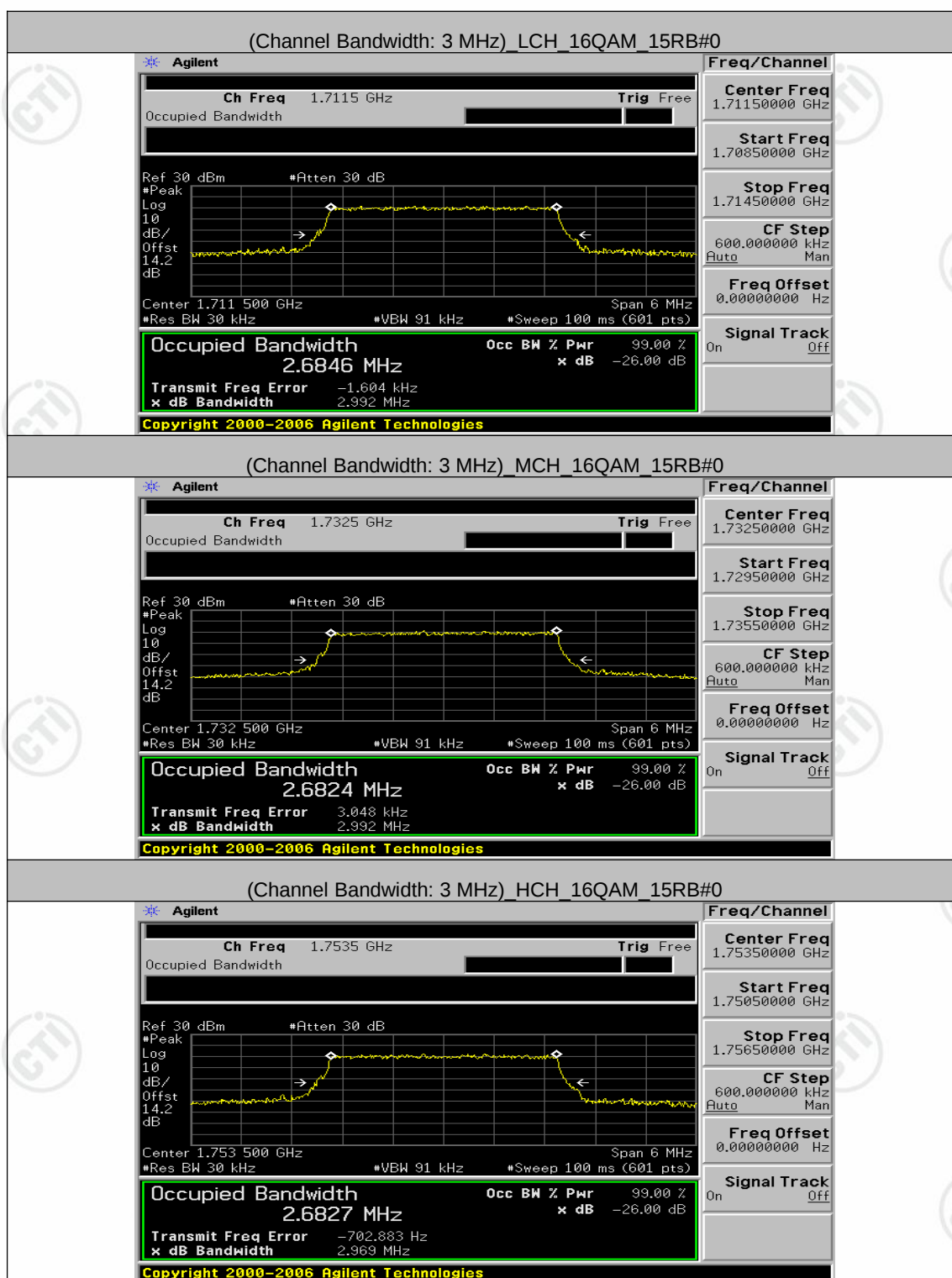
Channel Bandwidth: 1.4 MHz



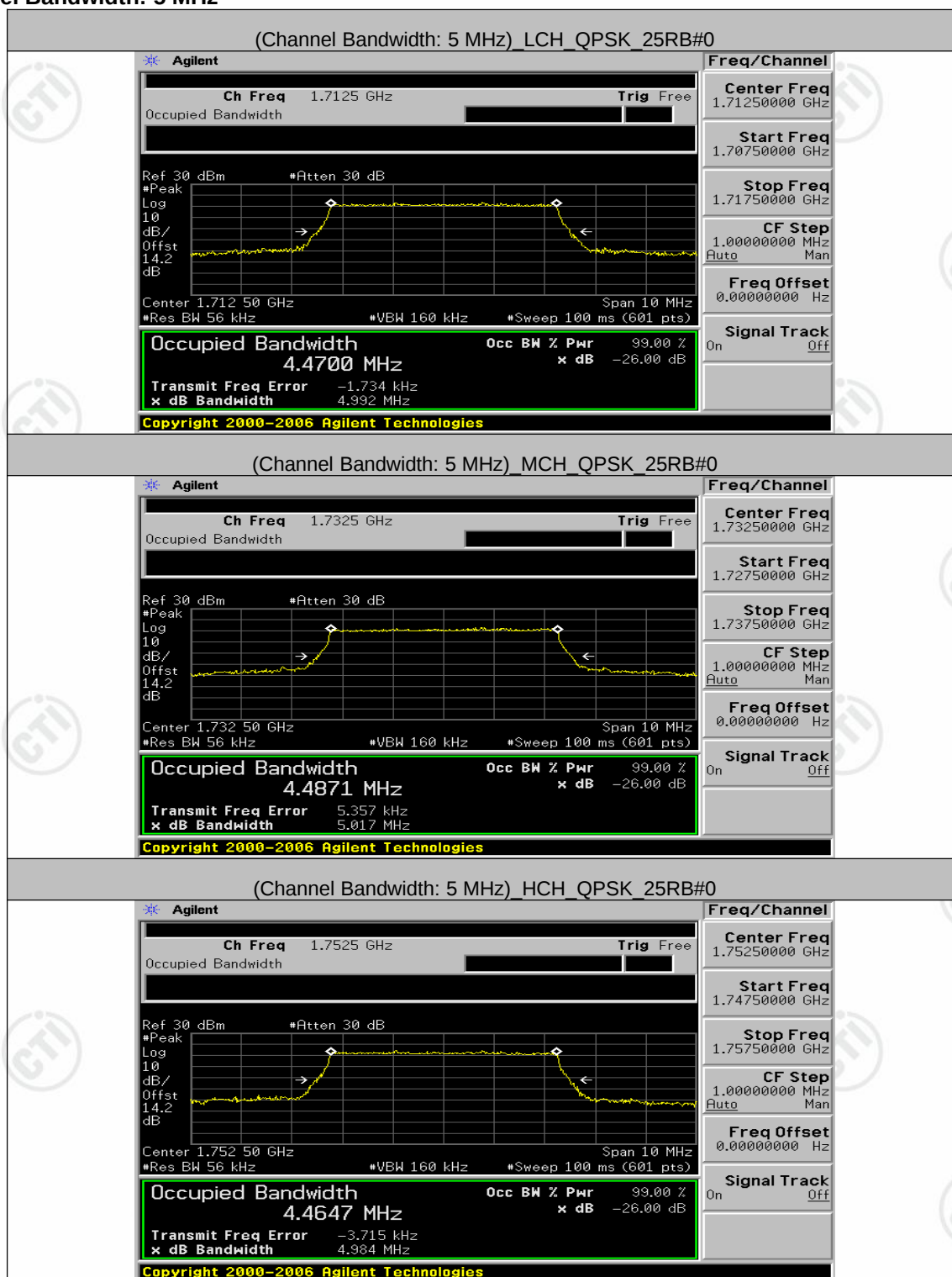


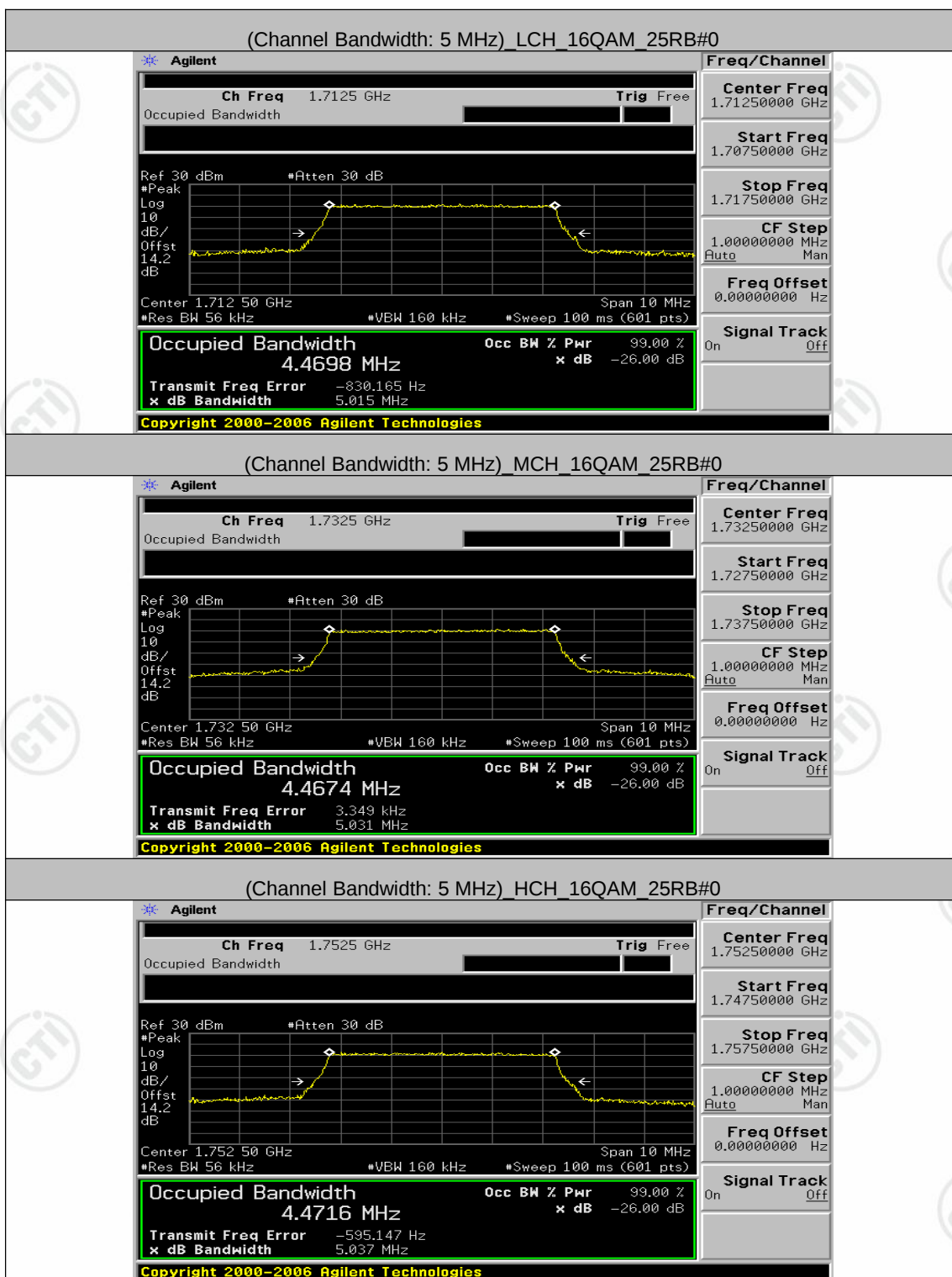
**Channel Bandwidth: 3 MHz**



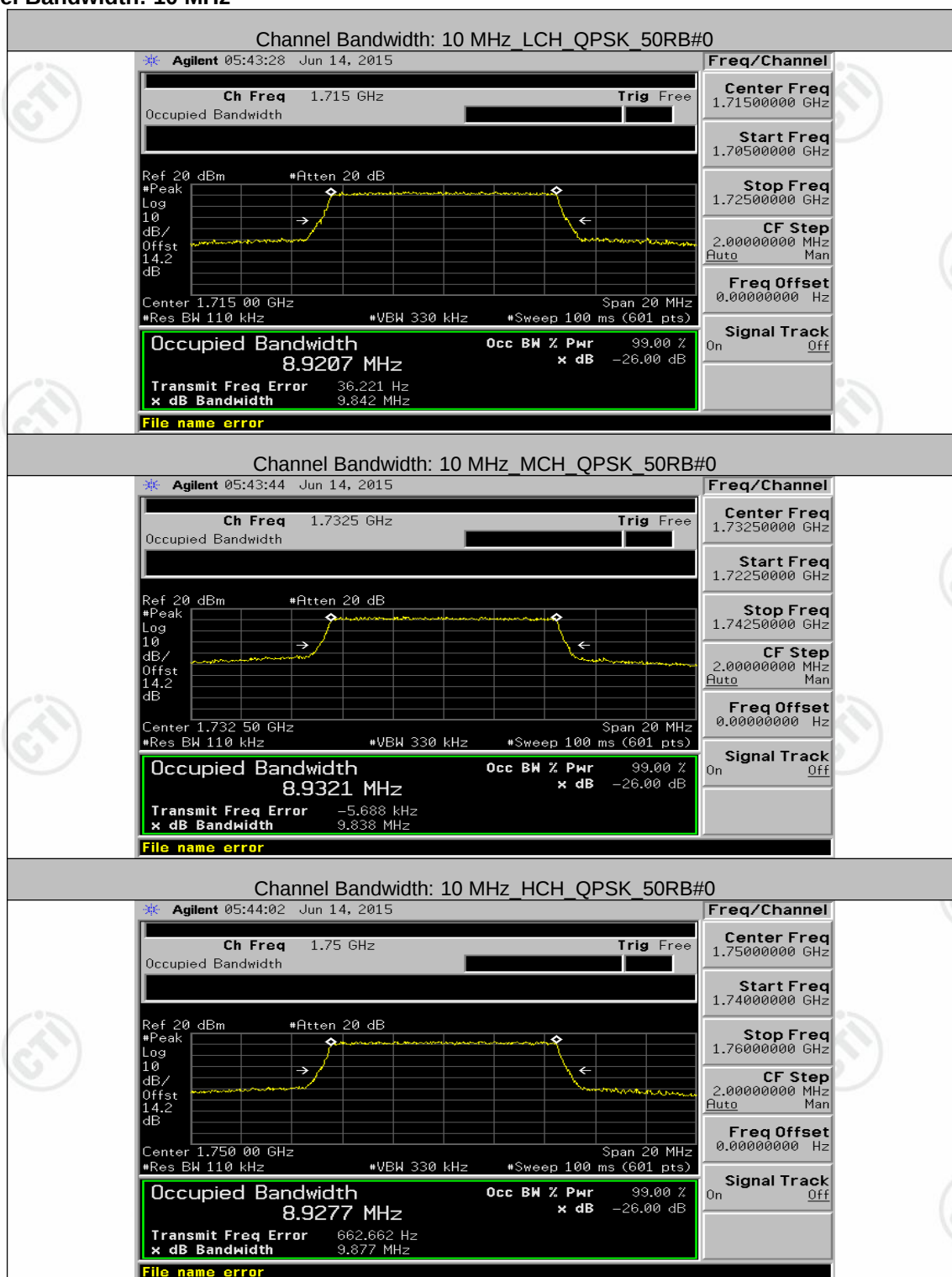


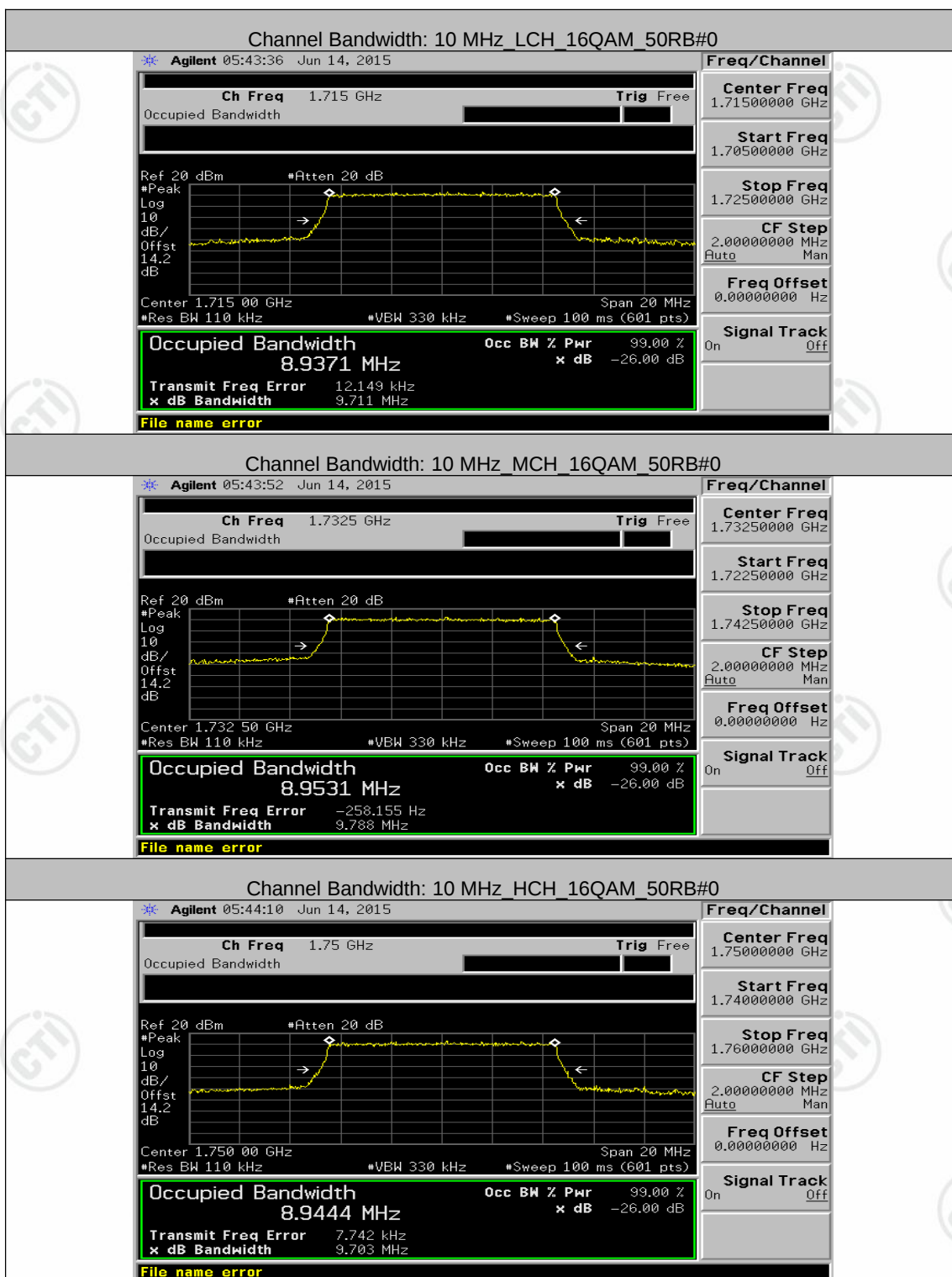
**Channel Bandwidth: 5 MHz**



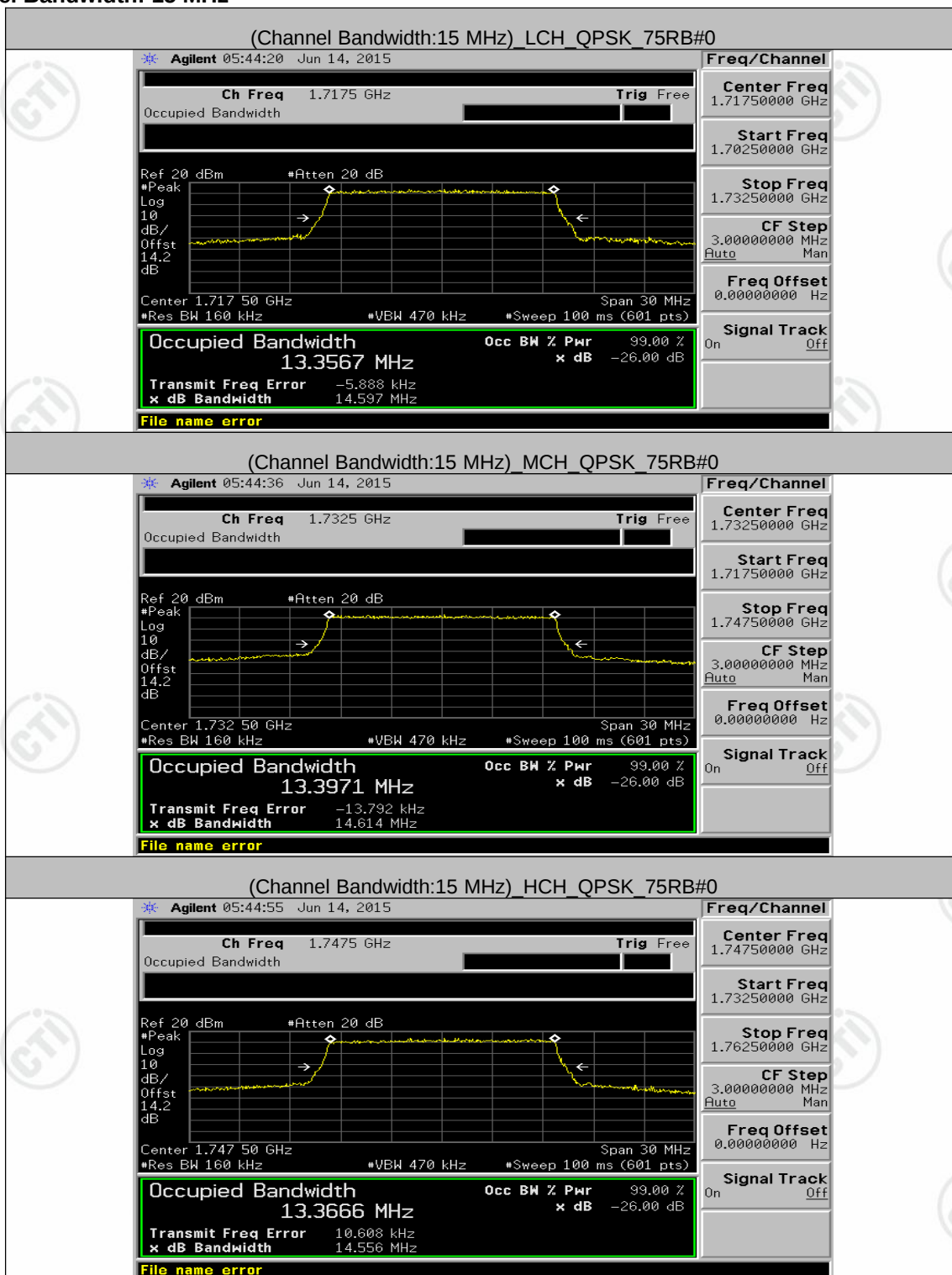


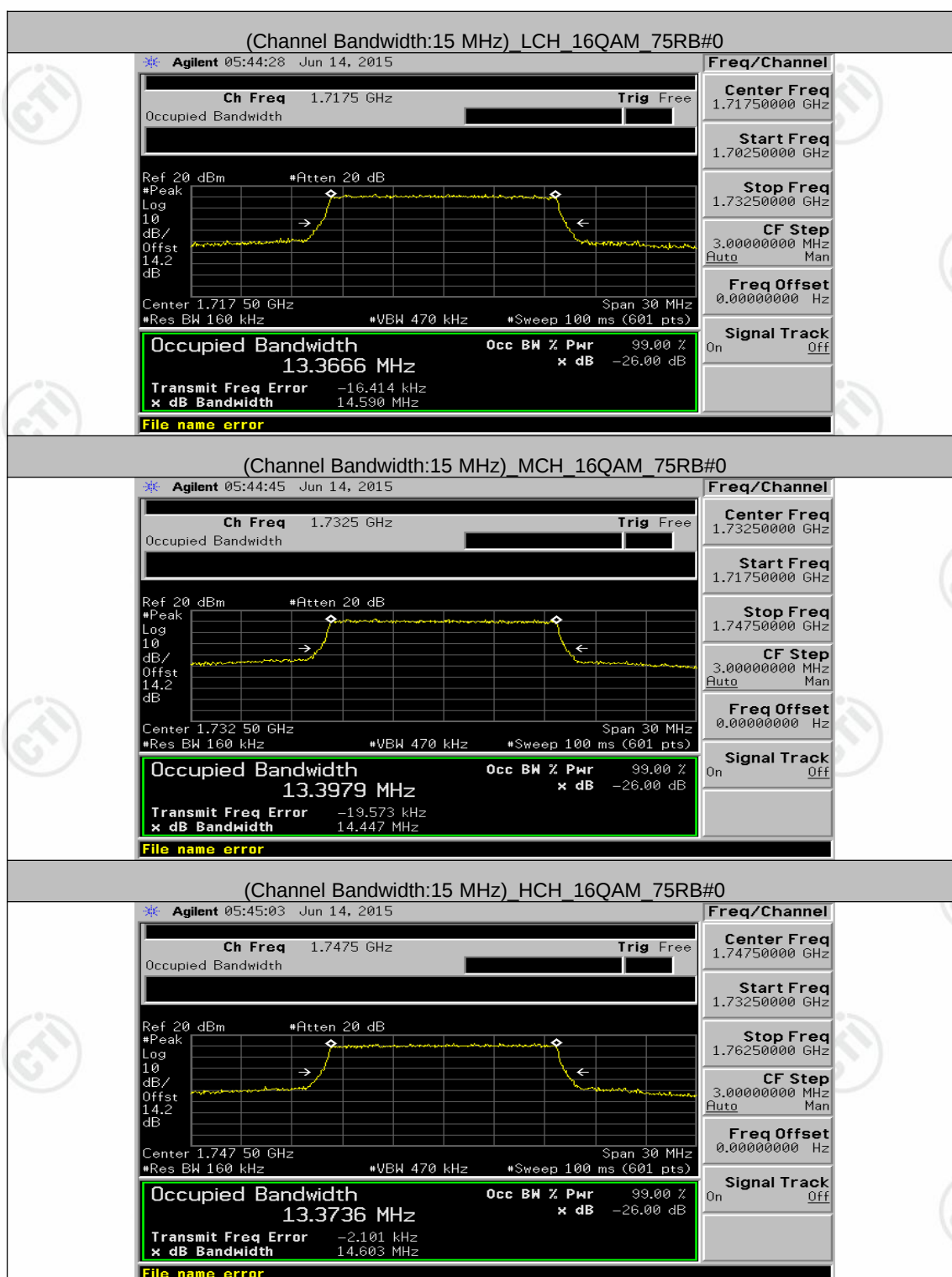
Channel Bandwidth: 10 MHz



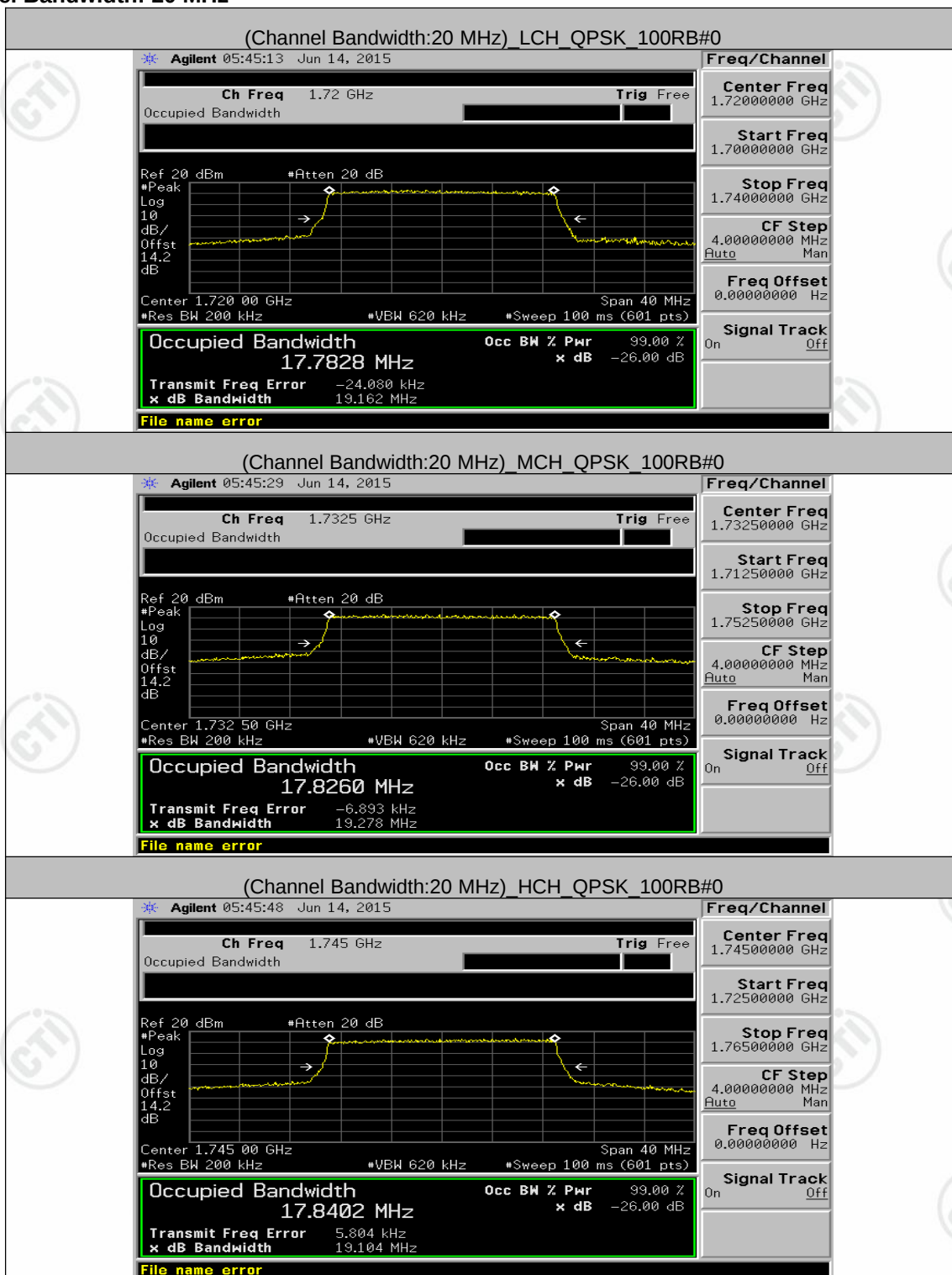


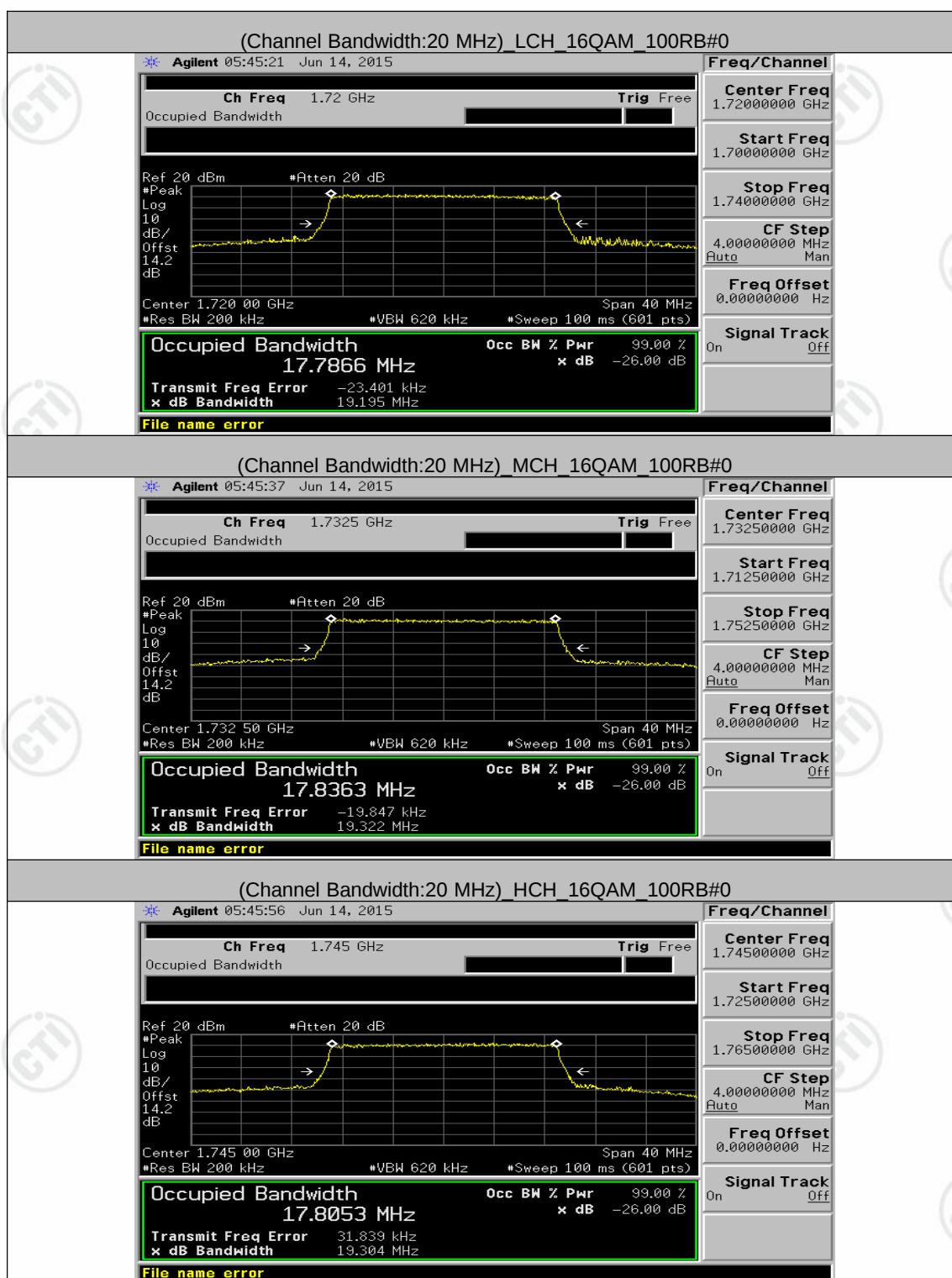
Channel Bandwidth: 15 MHz





Channel Bandwidth: 20 MHz

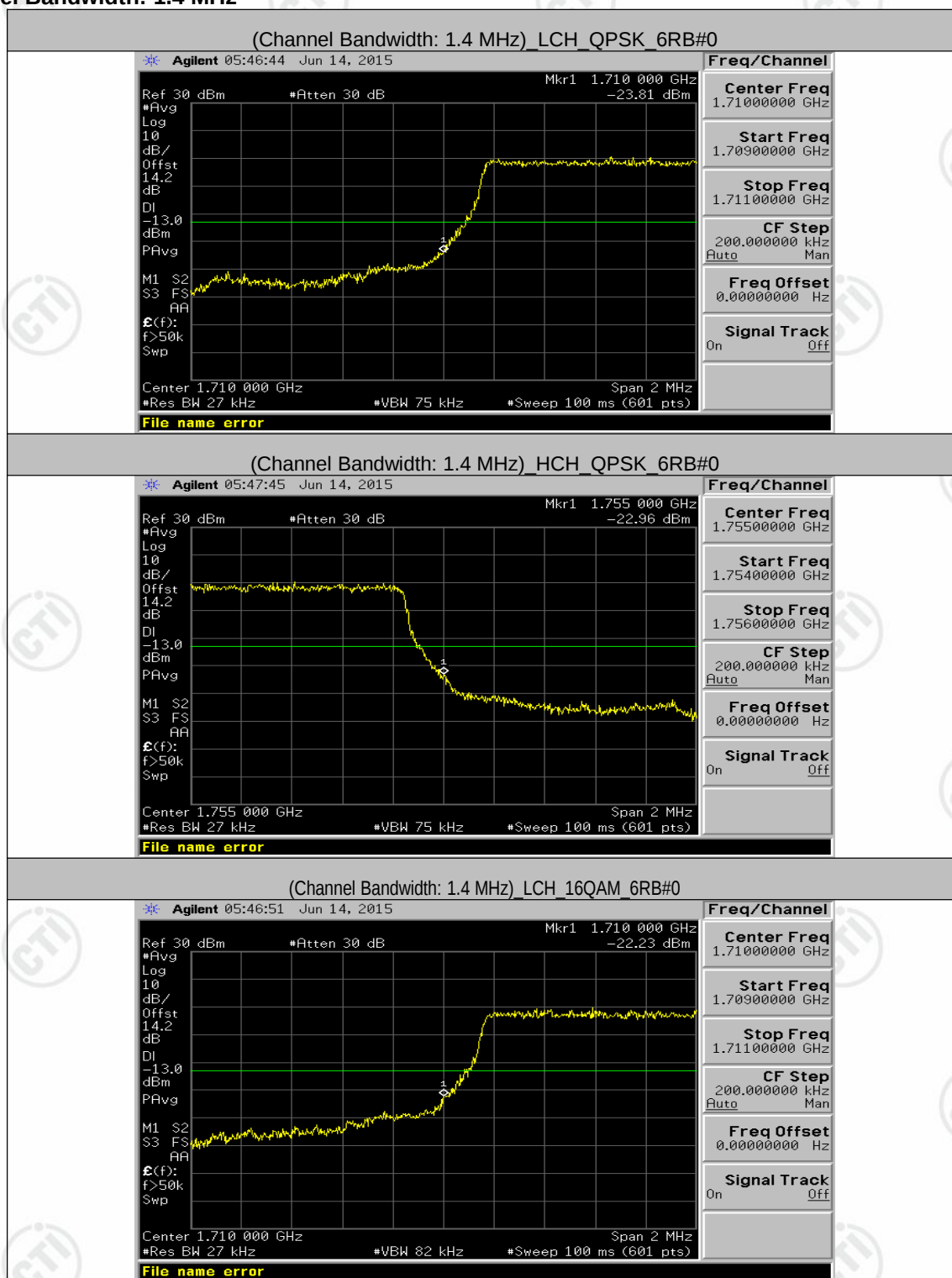


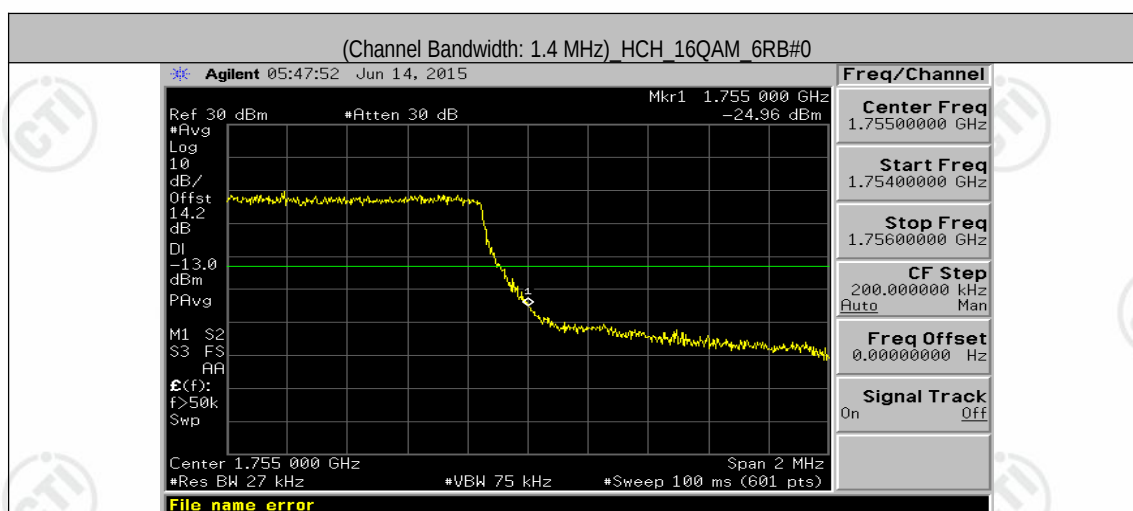


## Appendix D: Band Edge

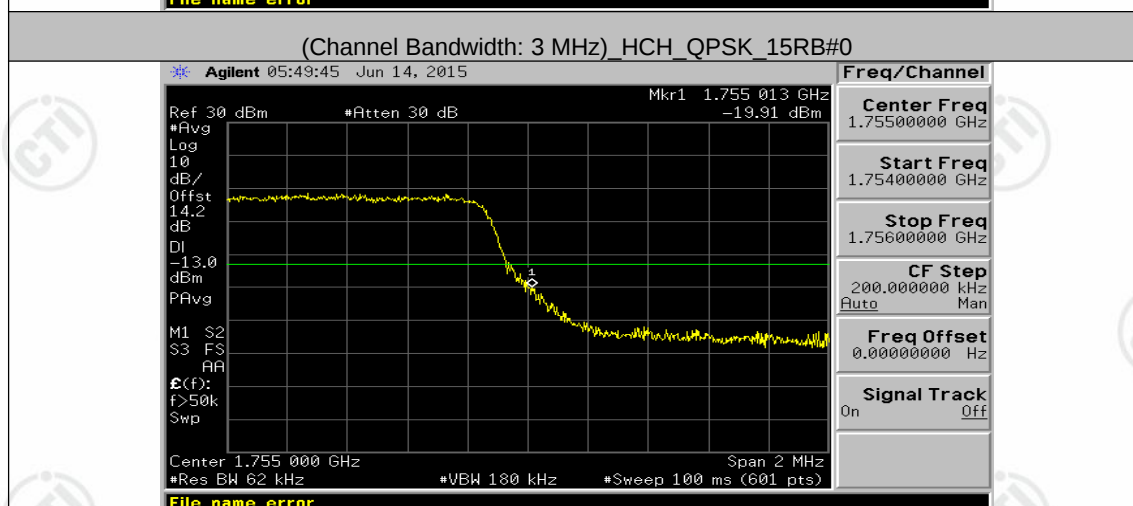
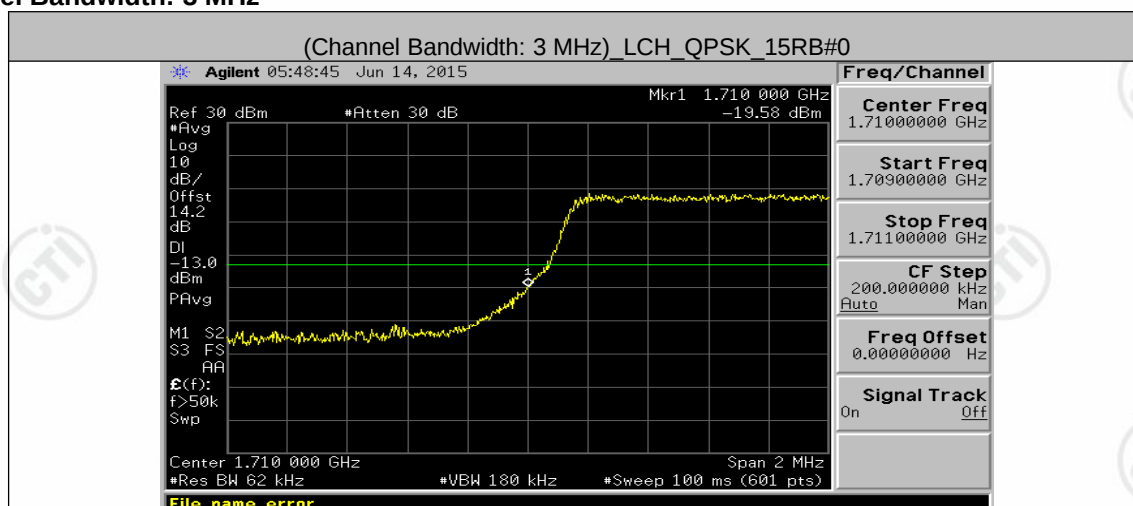
### Test Graphs

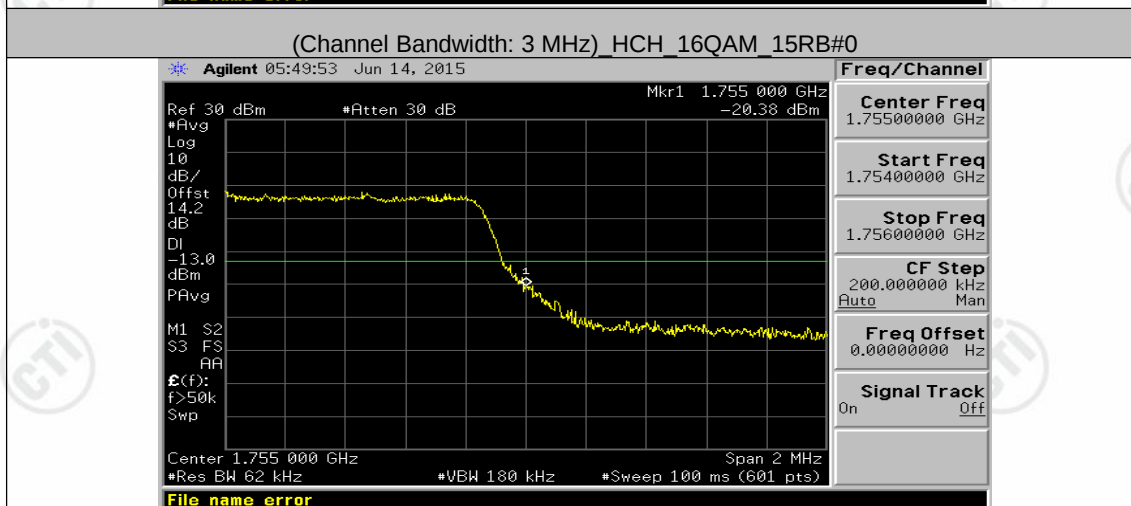
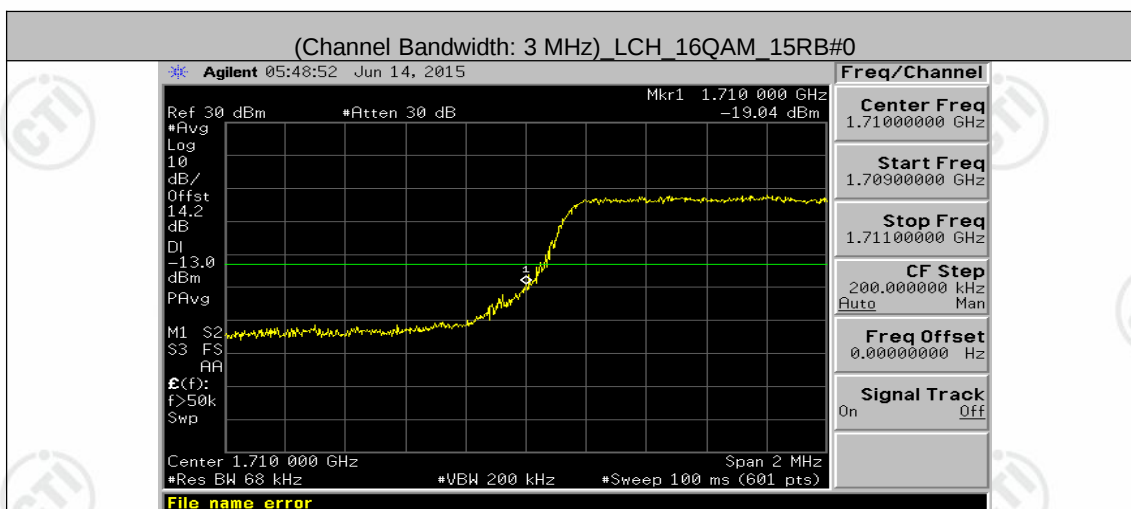
Channel Bandwidth: 1.4 MHz



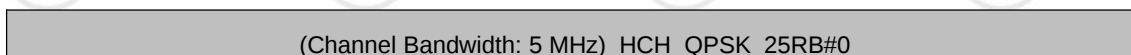
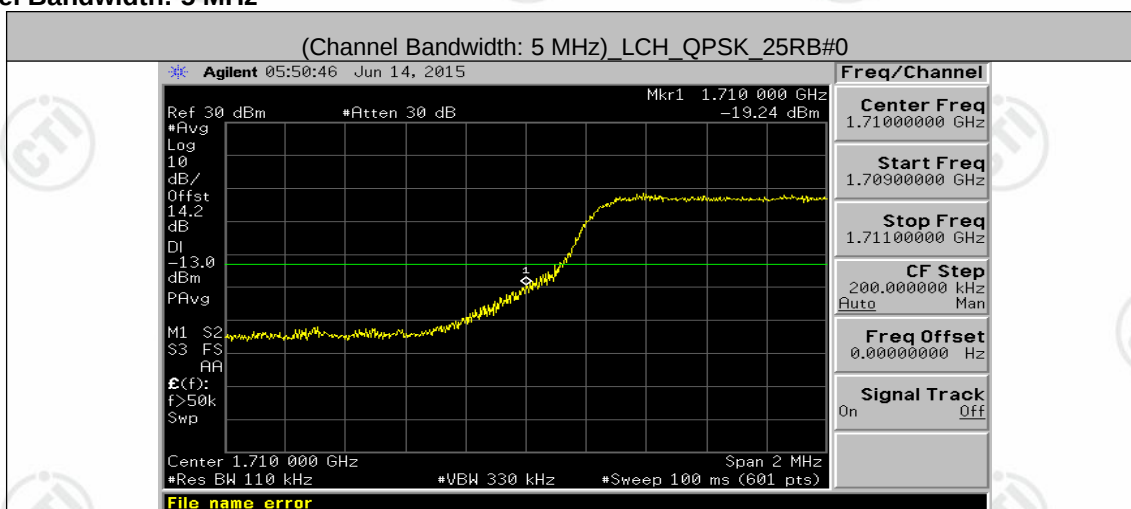


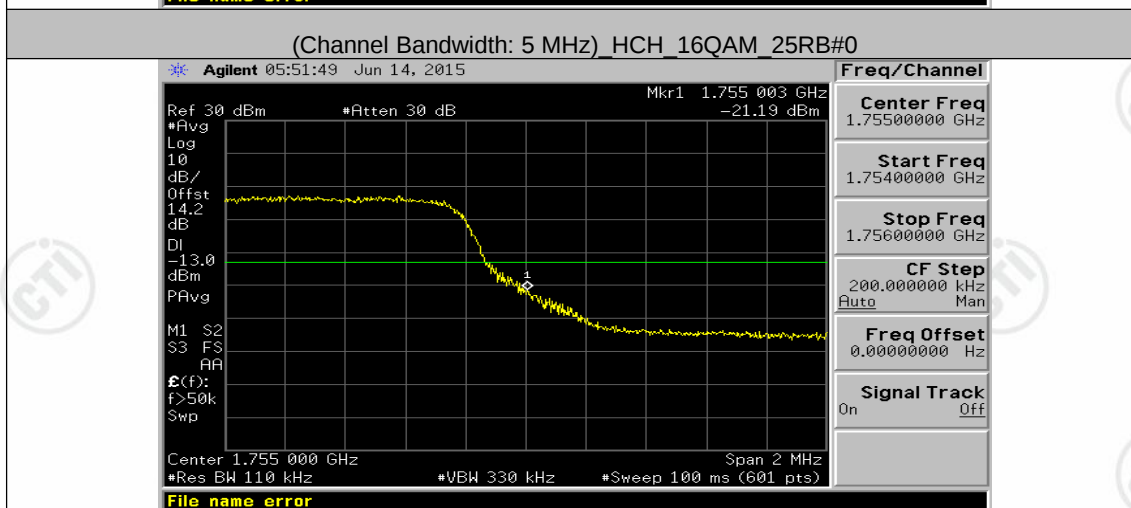
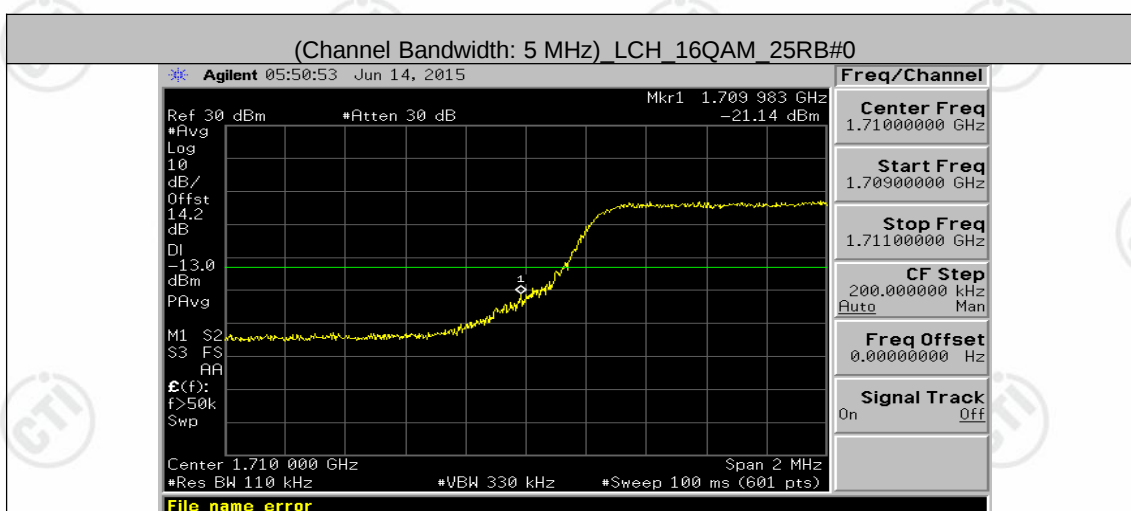
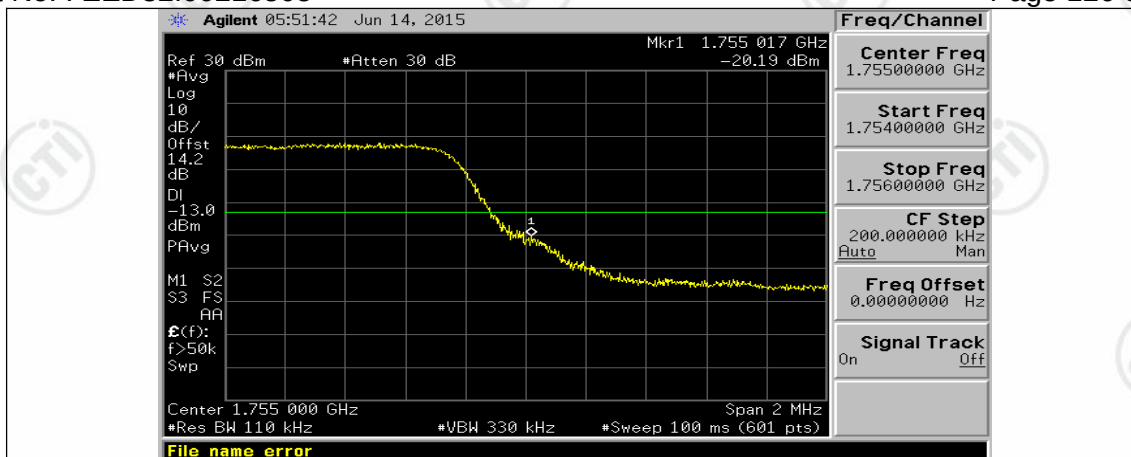
### Channel Bandwidth: 3 MHz



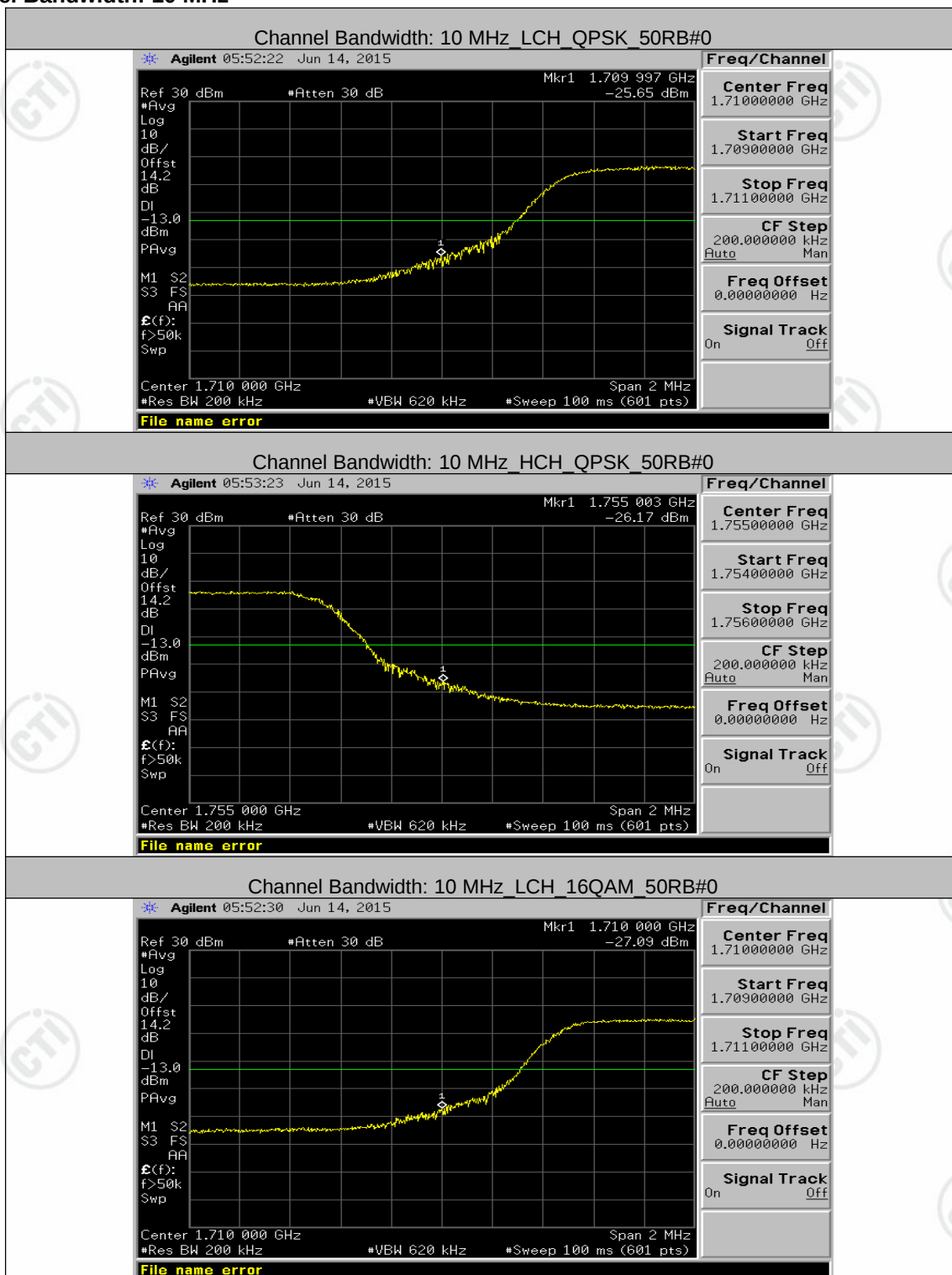


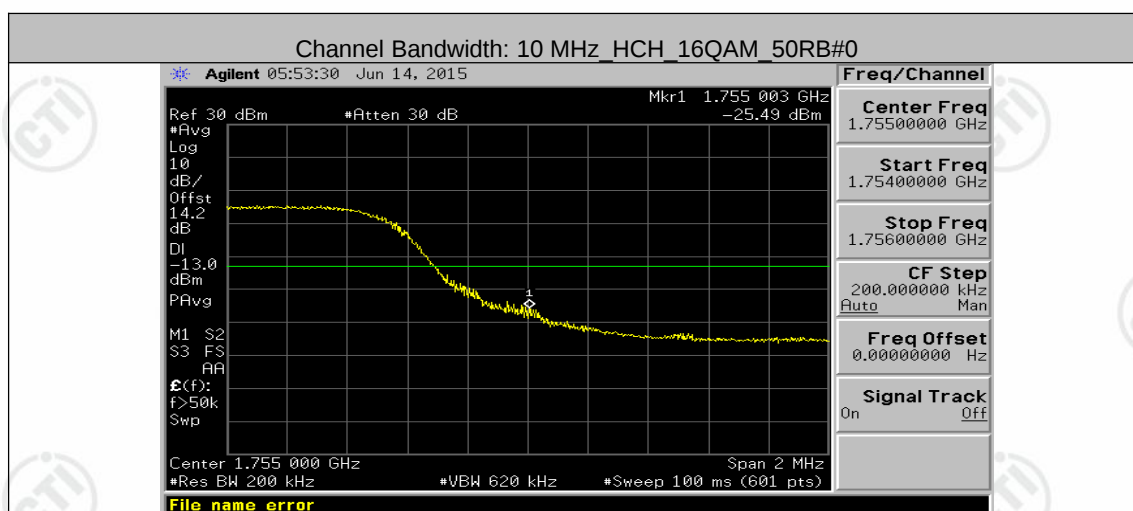
### Channel Bandwidth: 5 MHz



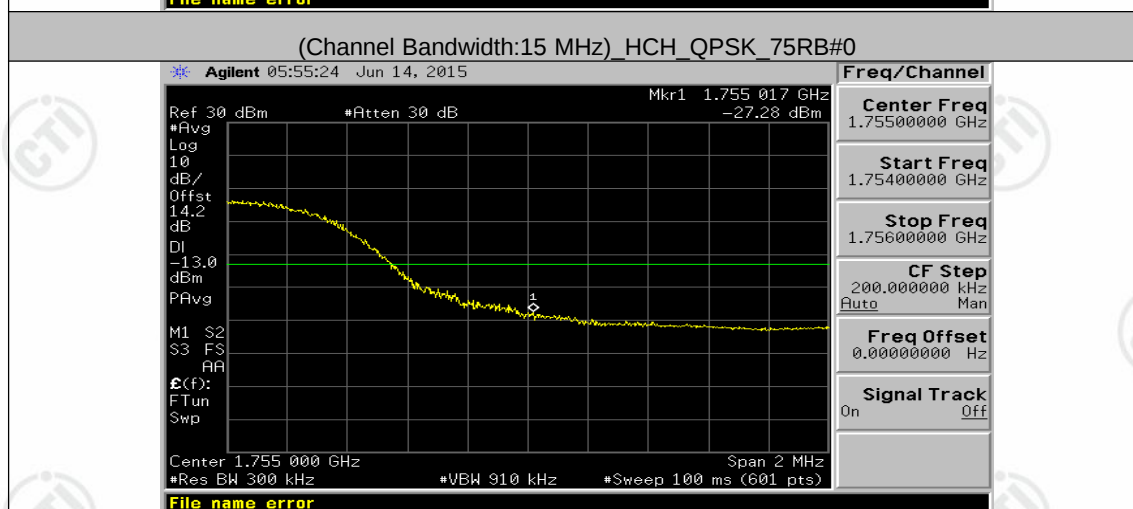
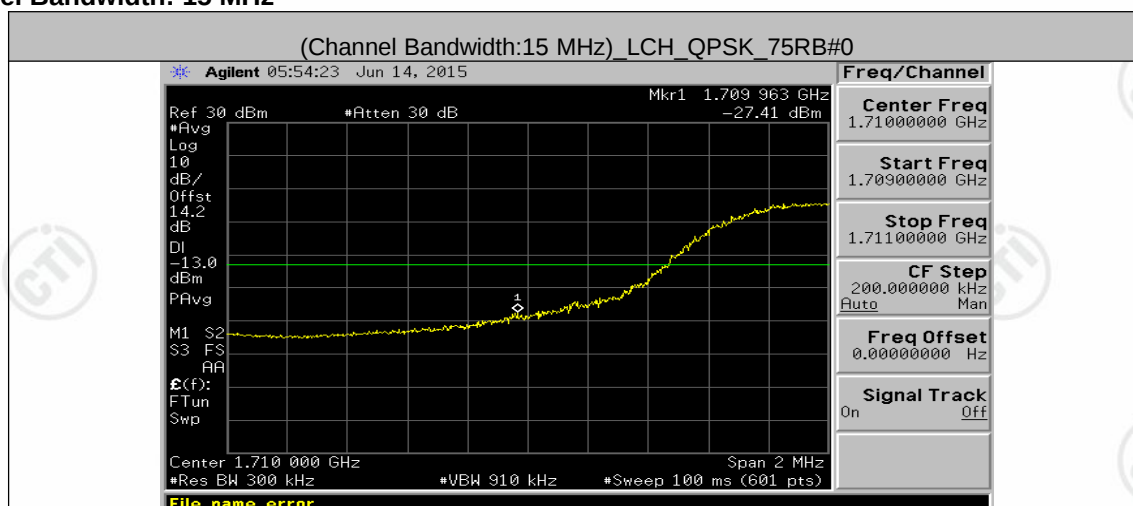


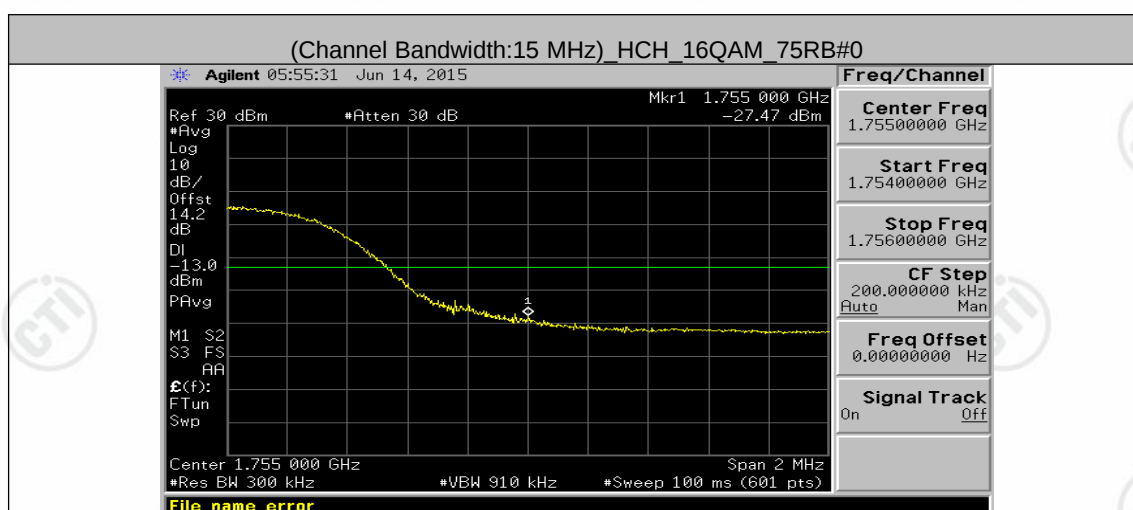
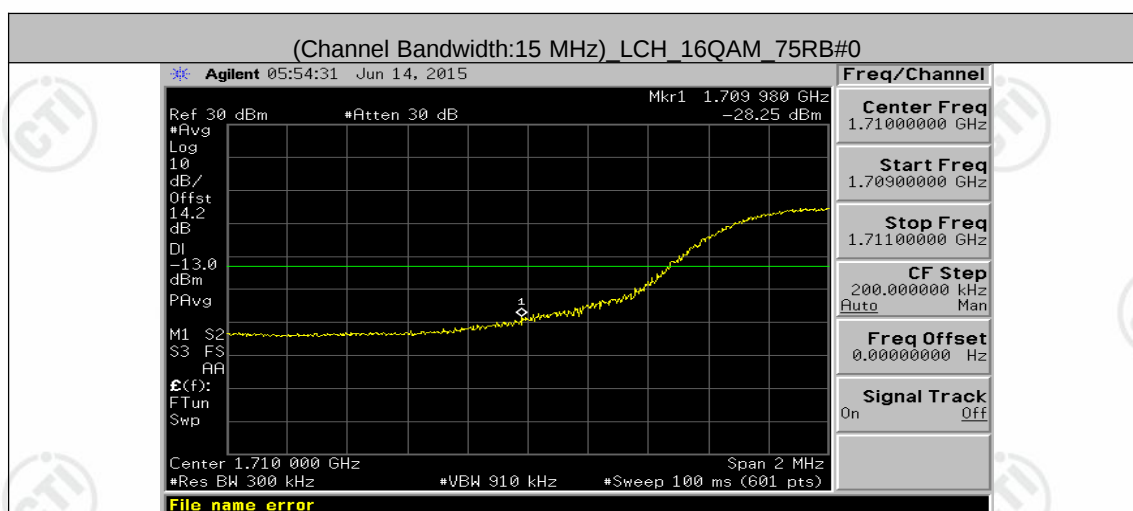
Channel Bandwidth: 10 MHz



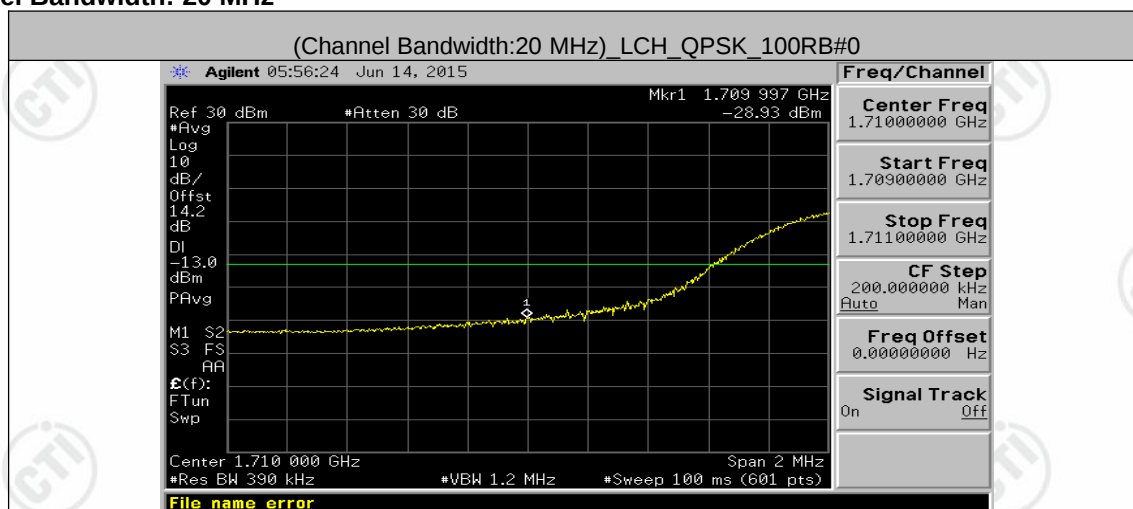


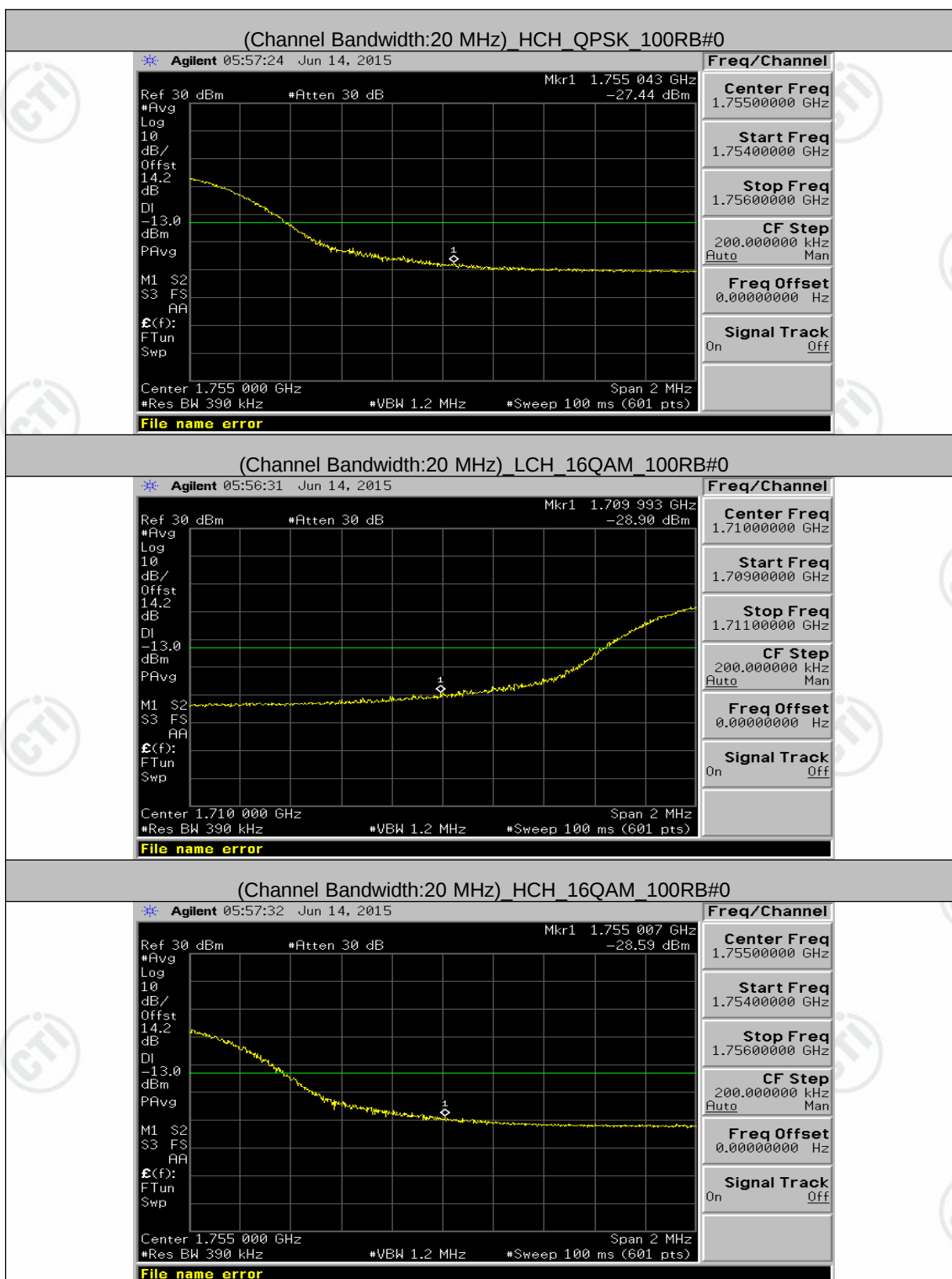
Channel Bandwidth: 15 MHz





### Channel Bandwidth: 20 MHz

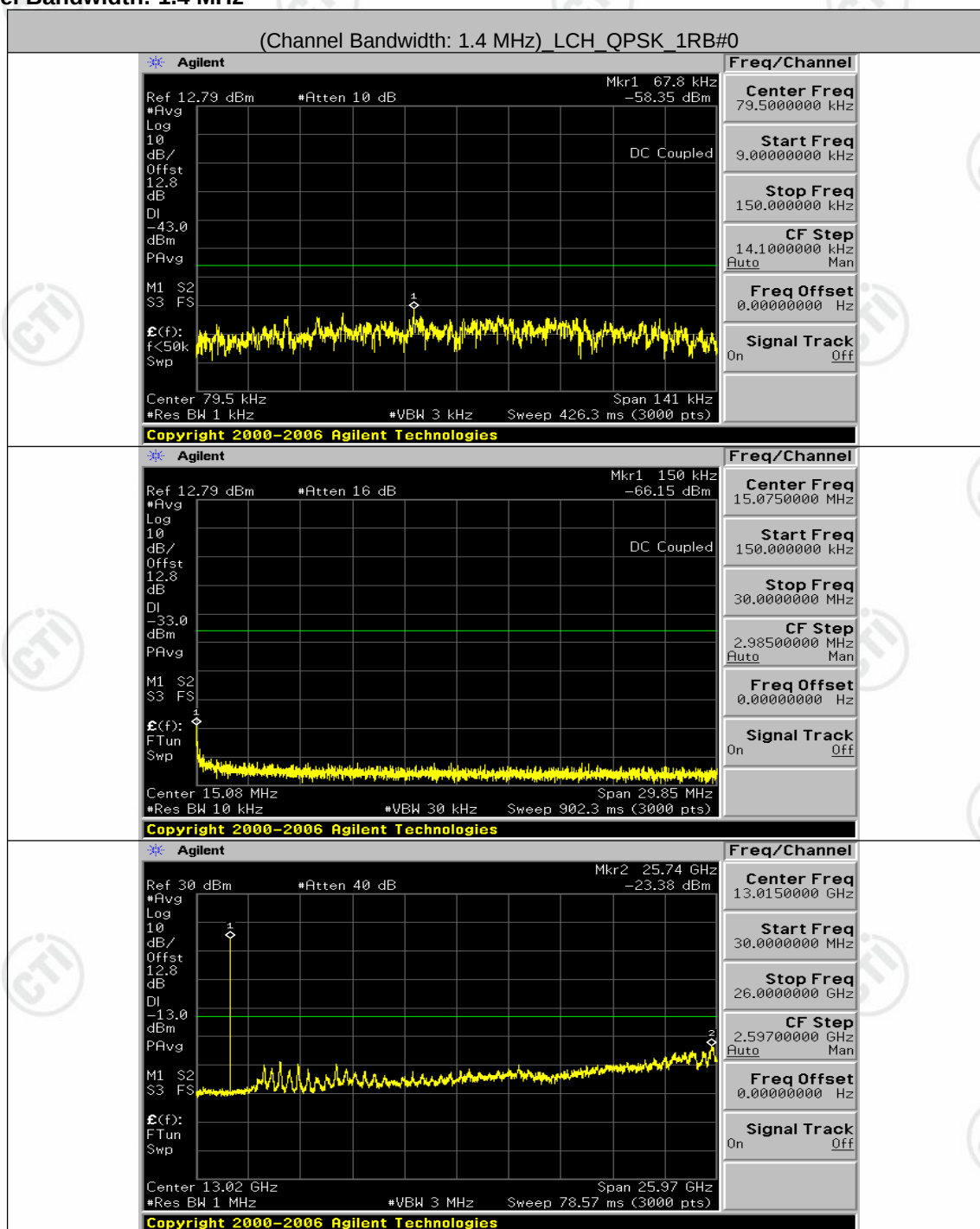


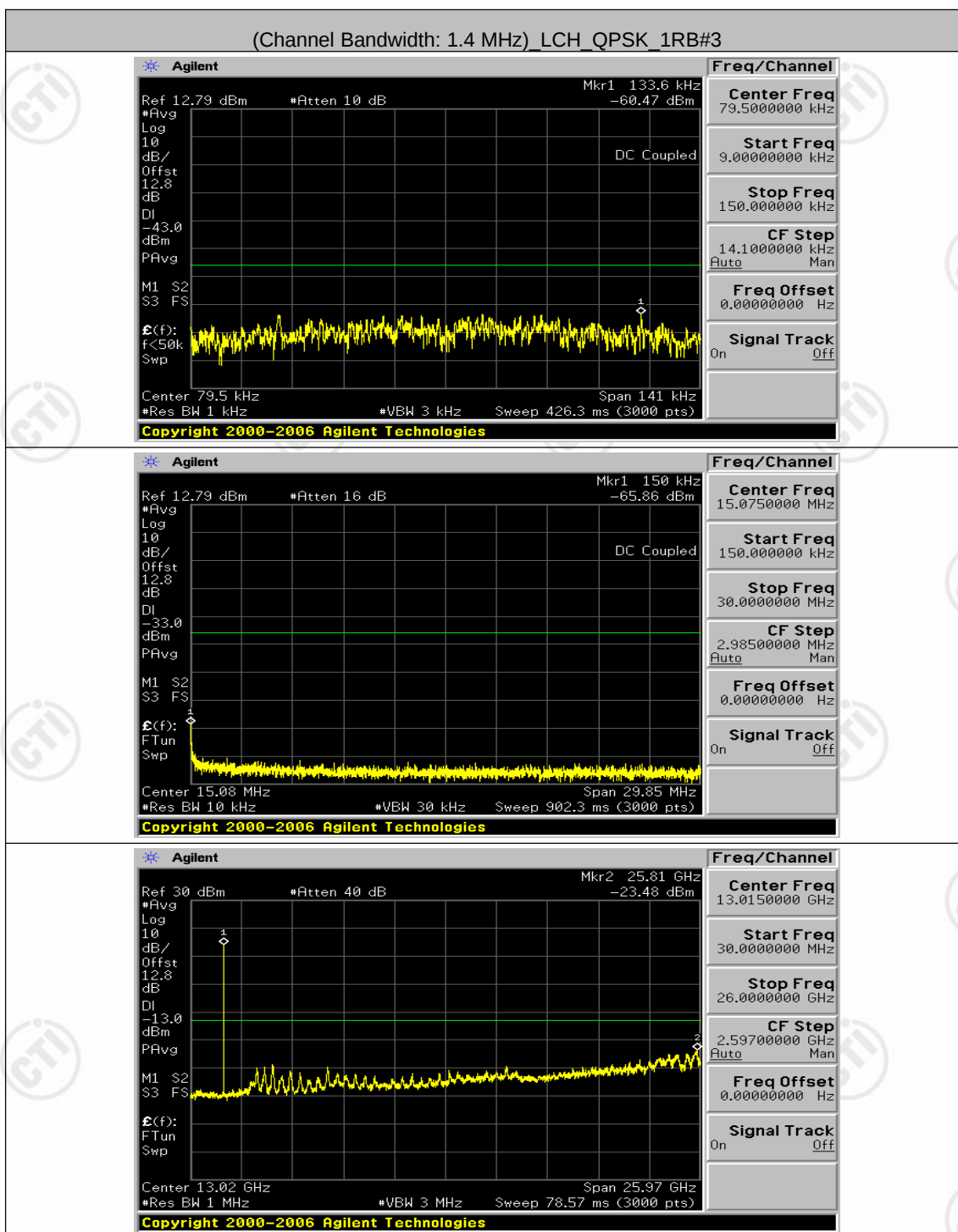


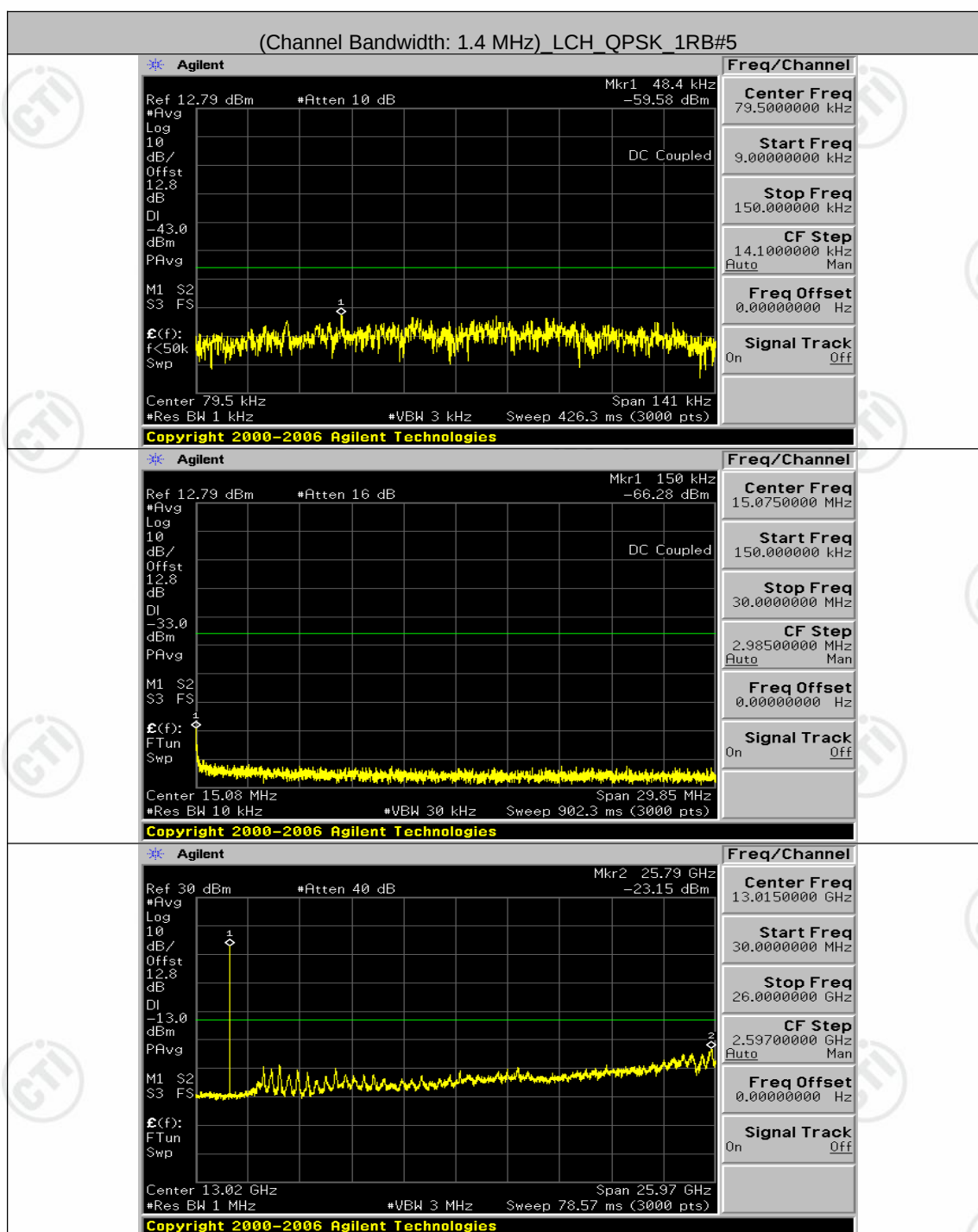
## Appendix E: Conducted Spurious Emission

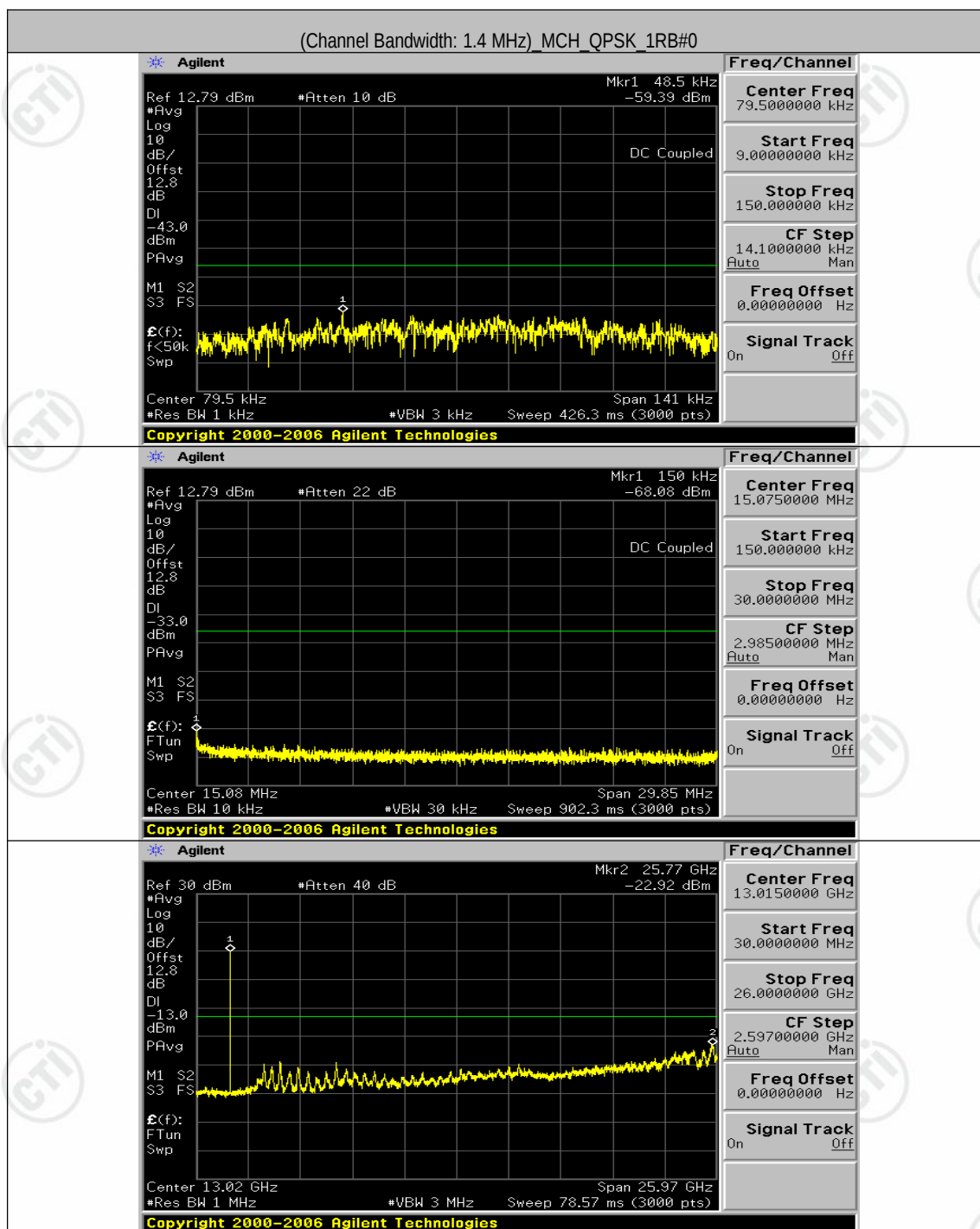
### Test Graphs

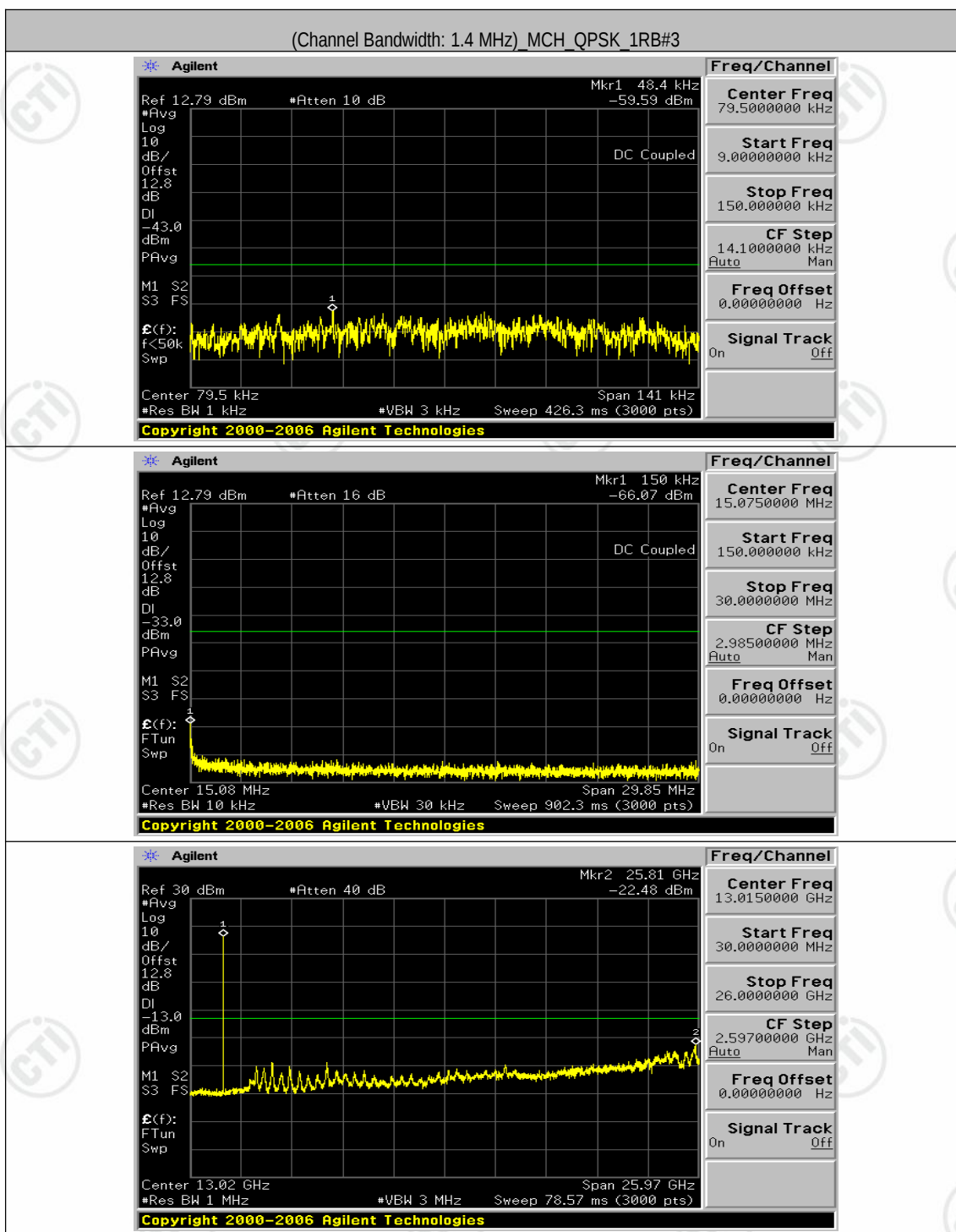
Channel Bandwidth: 1.4 MHz

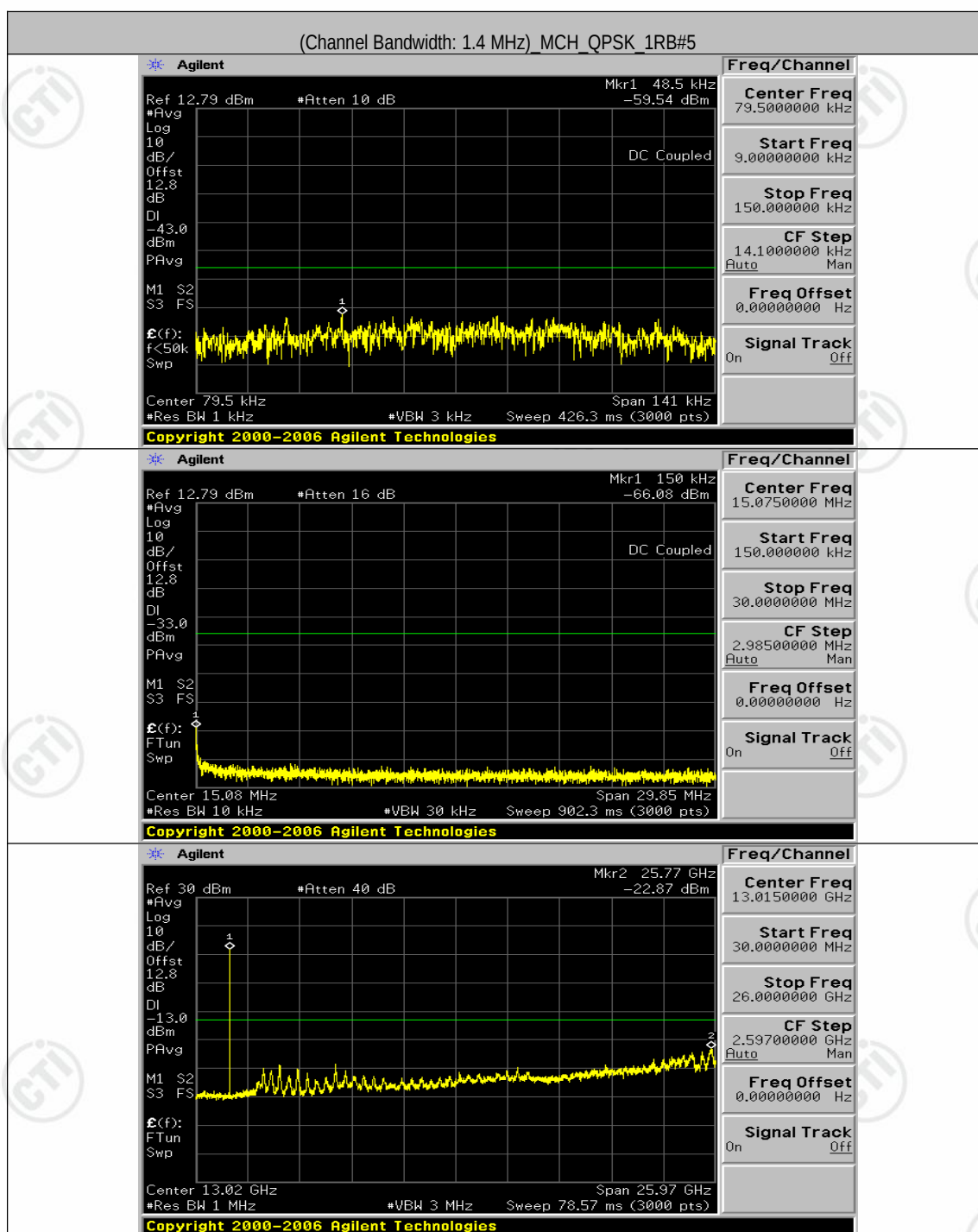


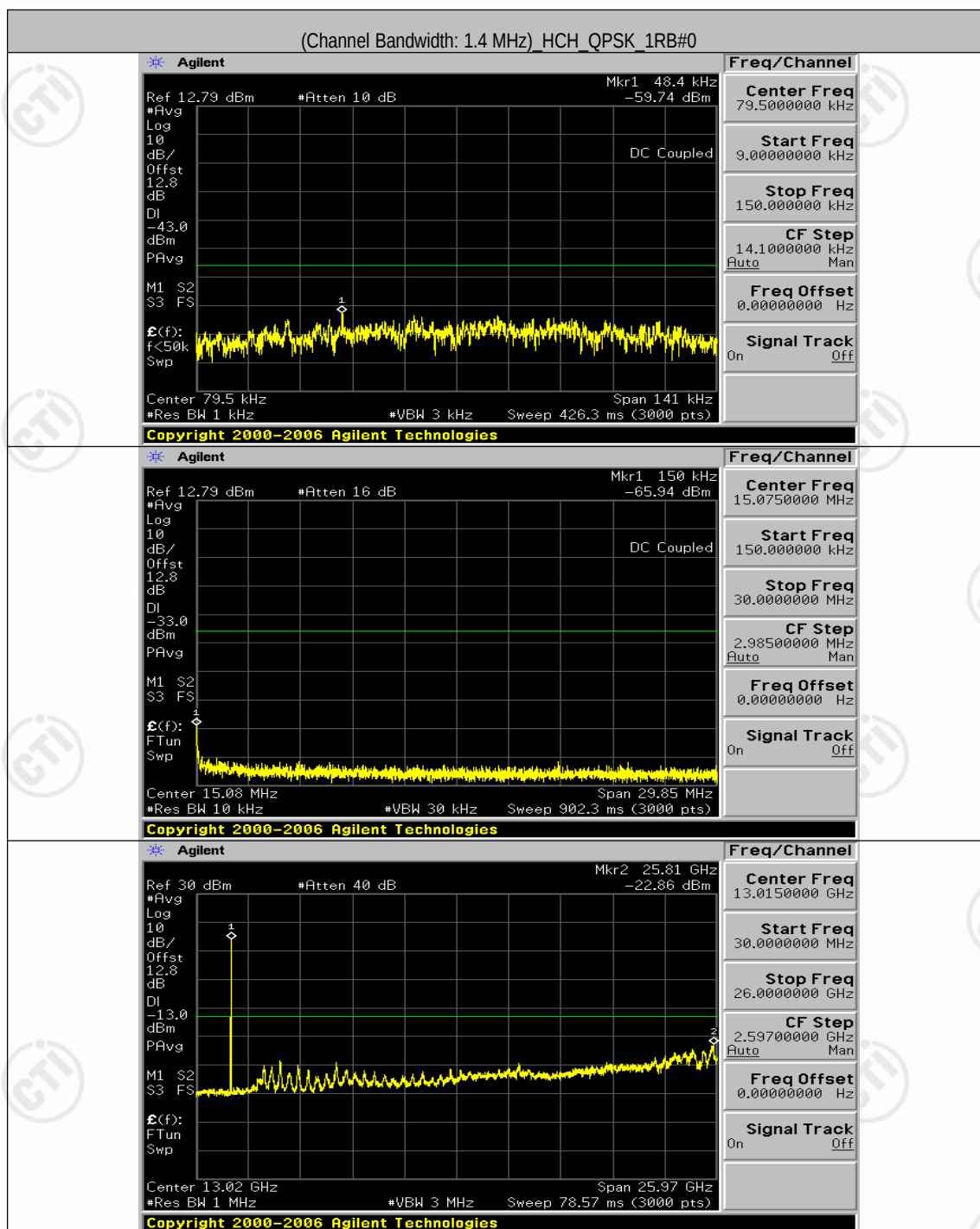


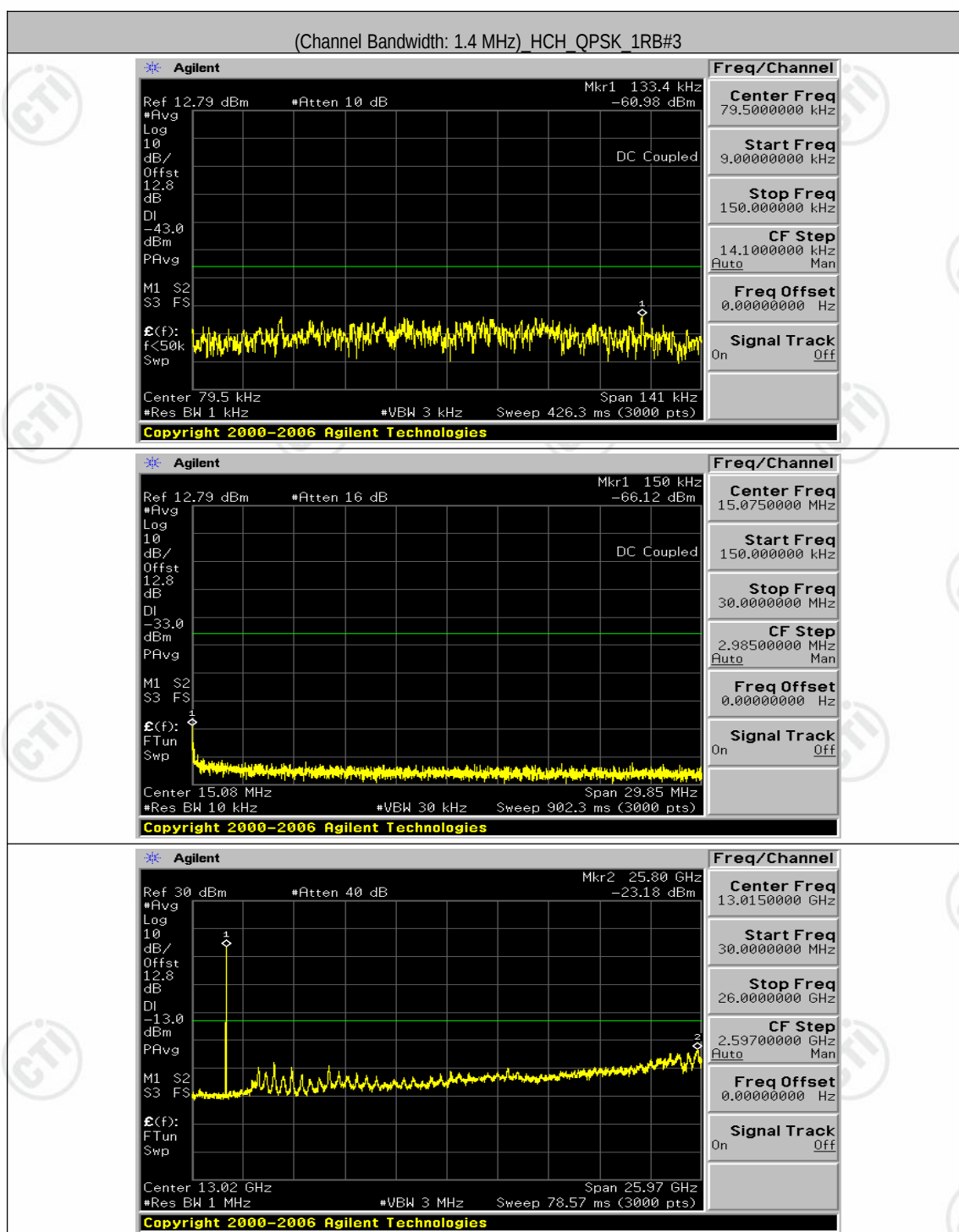


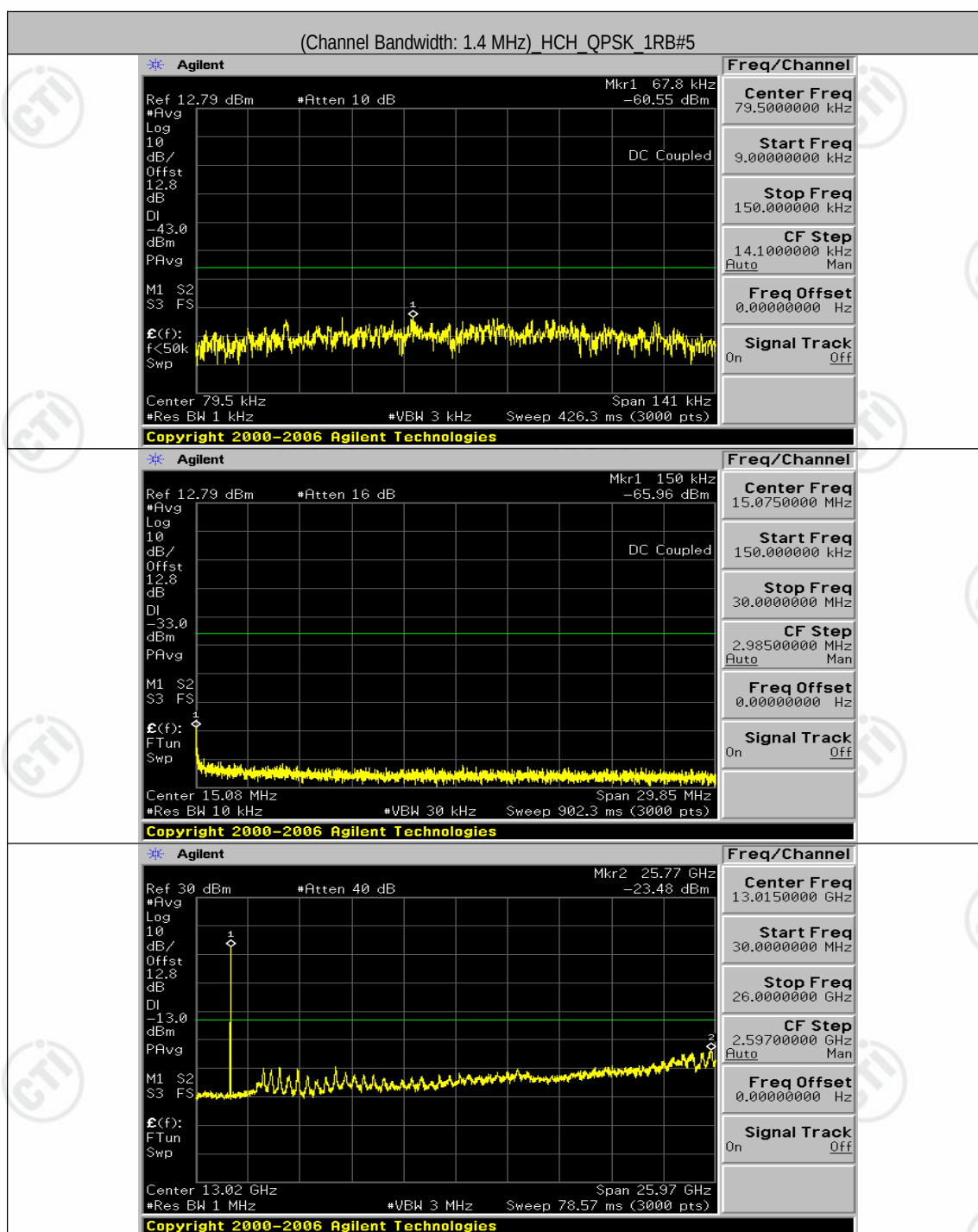


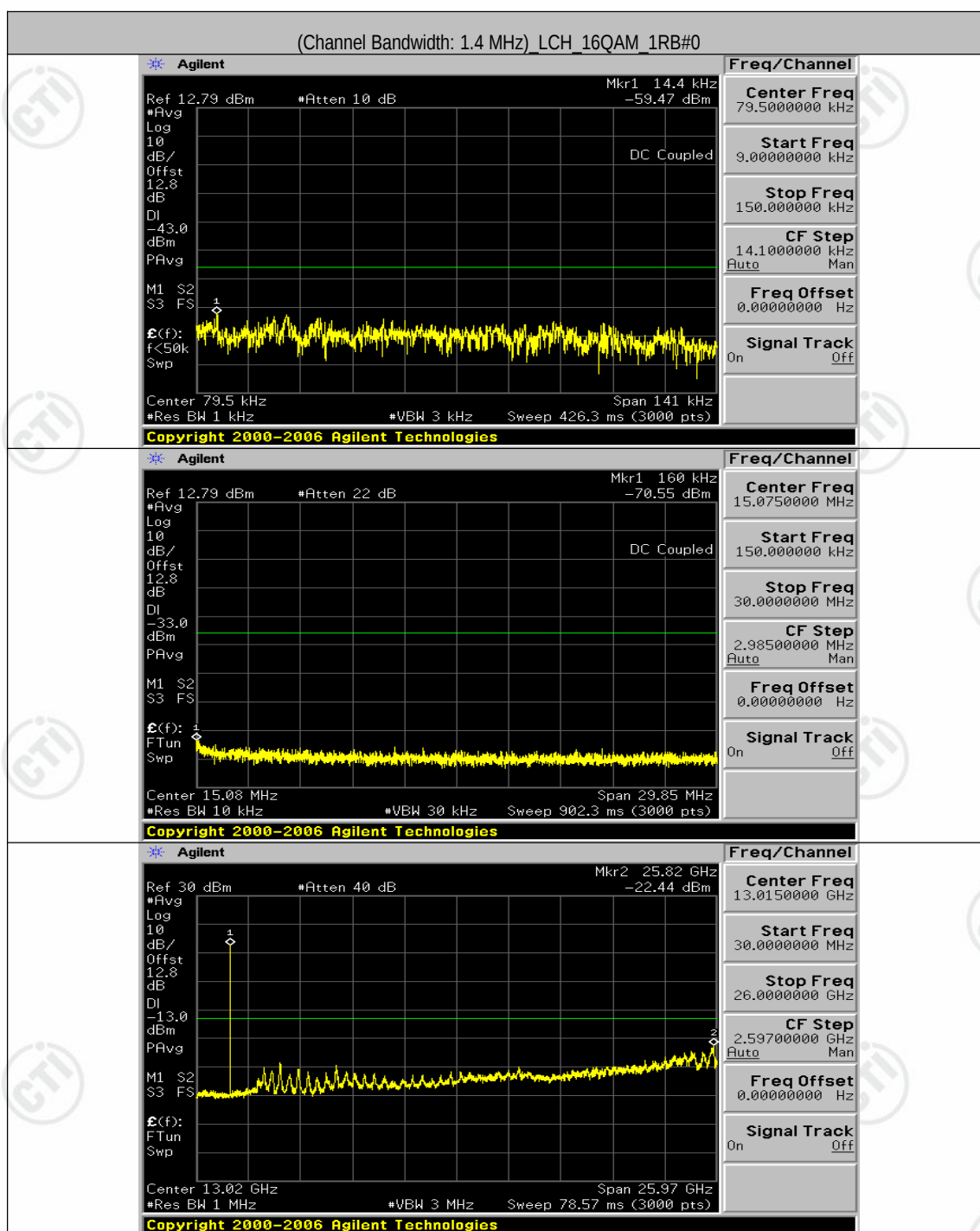


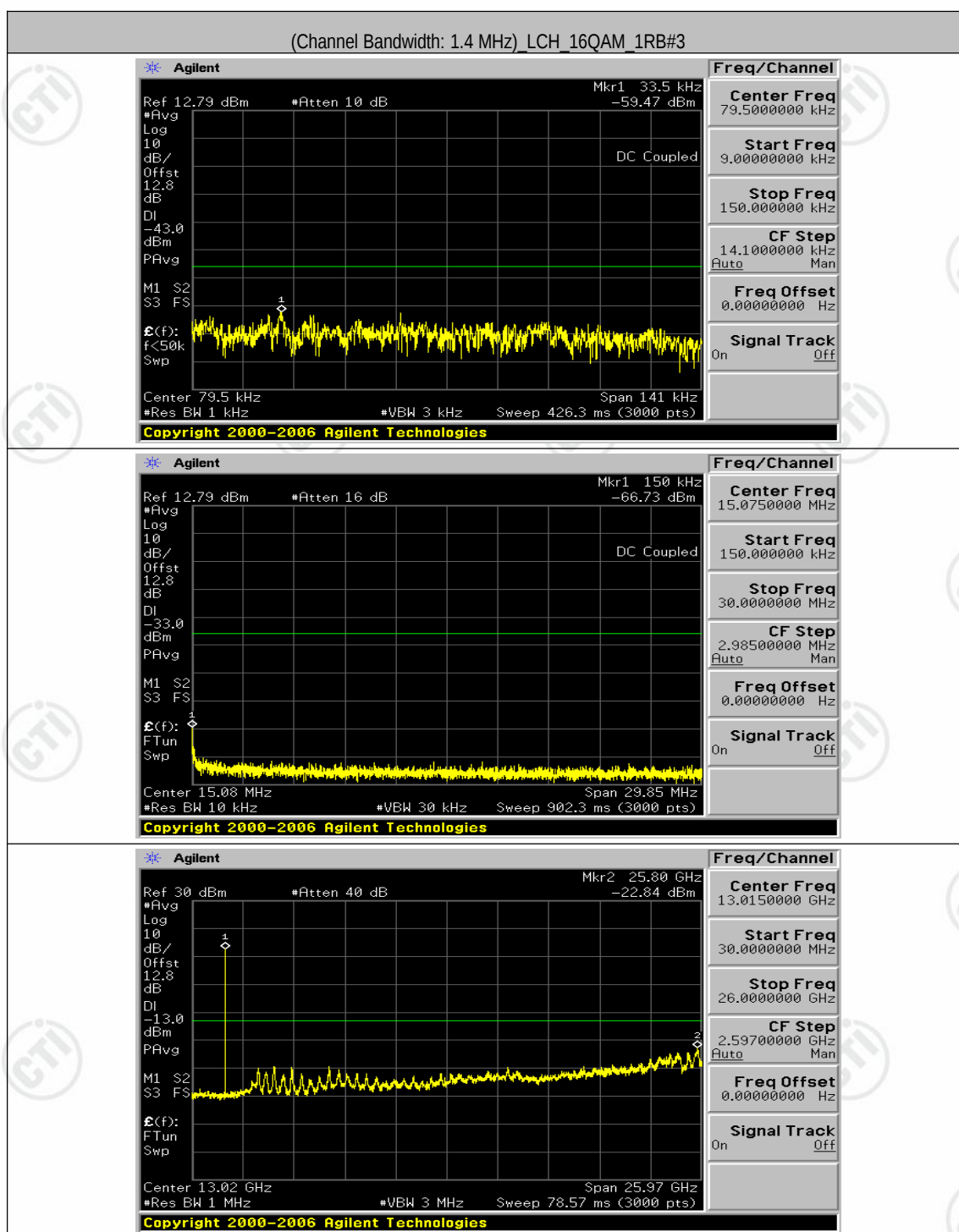


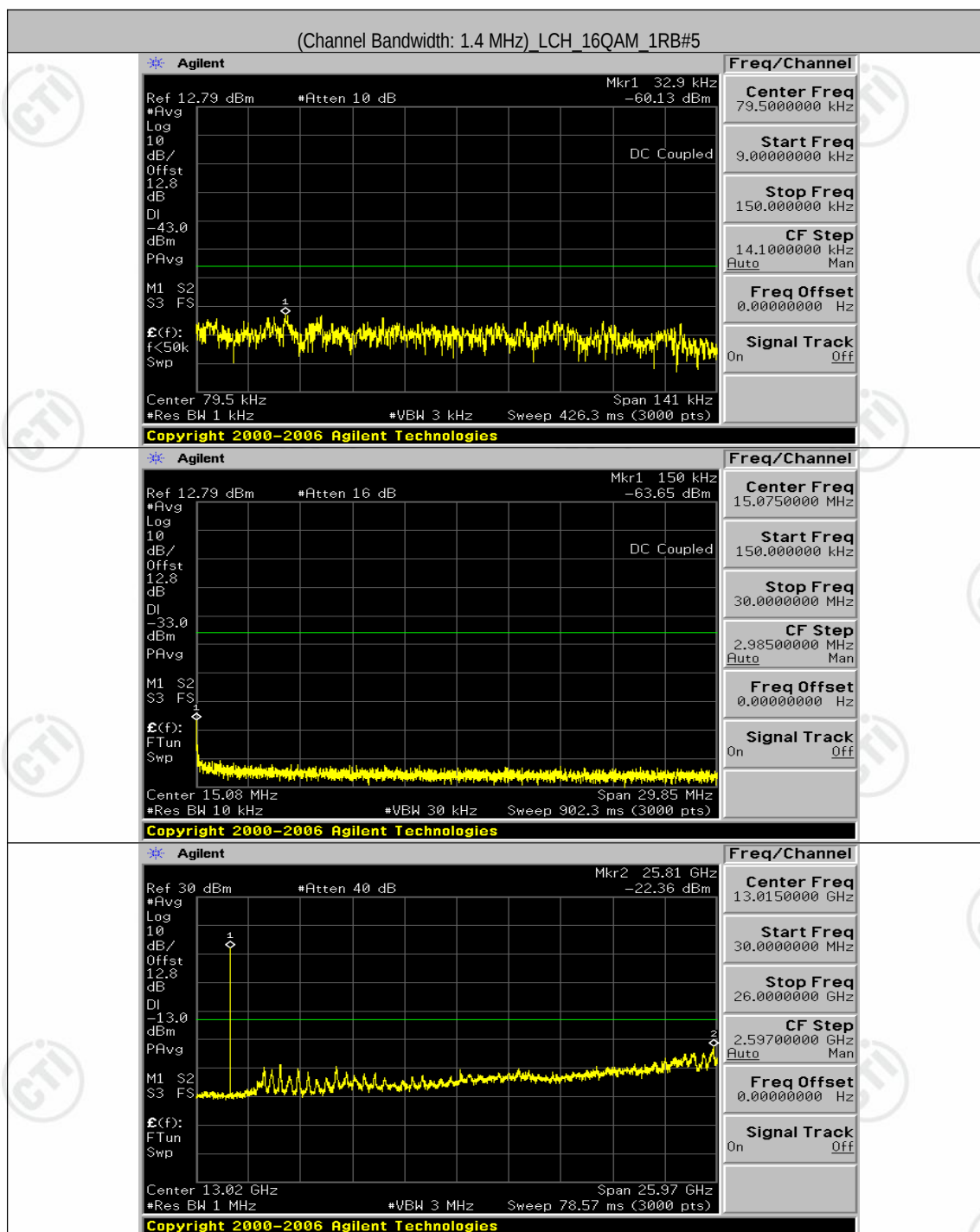


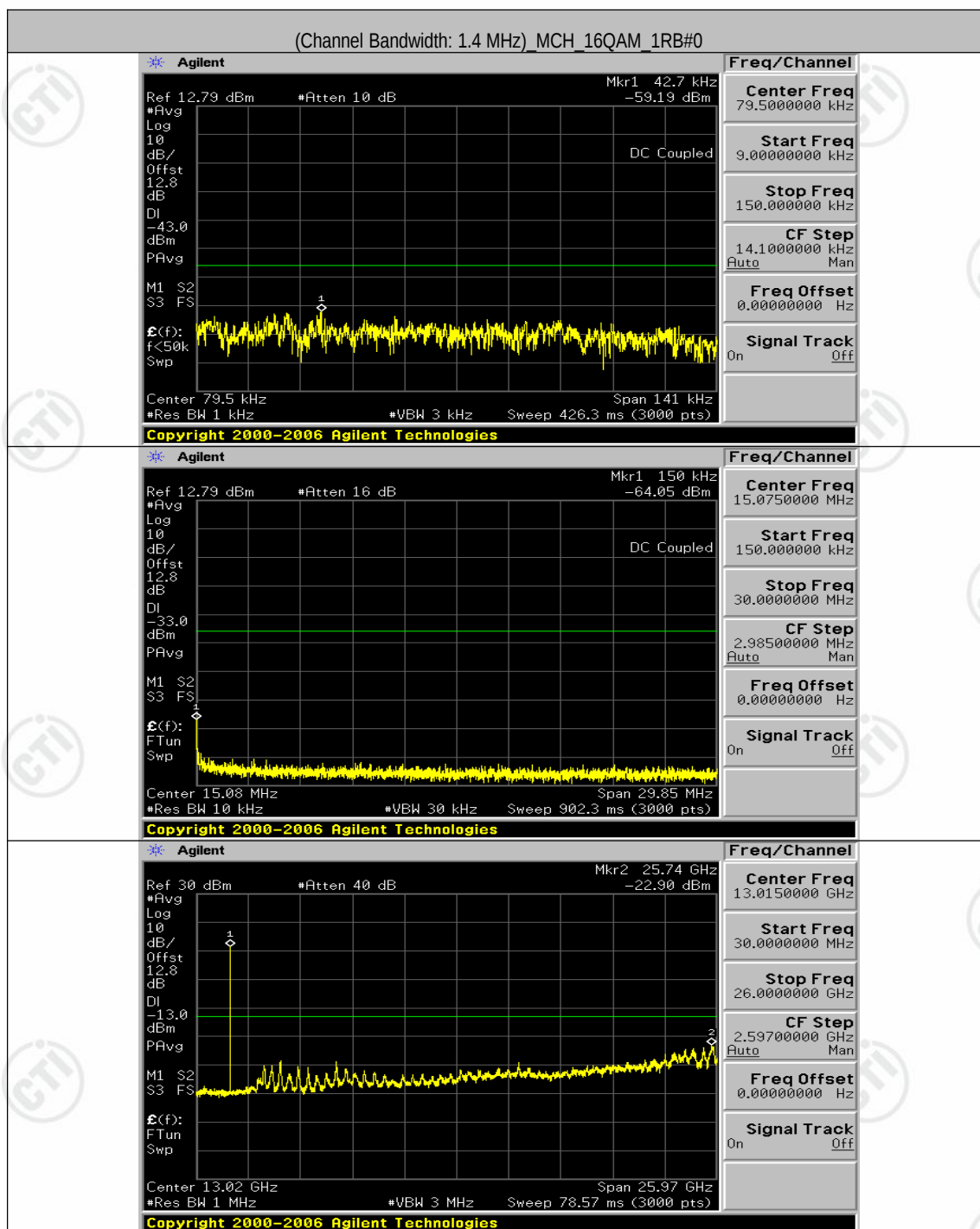


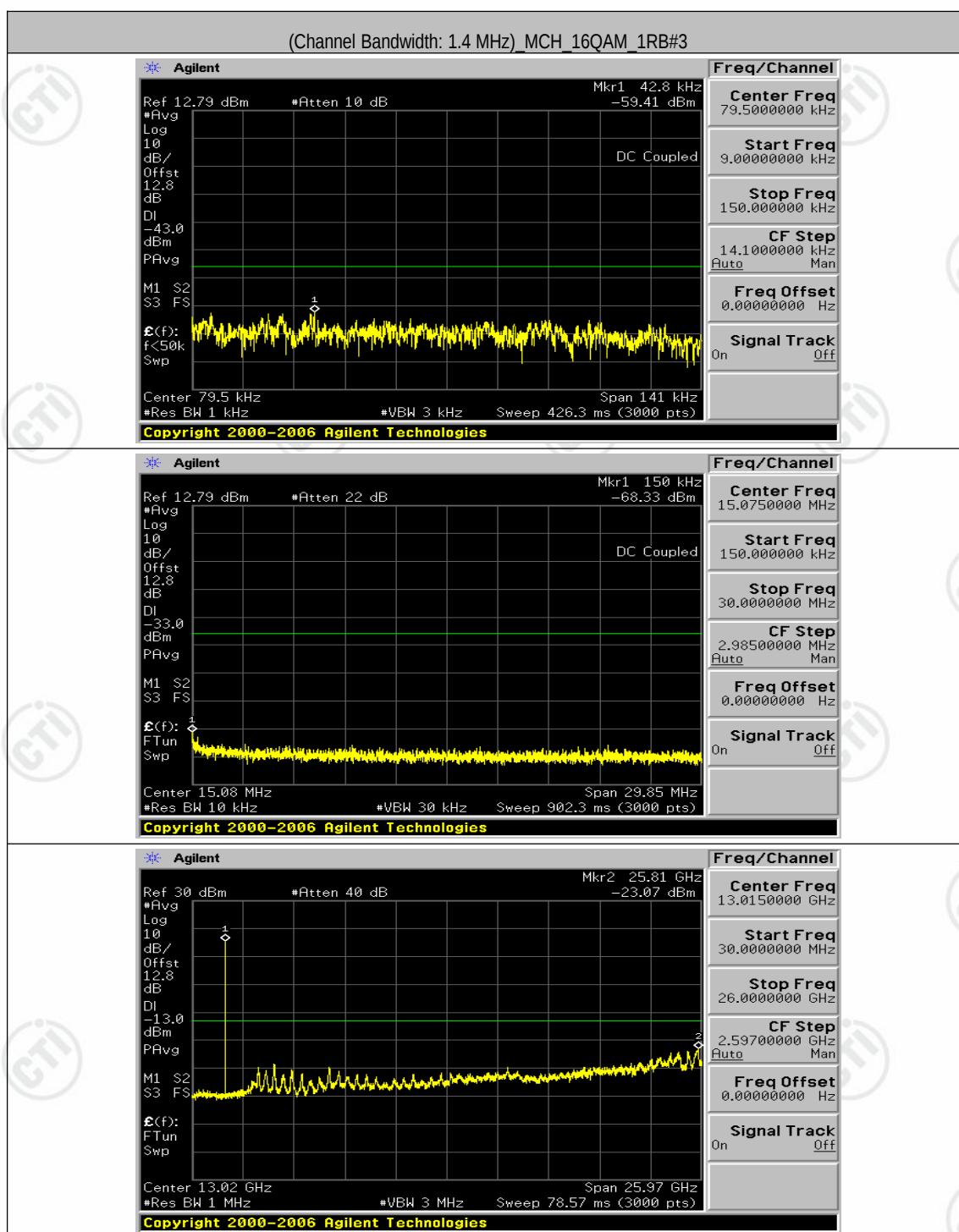


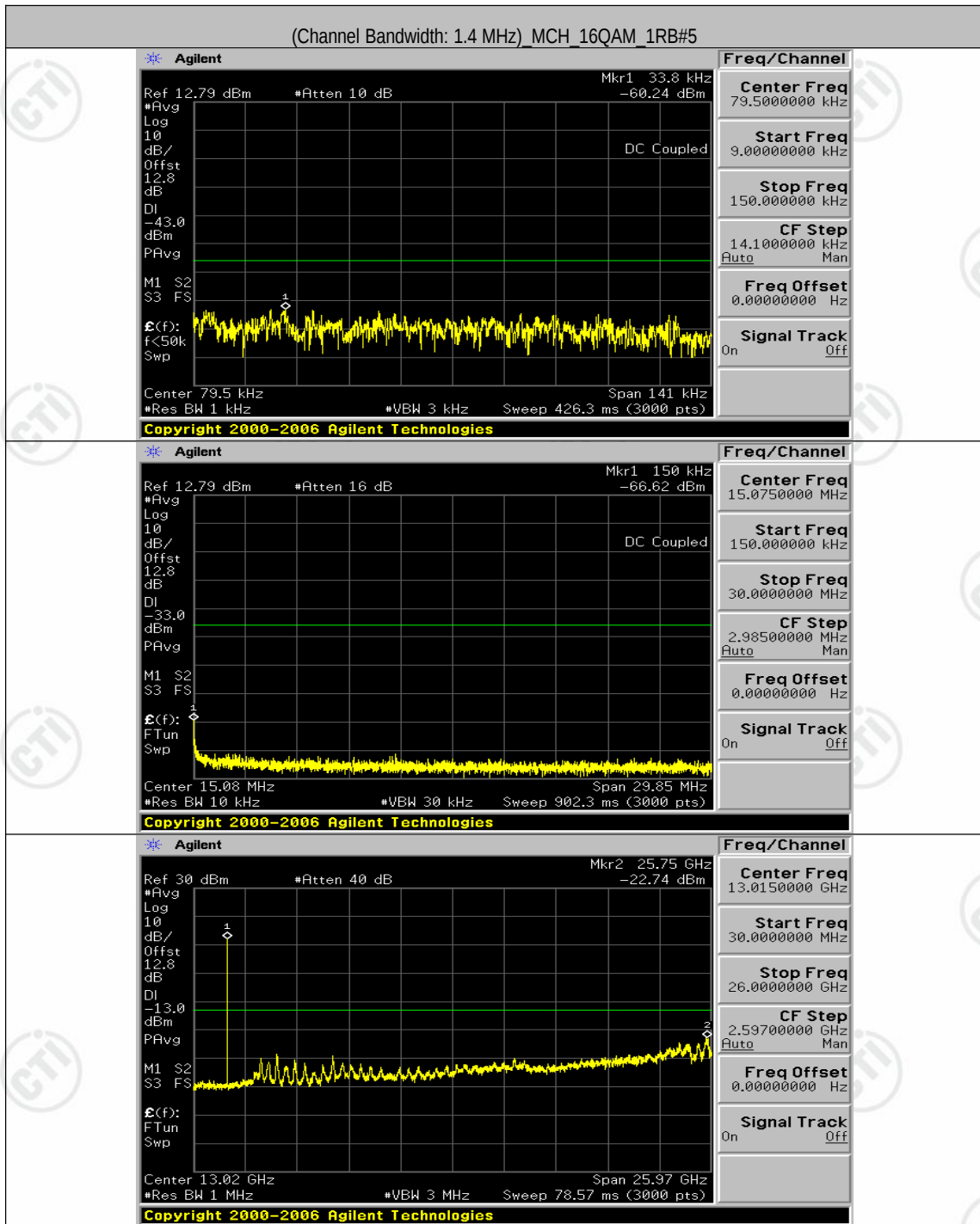


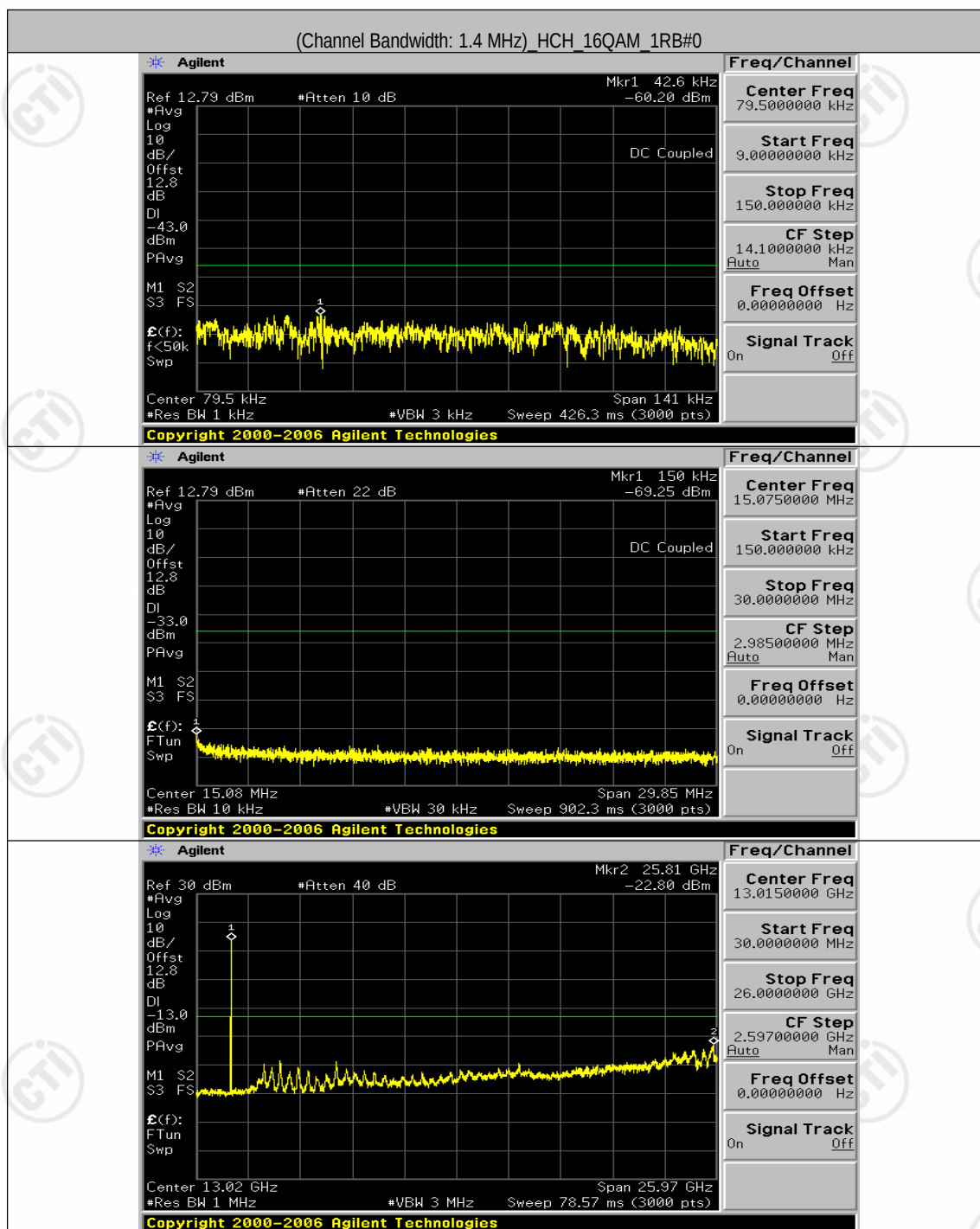


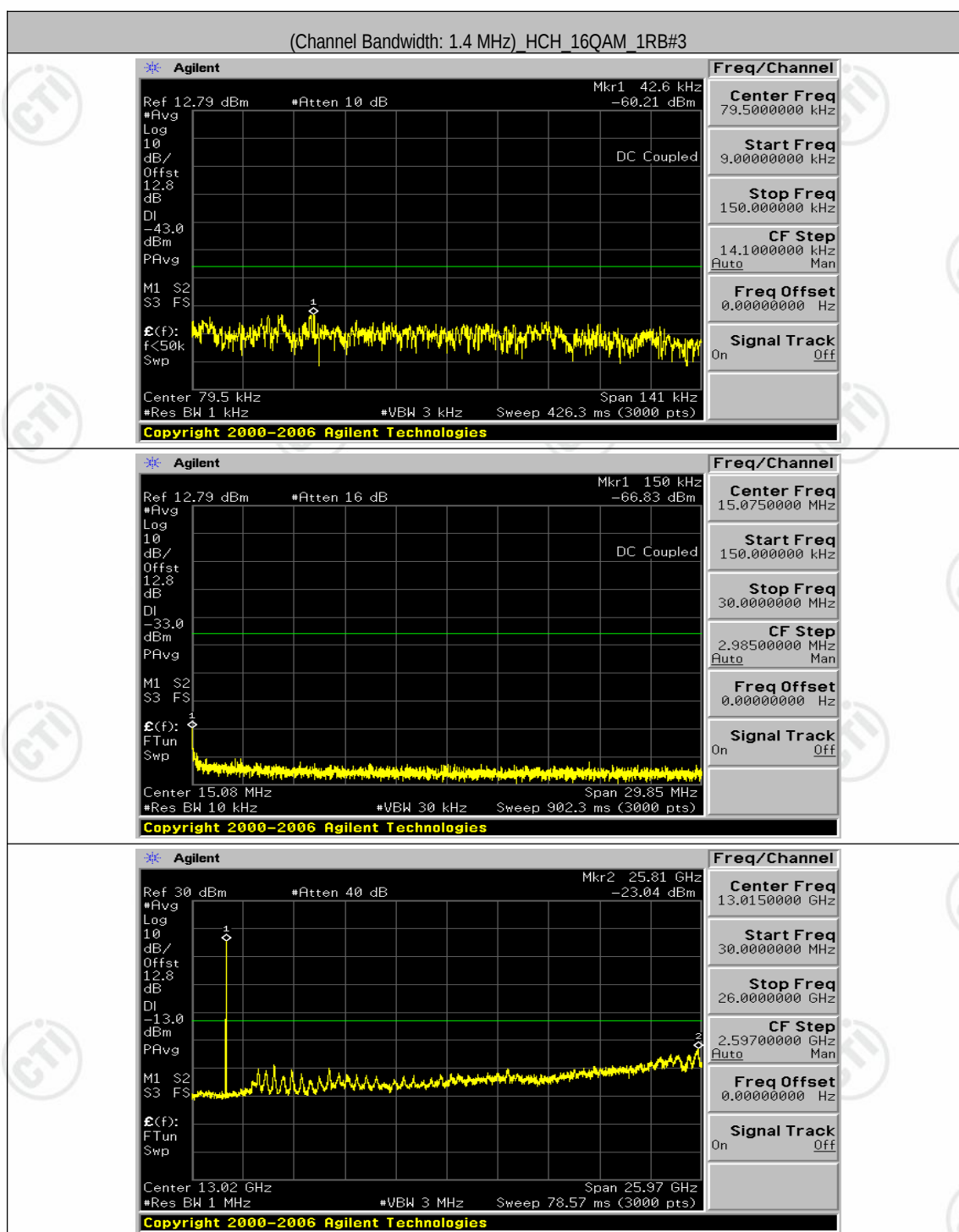


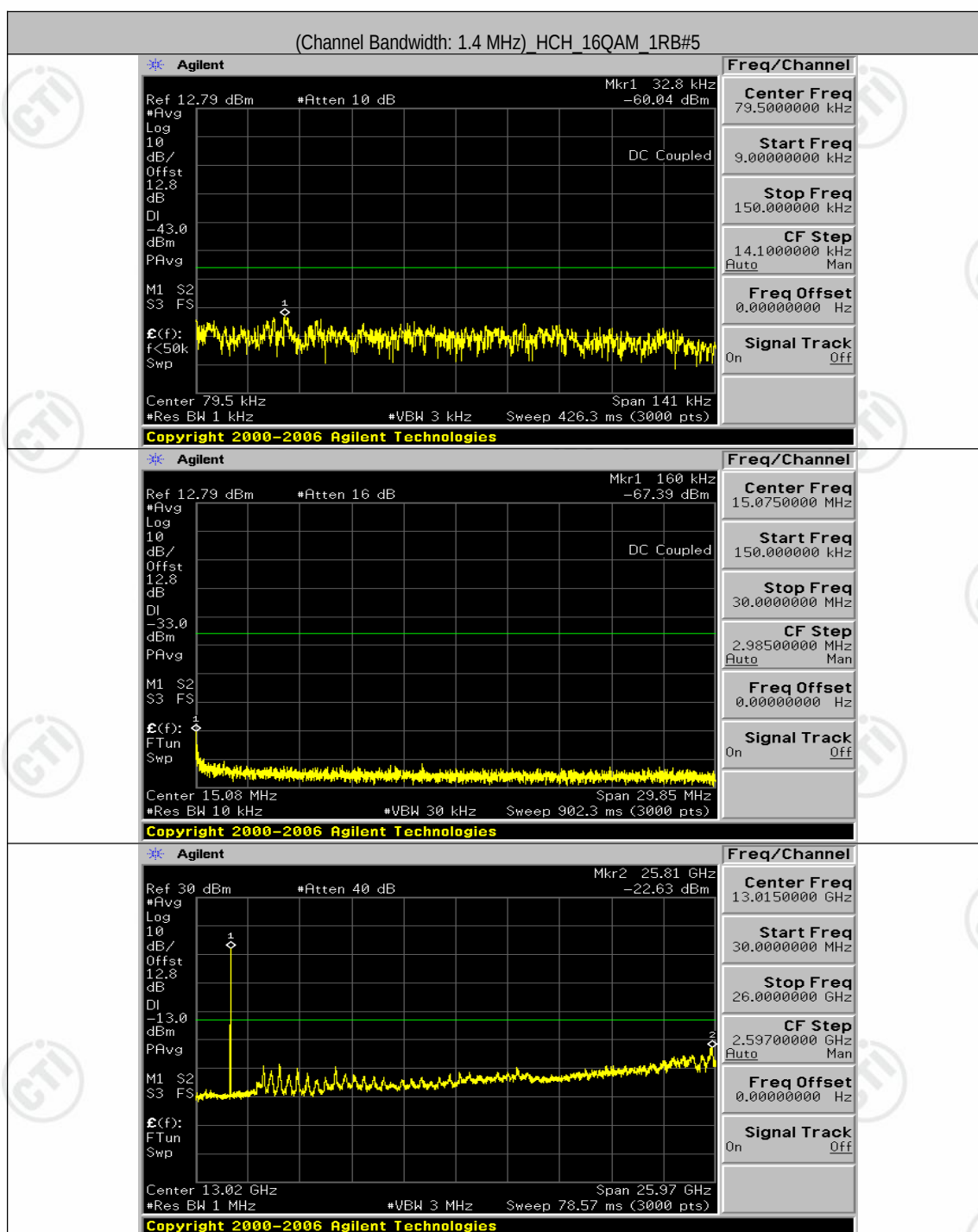




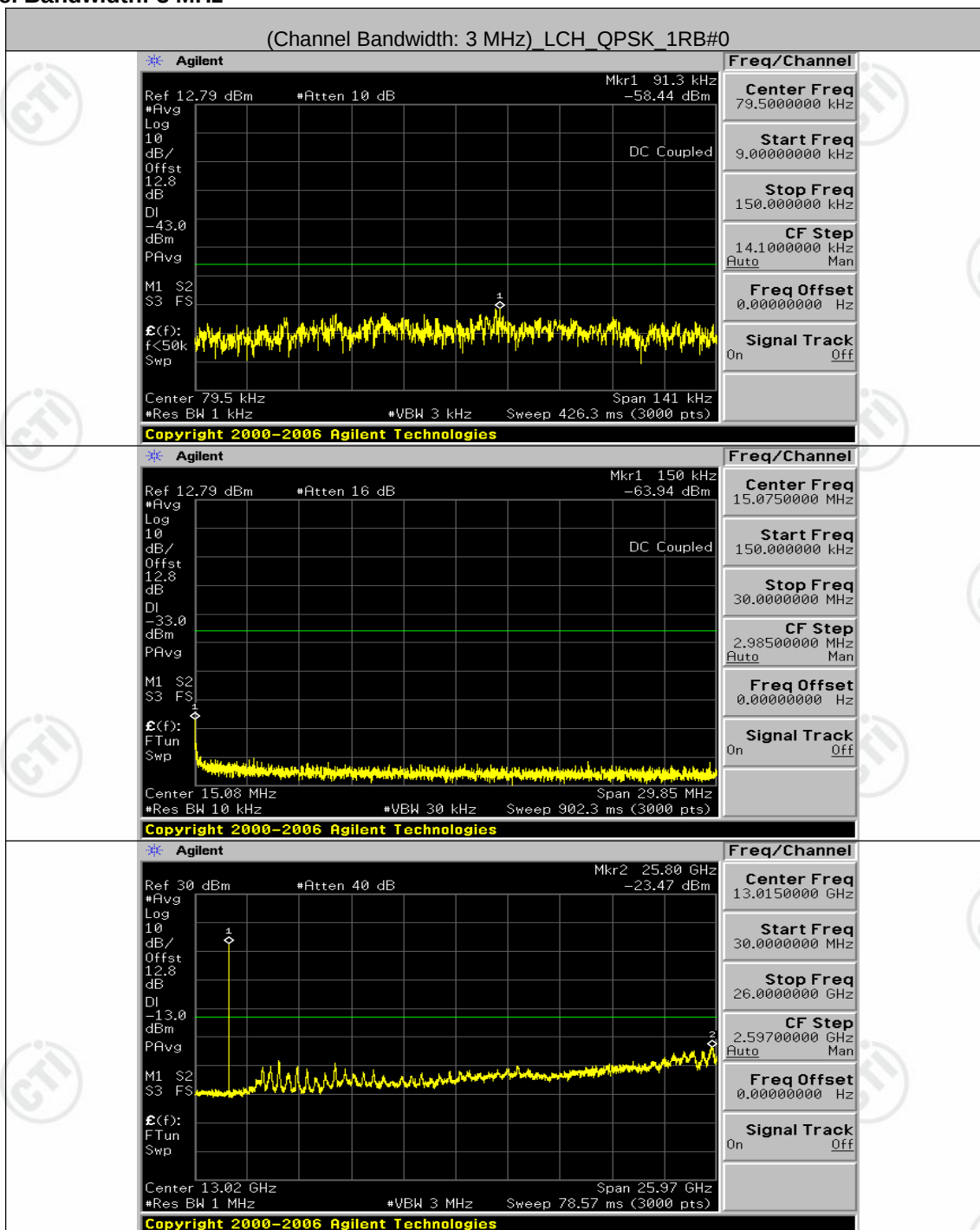


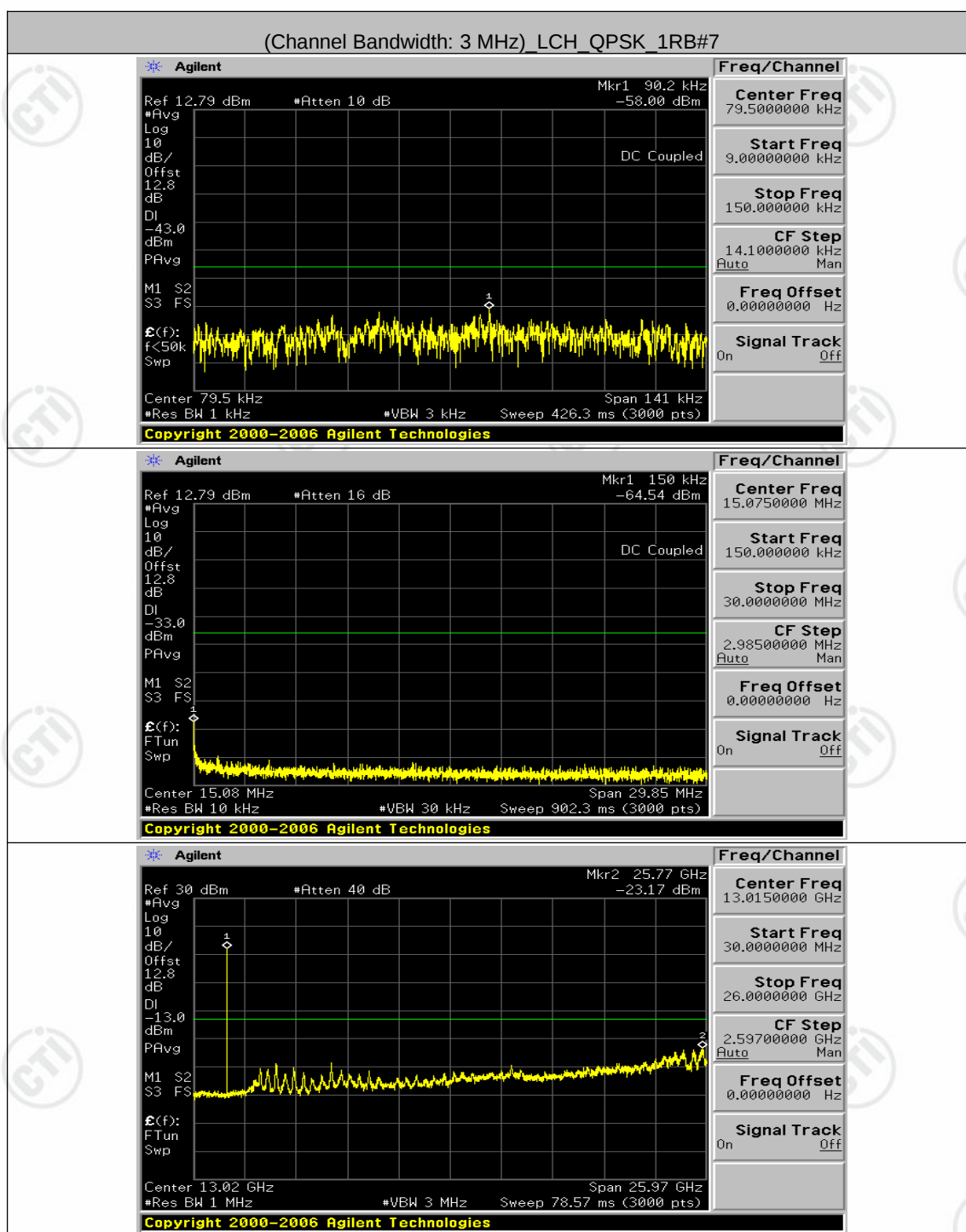


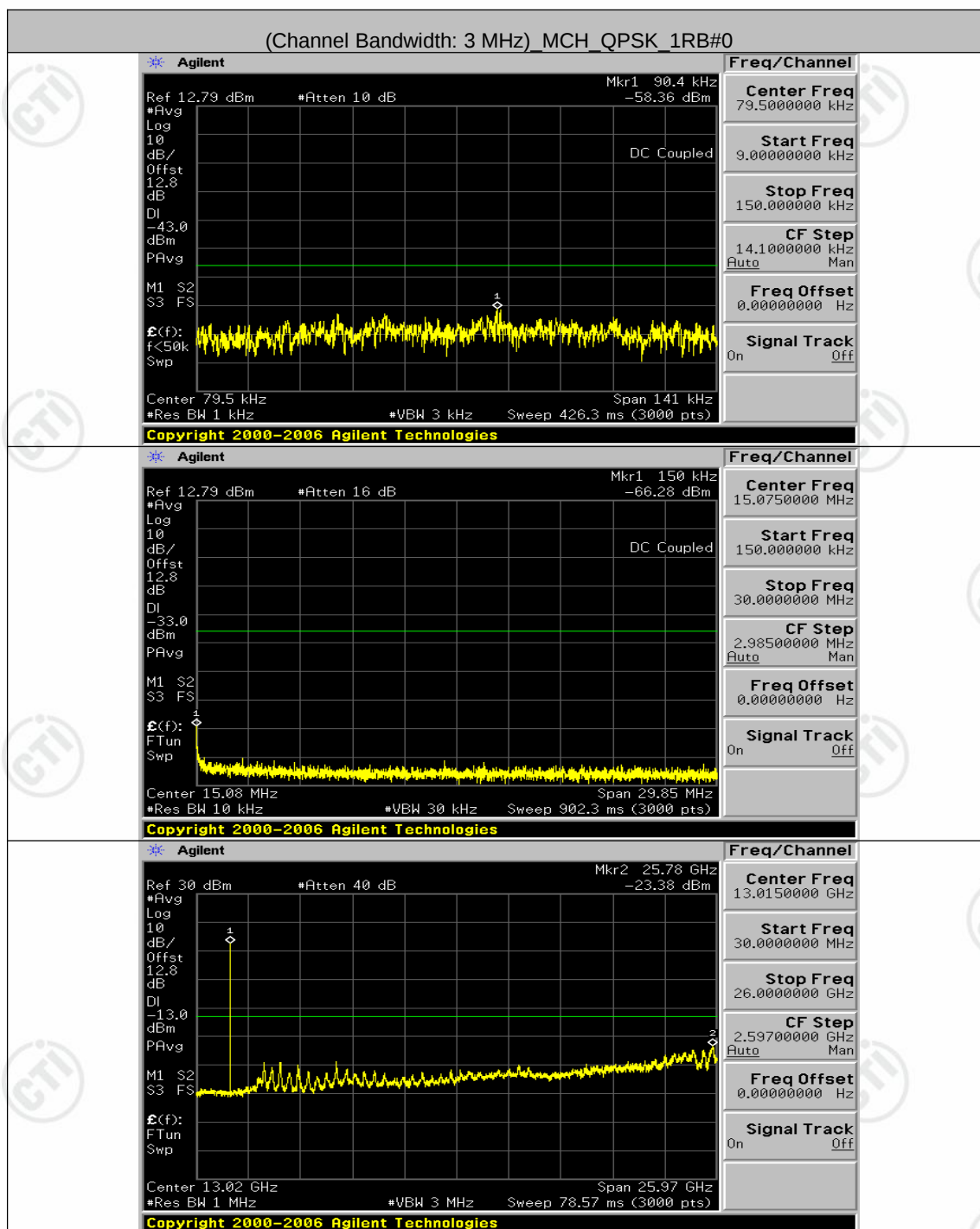


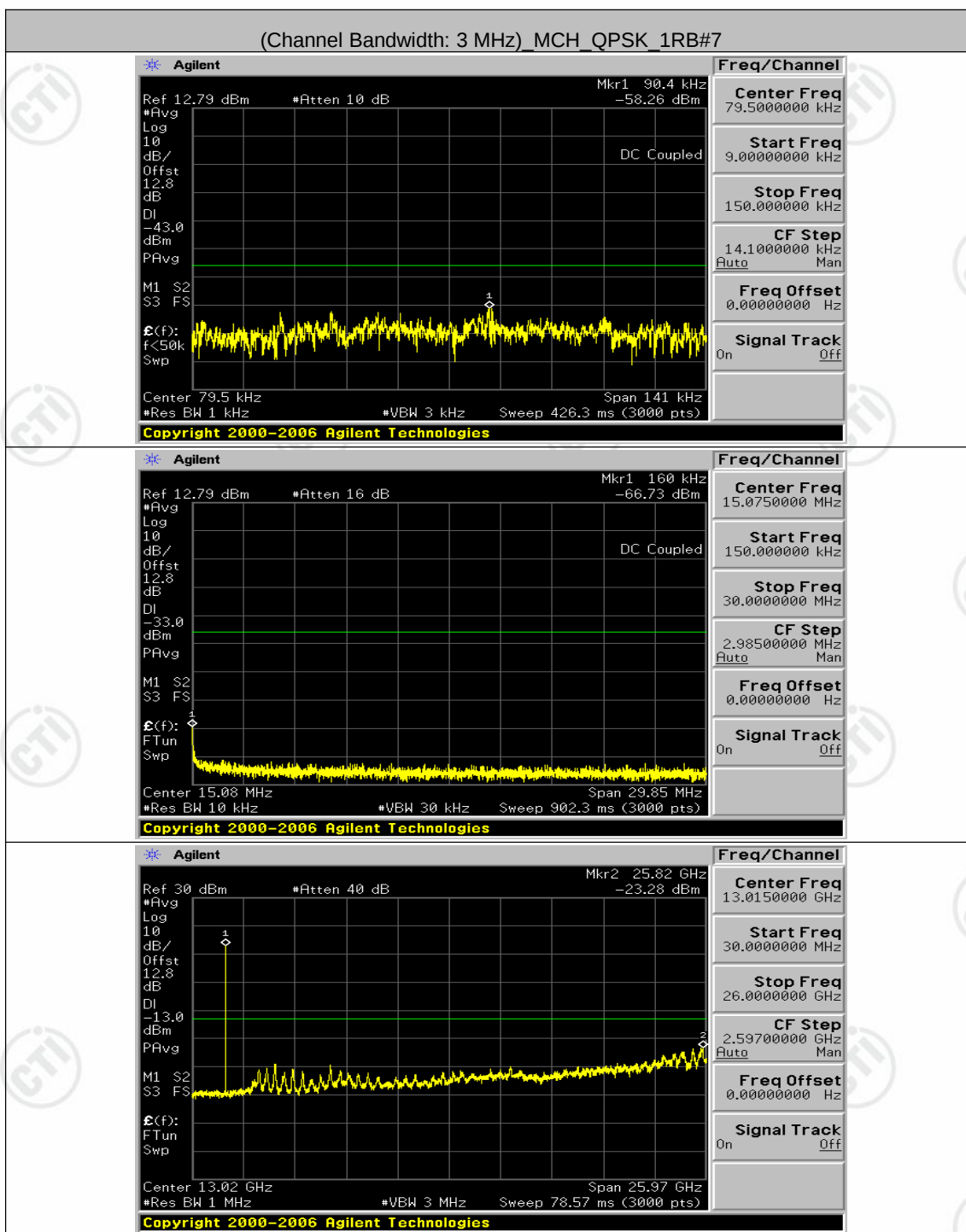


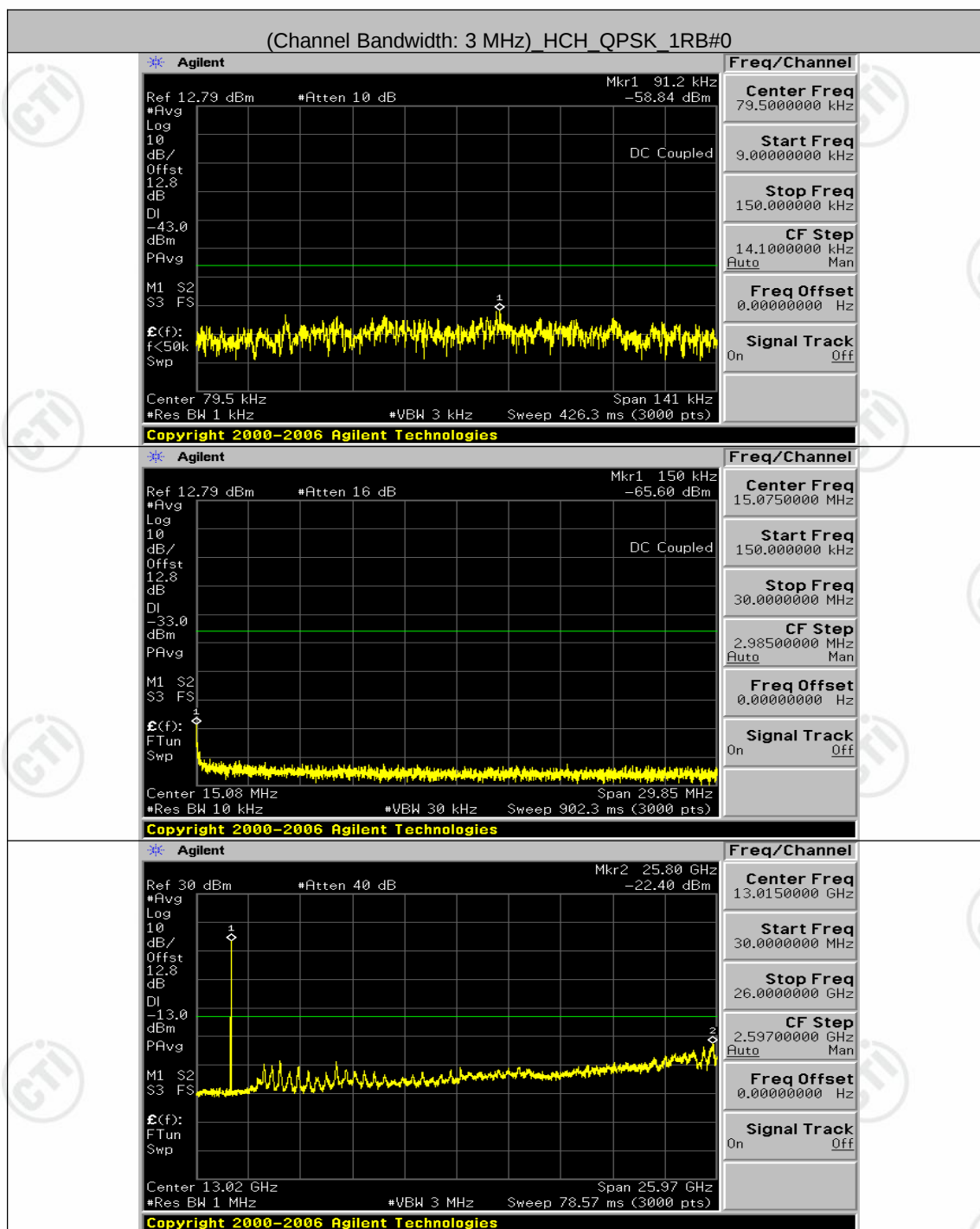
**Channel Bandwidth: 3 MHz**

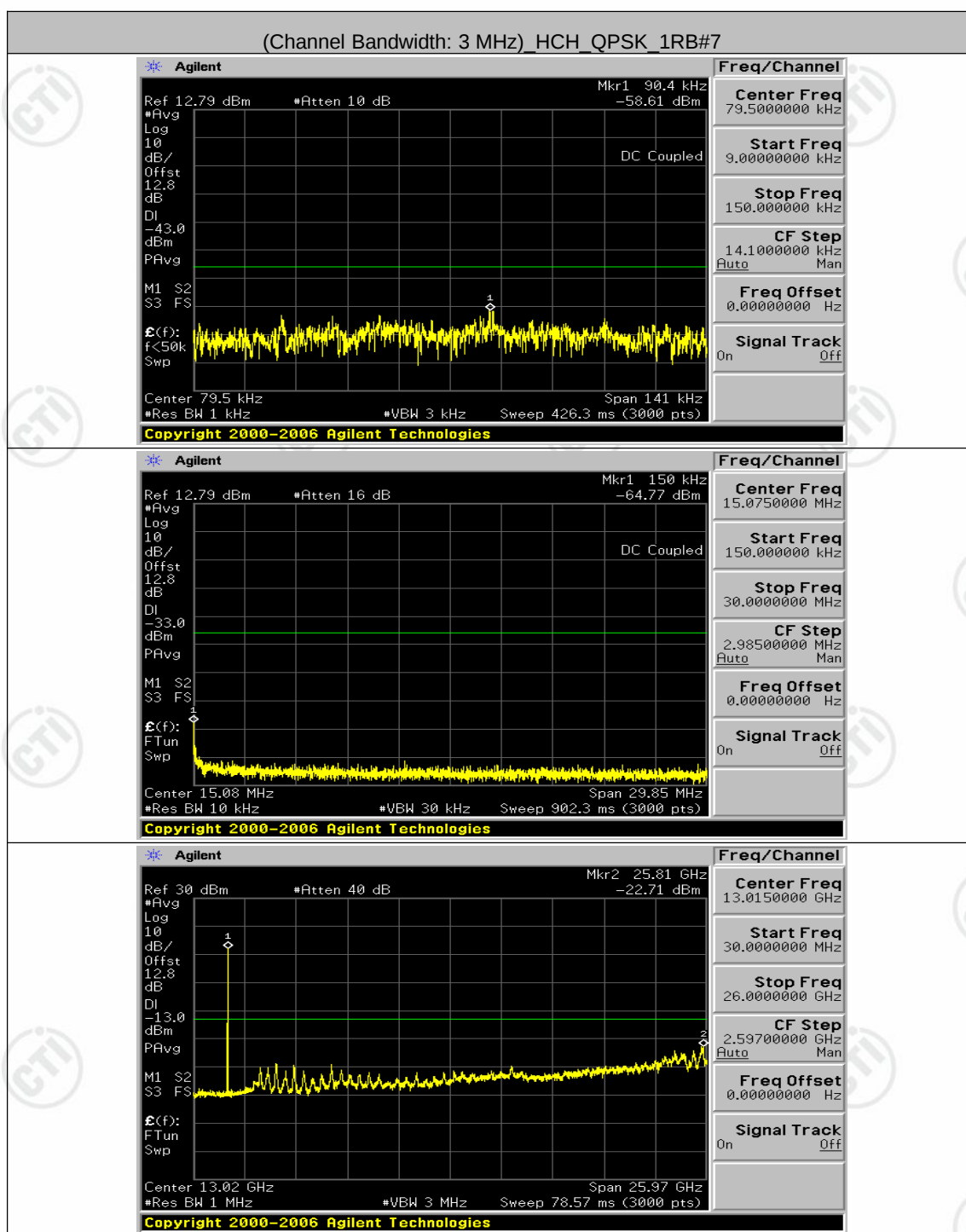


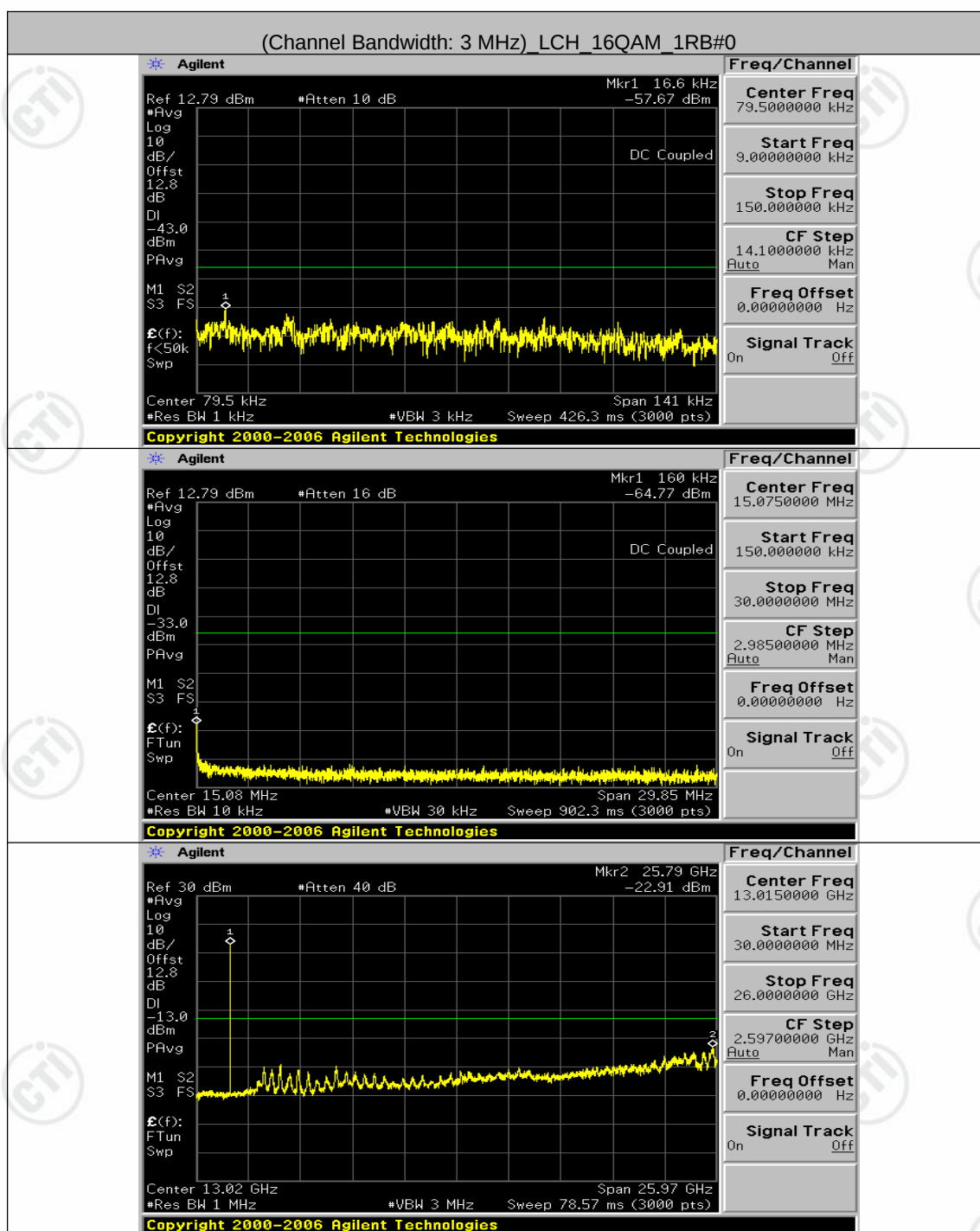


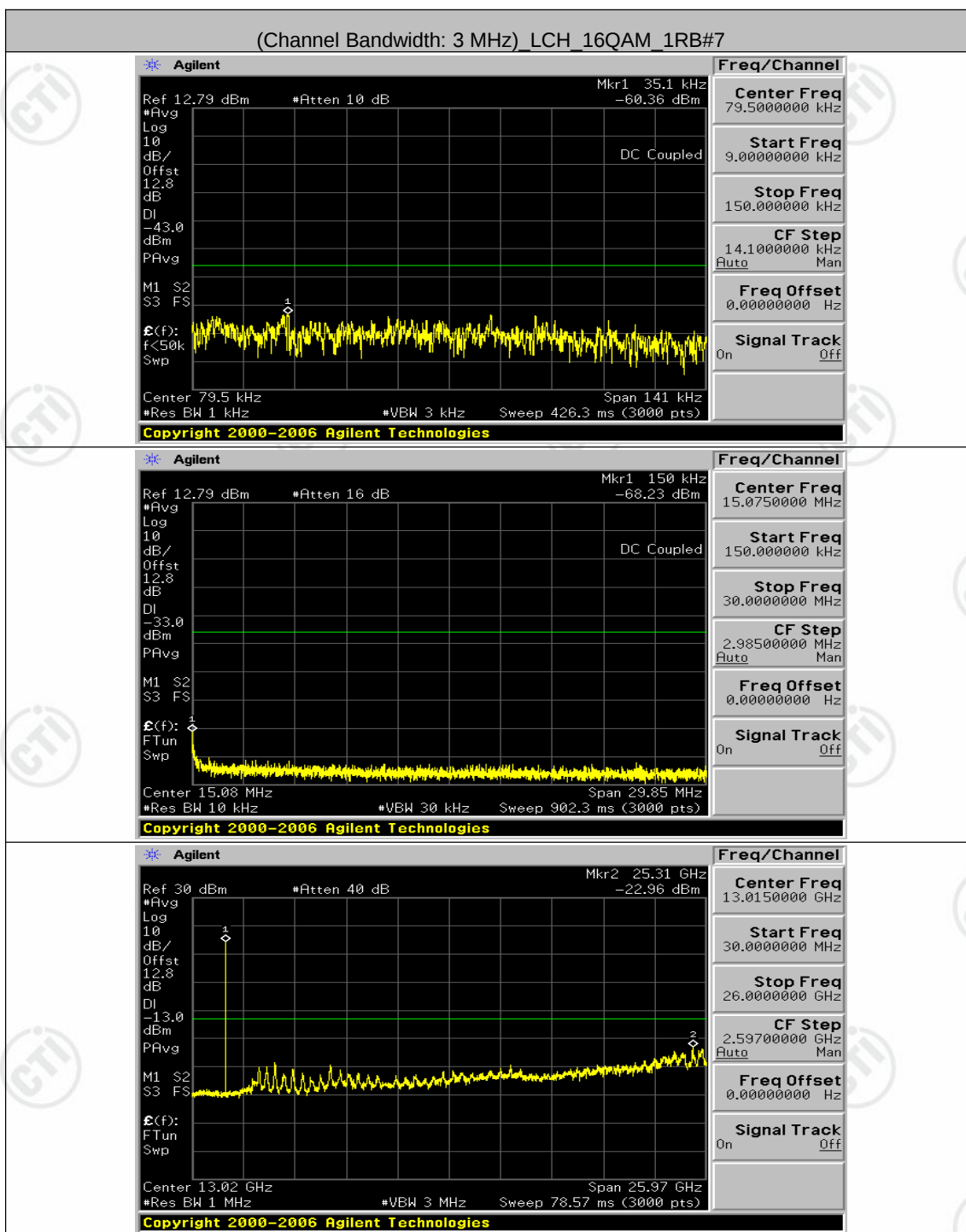


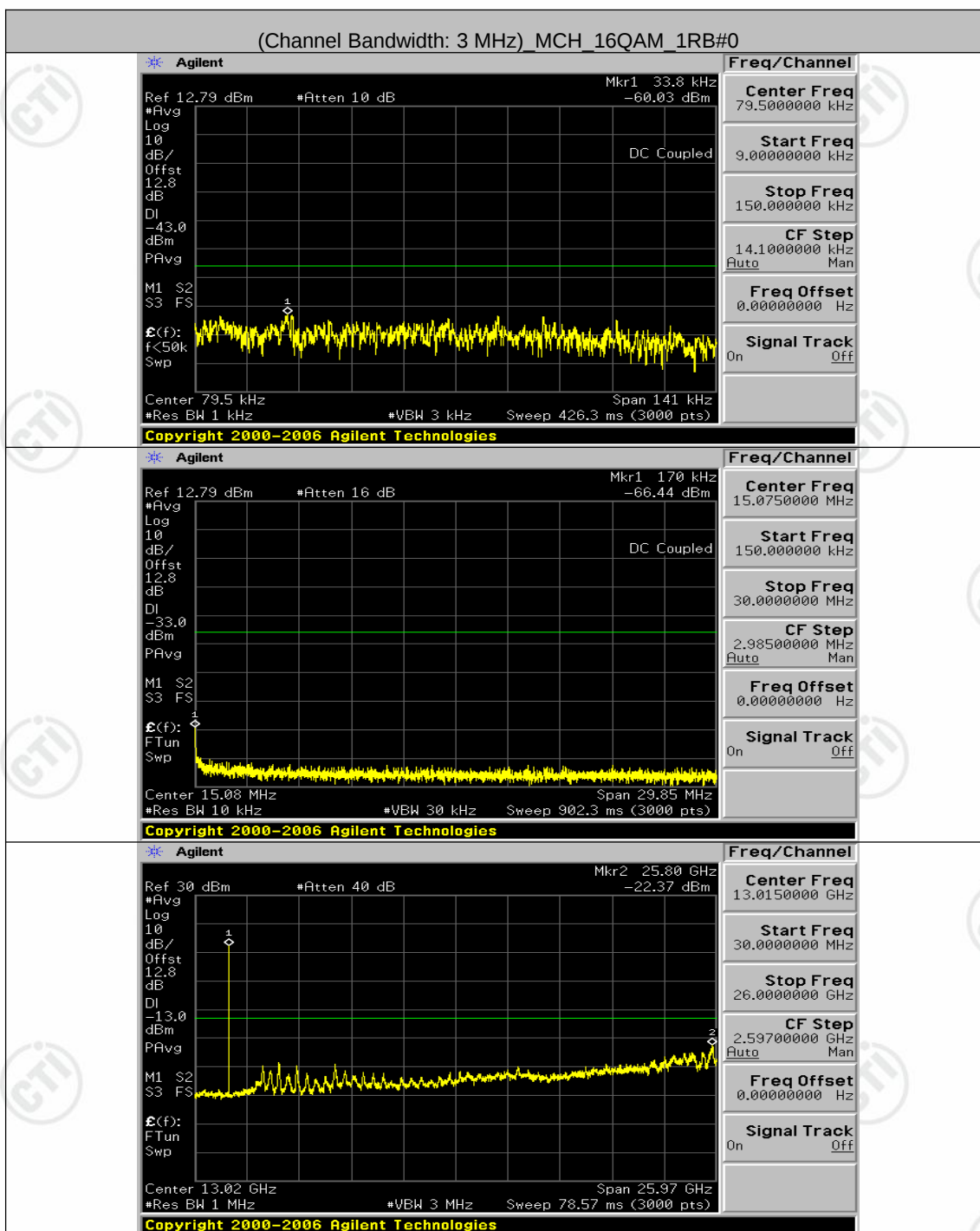


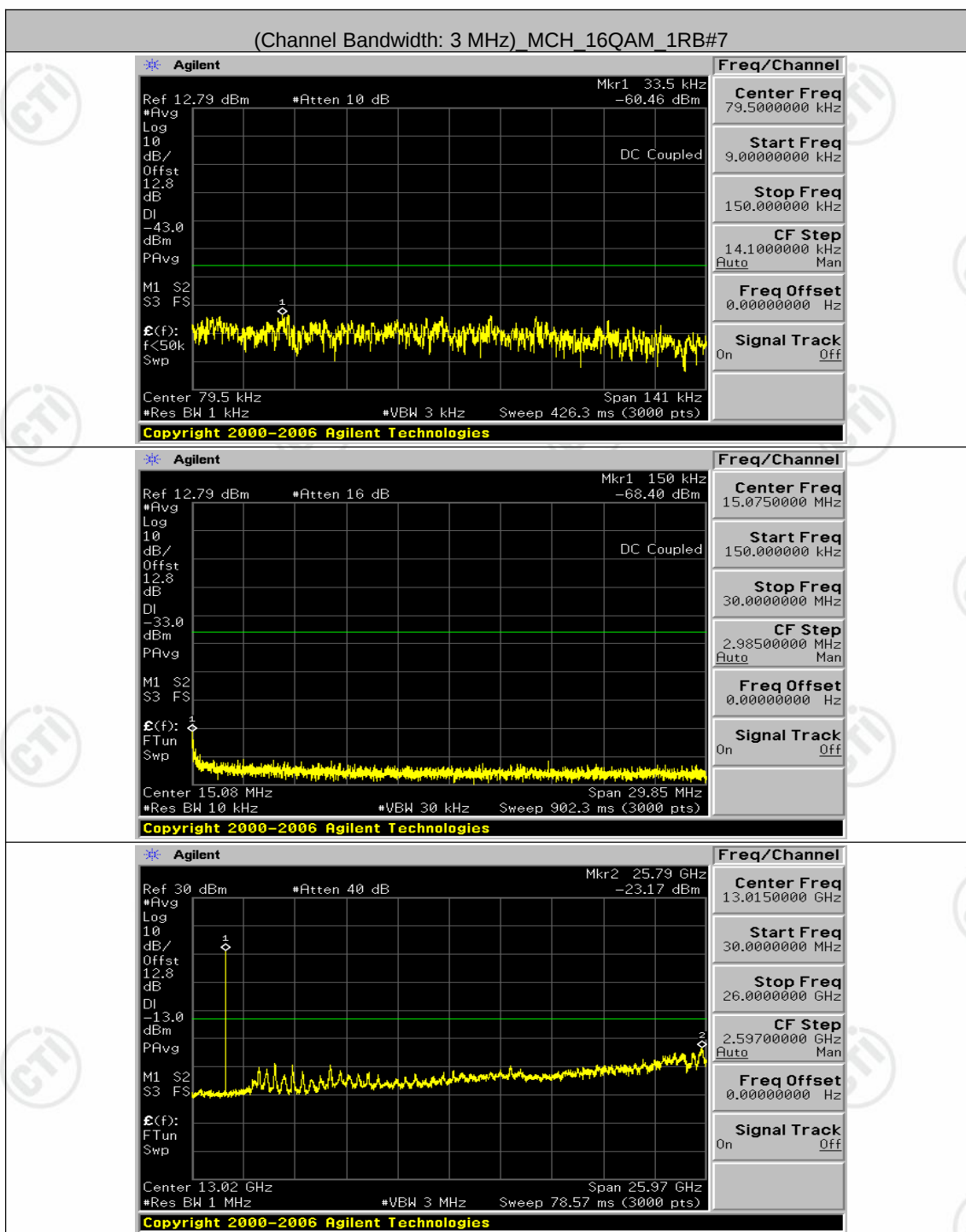


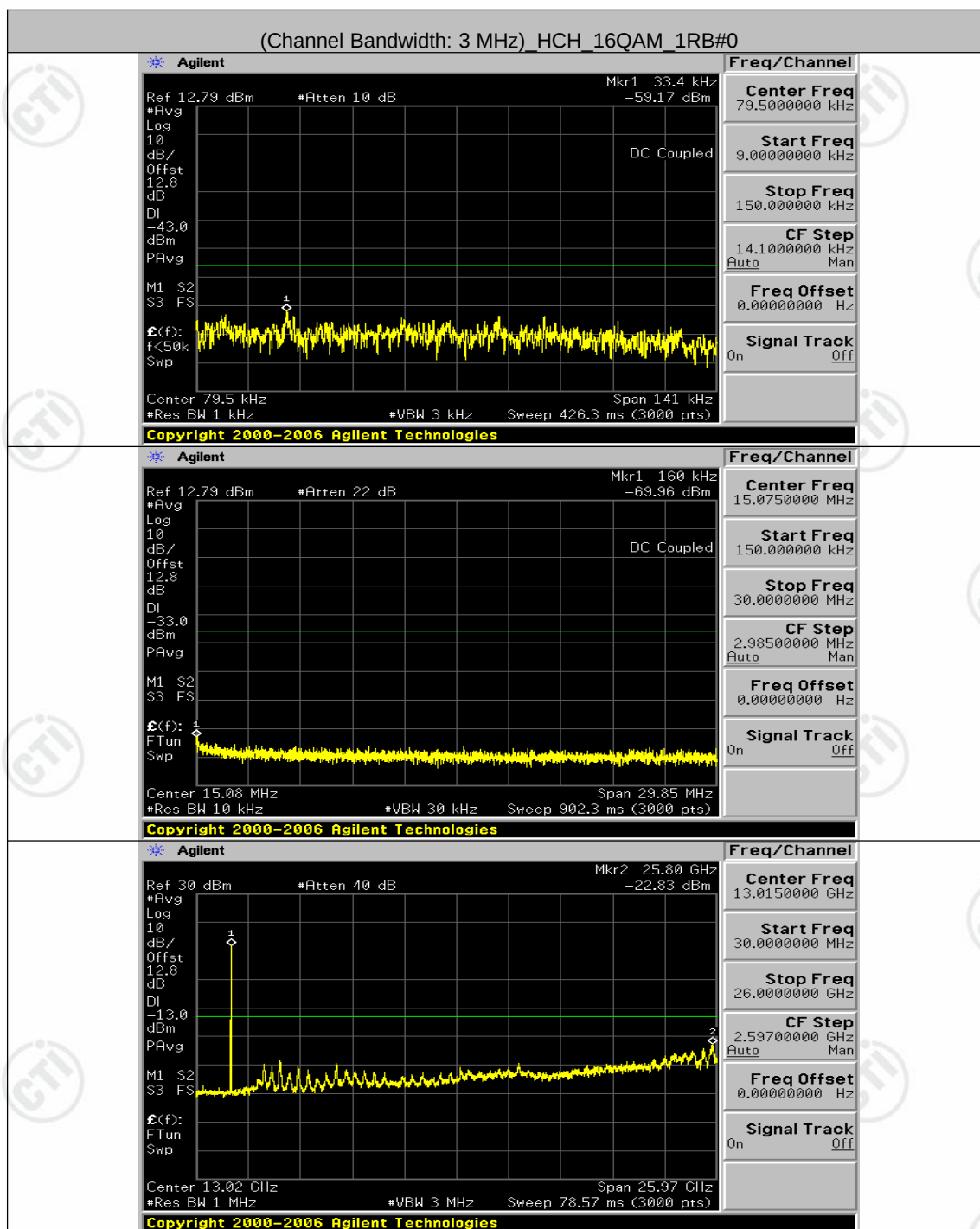


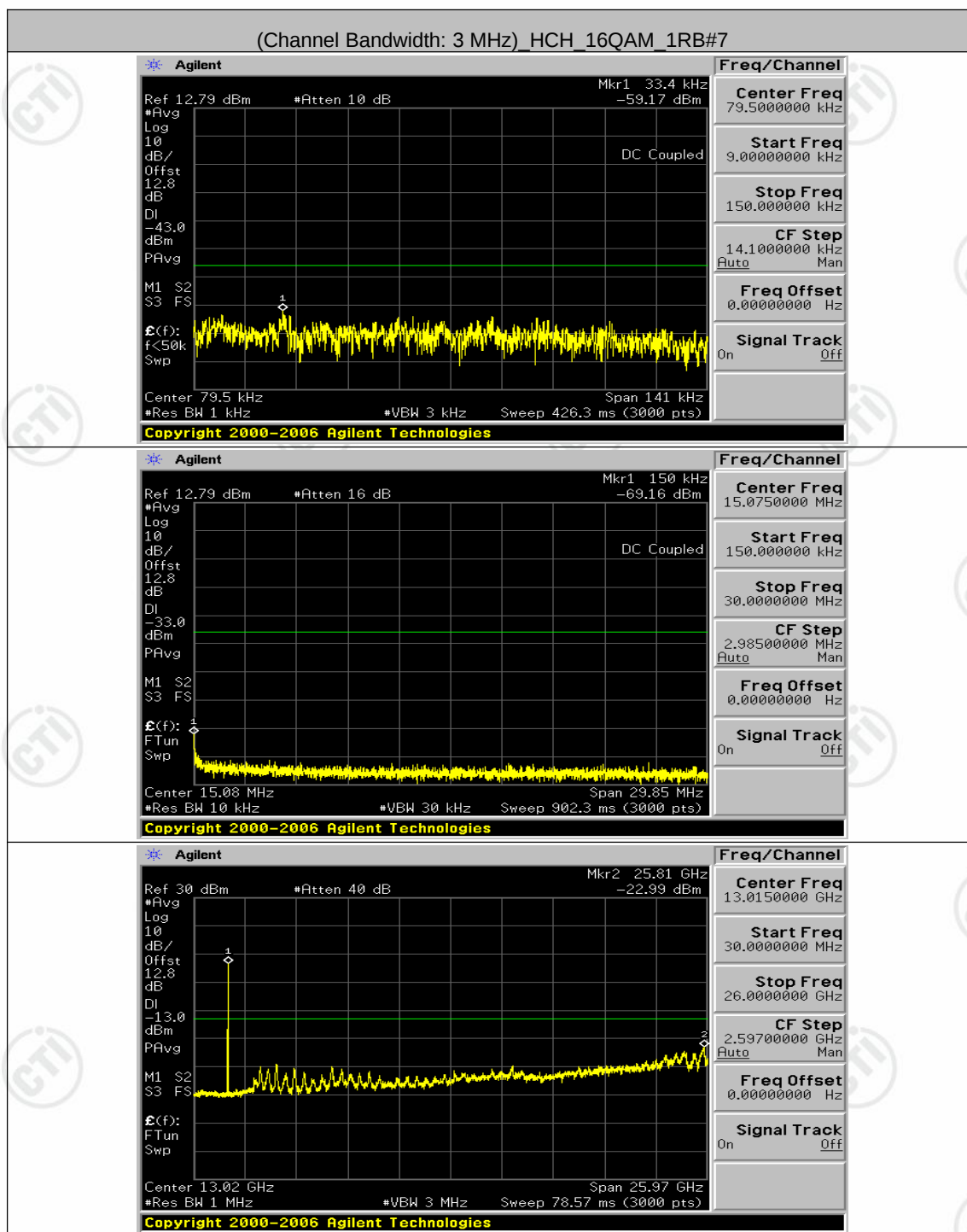




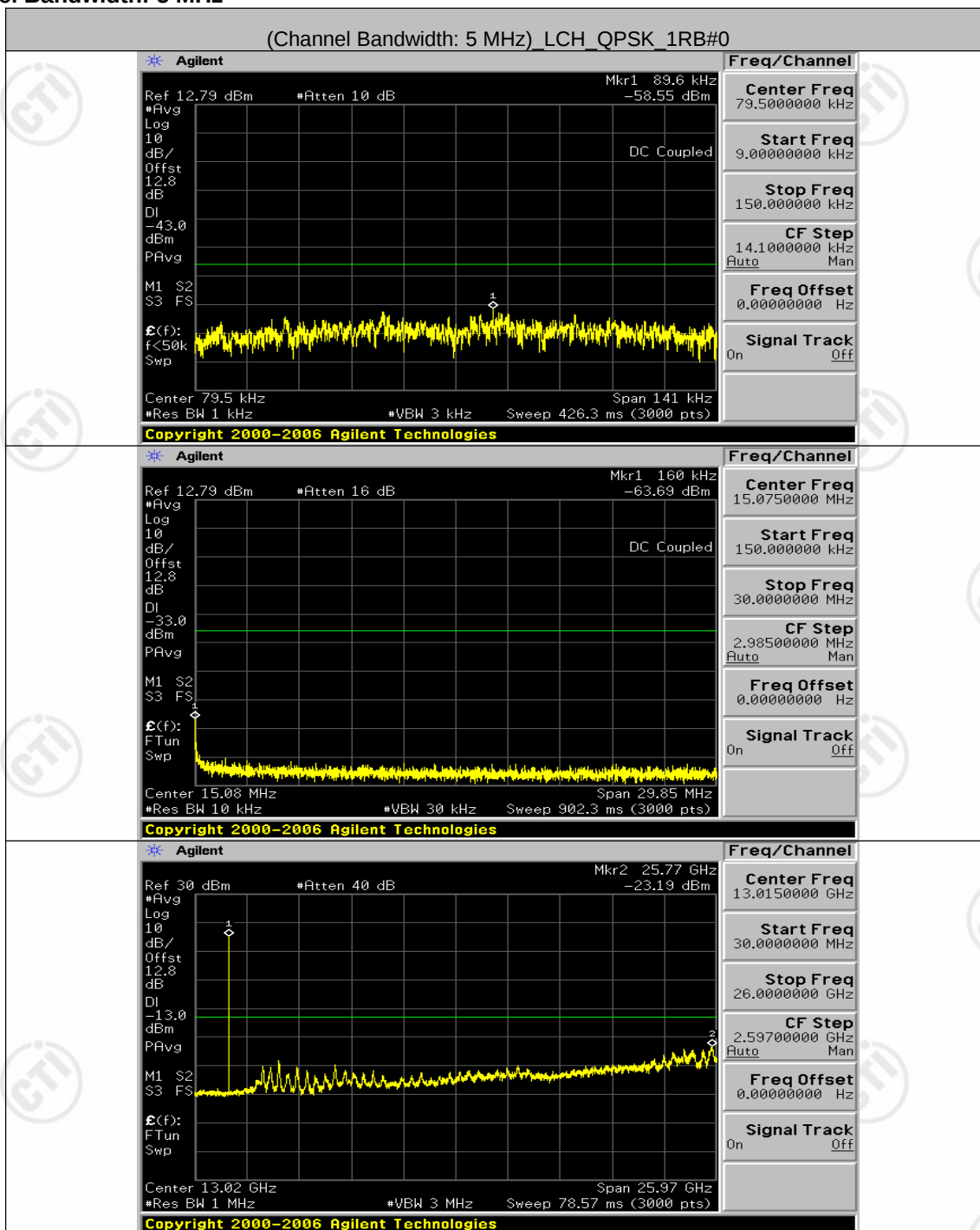


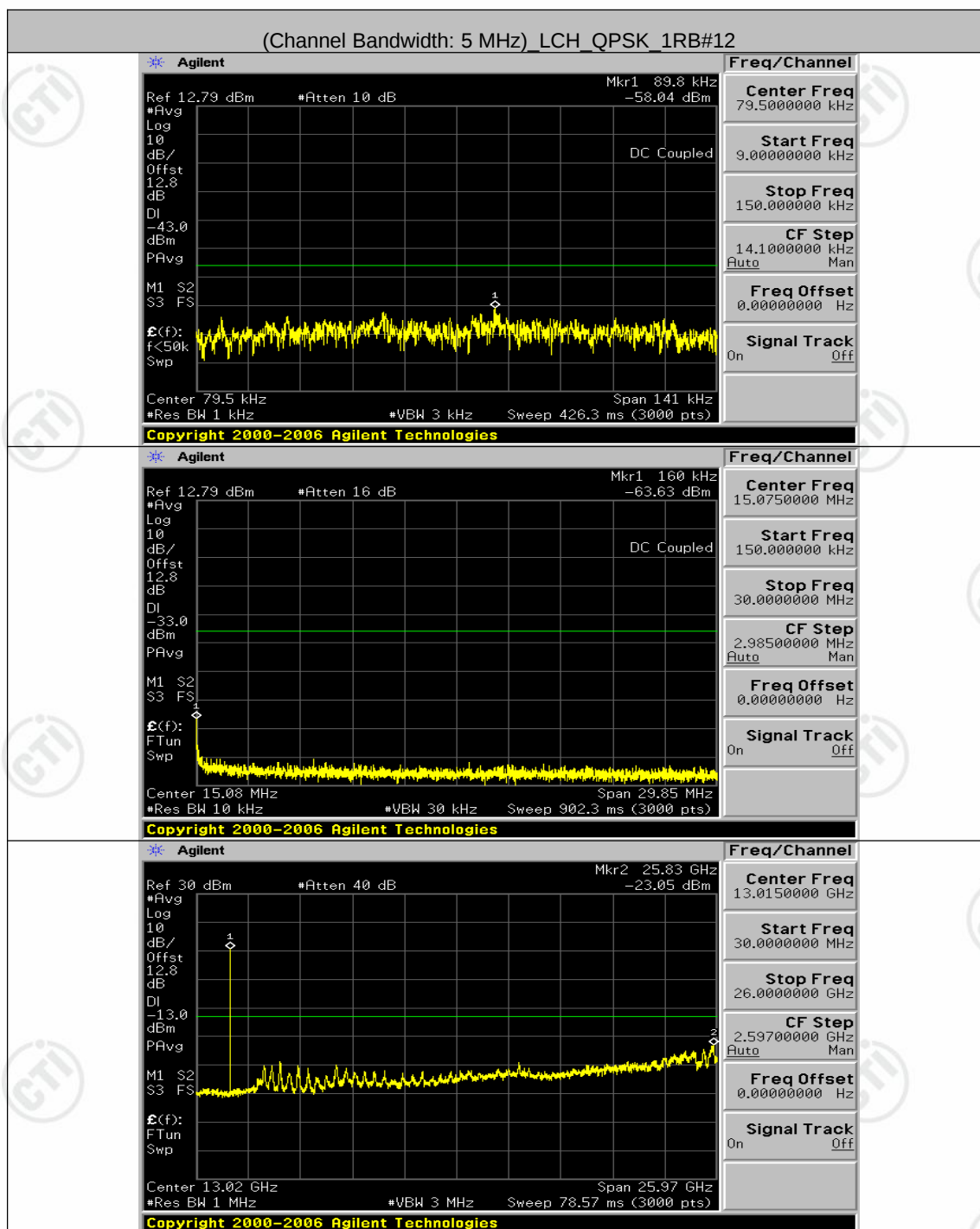


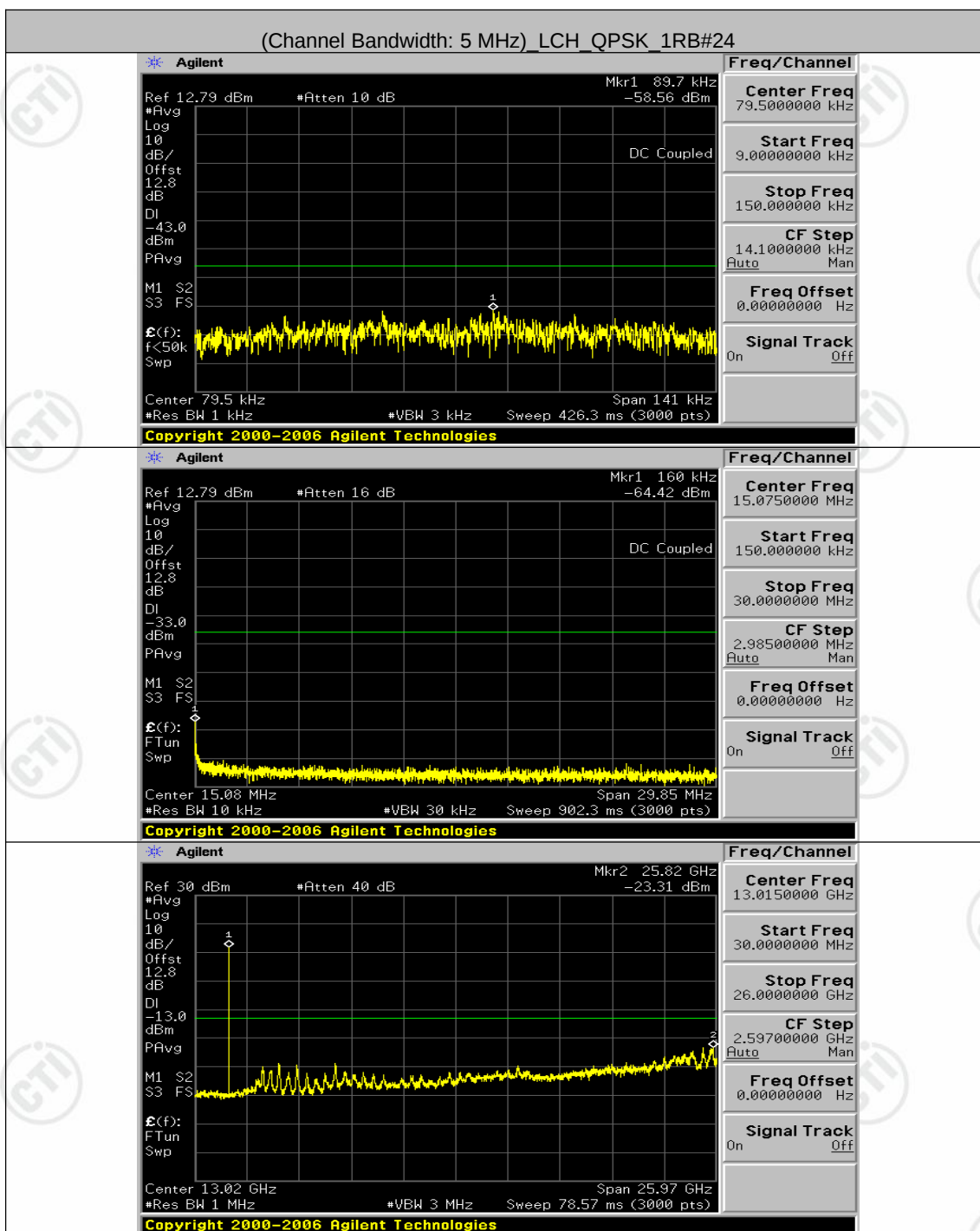


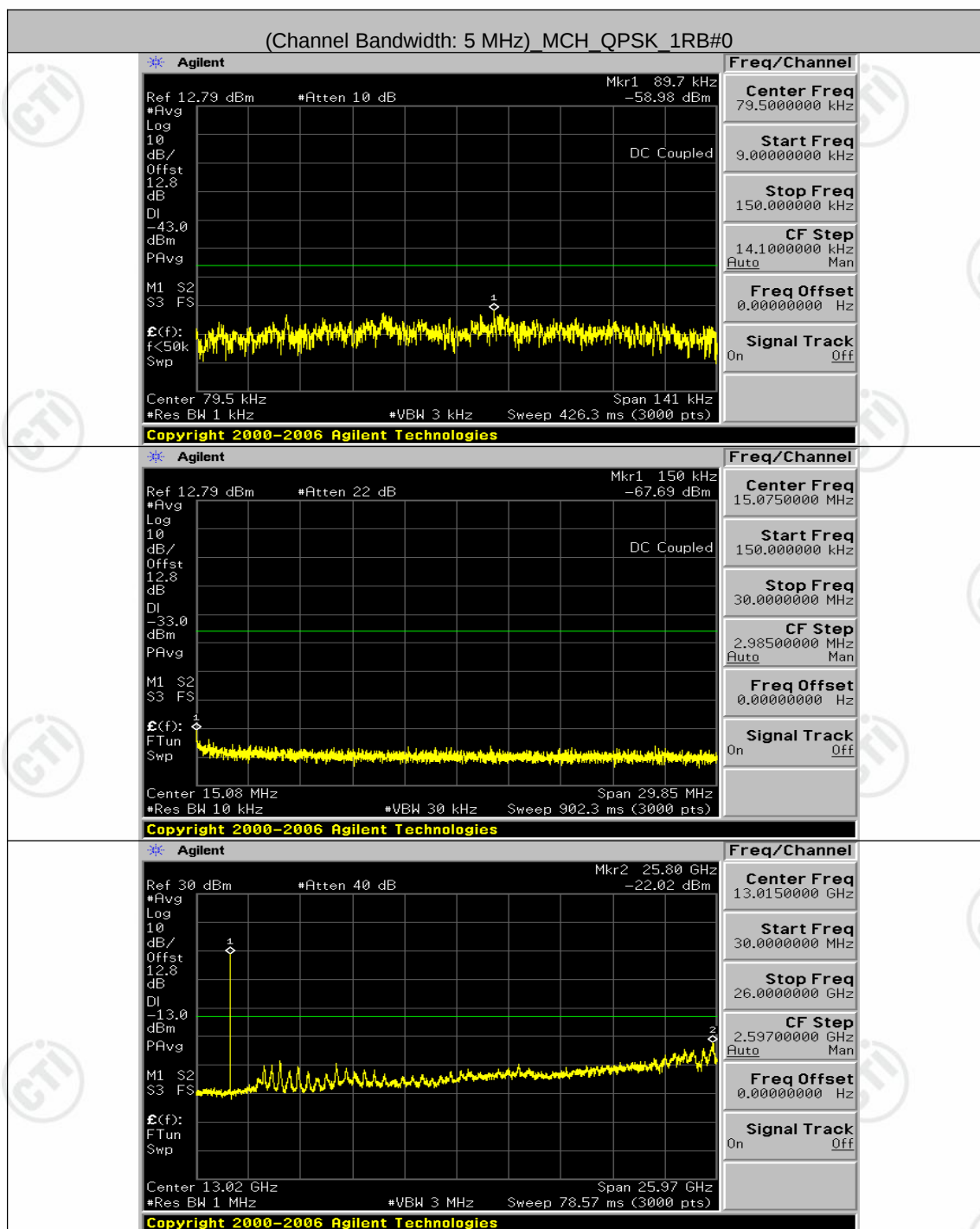


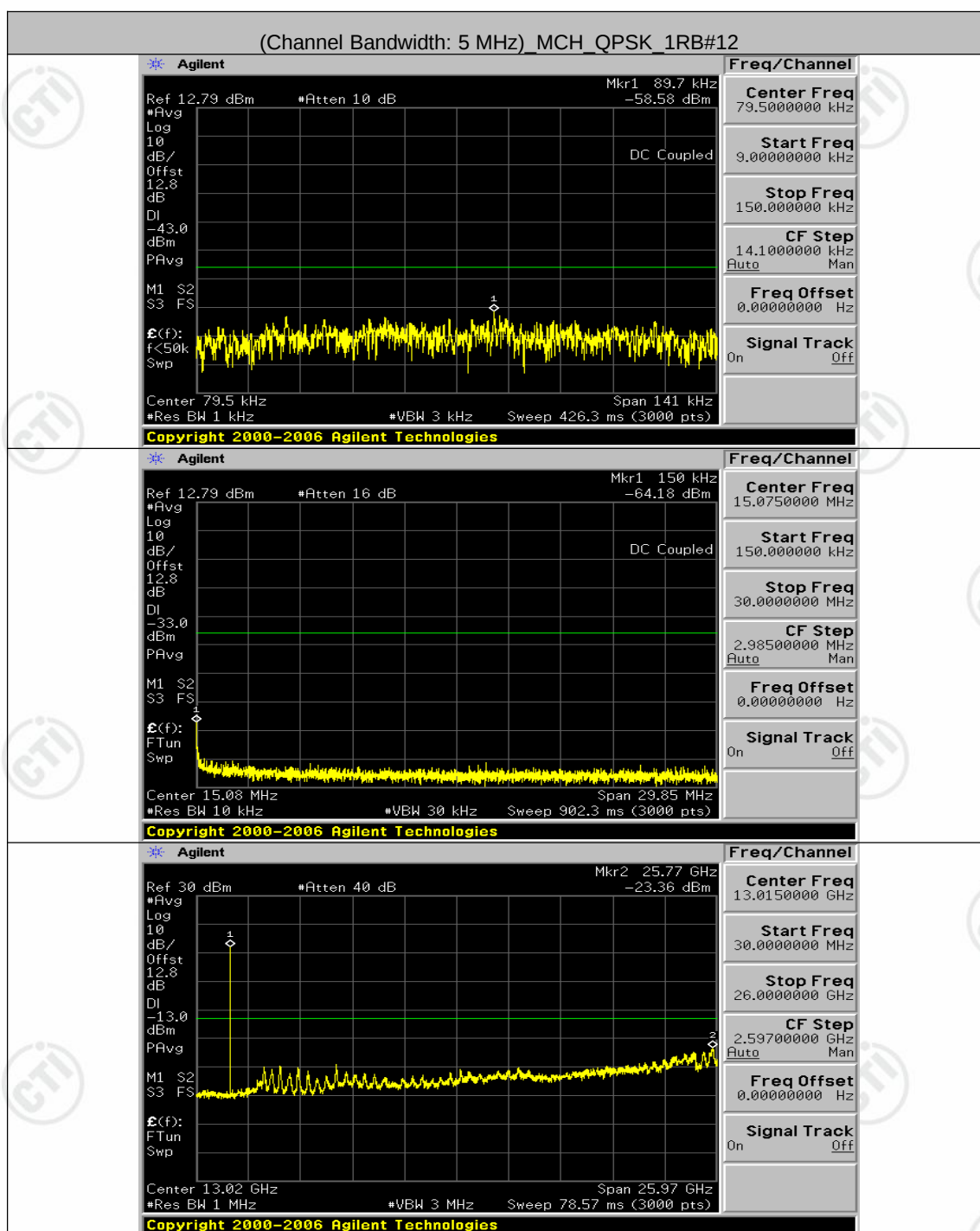
Channel Bandwidth: 5 MHz

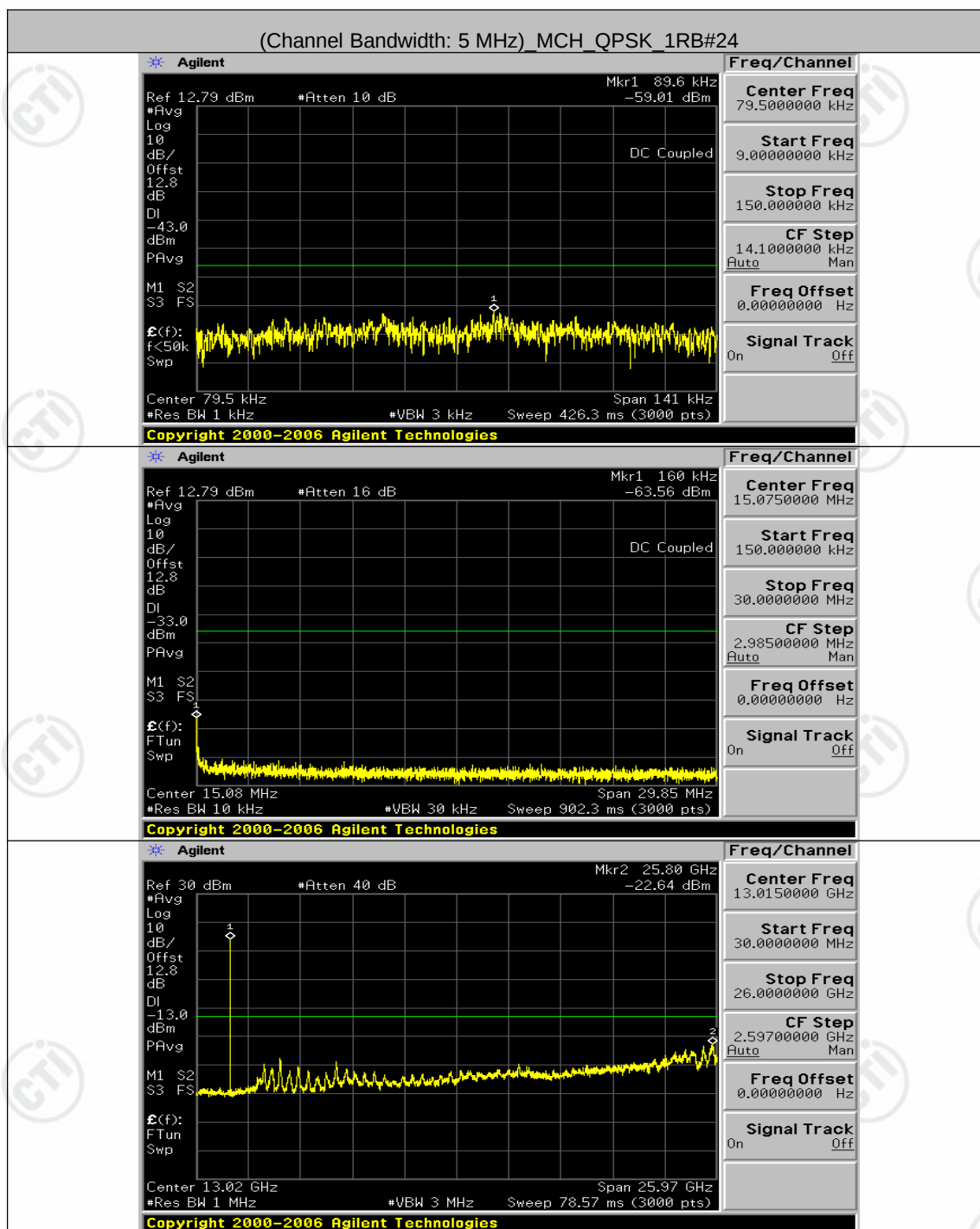


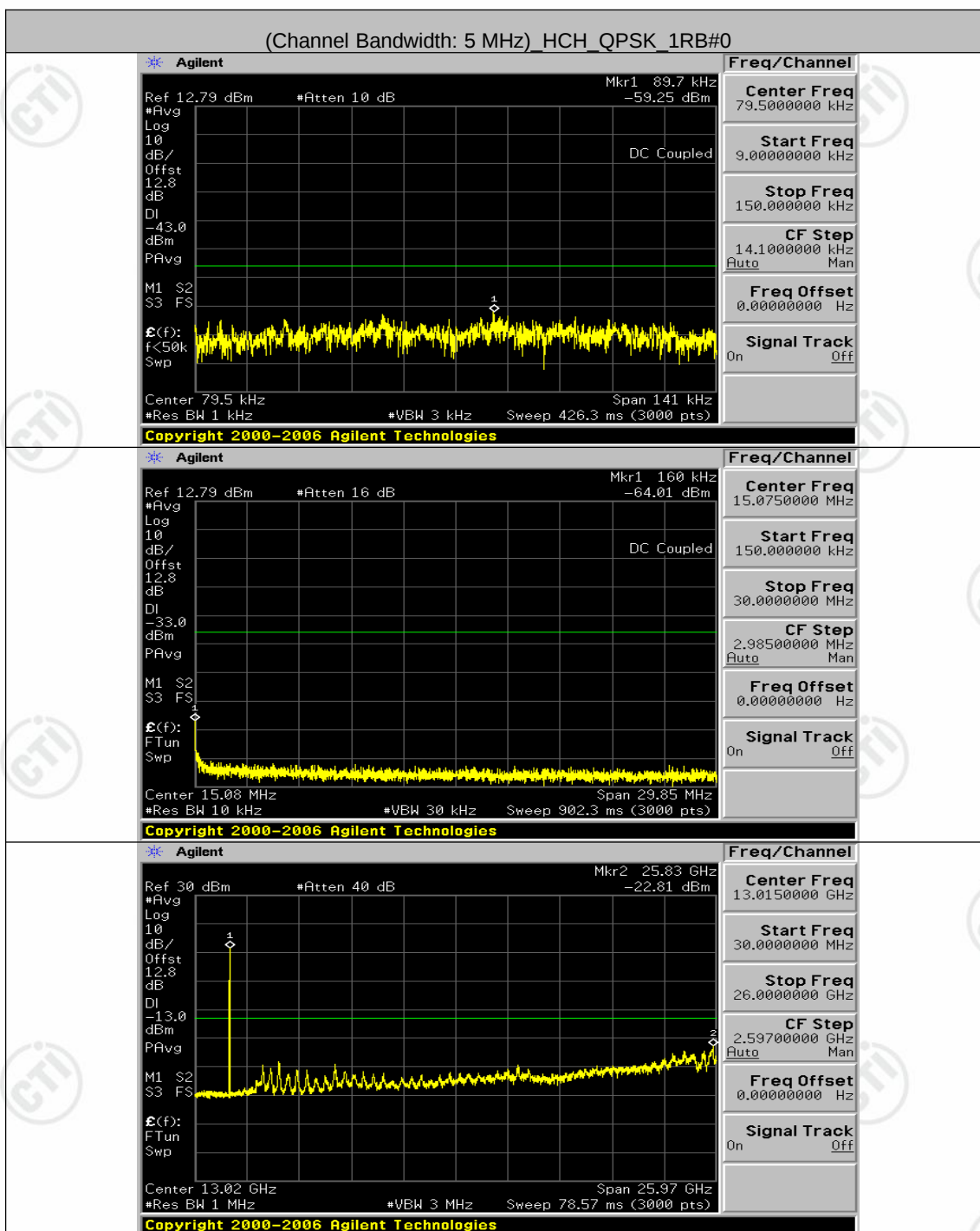


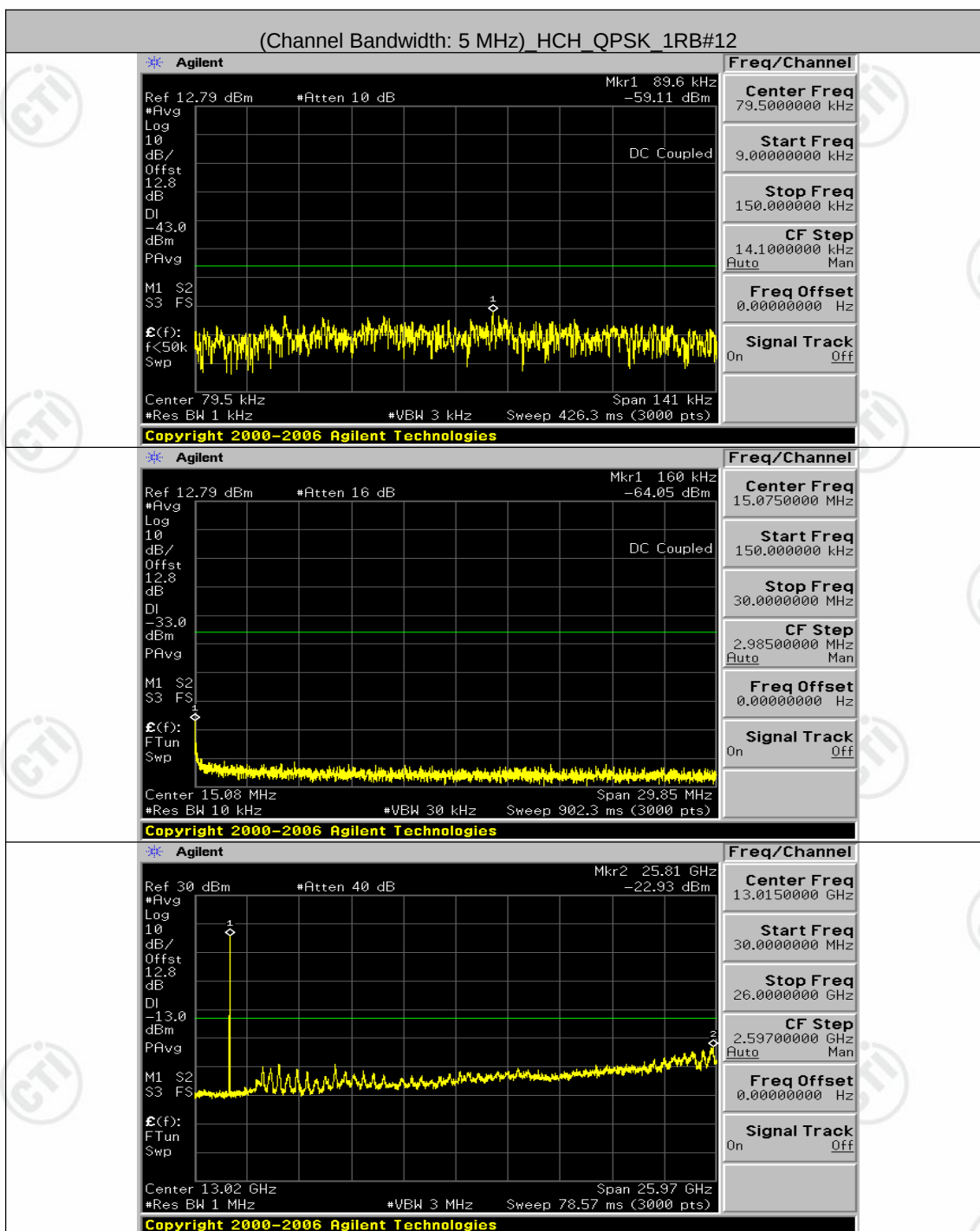


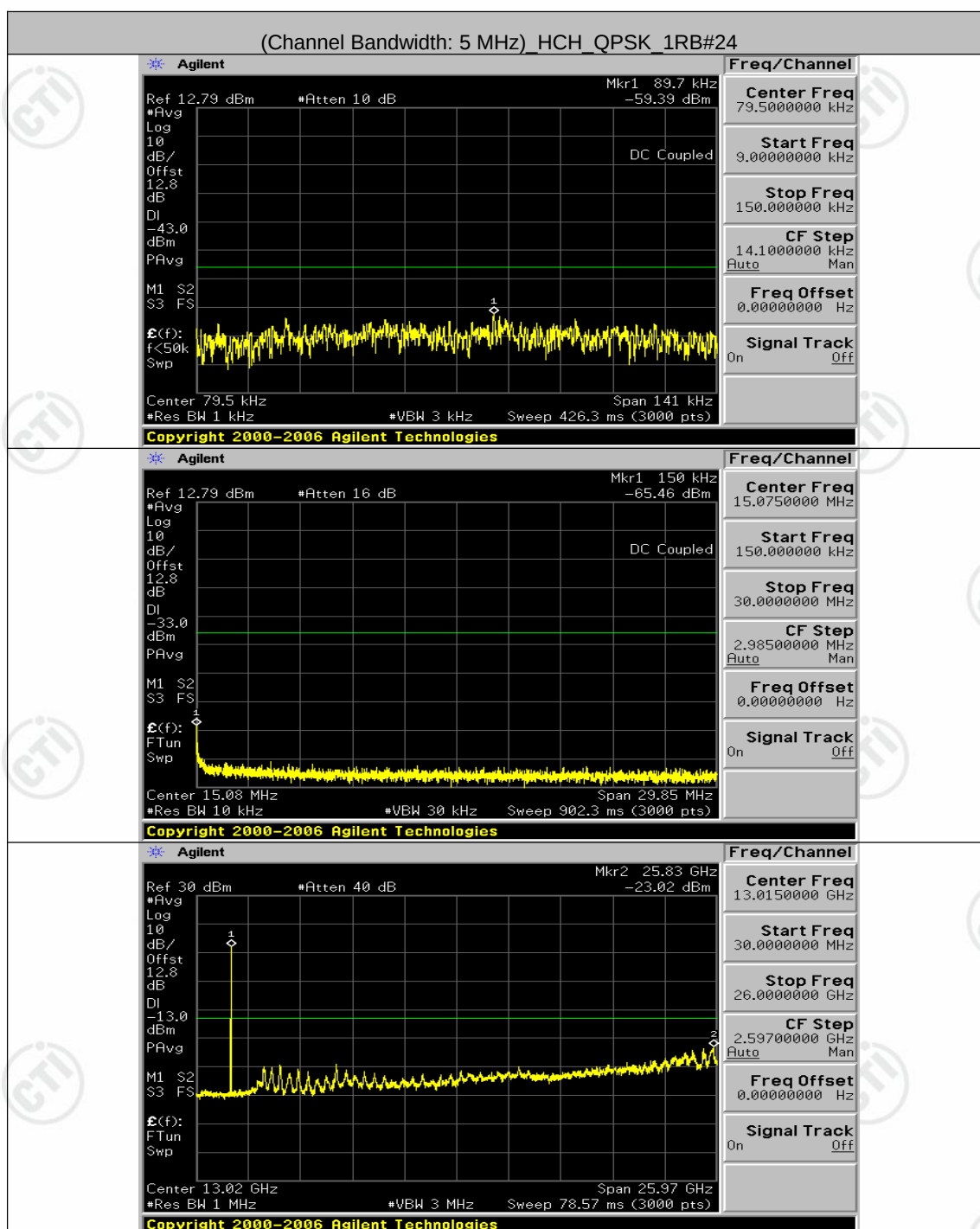


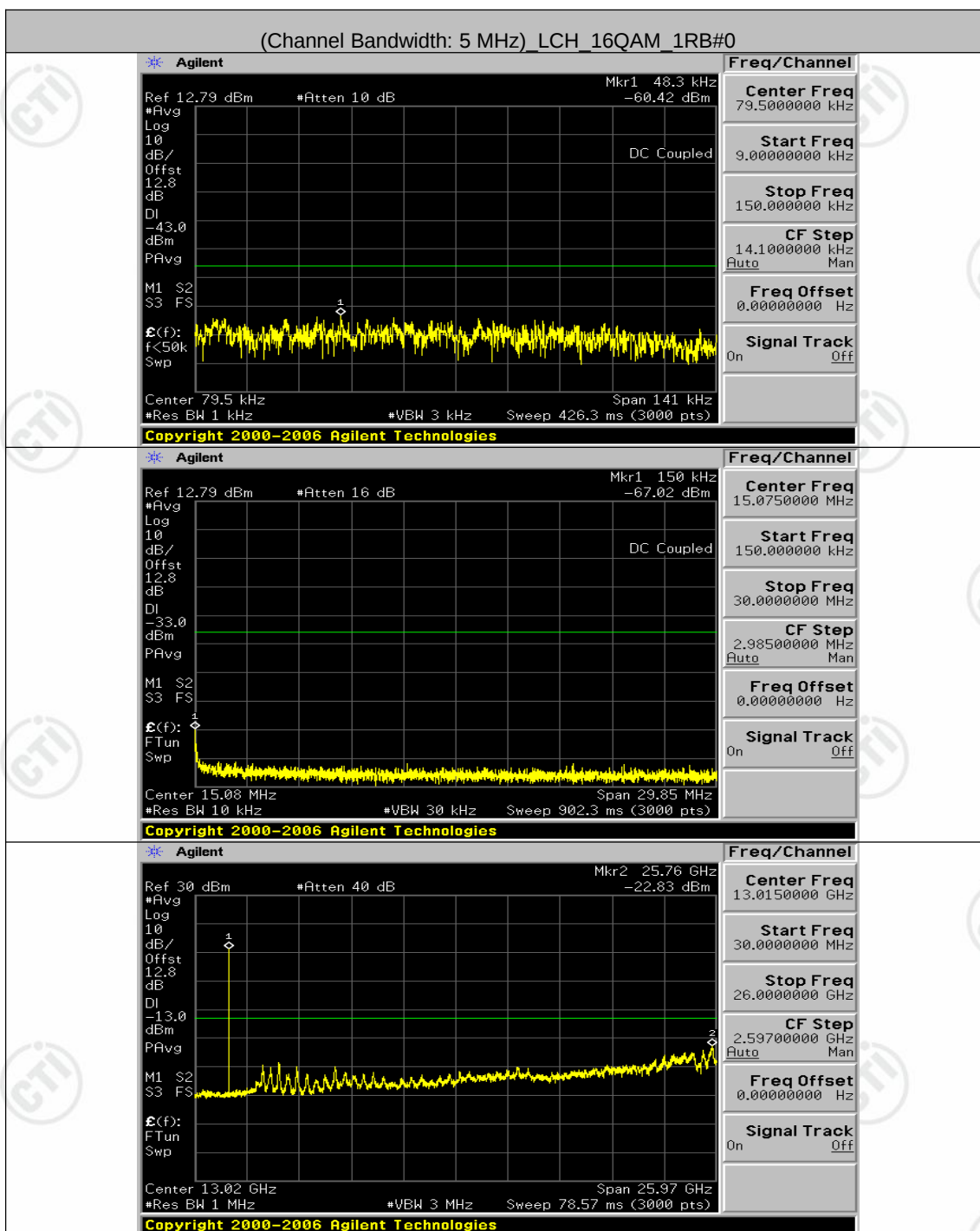


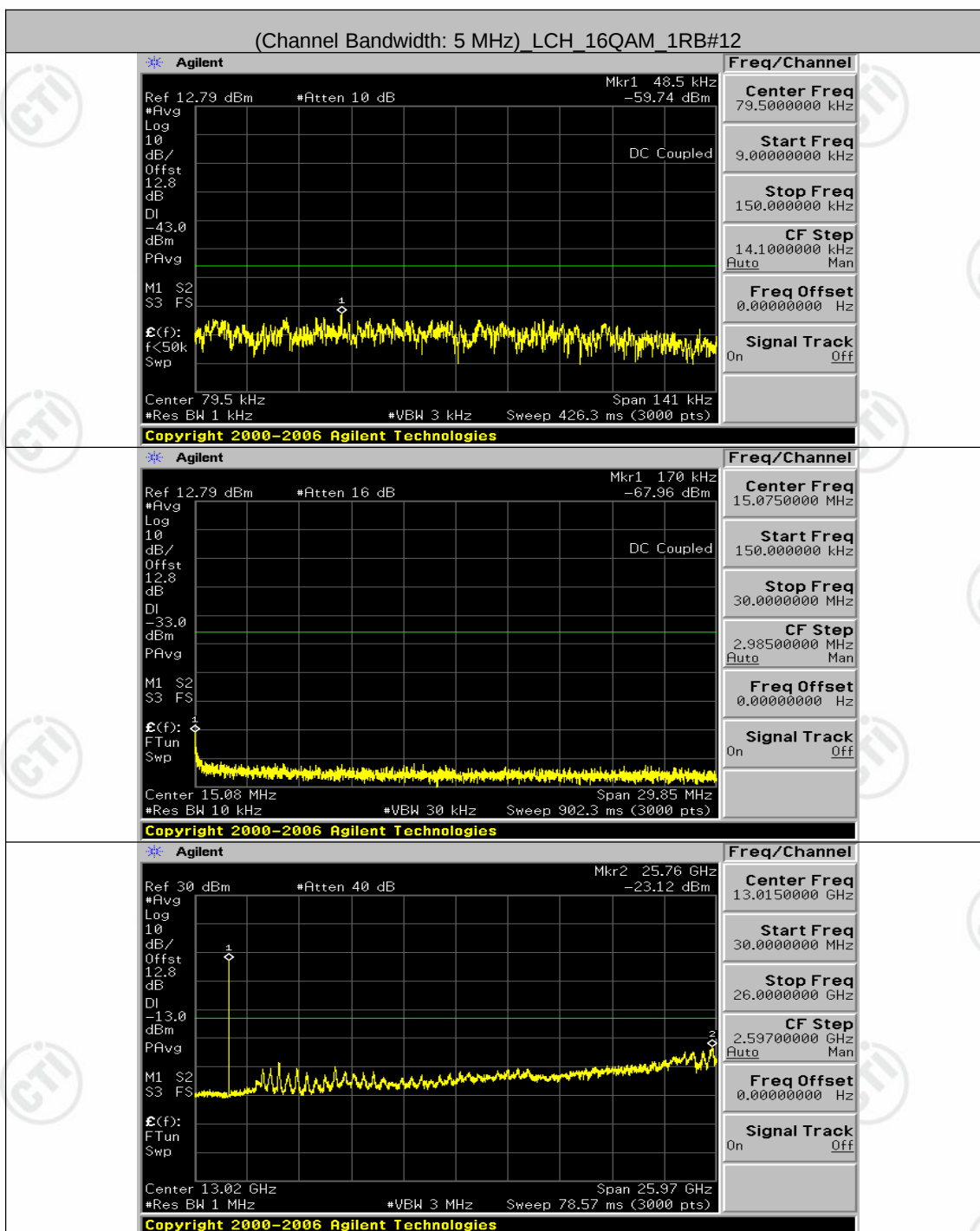


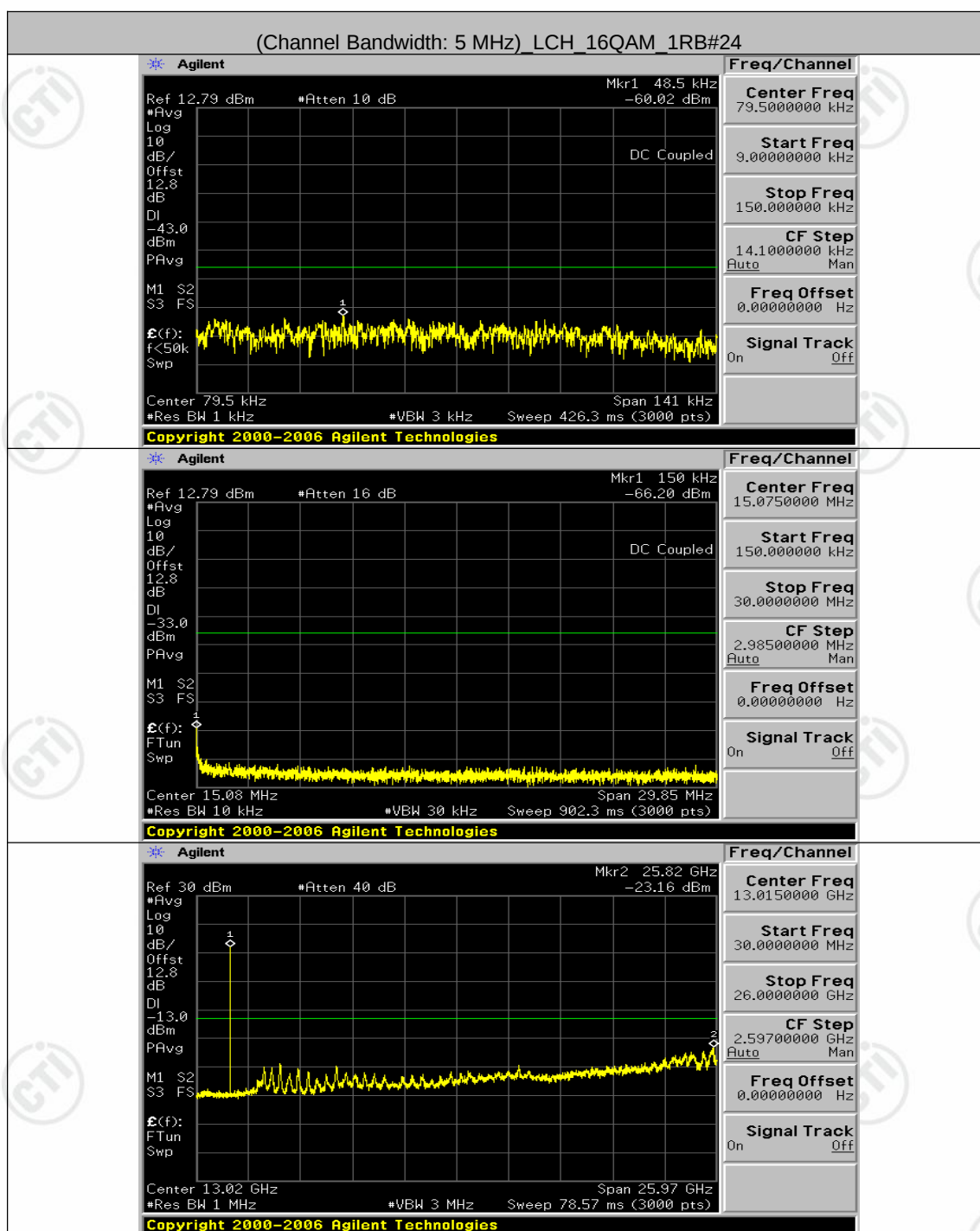


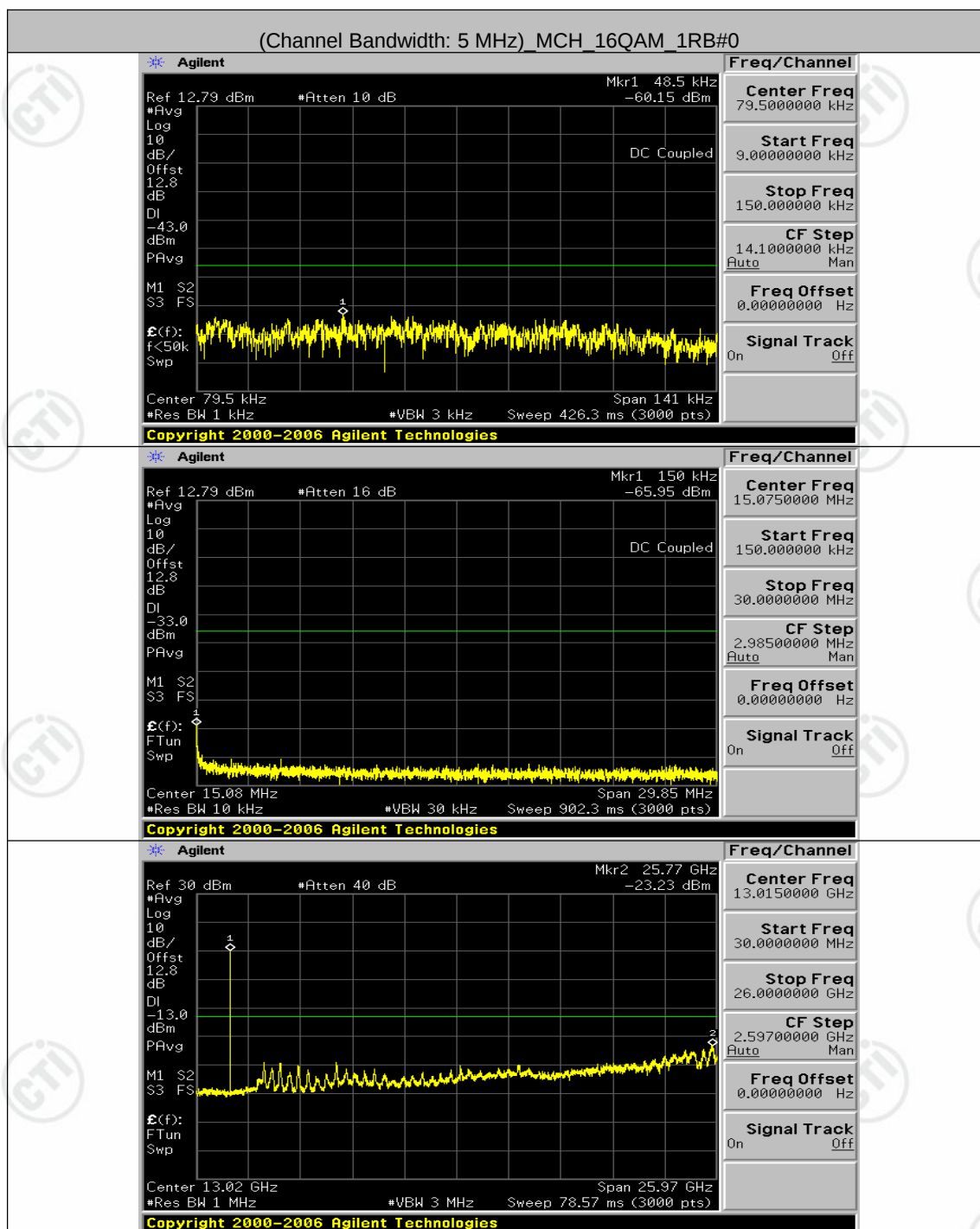


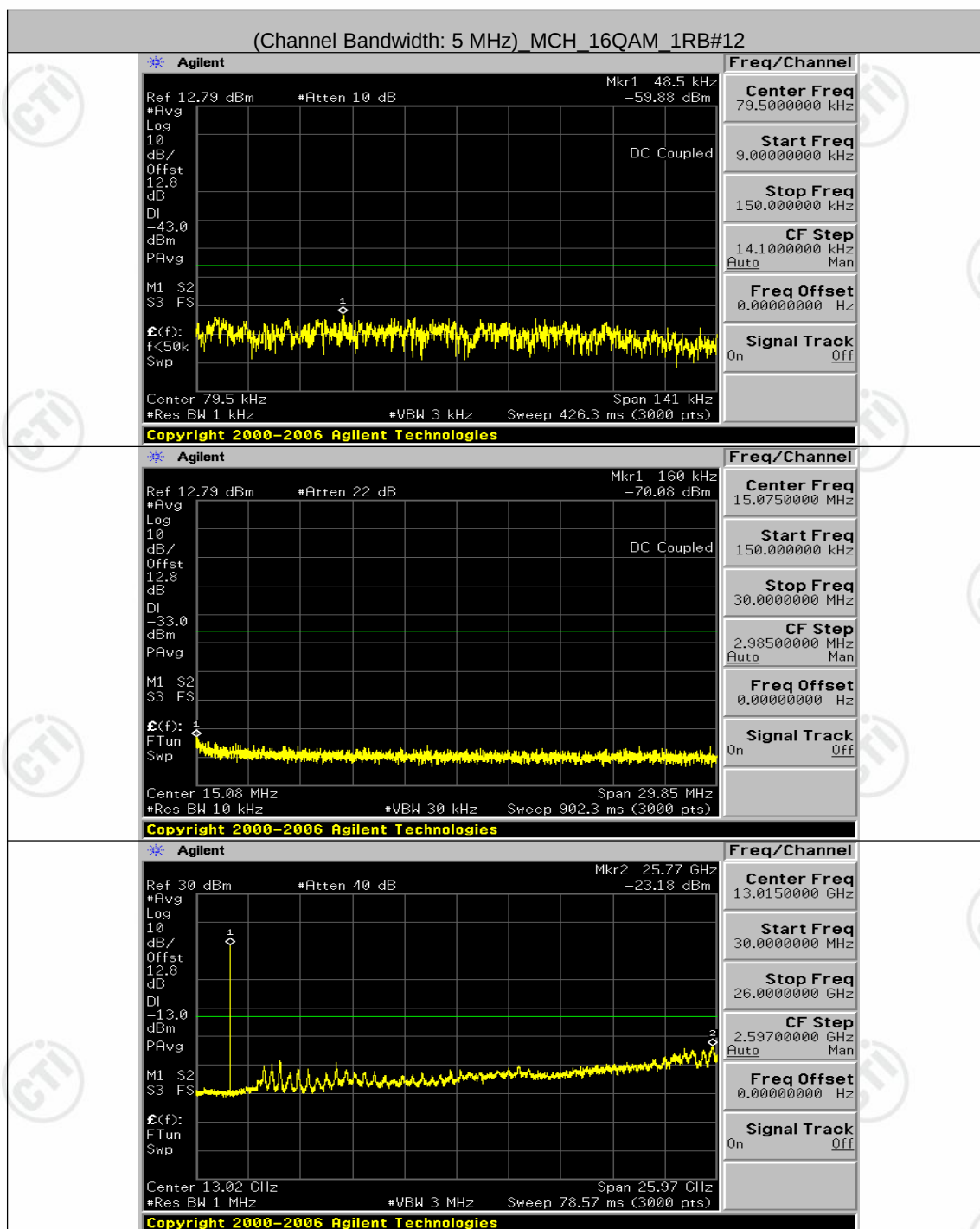


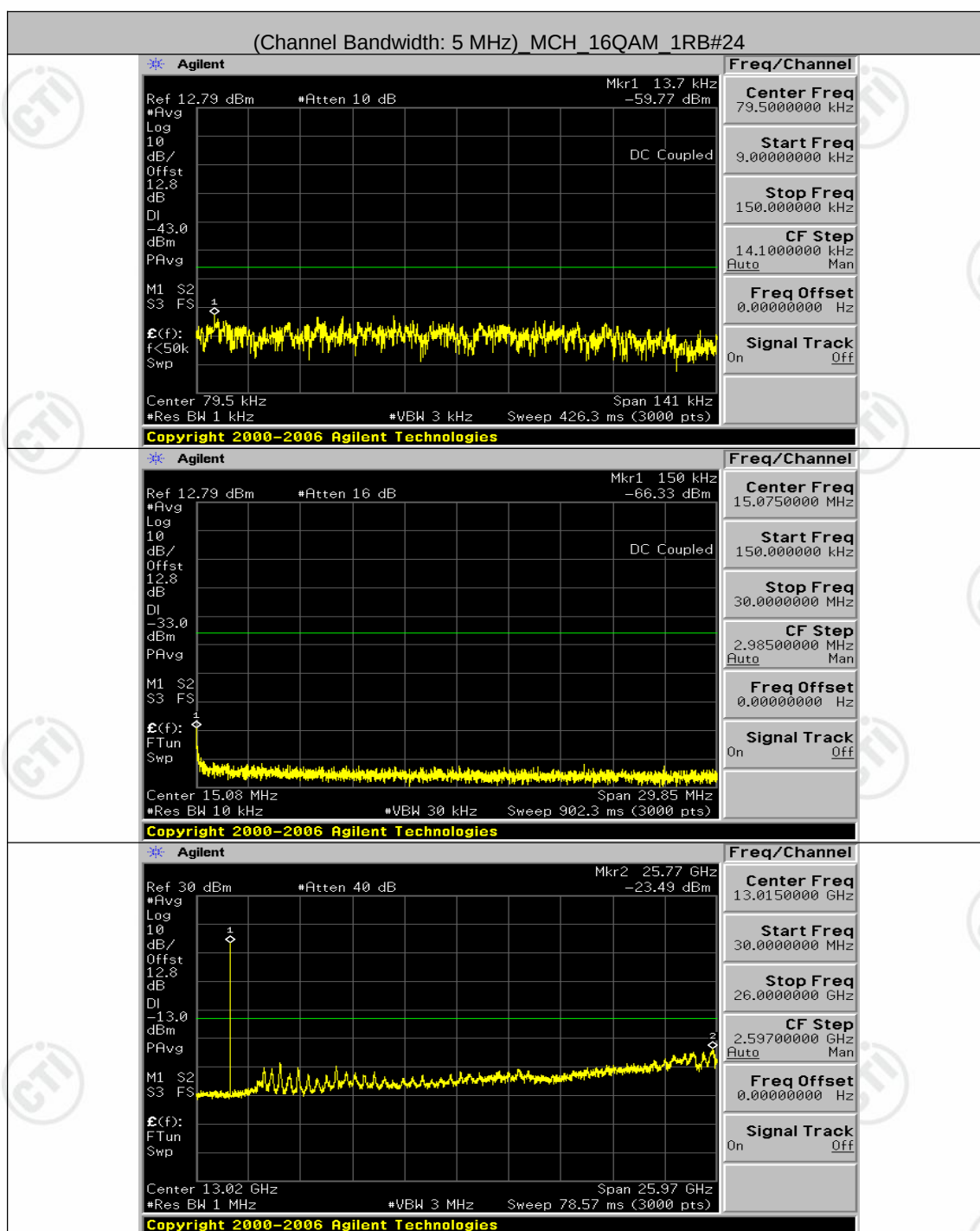


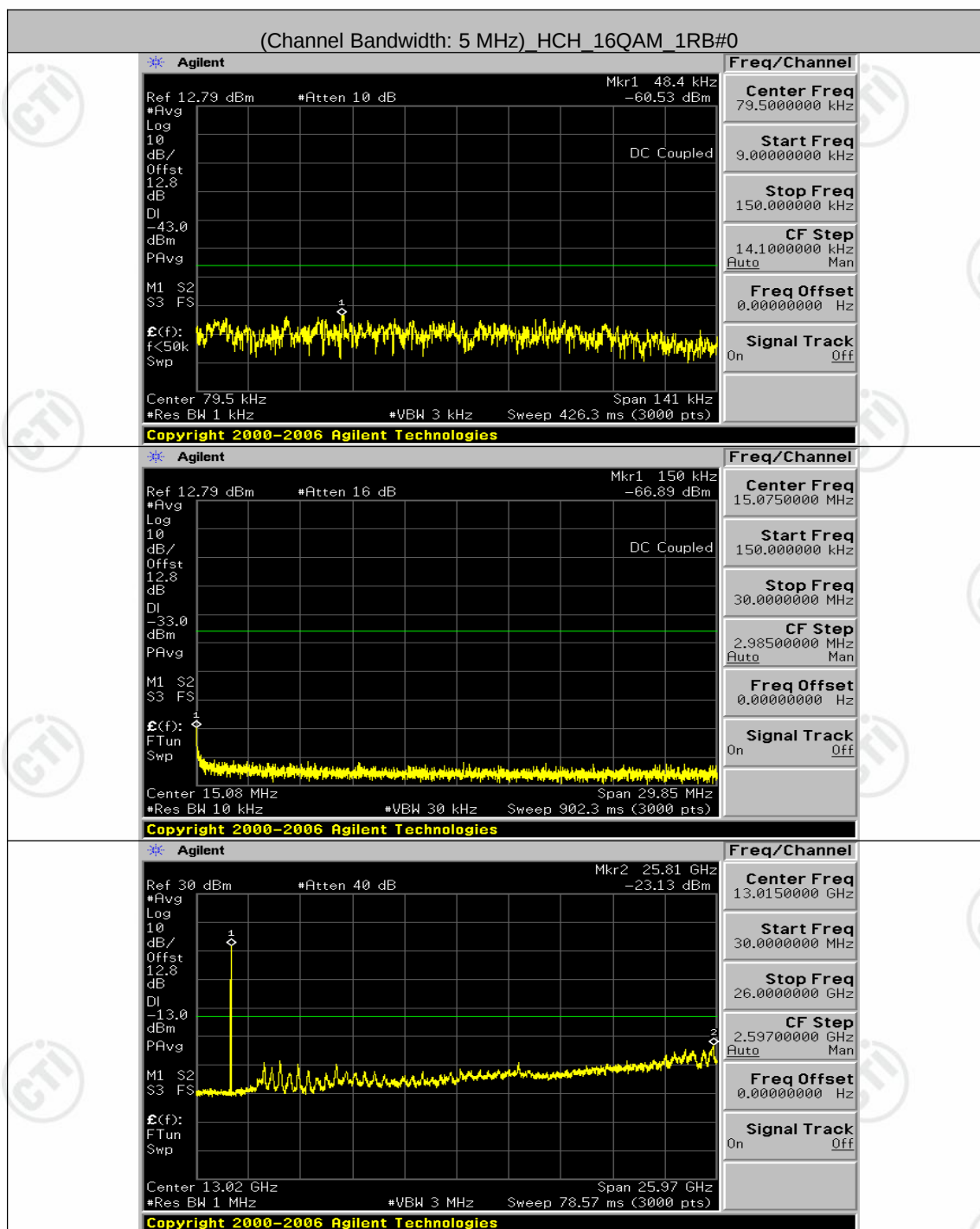


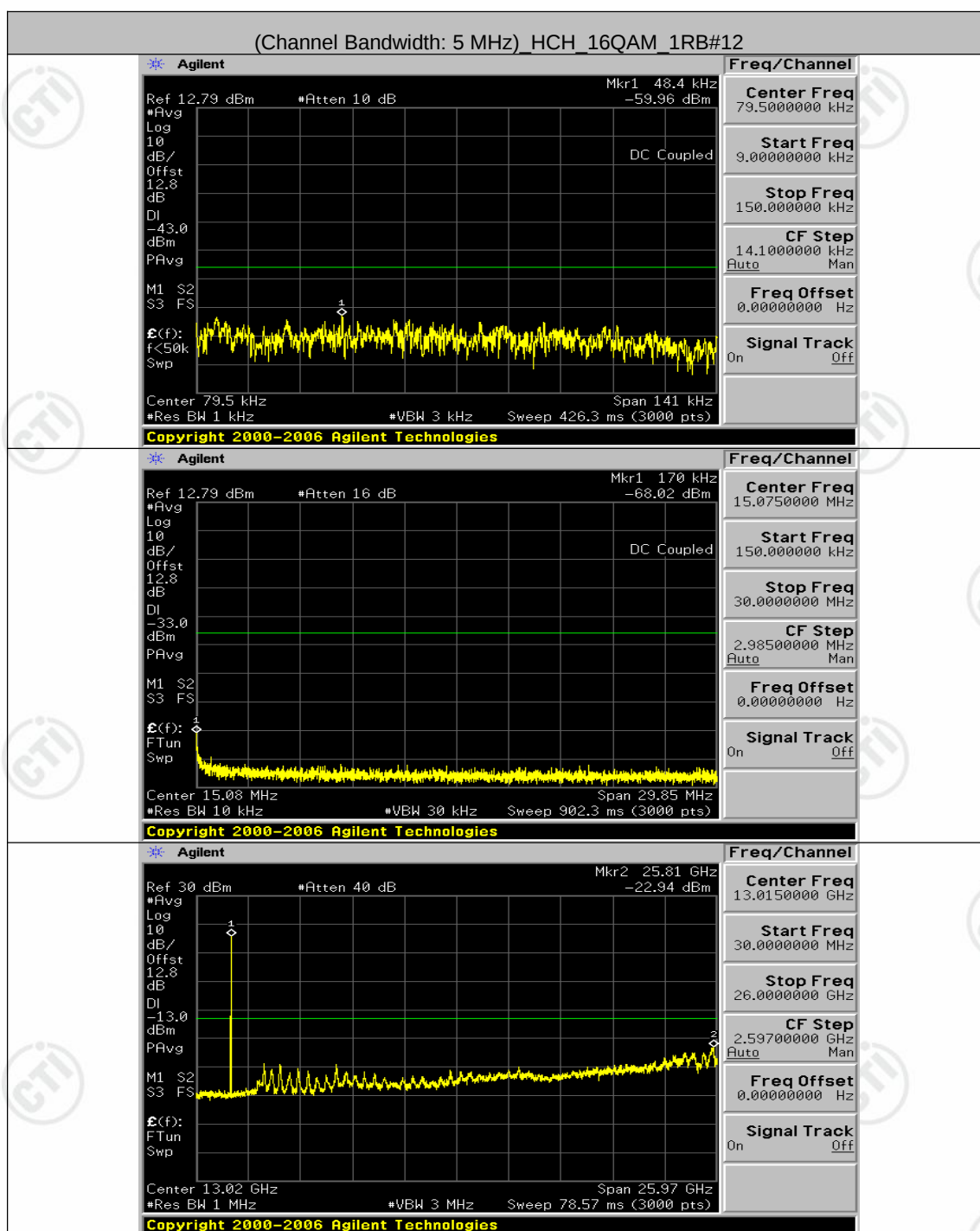


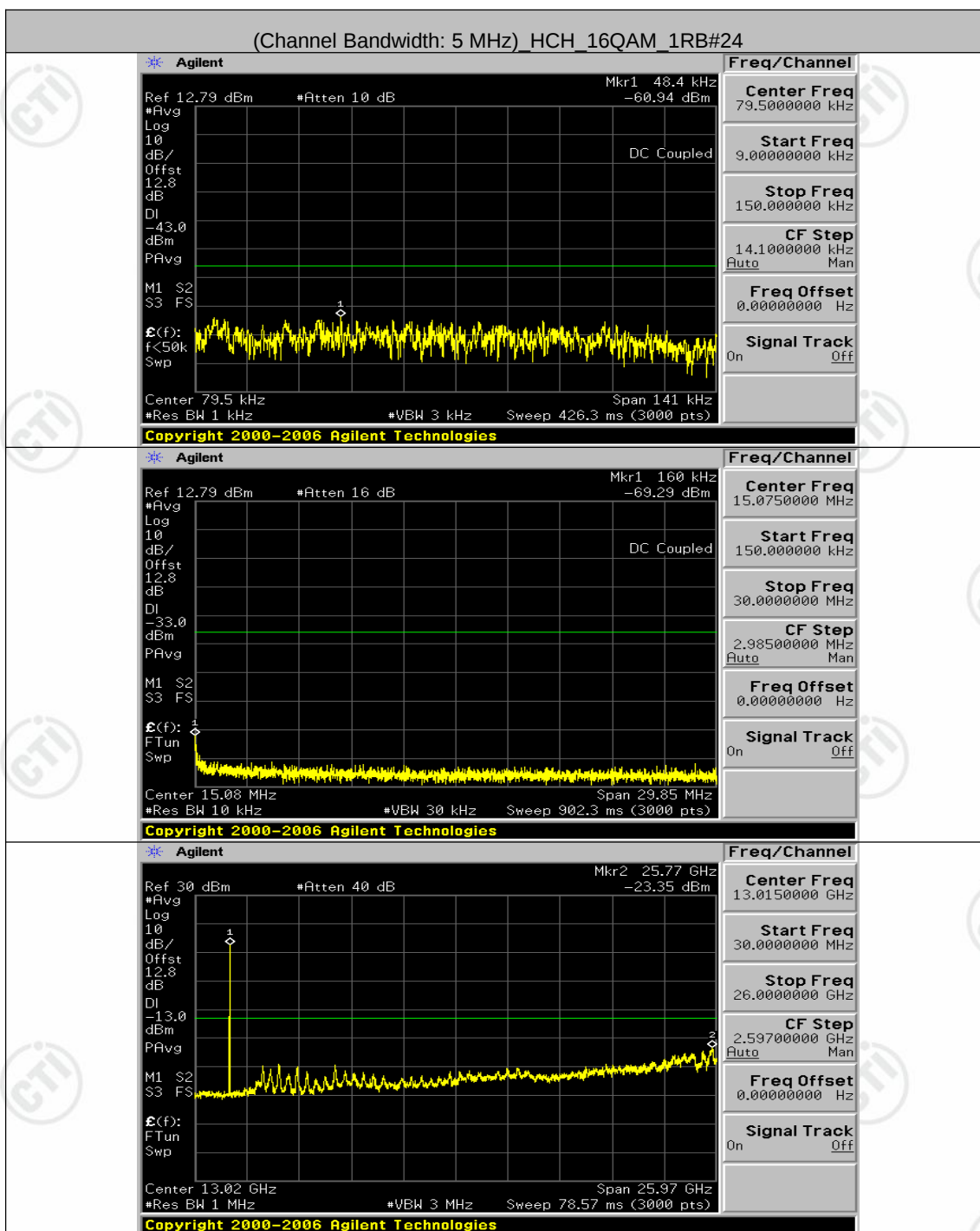




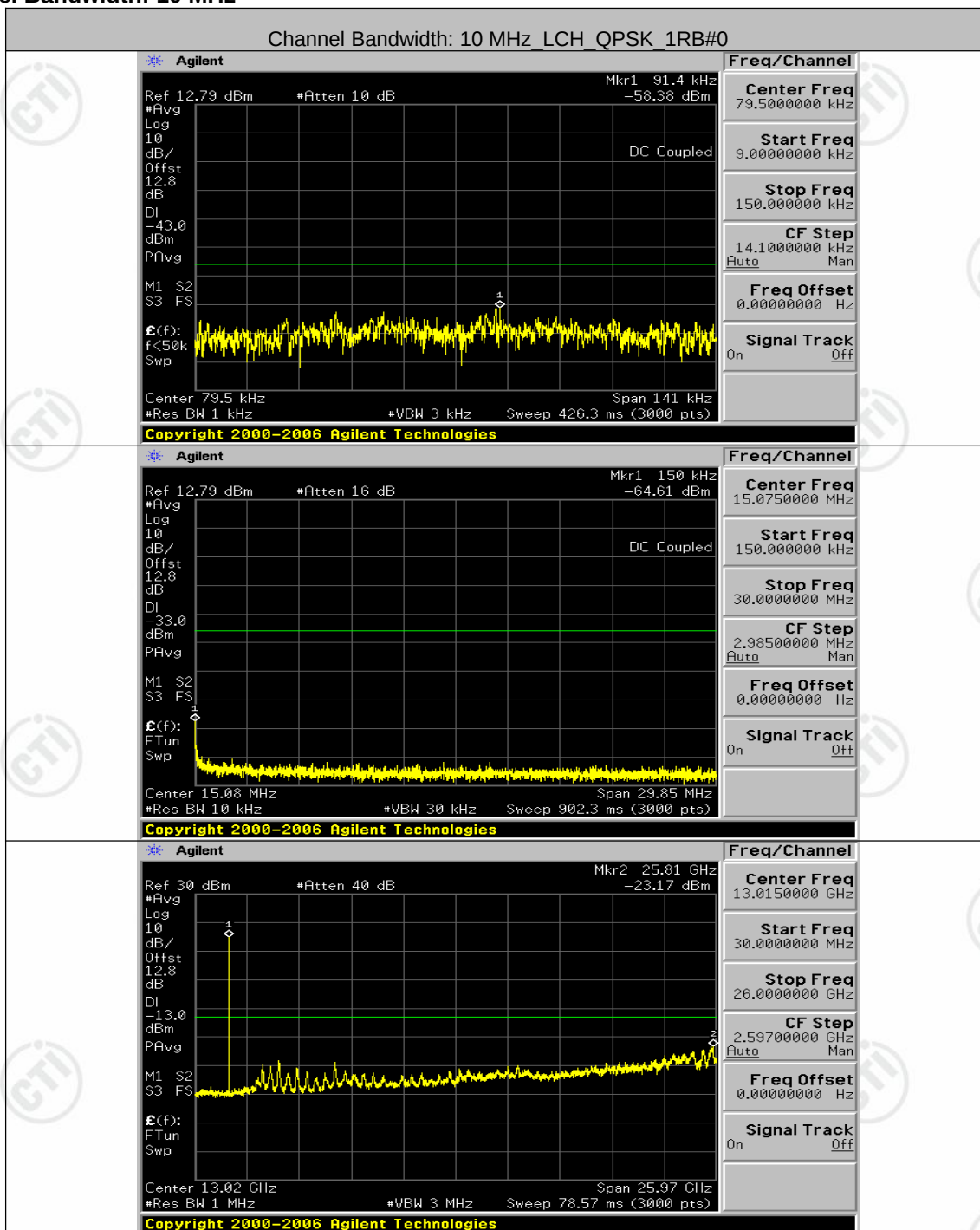


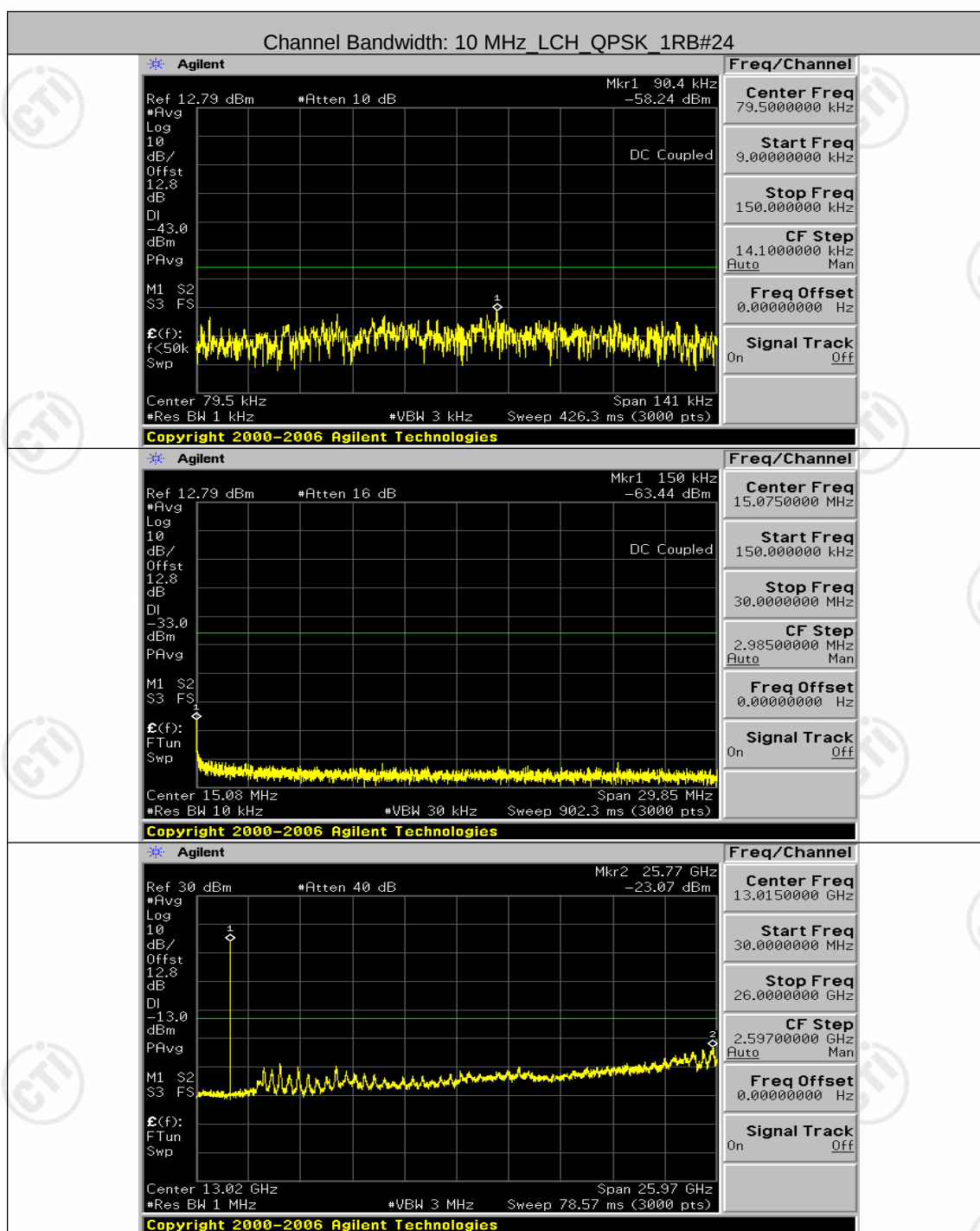


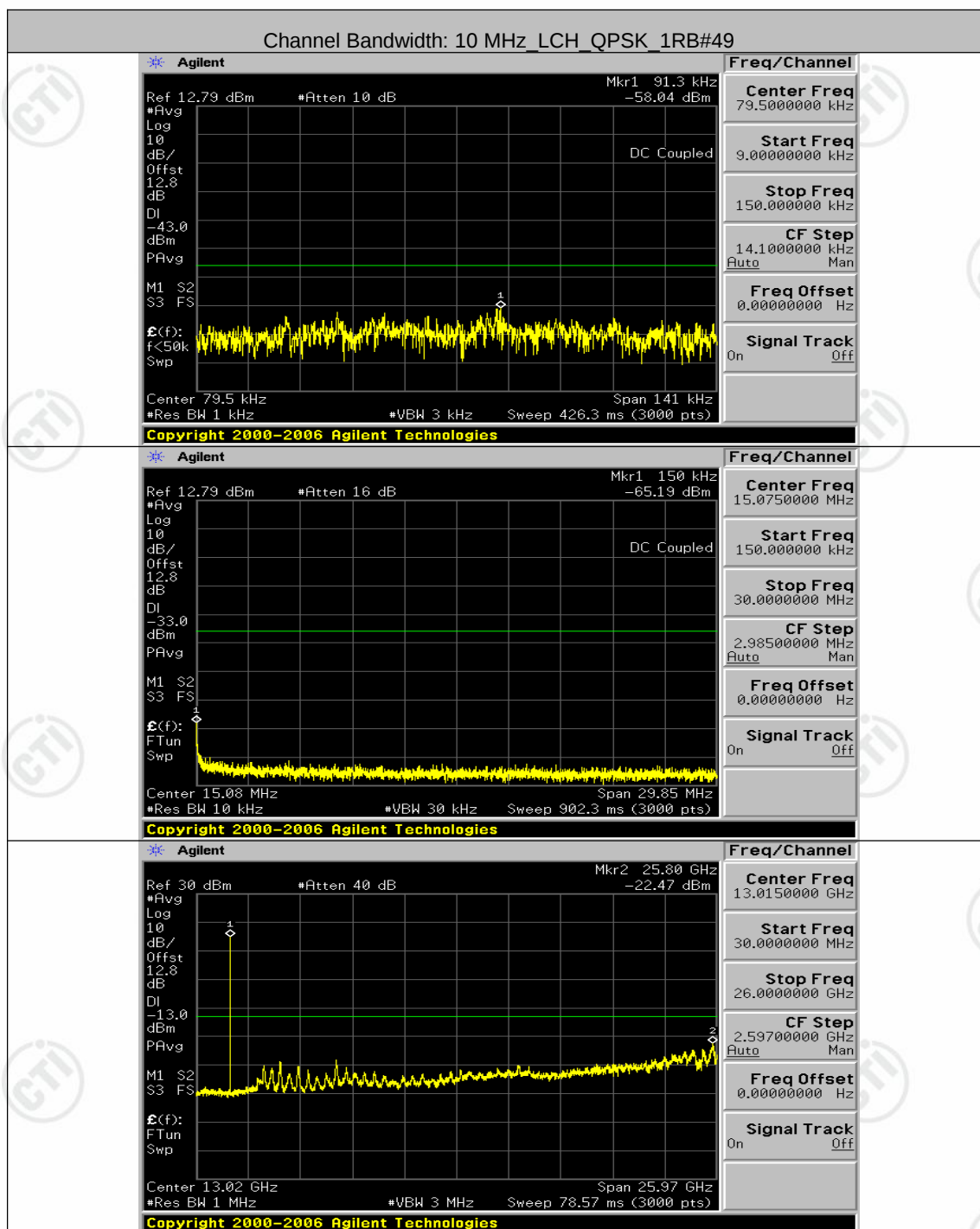


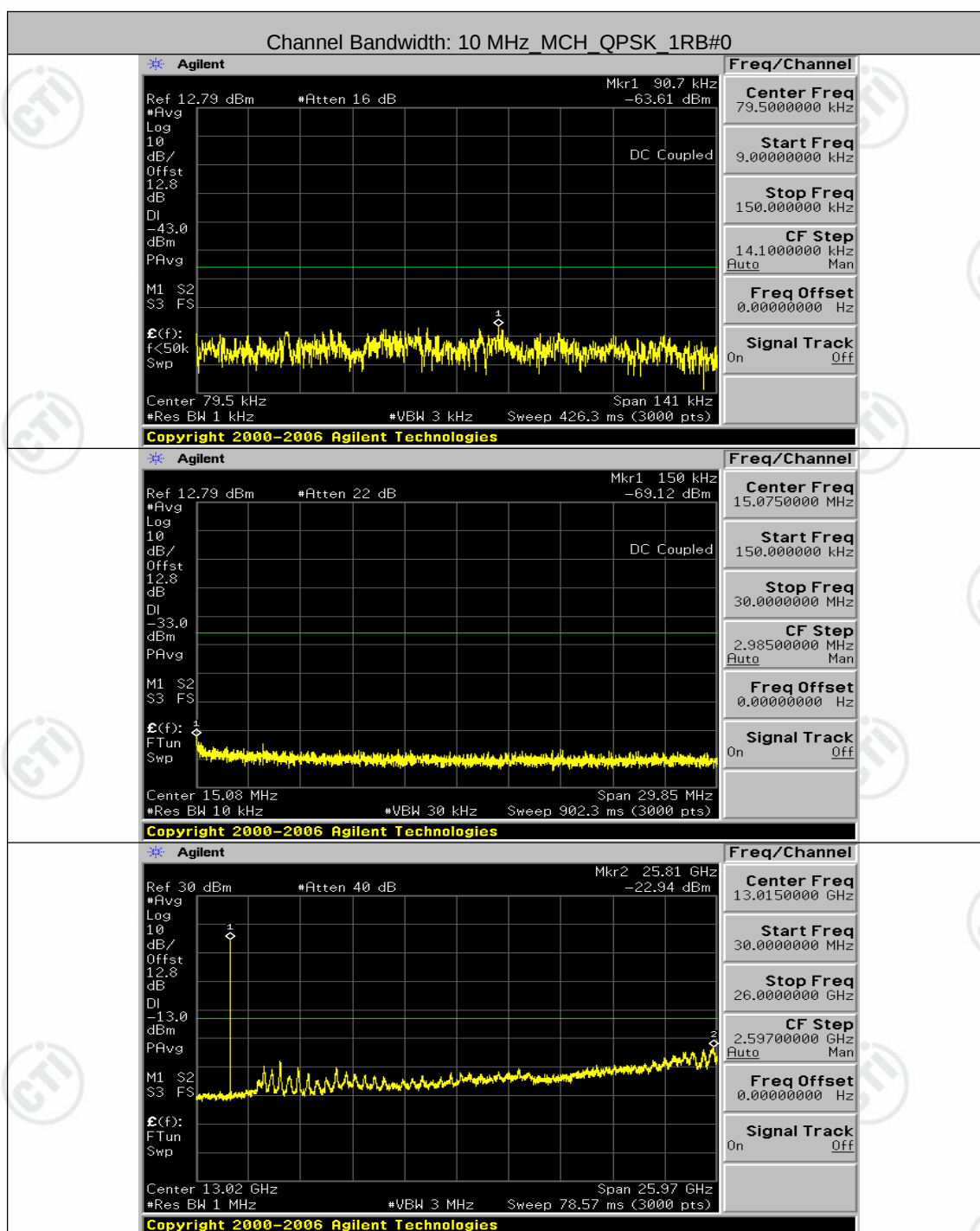


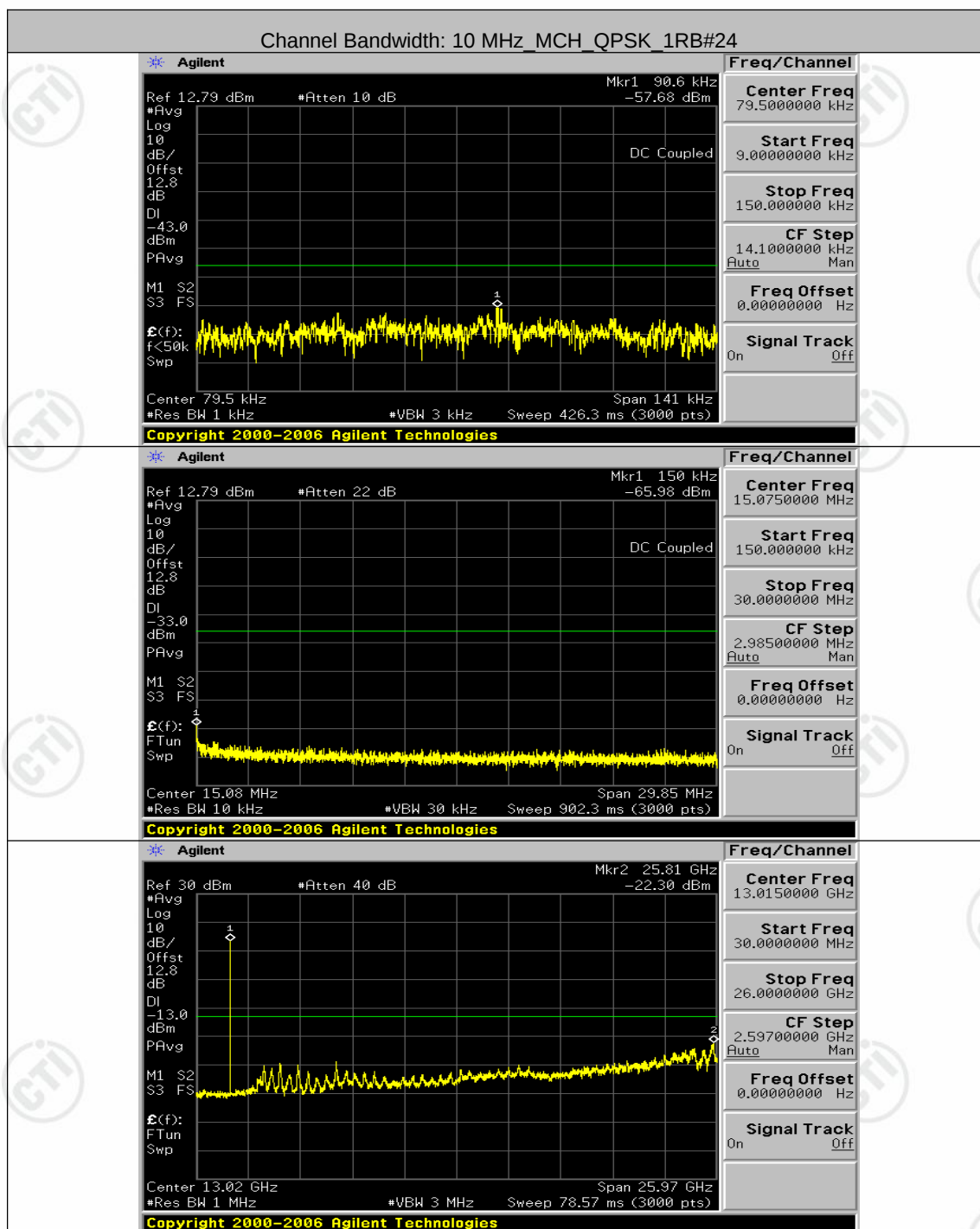
Channel Bandwidth: 10 MHz

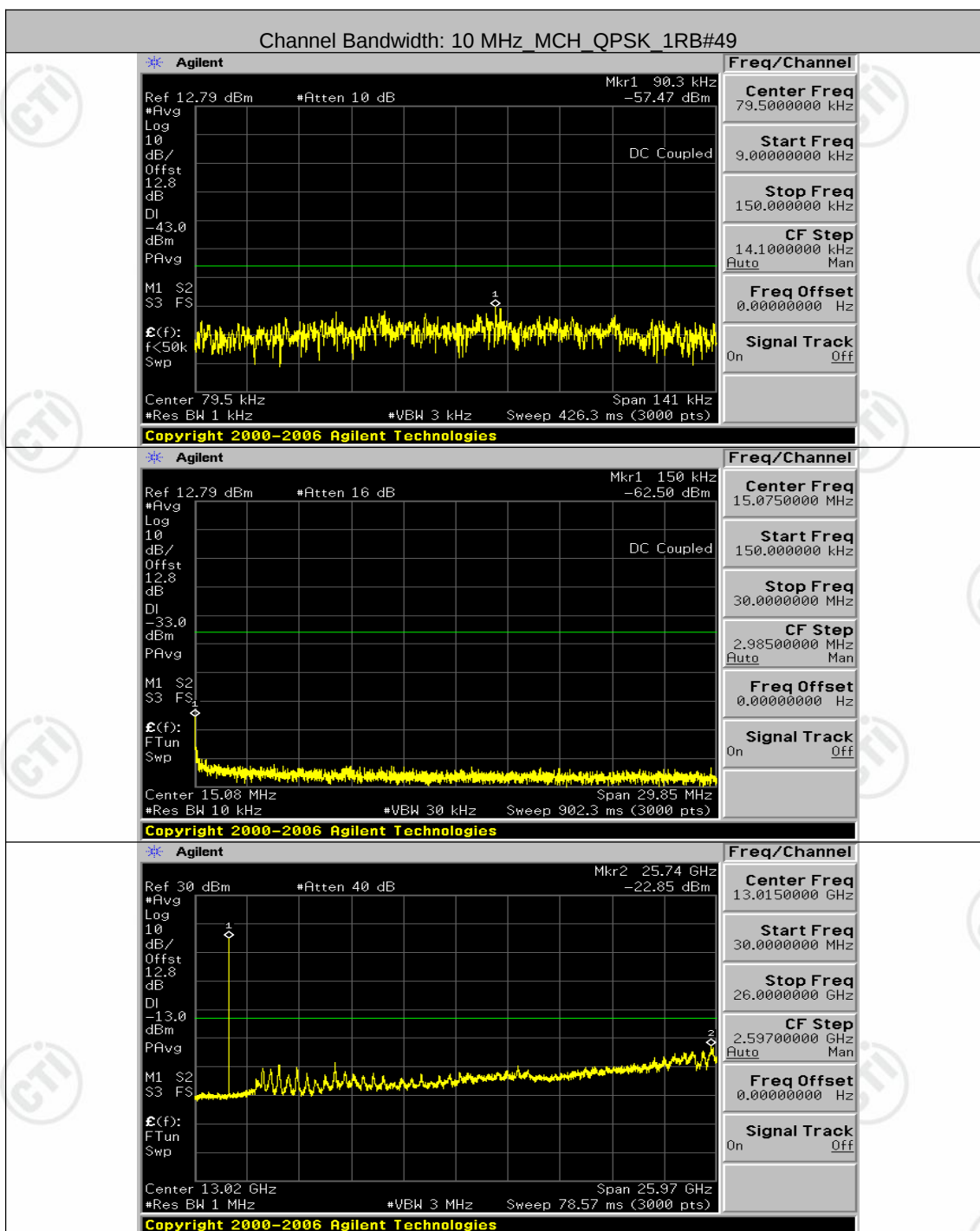


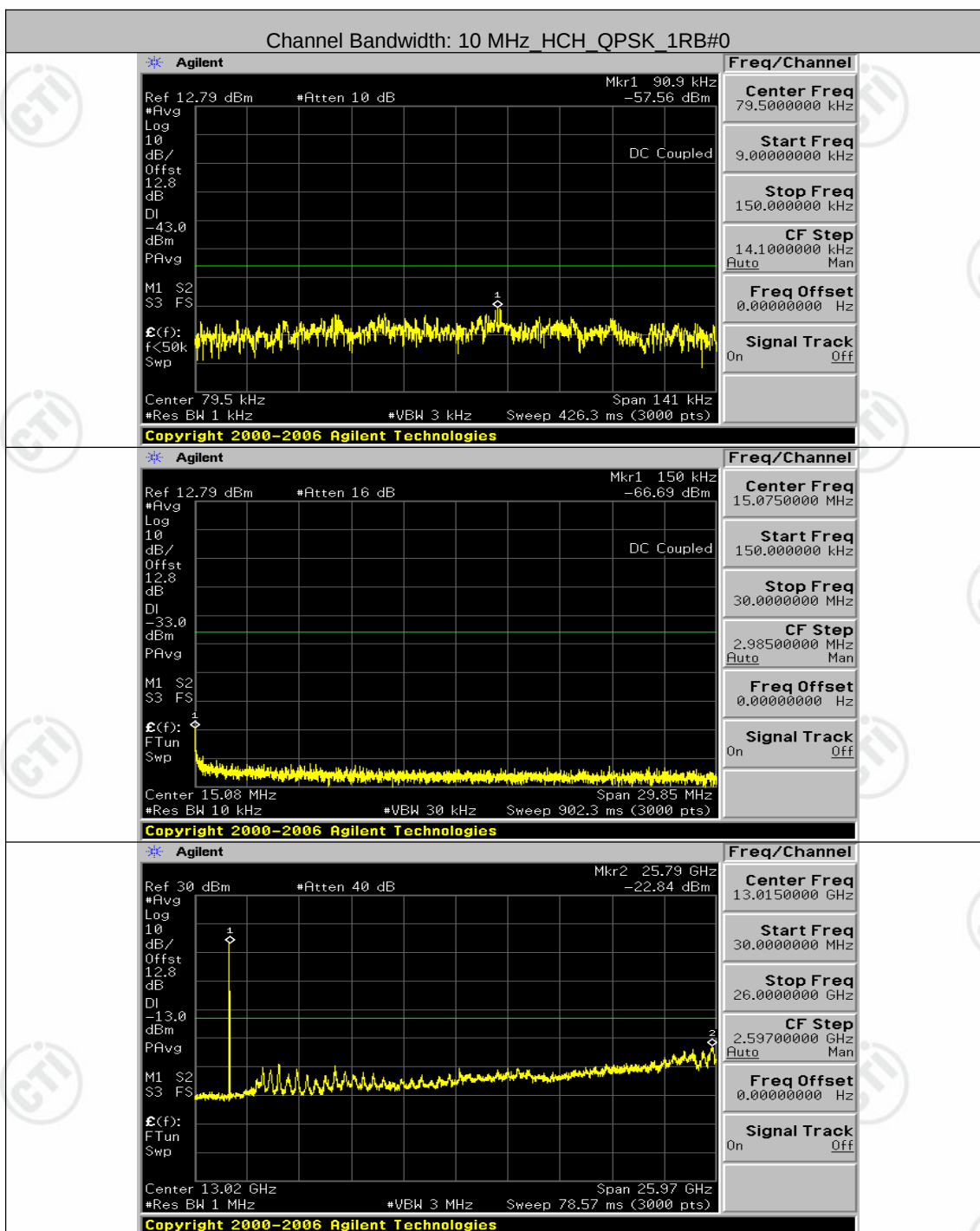


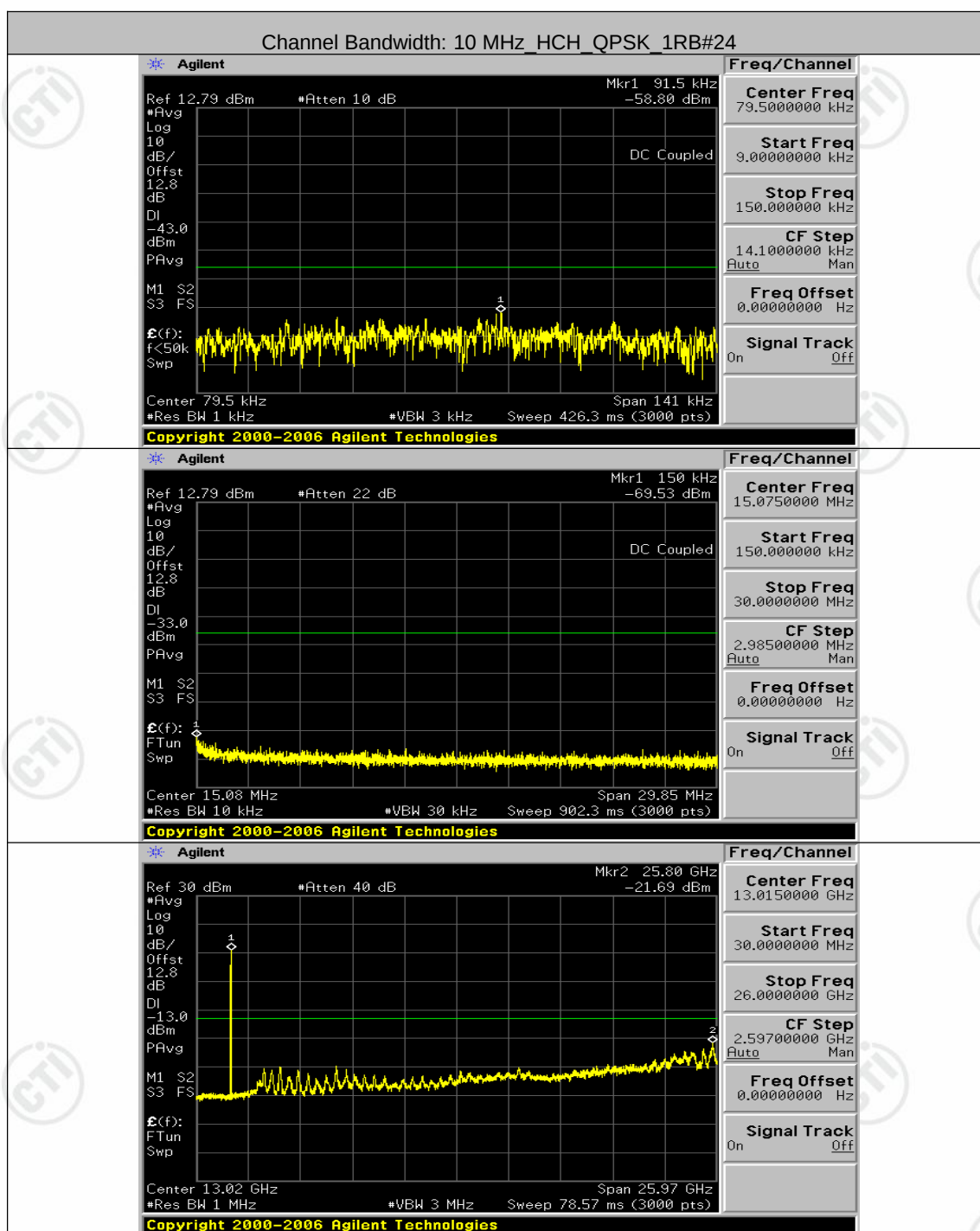


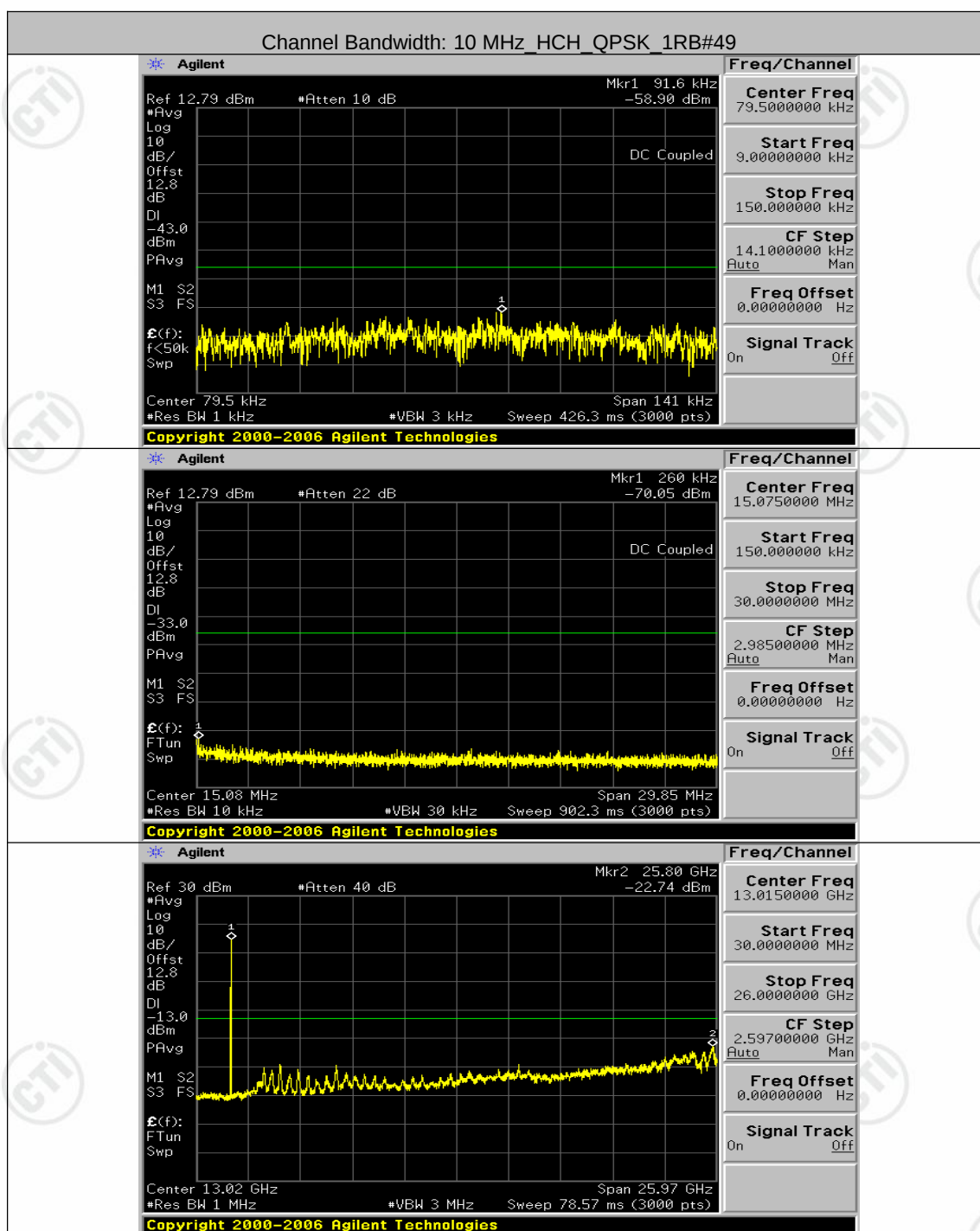


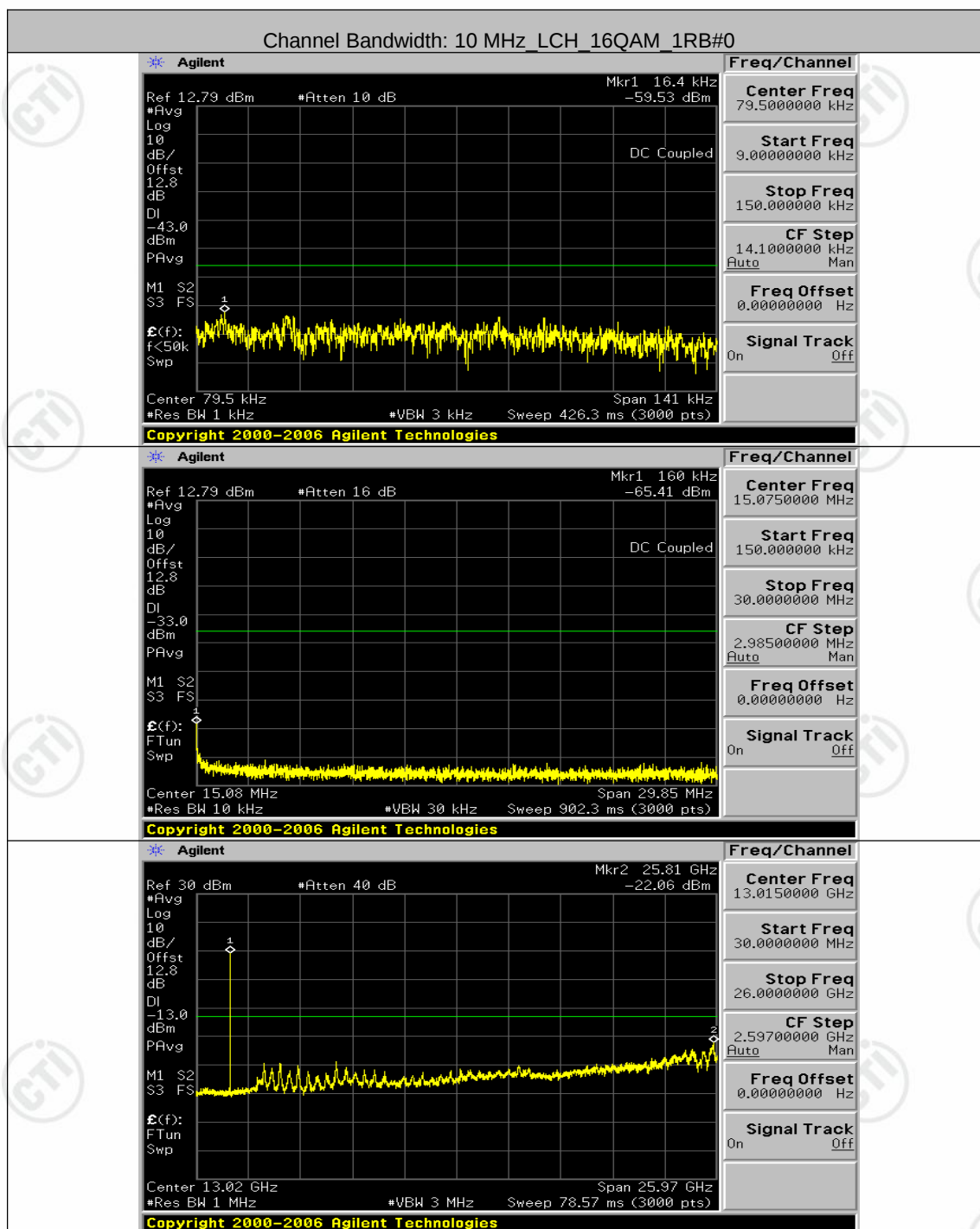


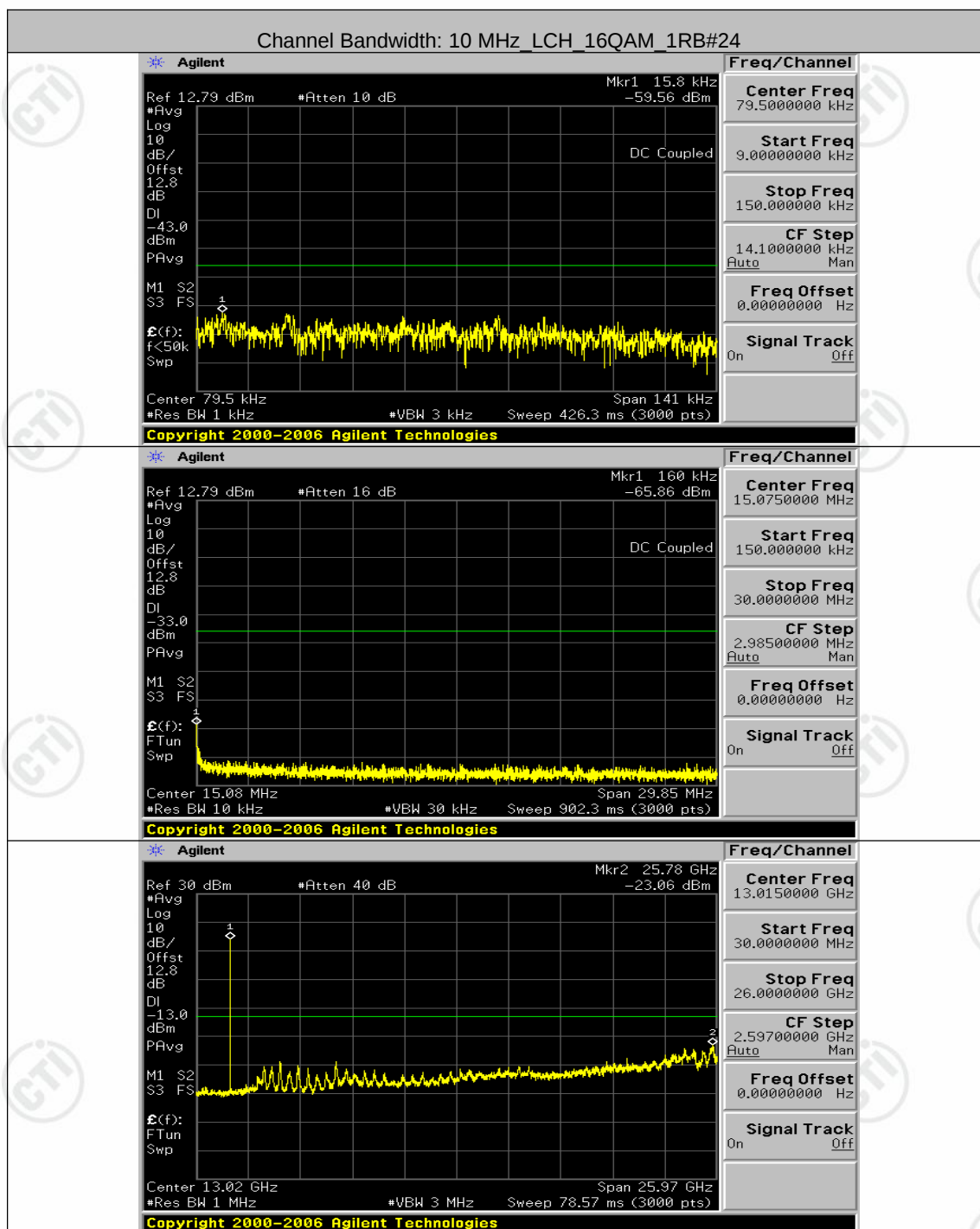


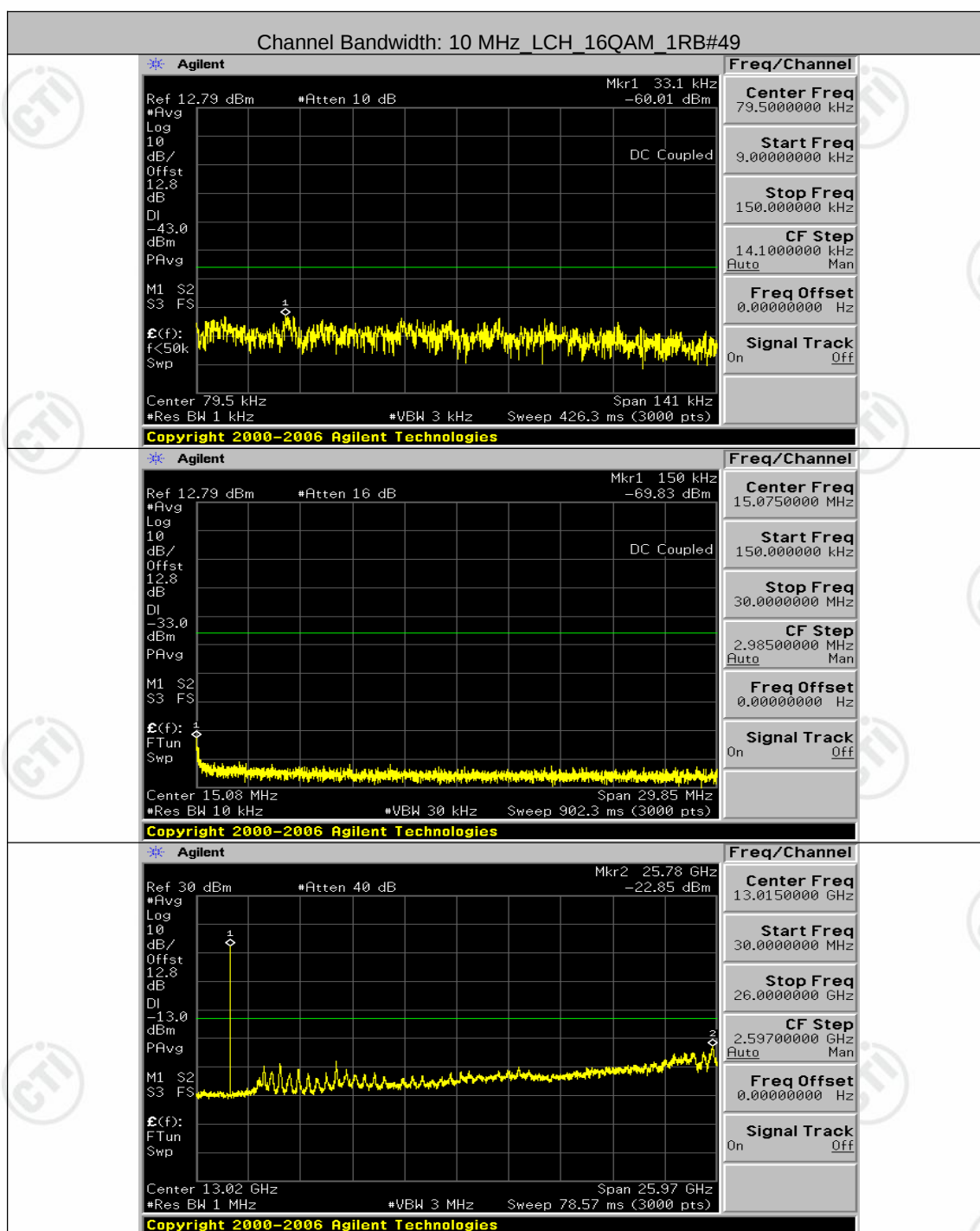


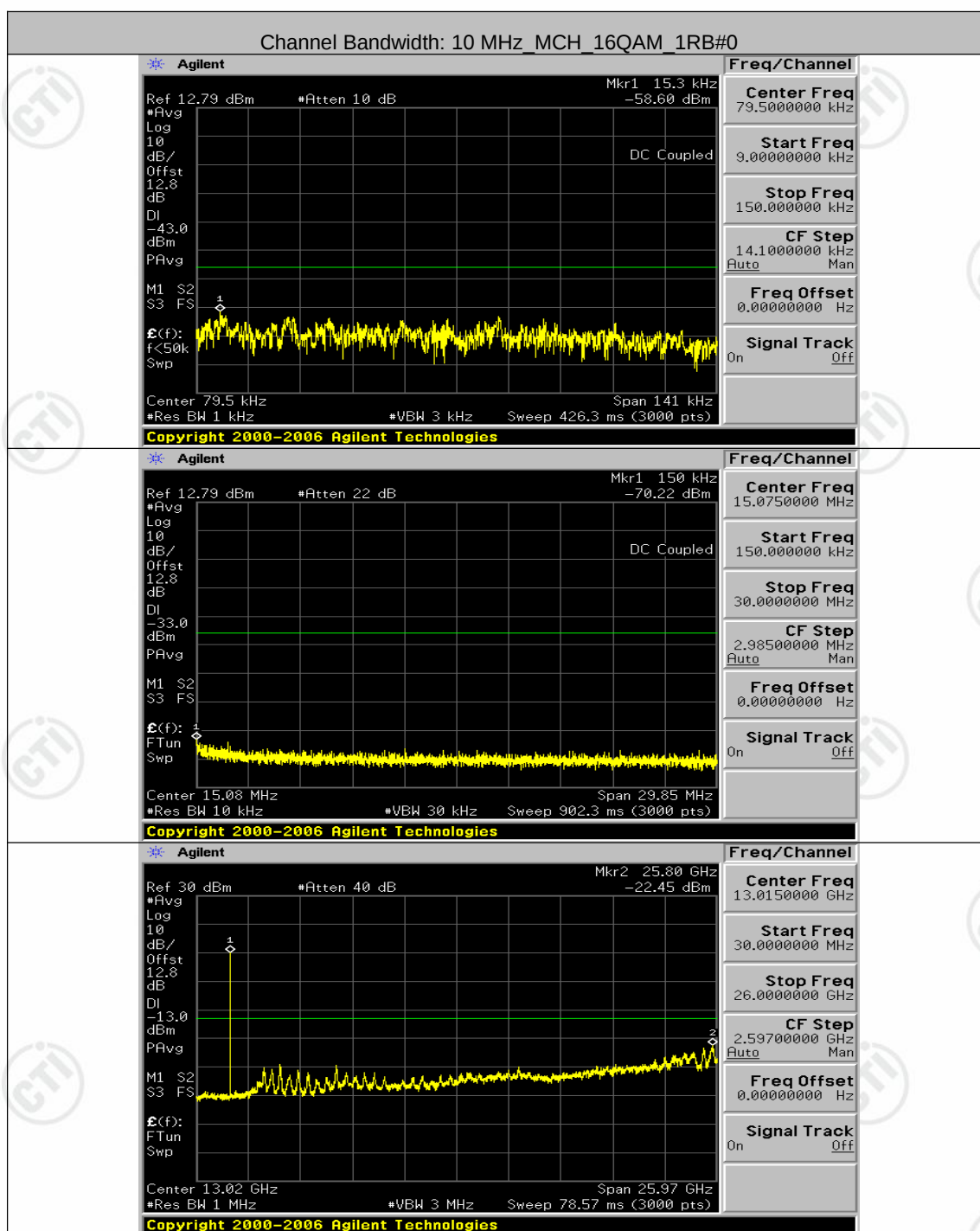


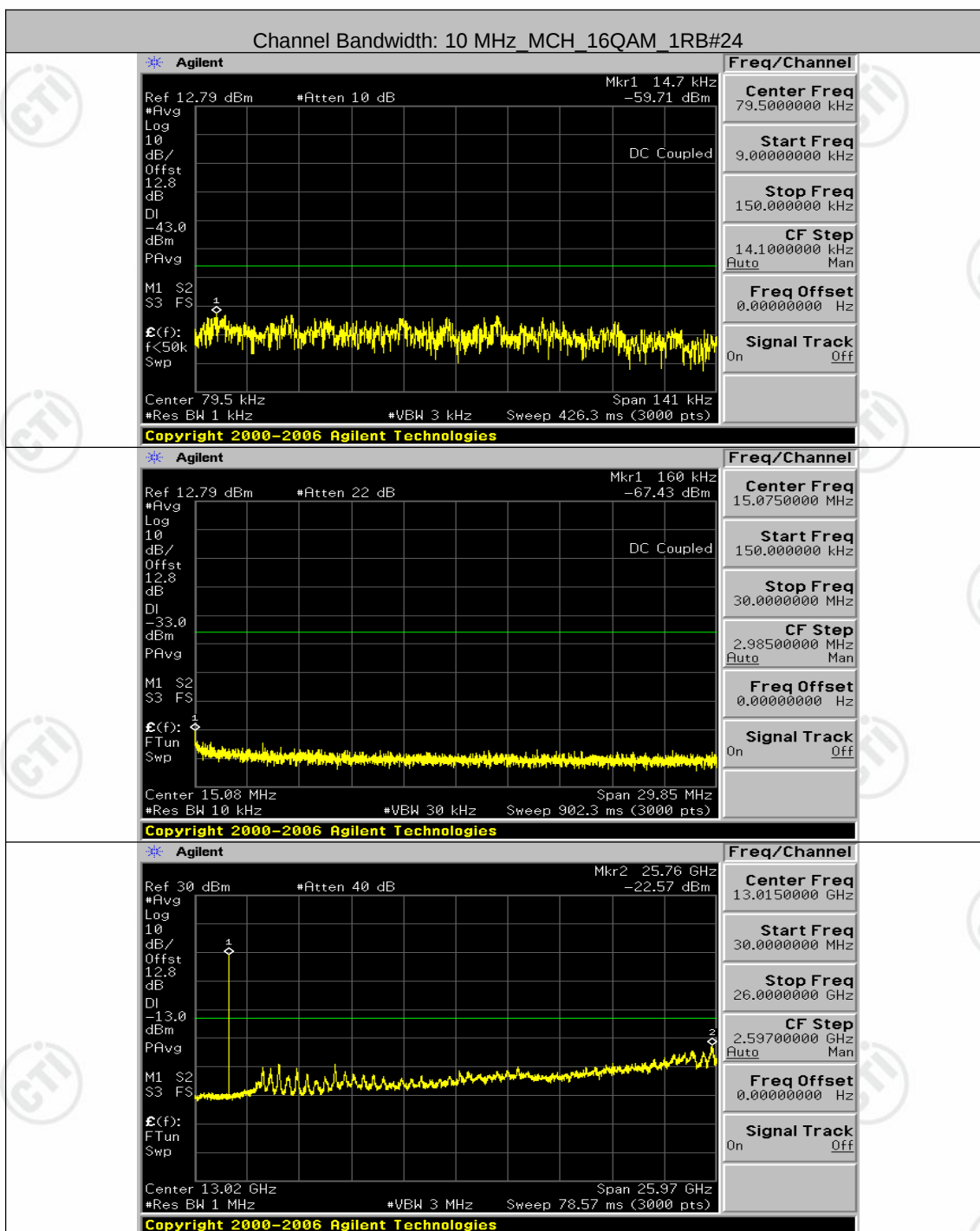


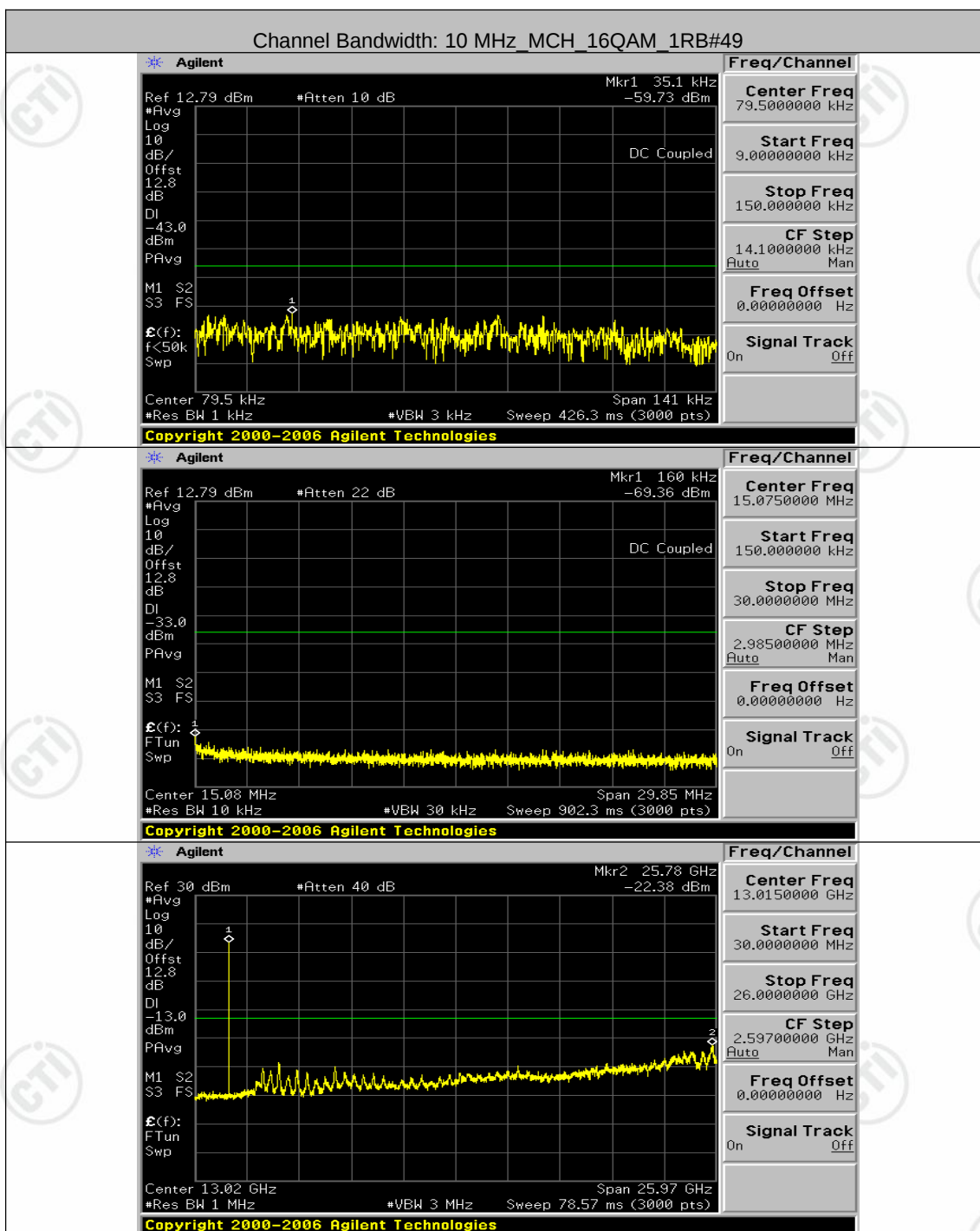


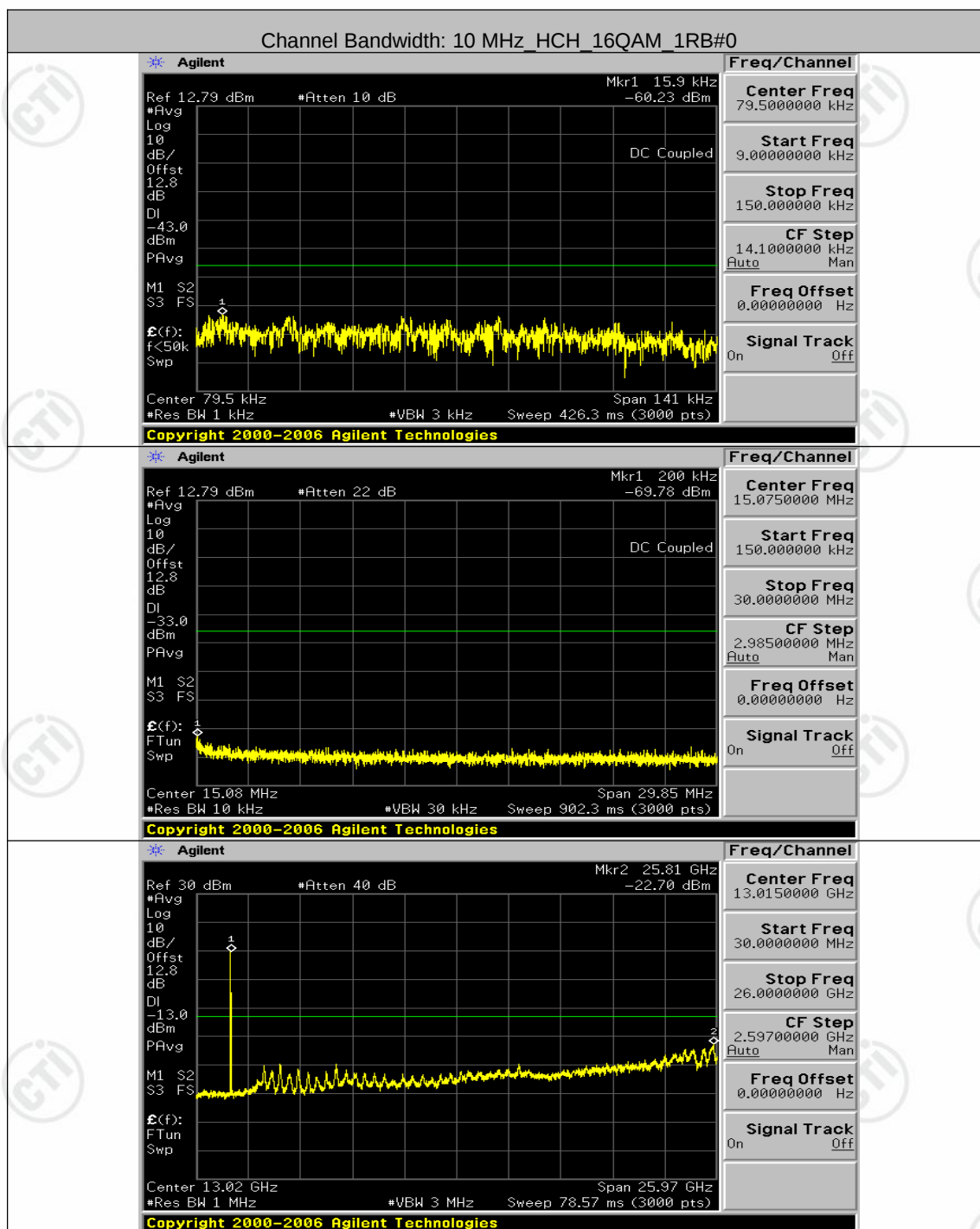


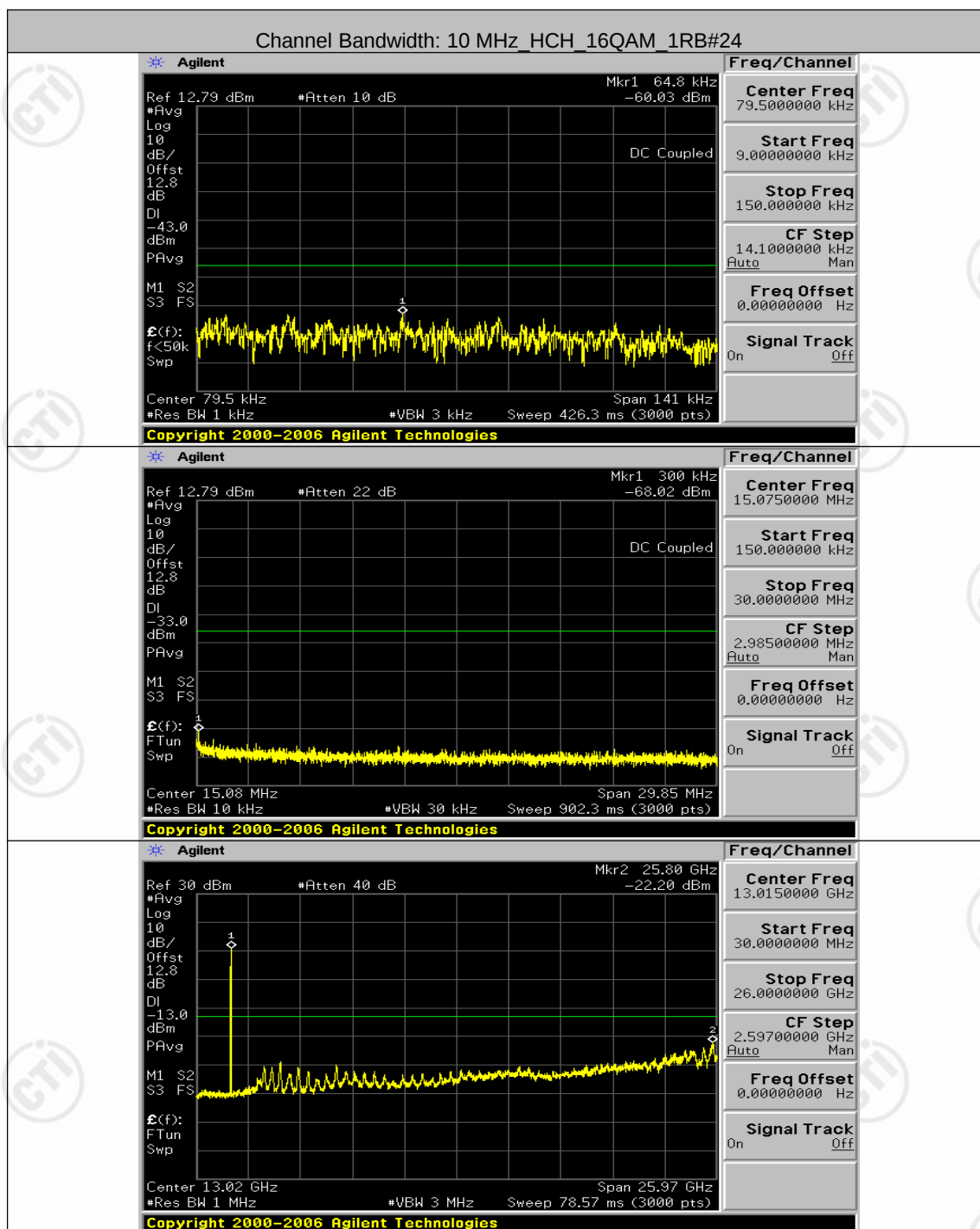


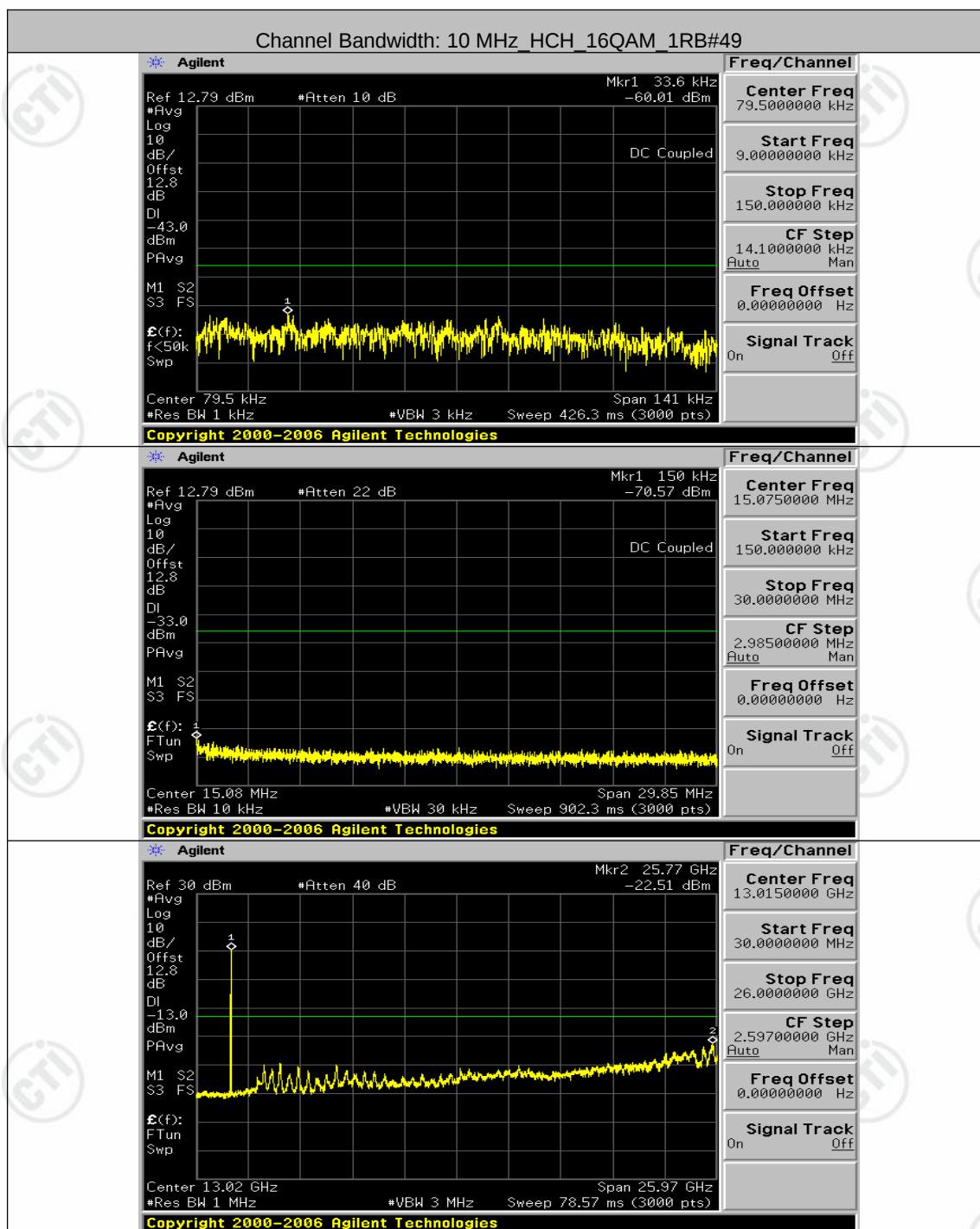




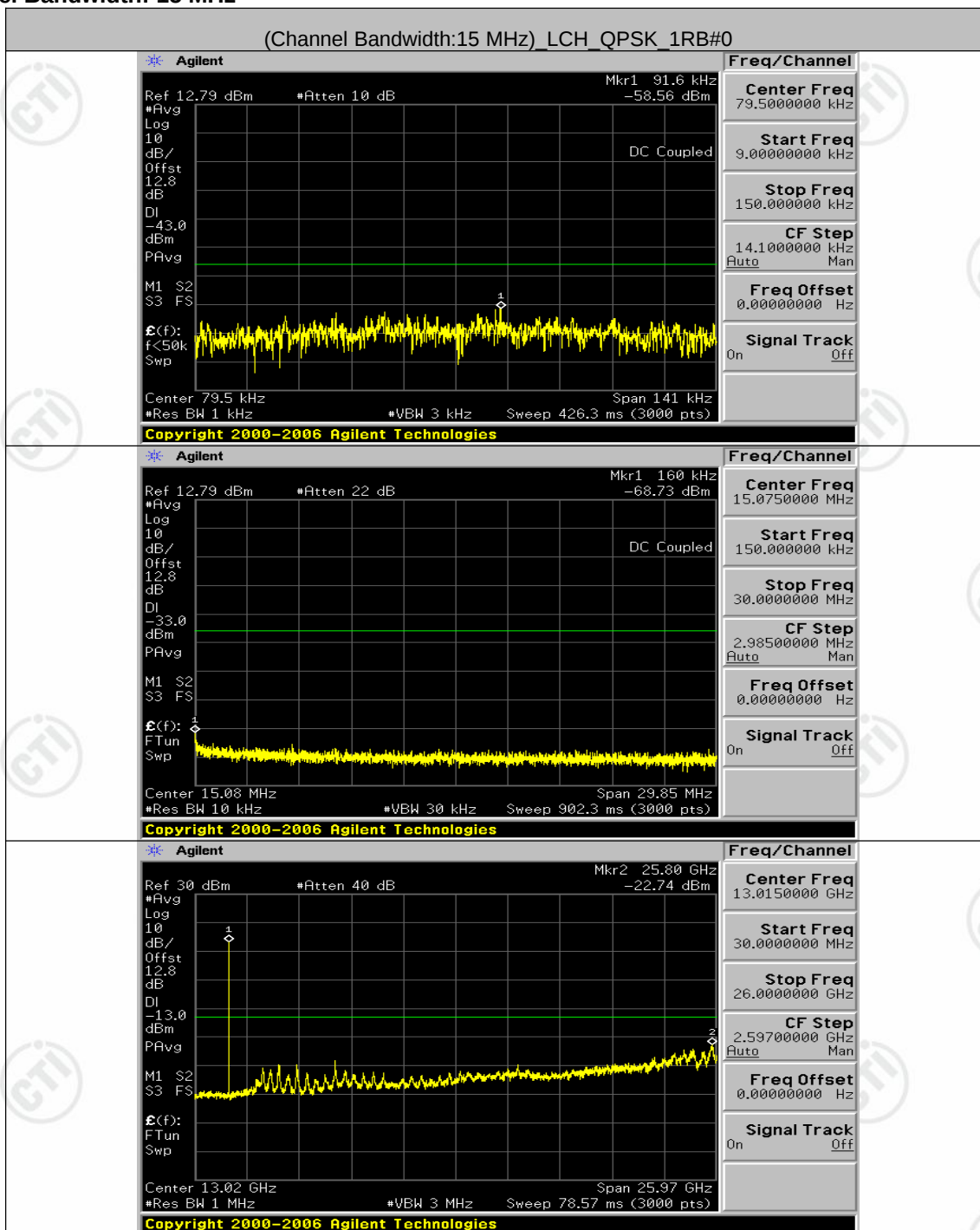


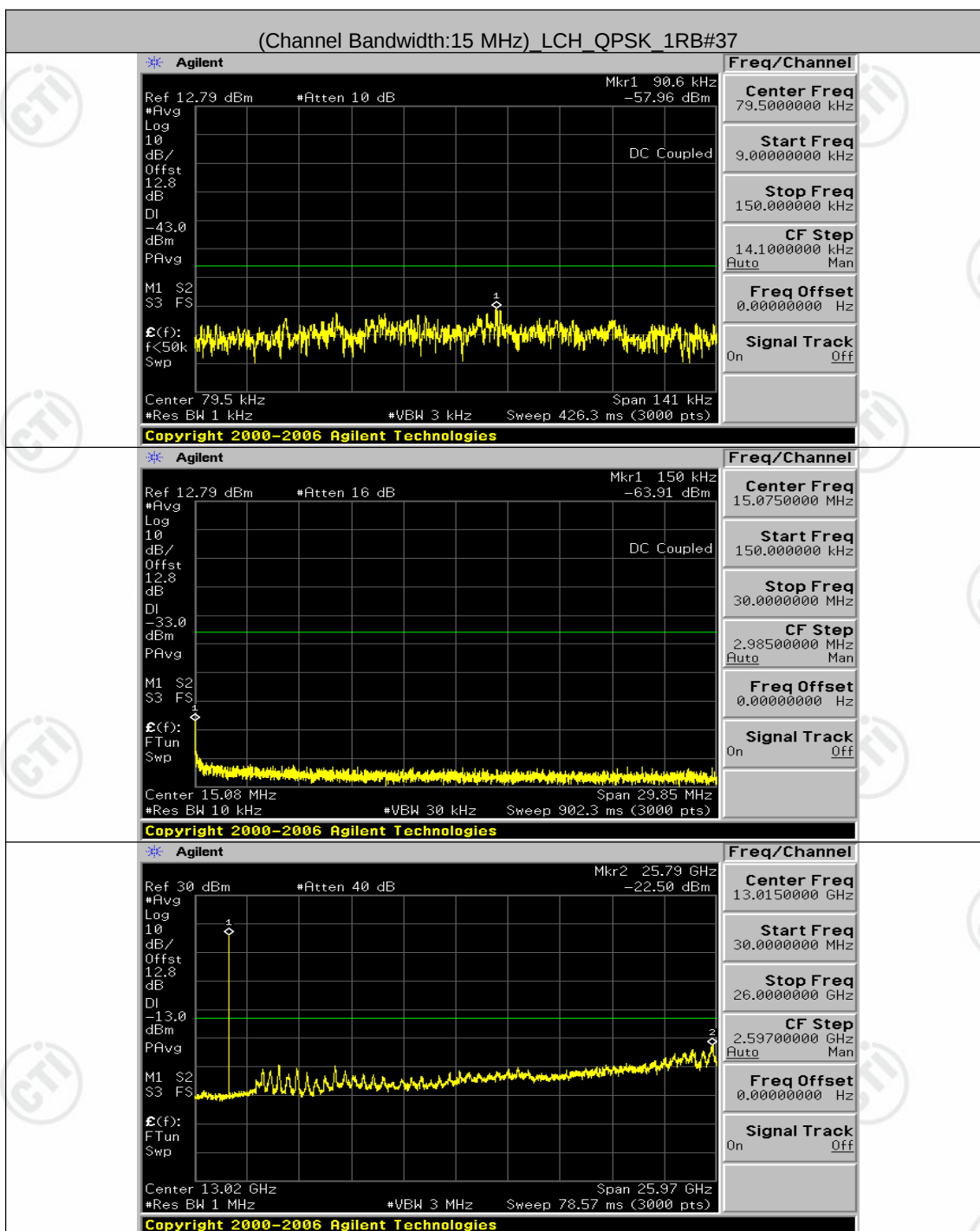


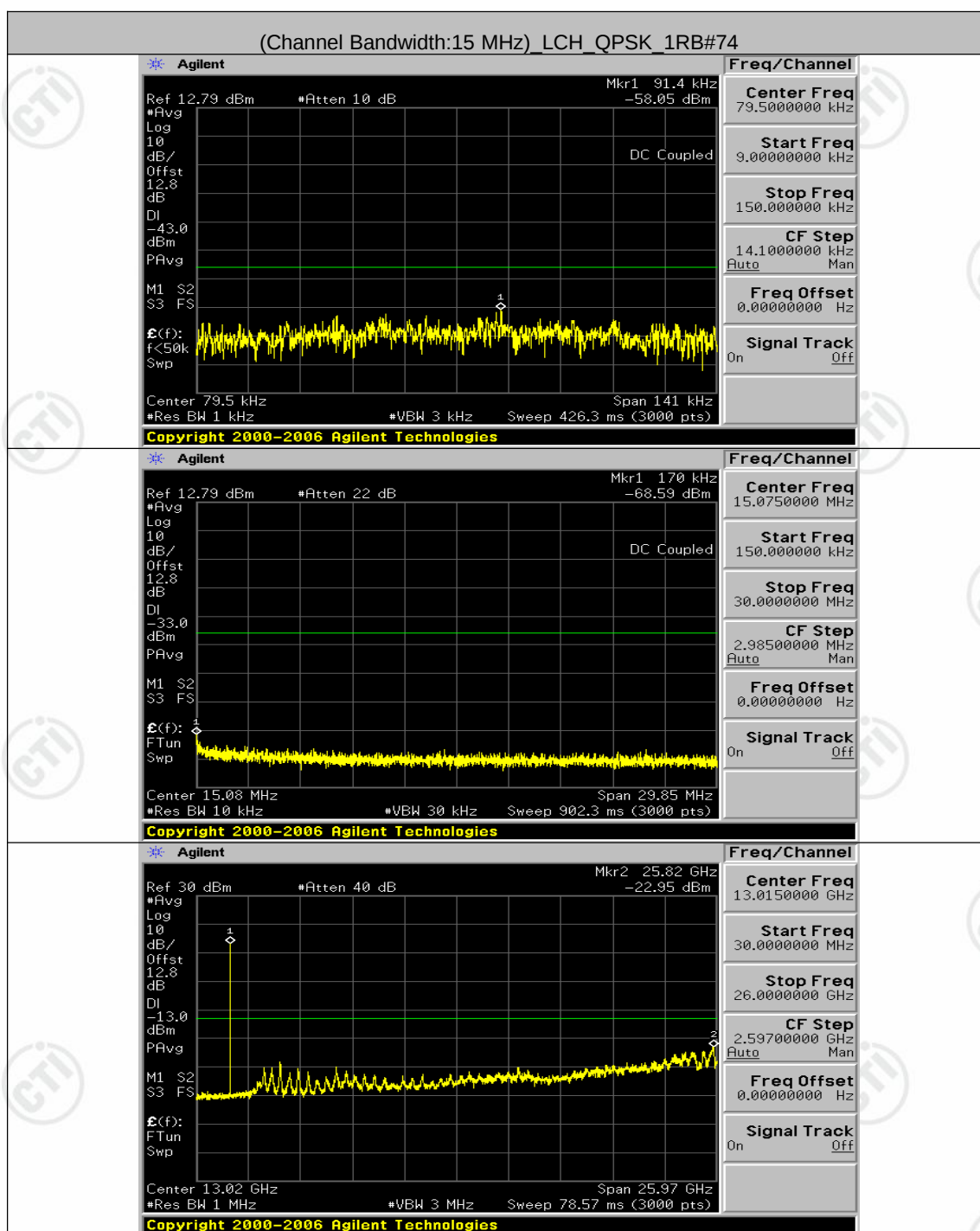


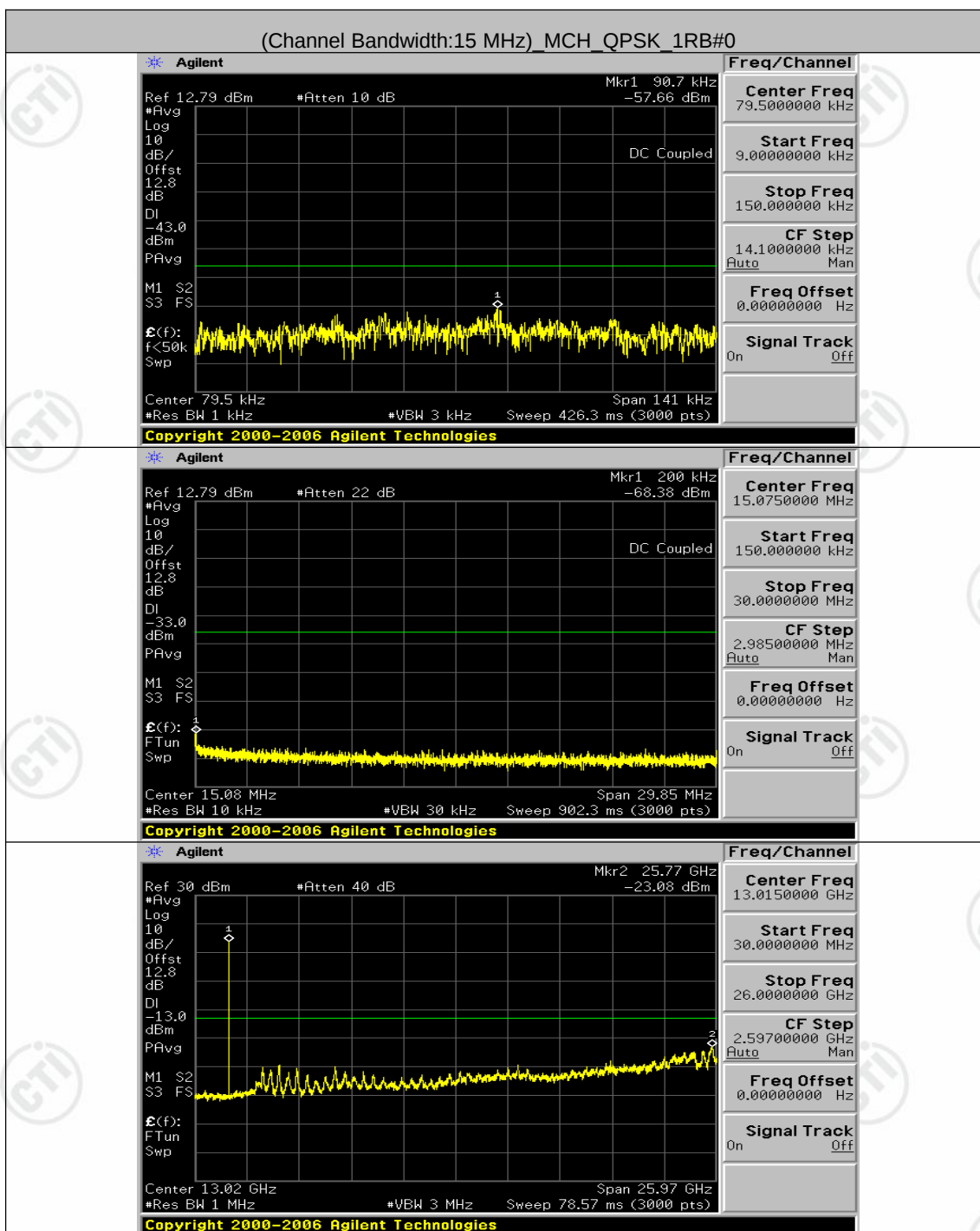


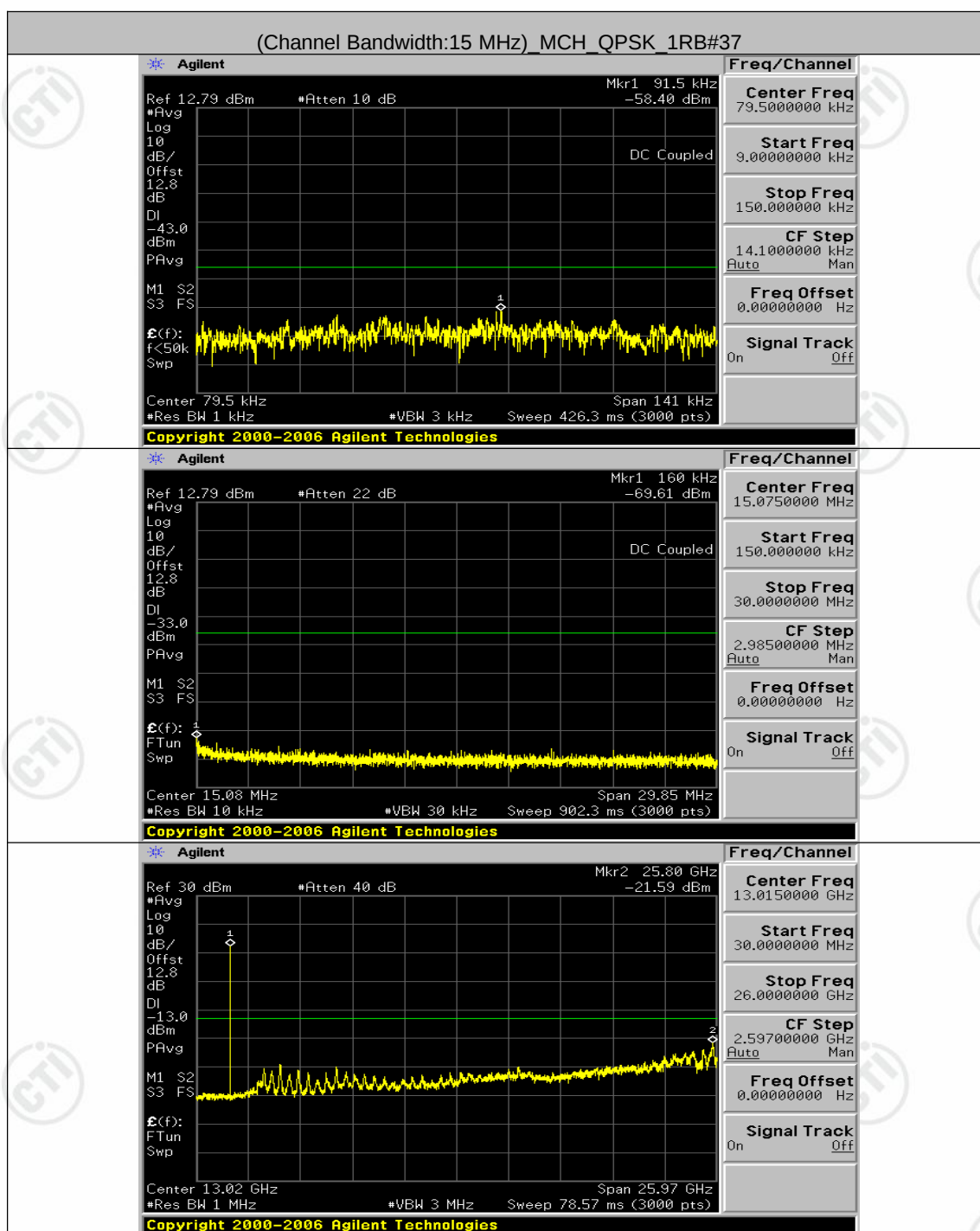
**Channel Bandwidth: 15 MHz**

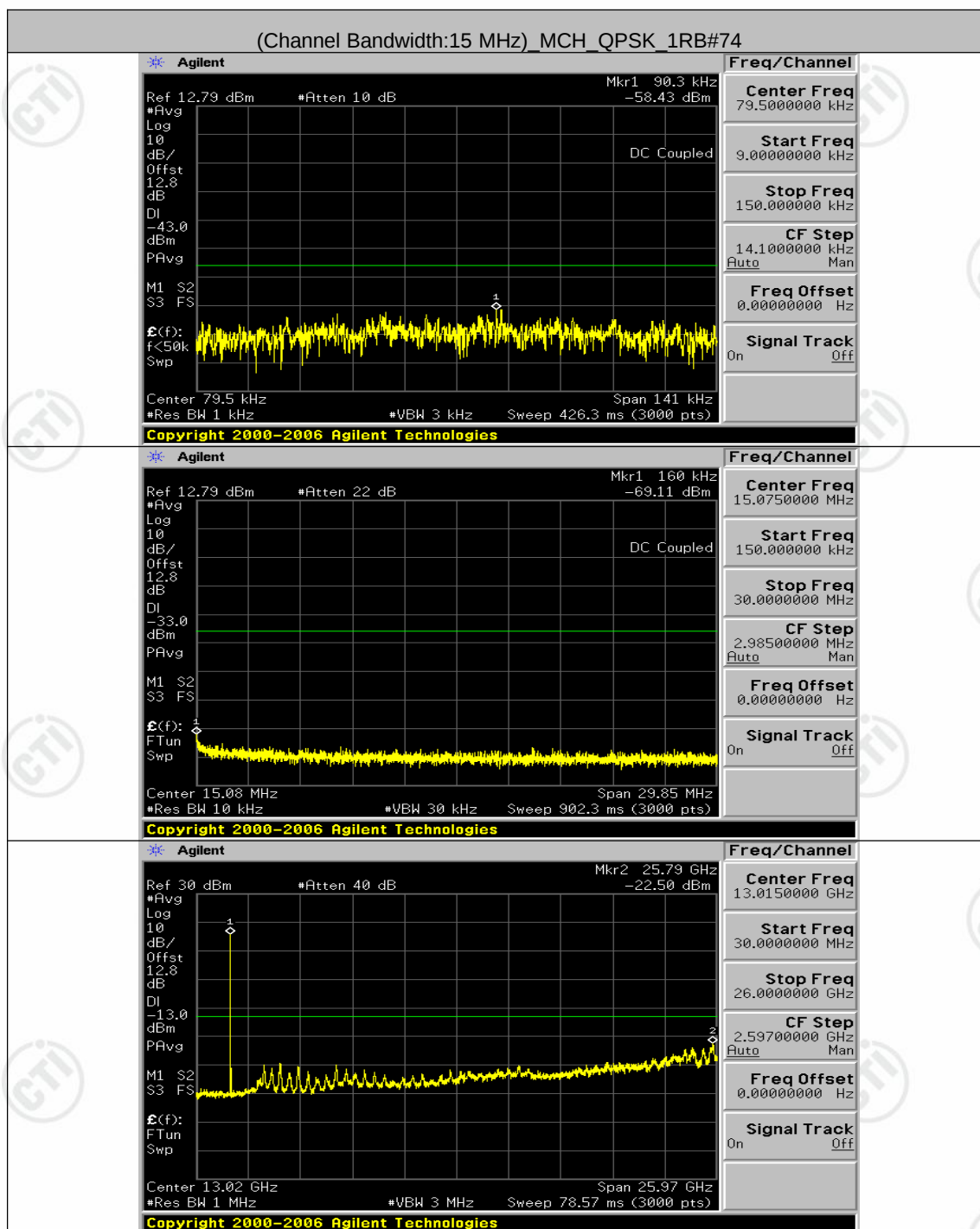


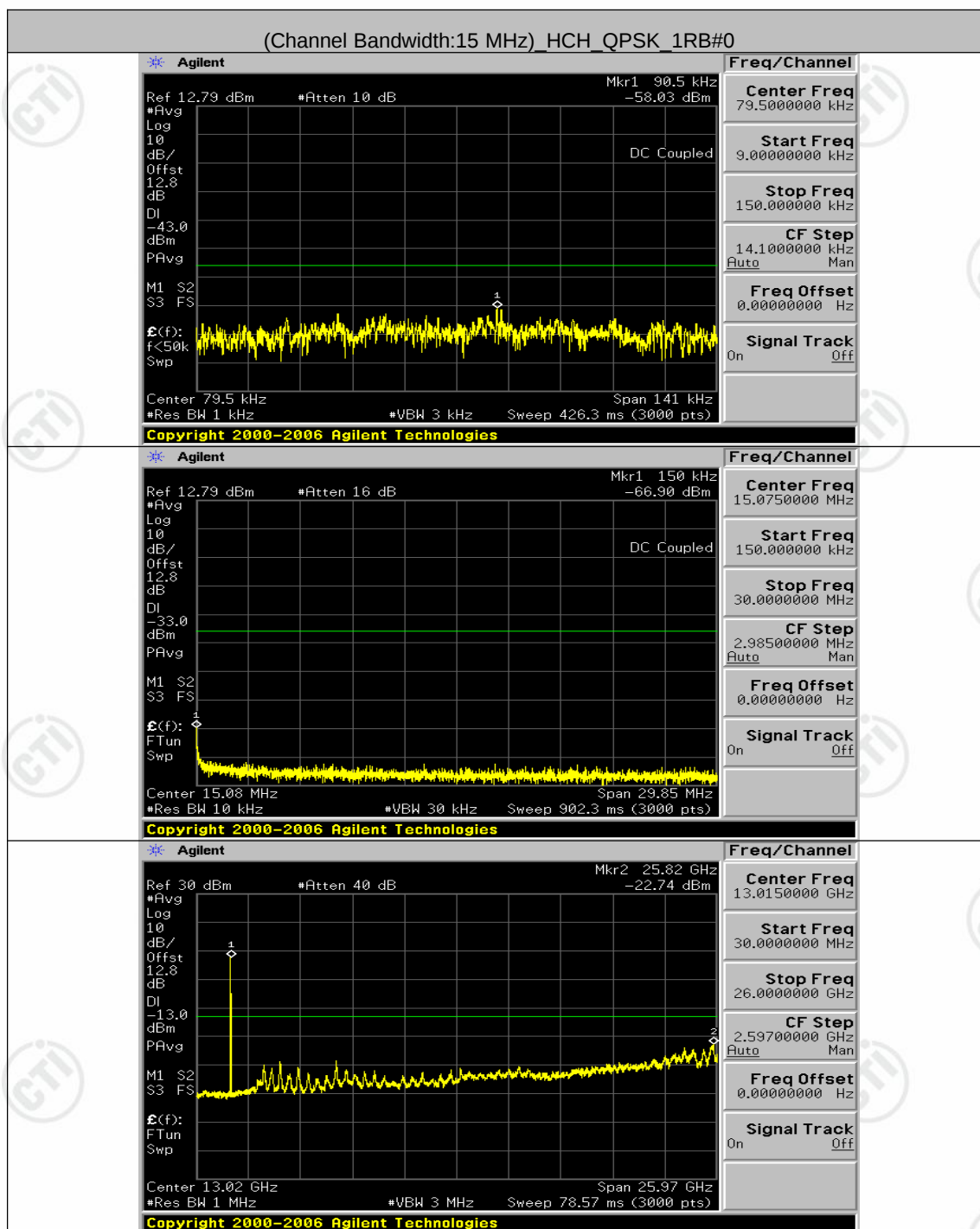


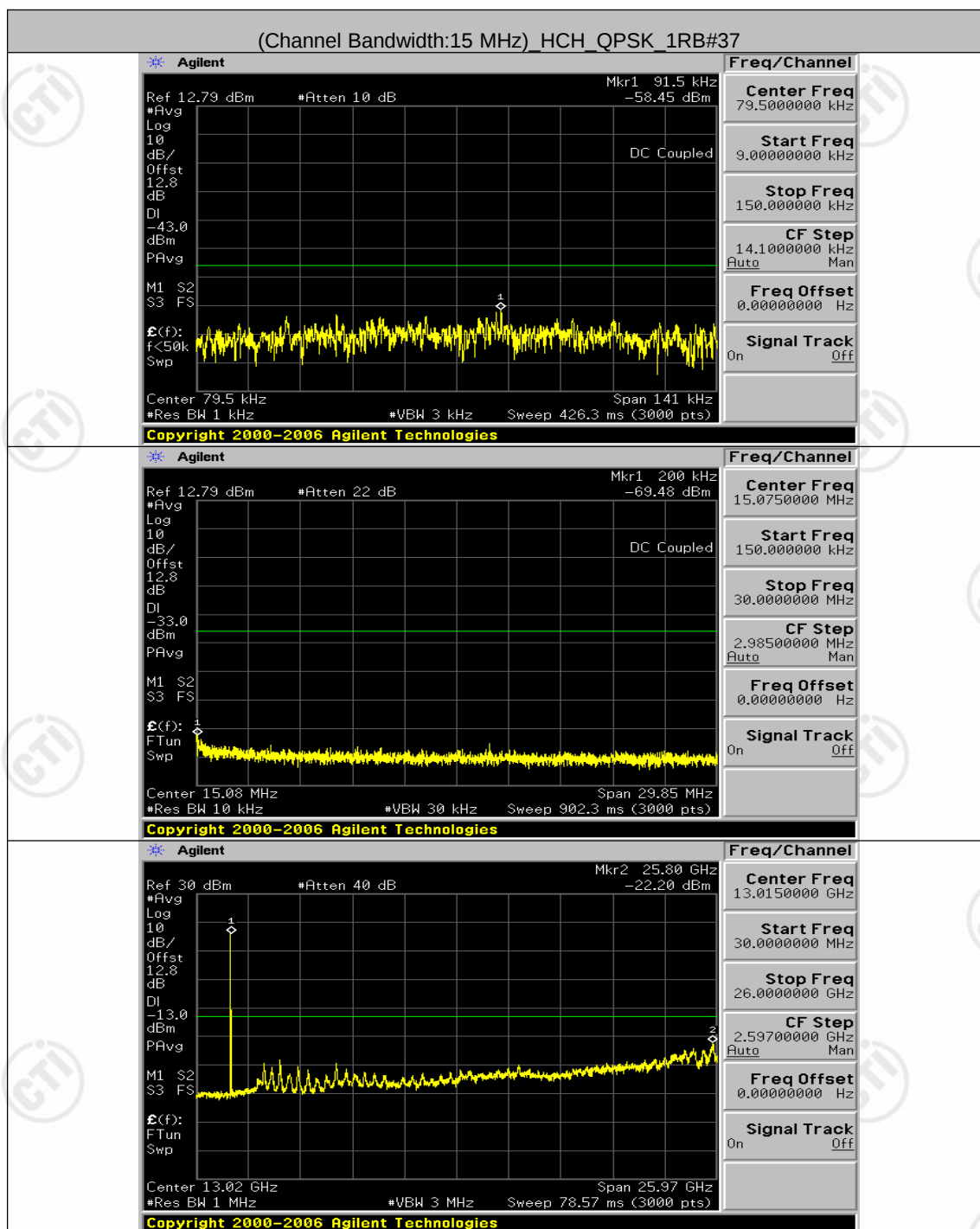


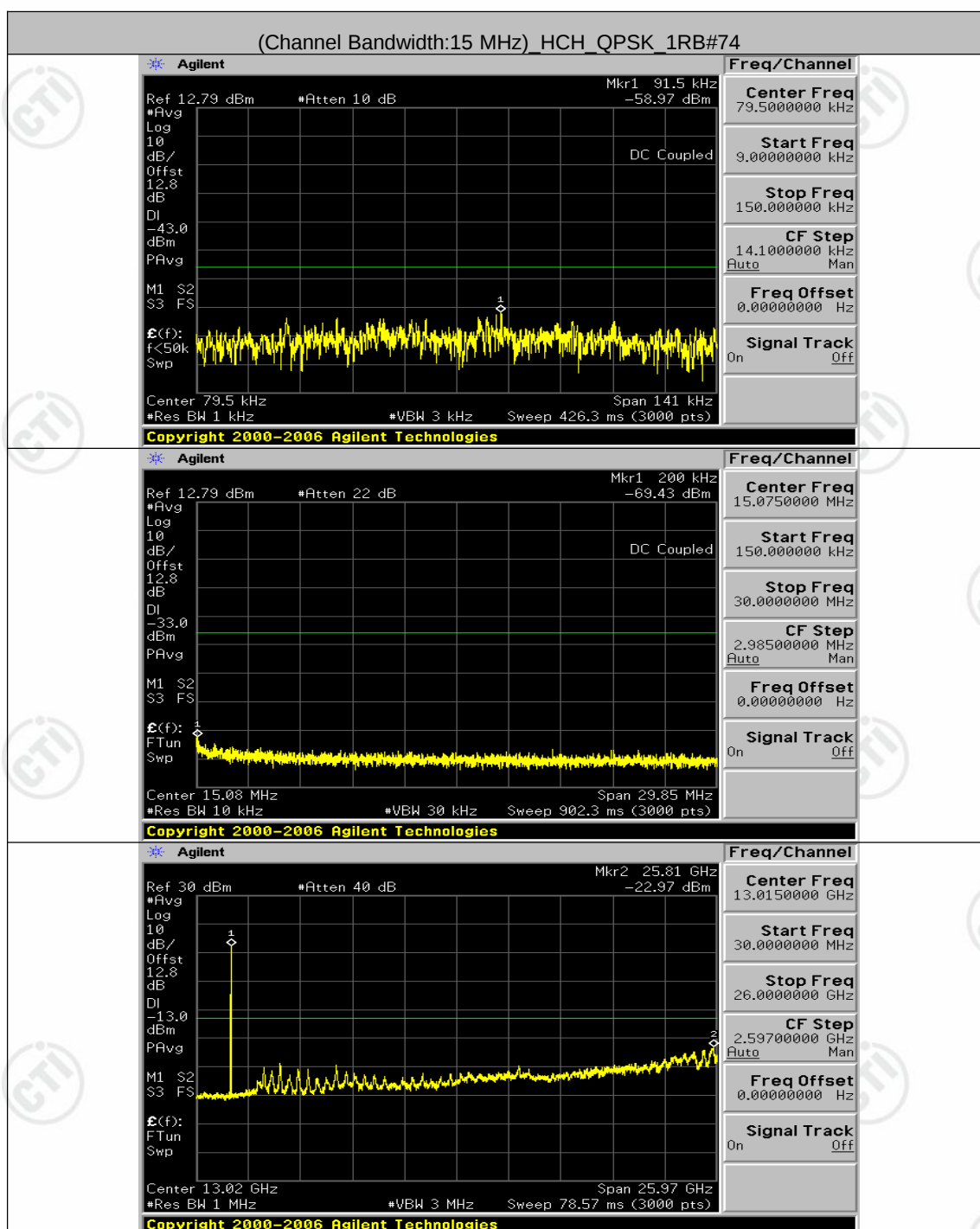


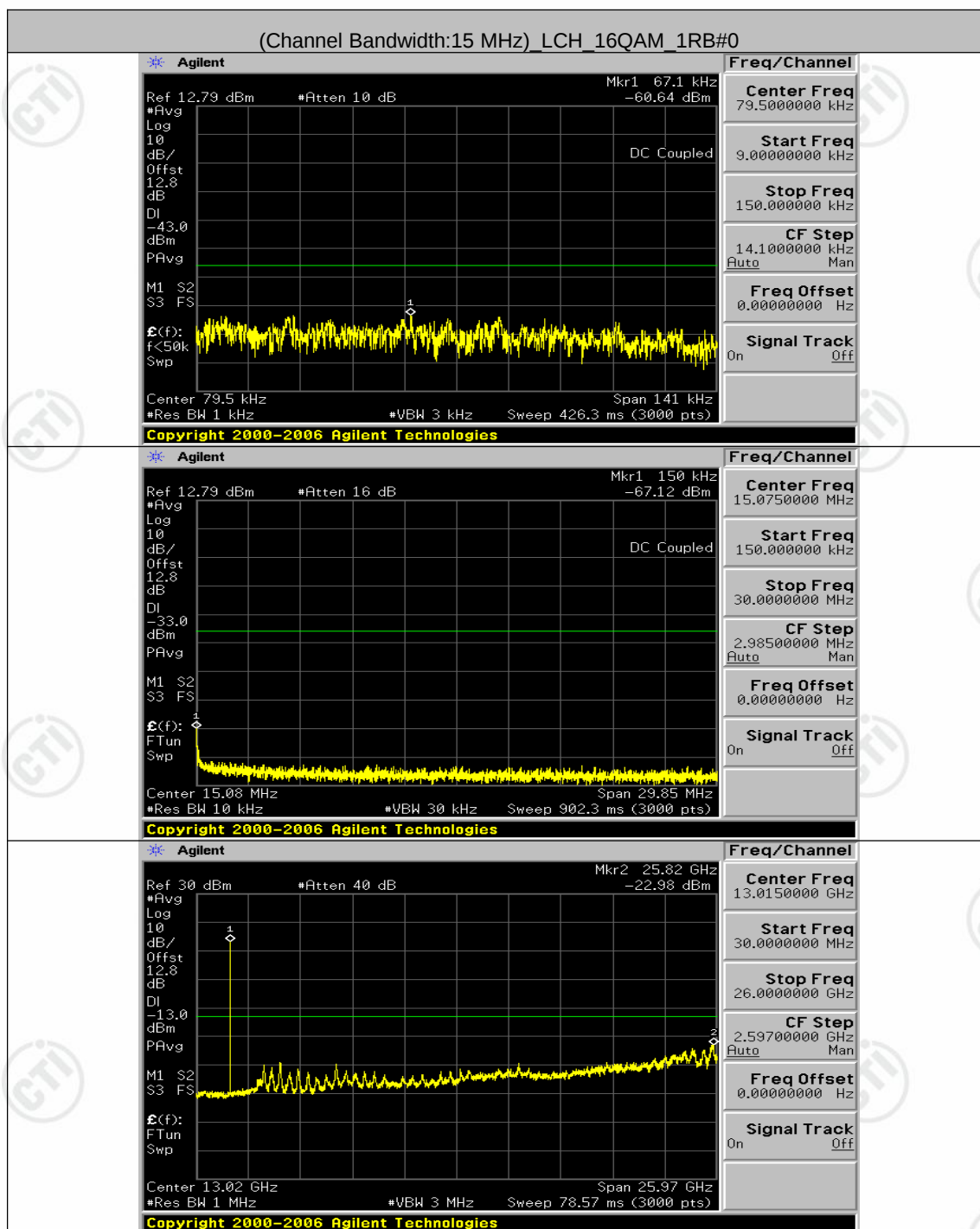


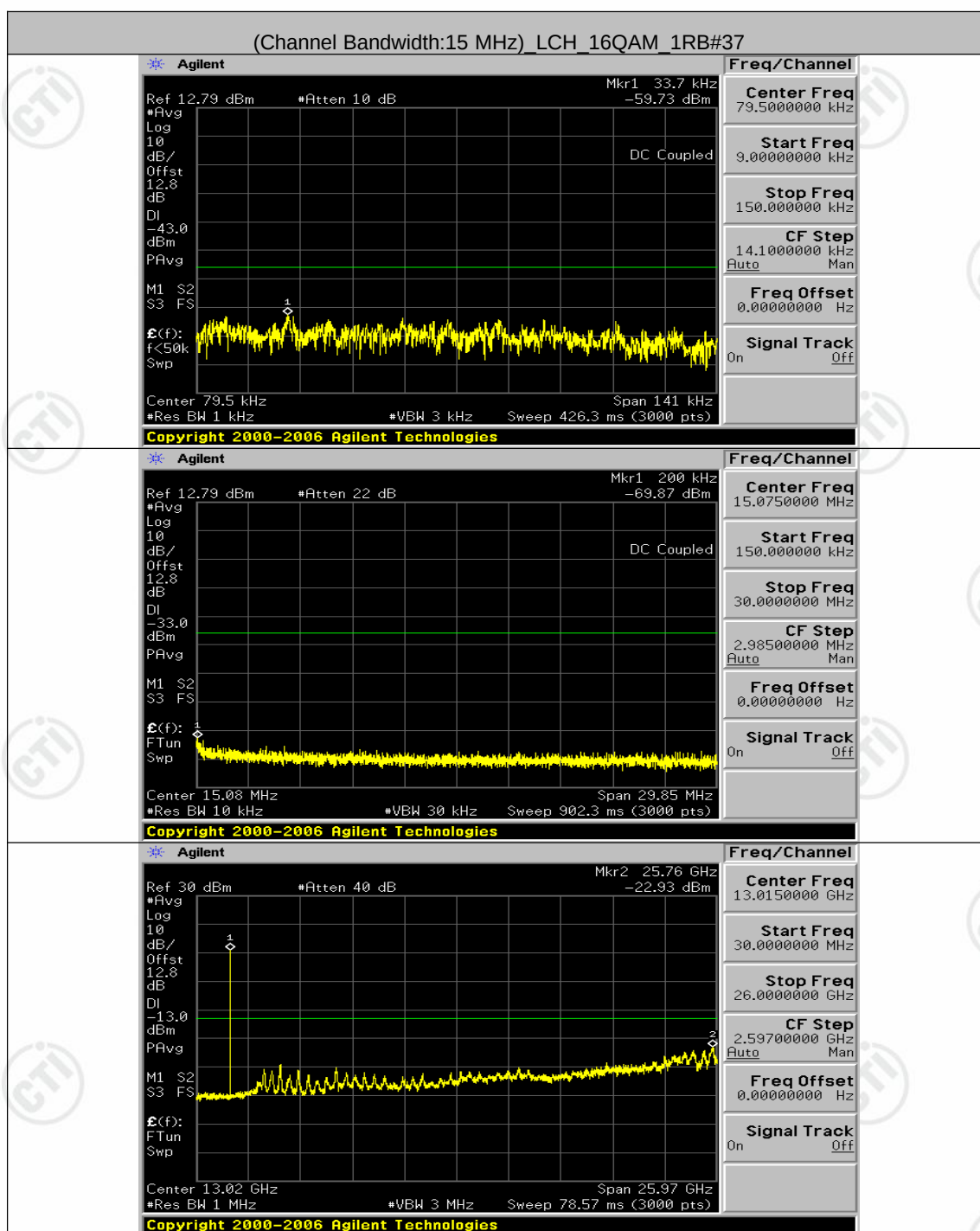


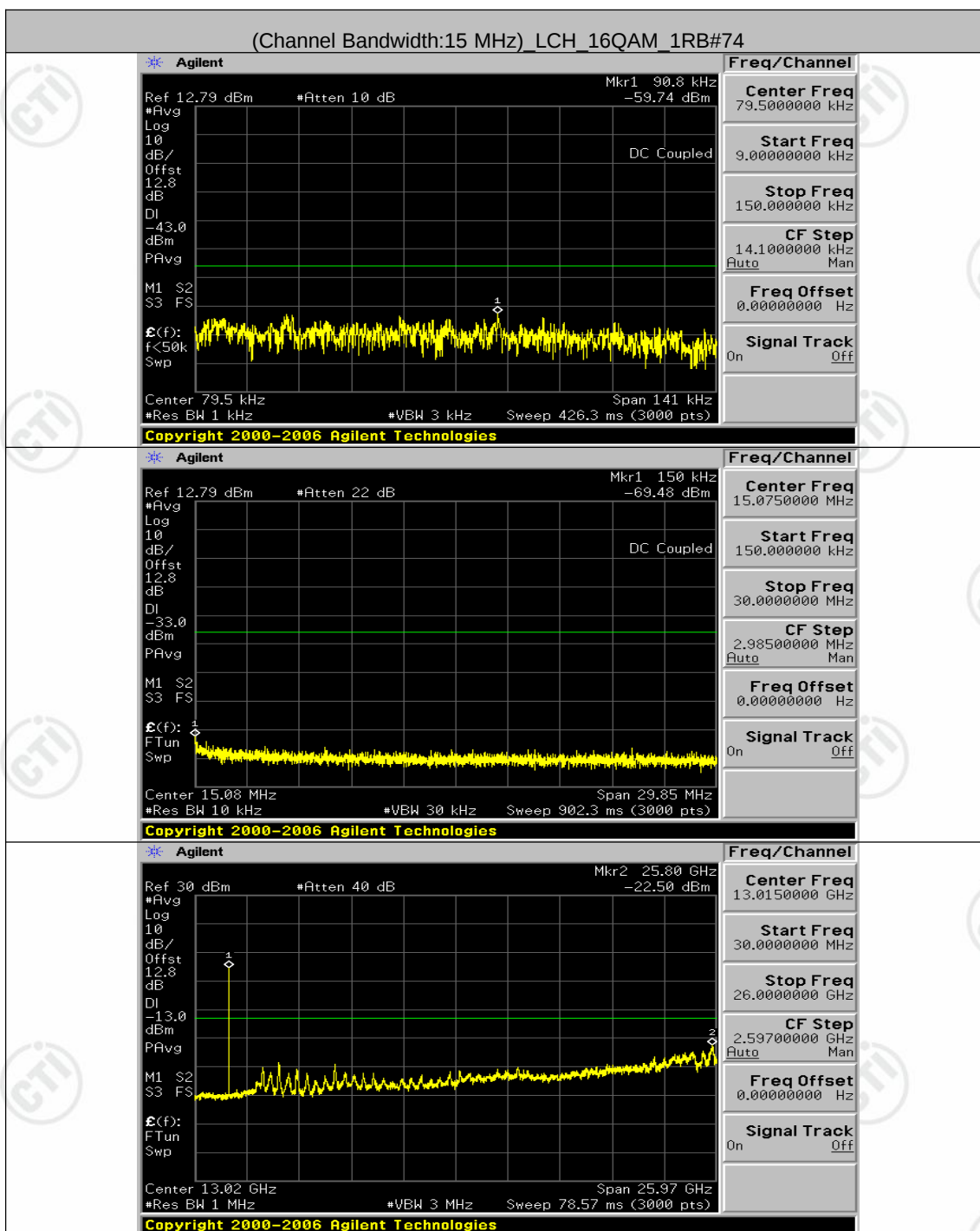


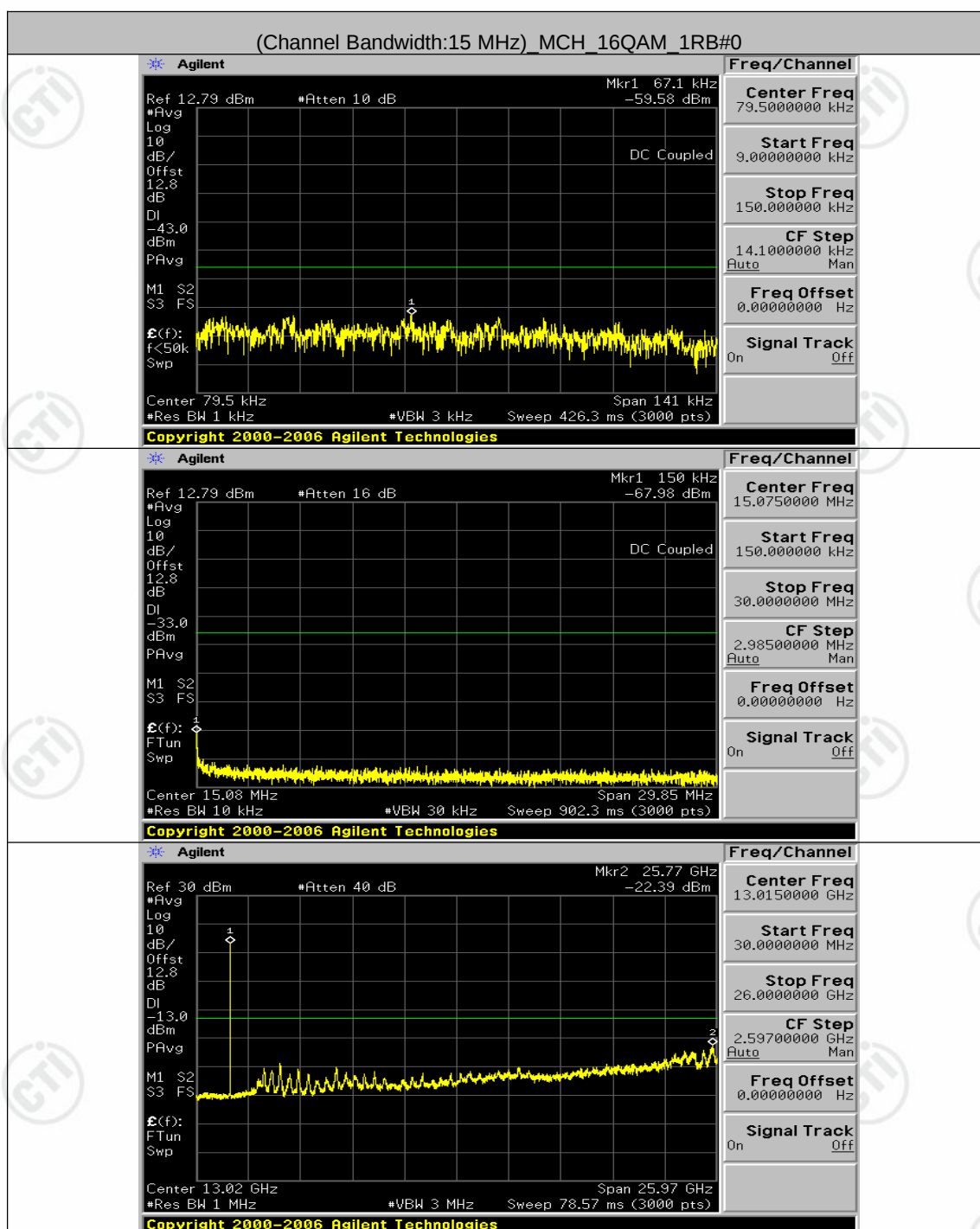


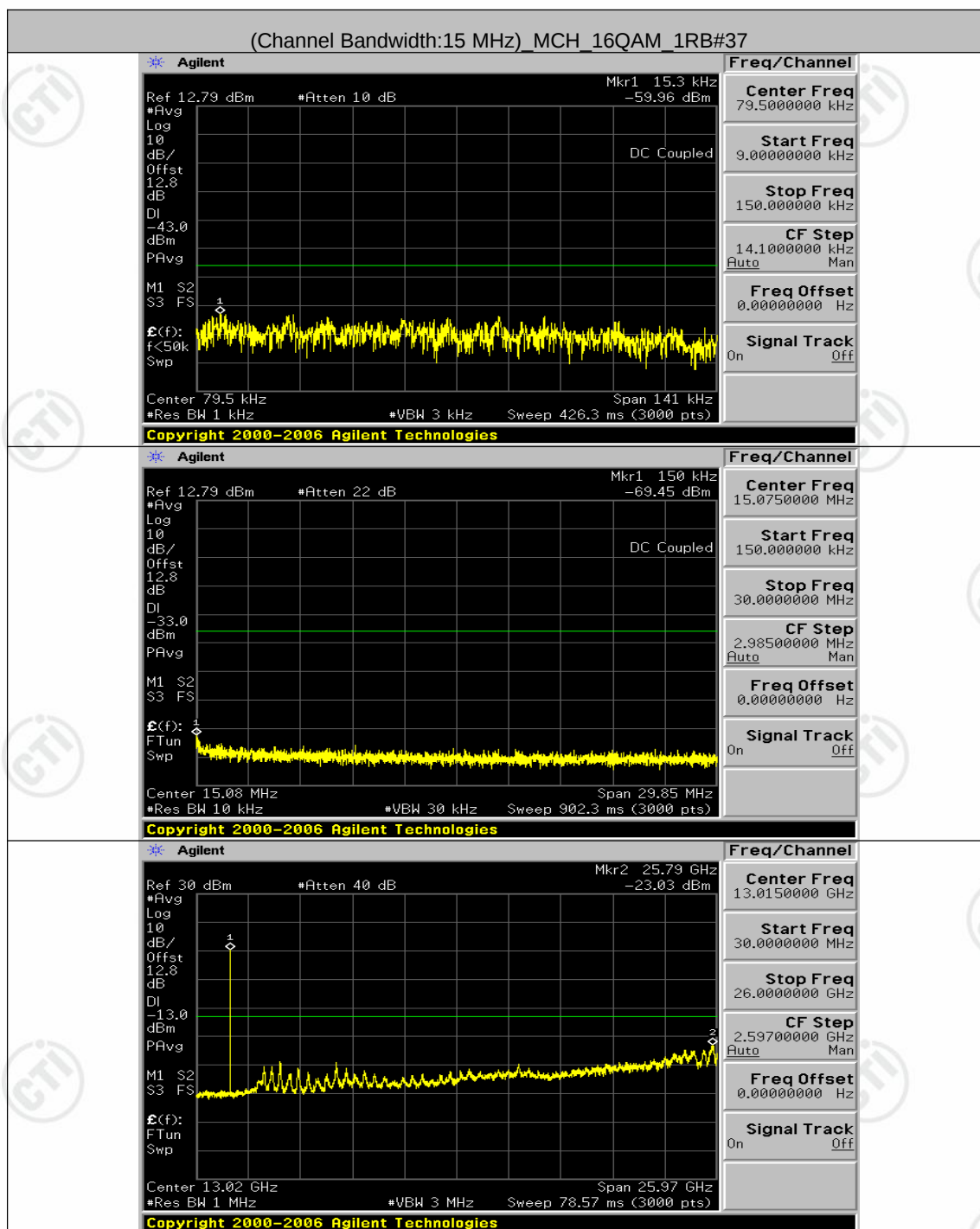


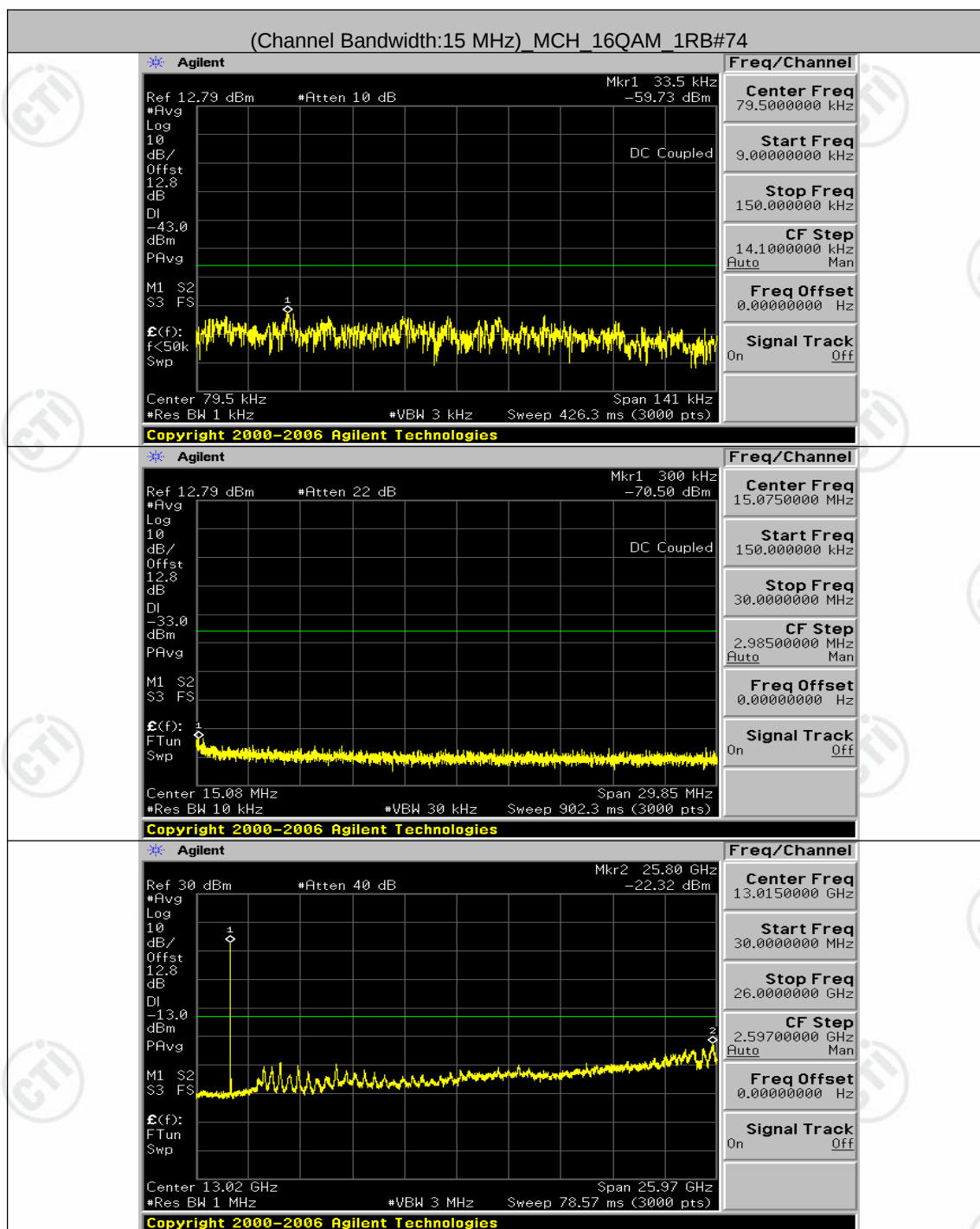


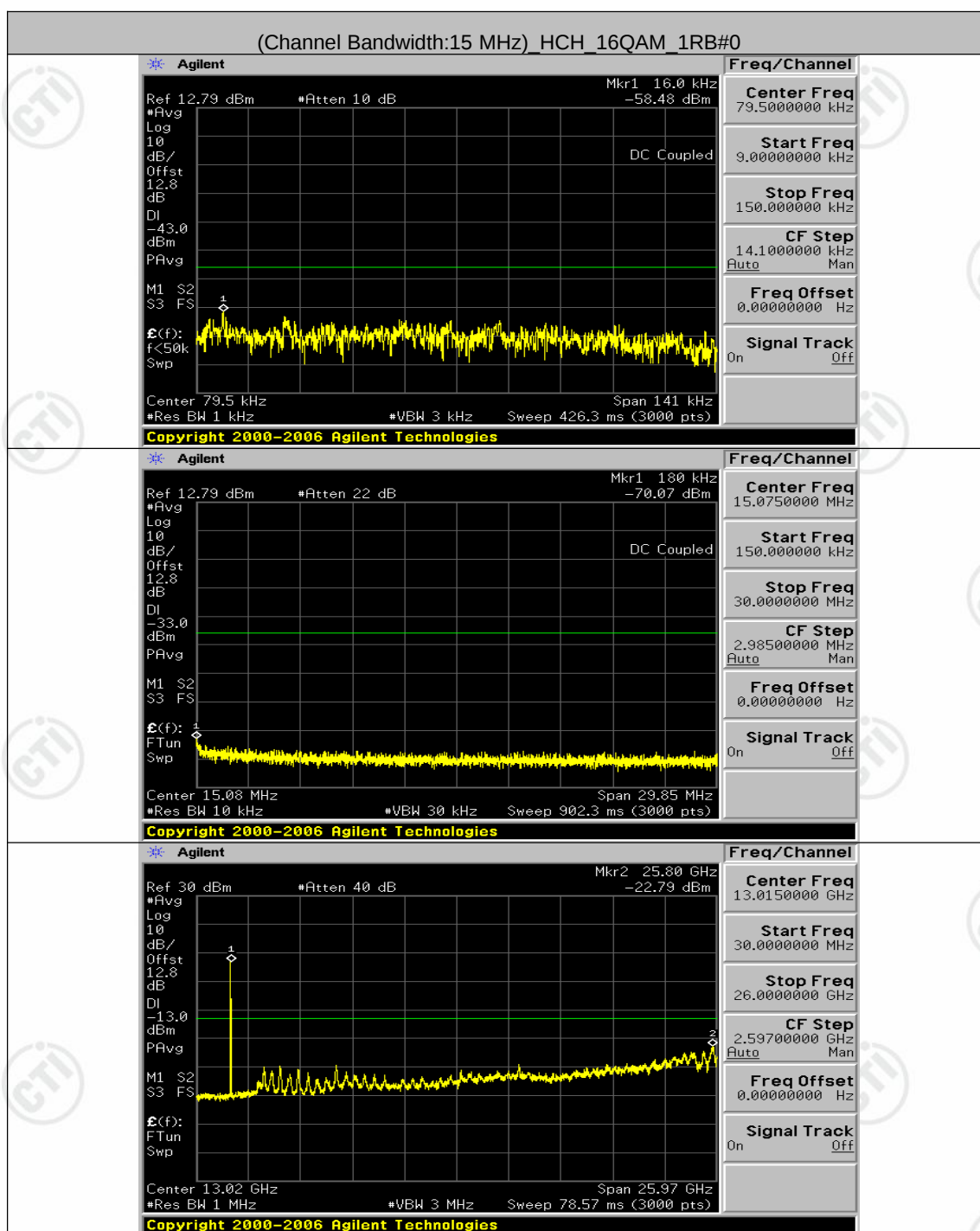


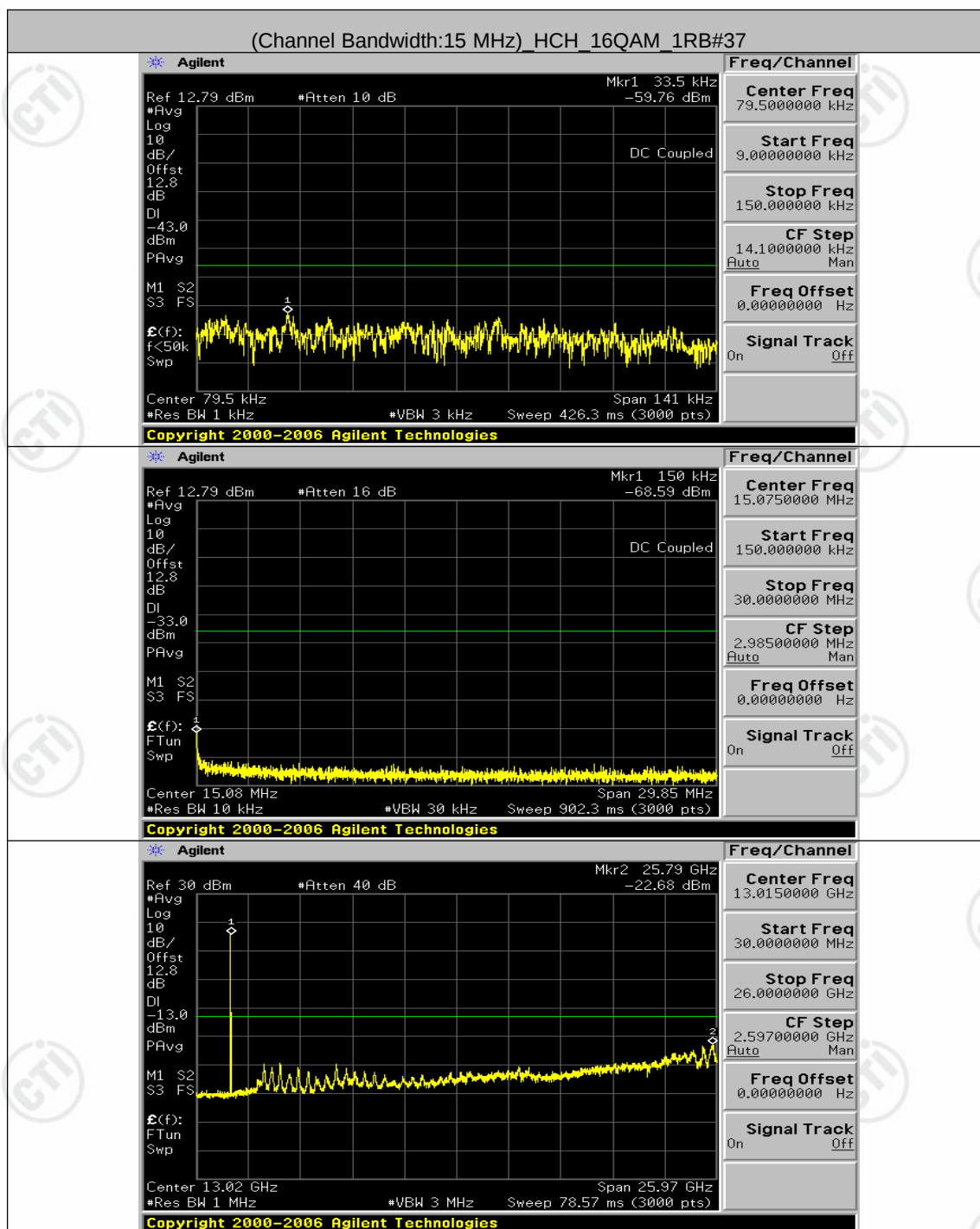


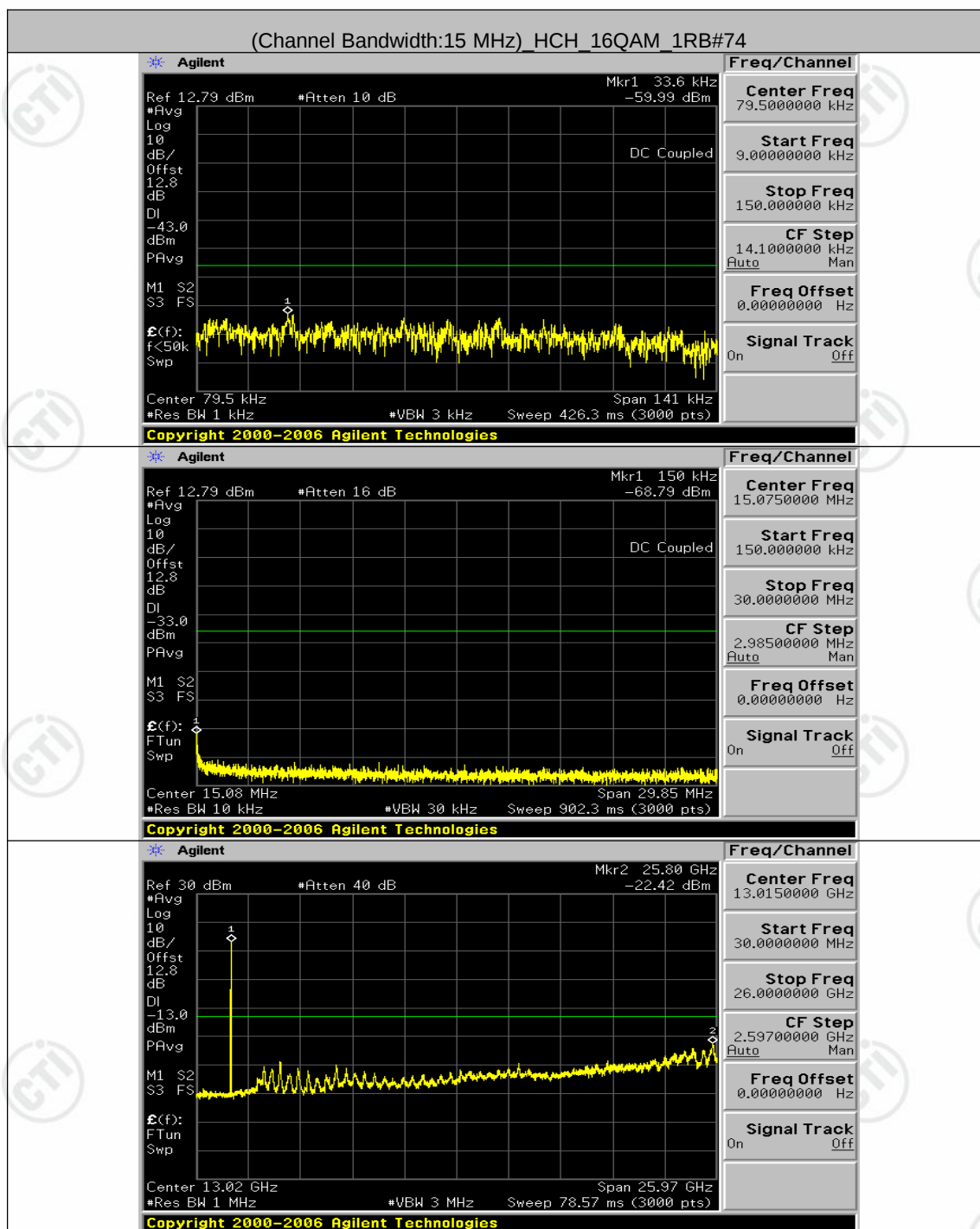




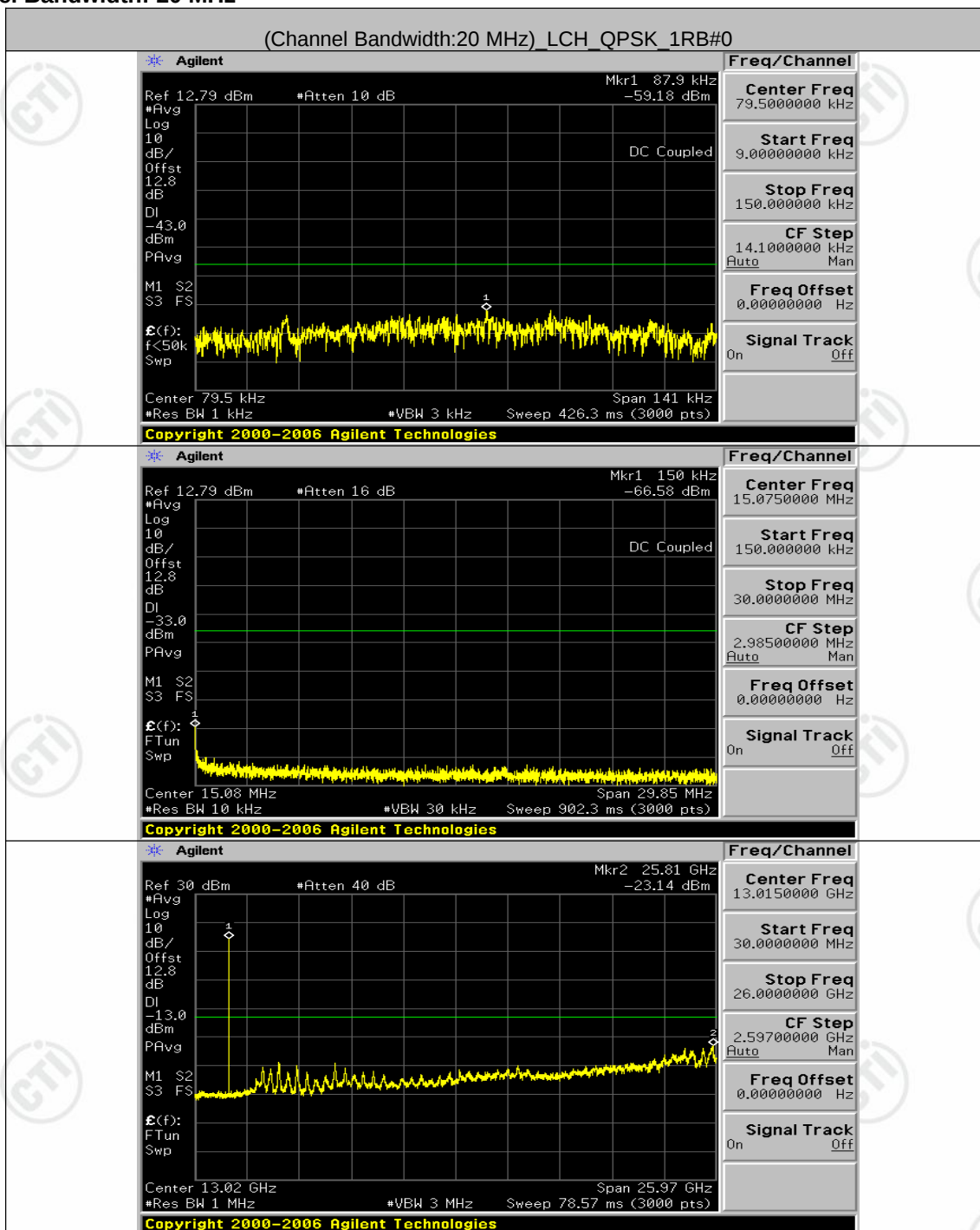


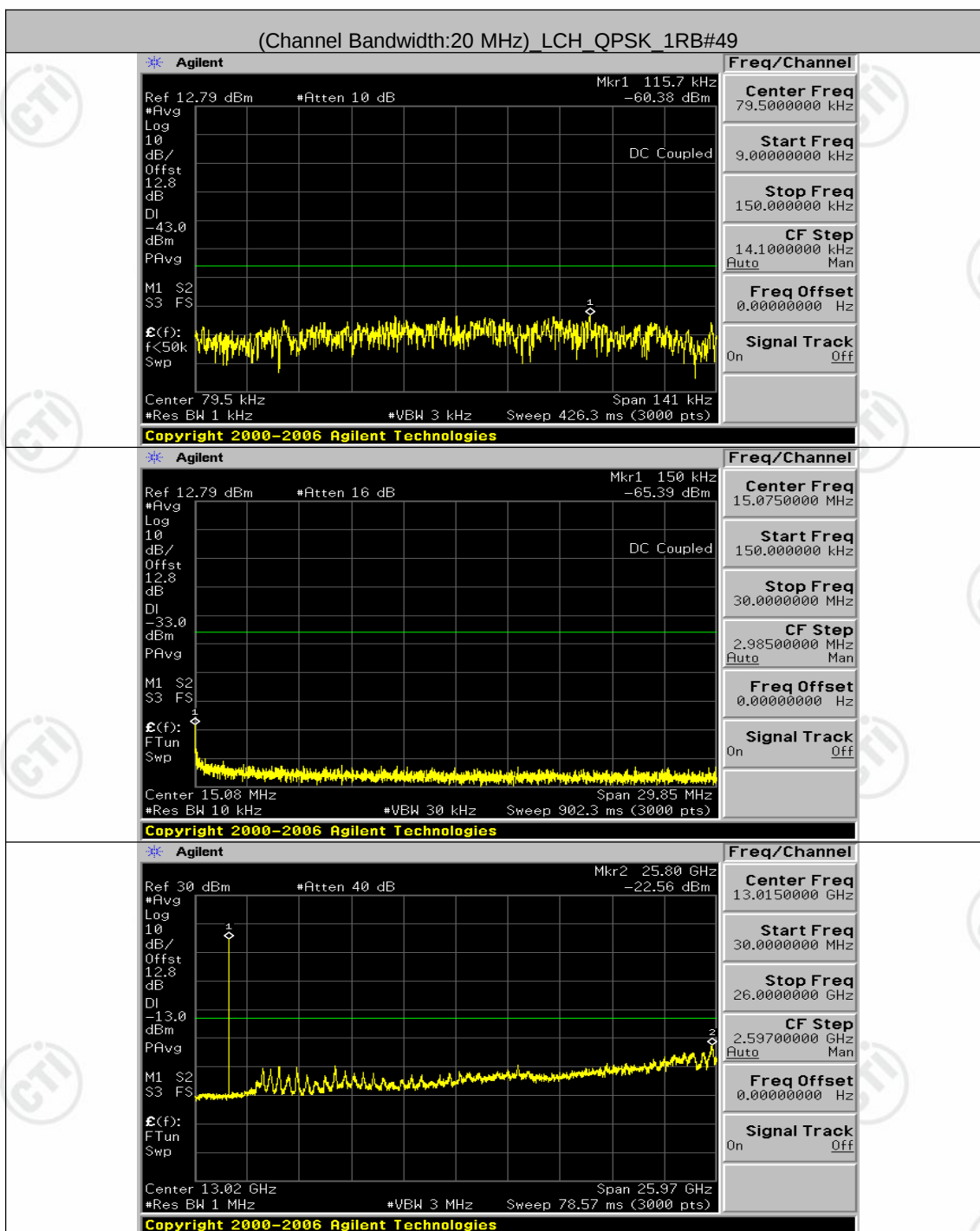


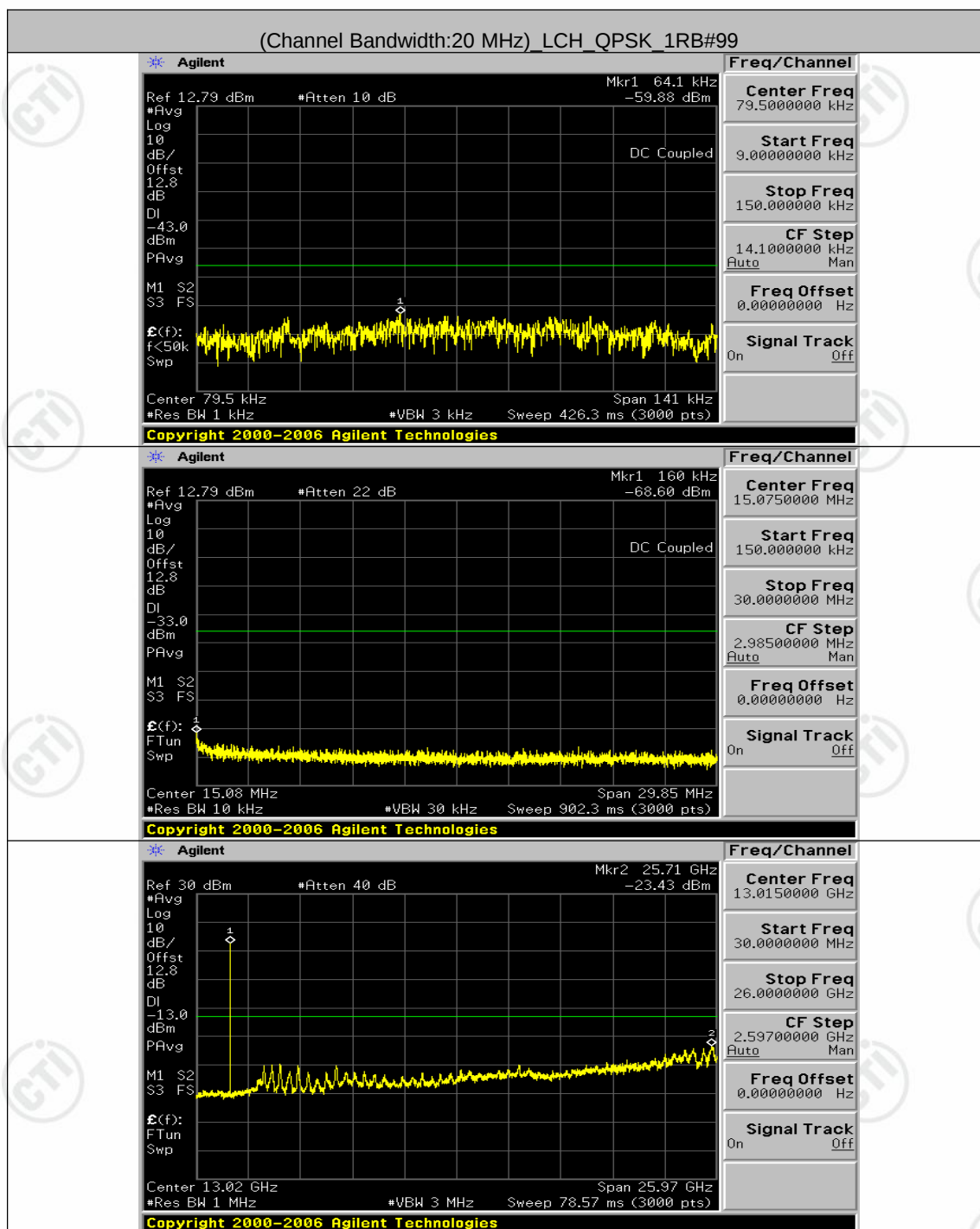


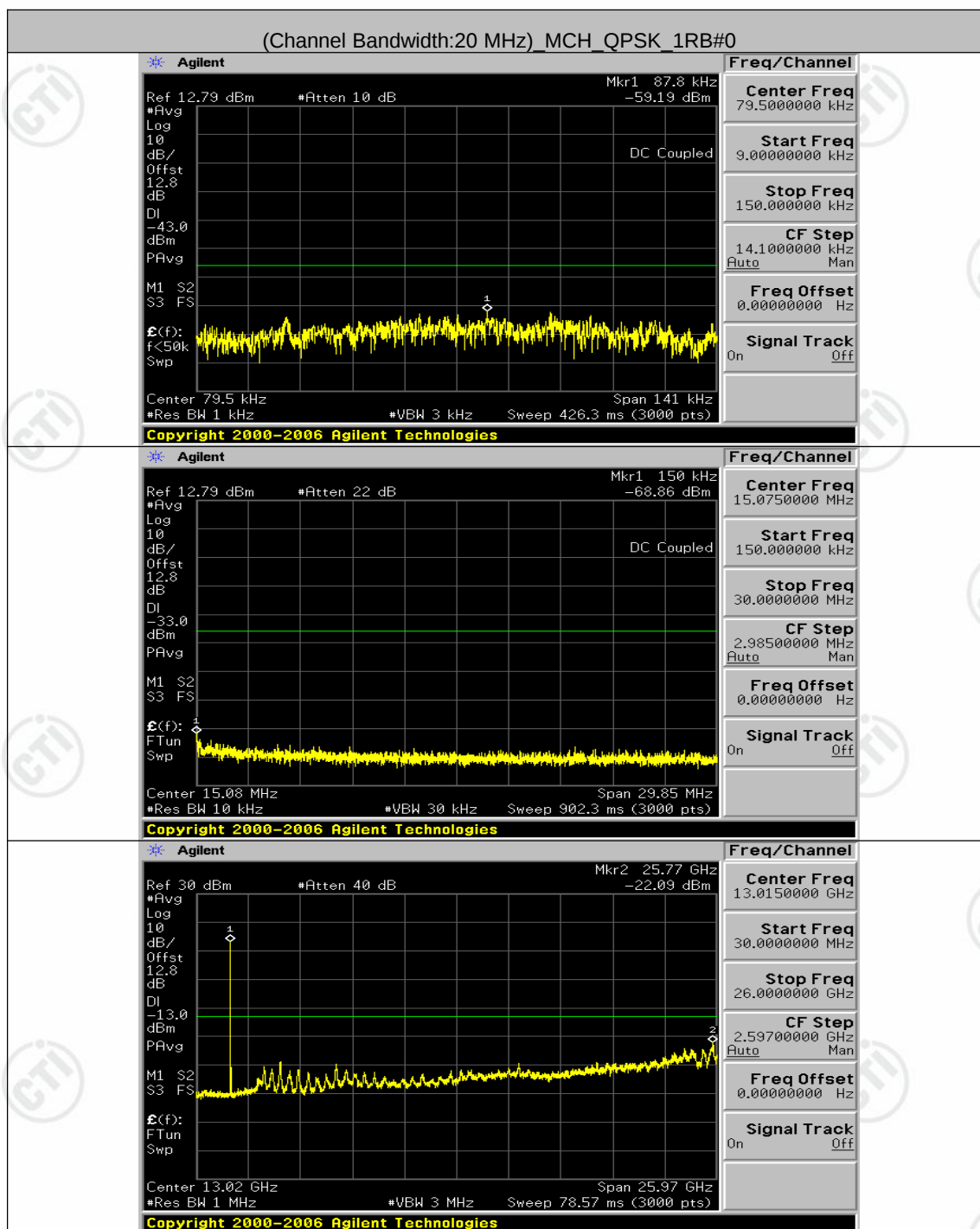


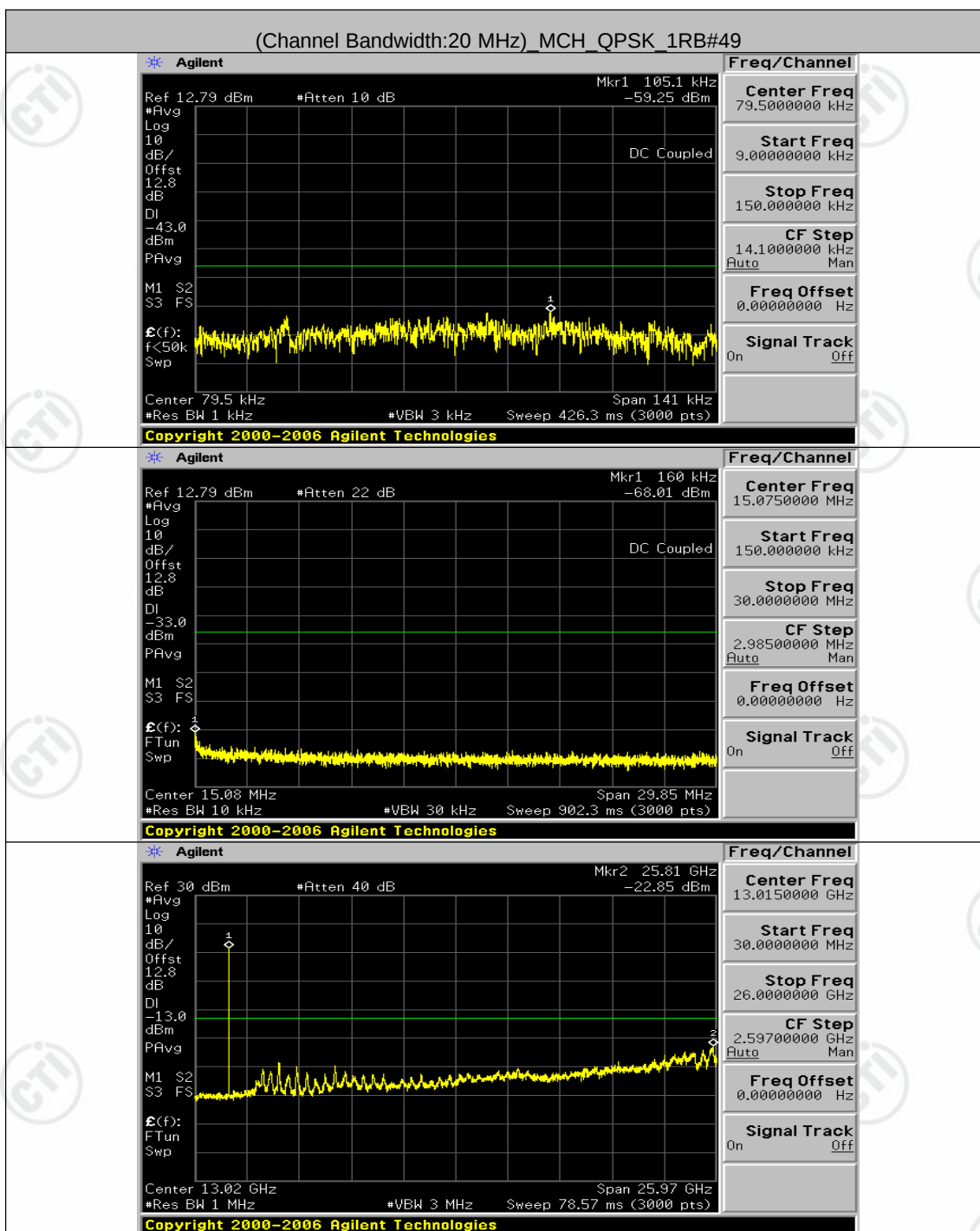
Channel Bandwidth: 20 MHz

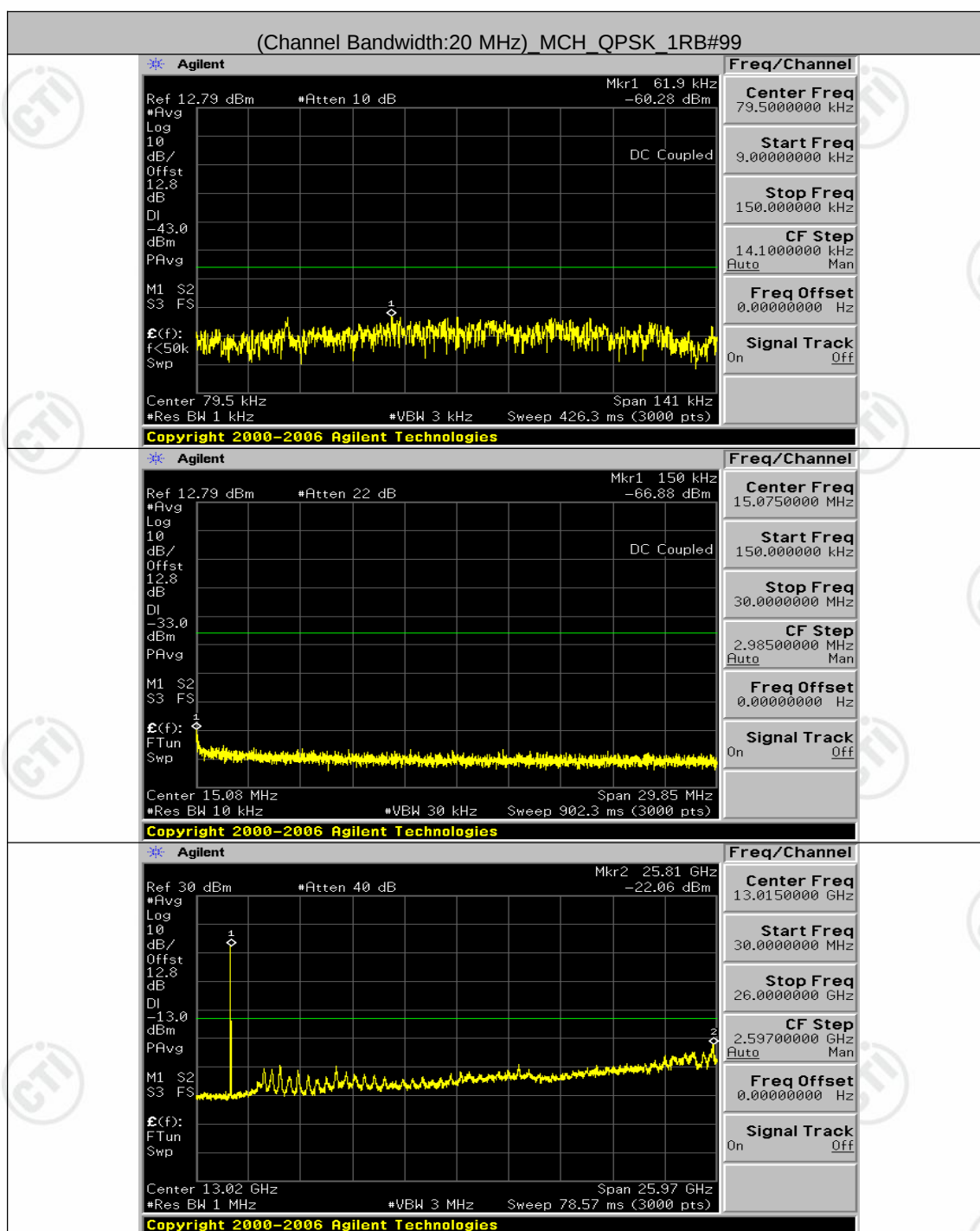


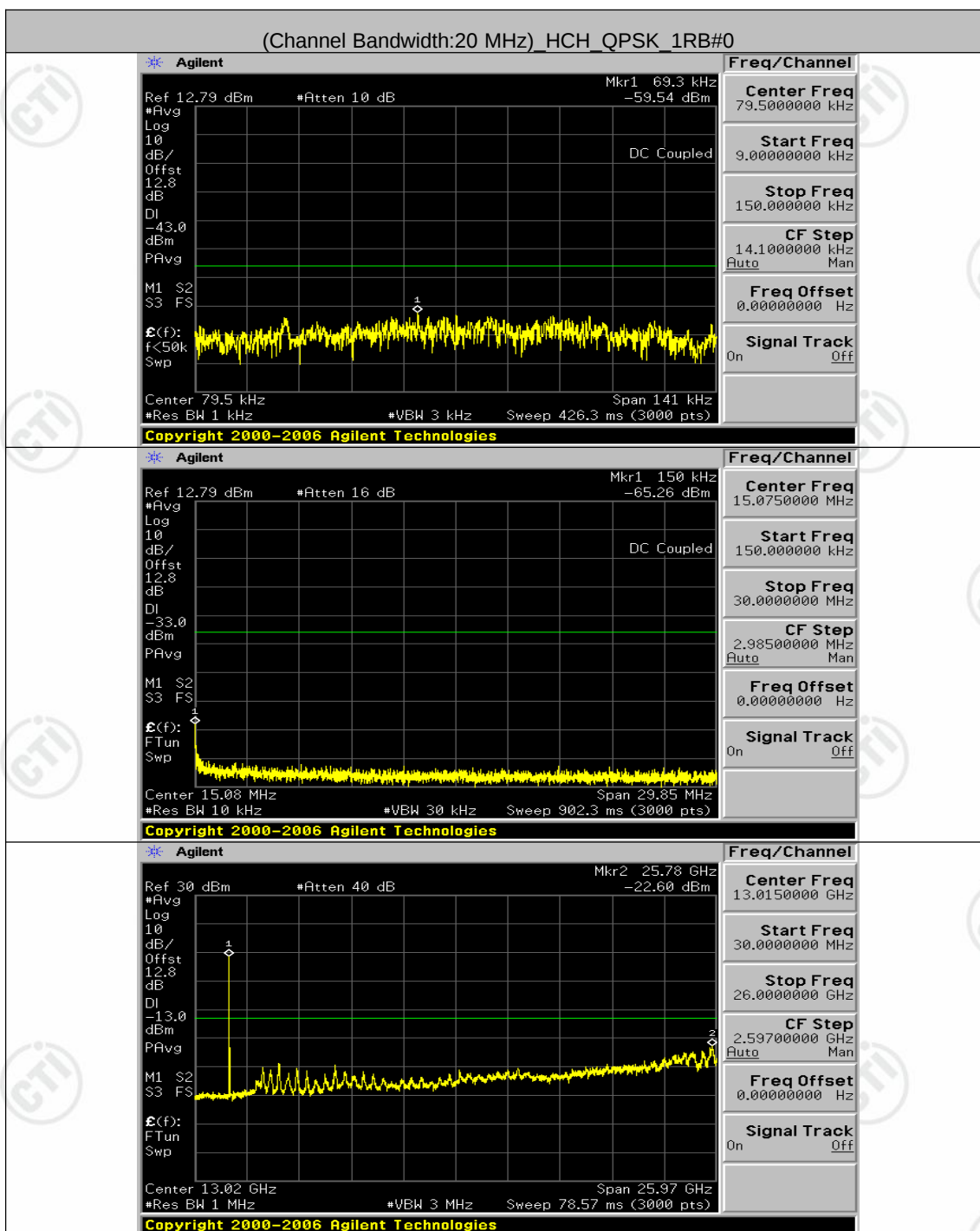


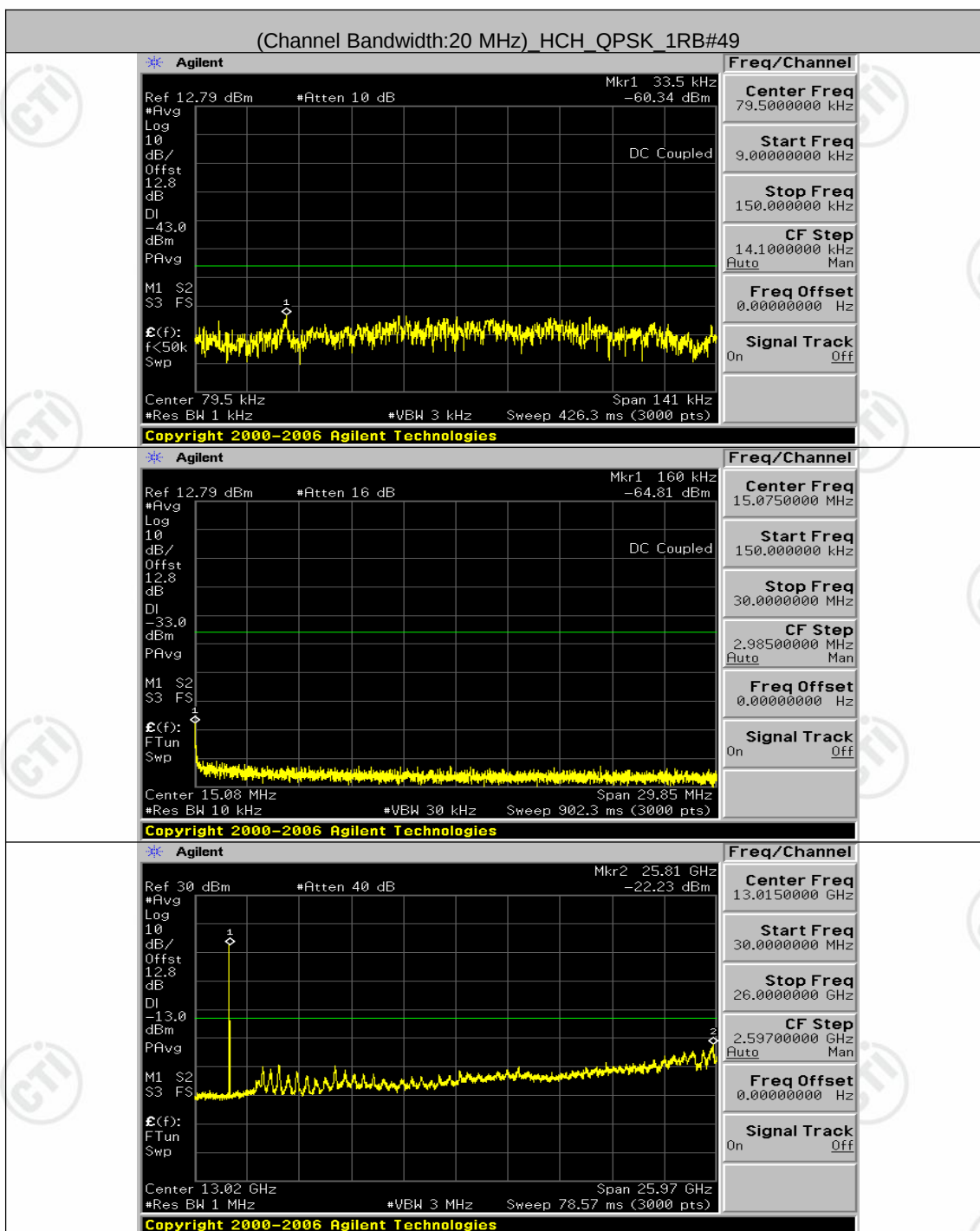


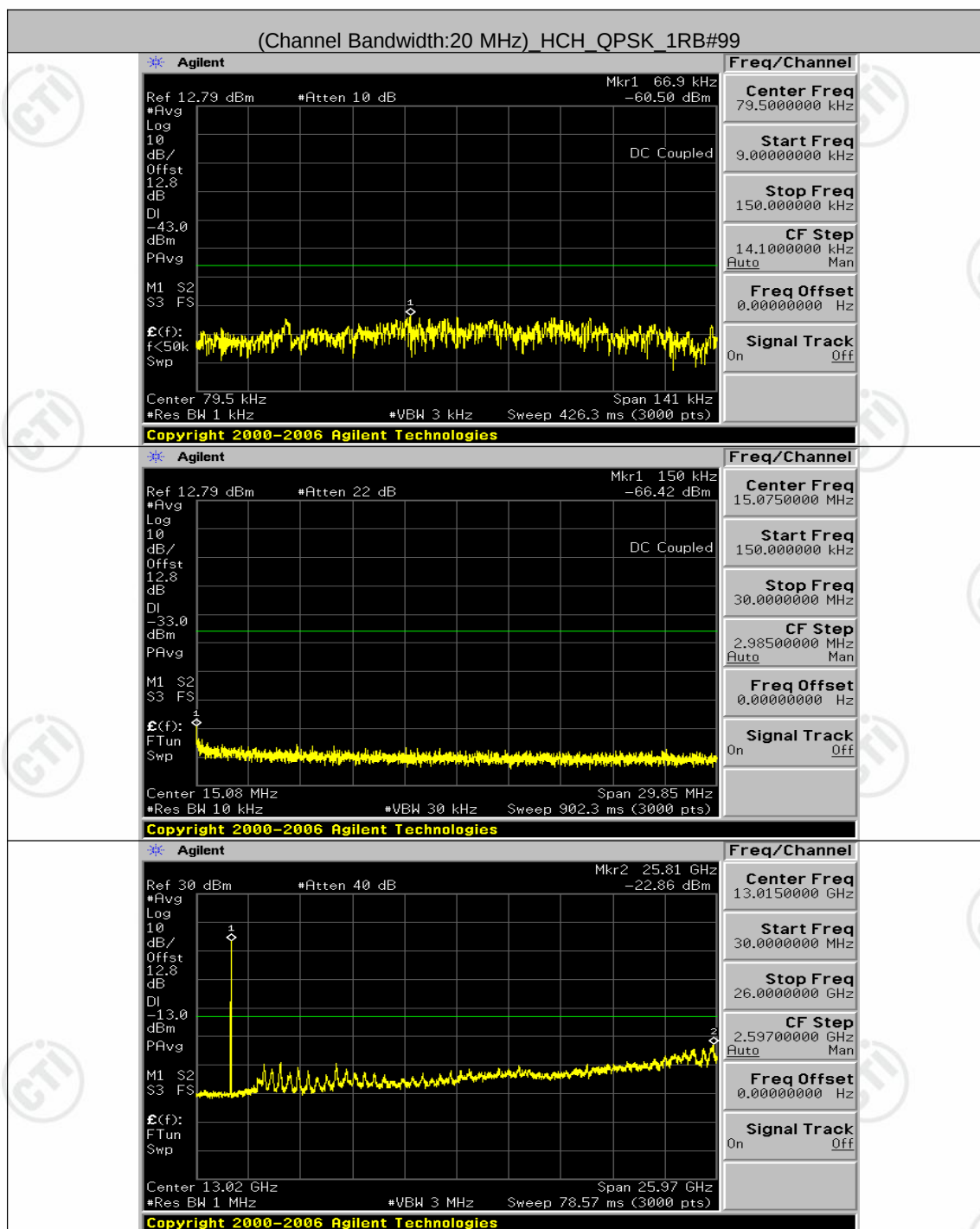


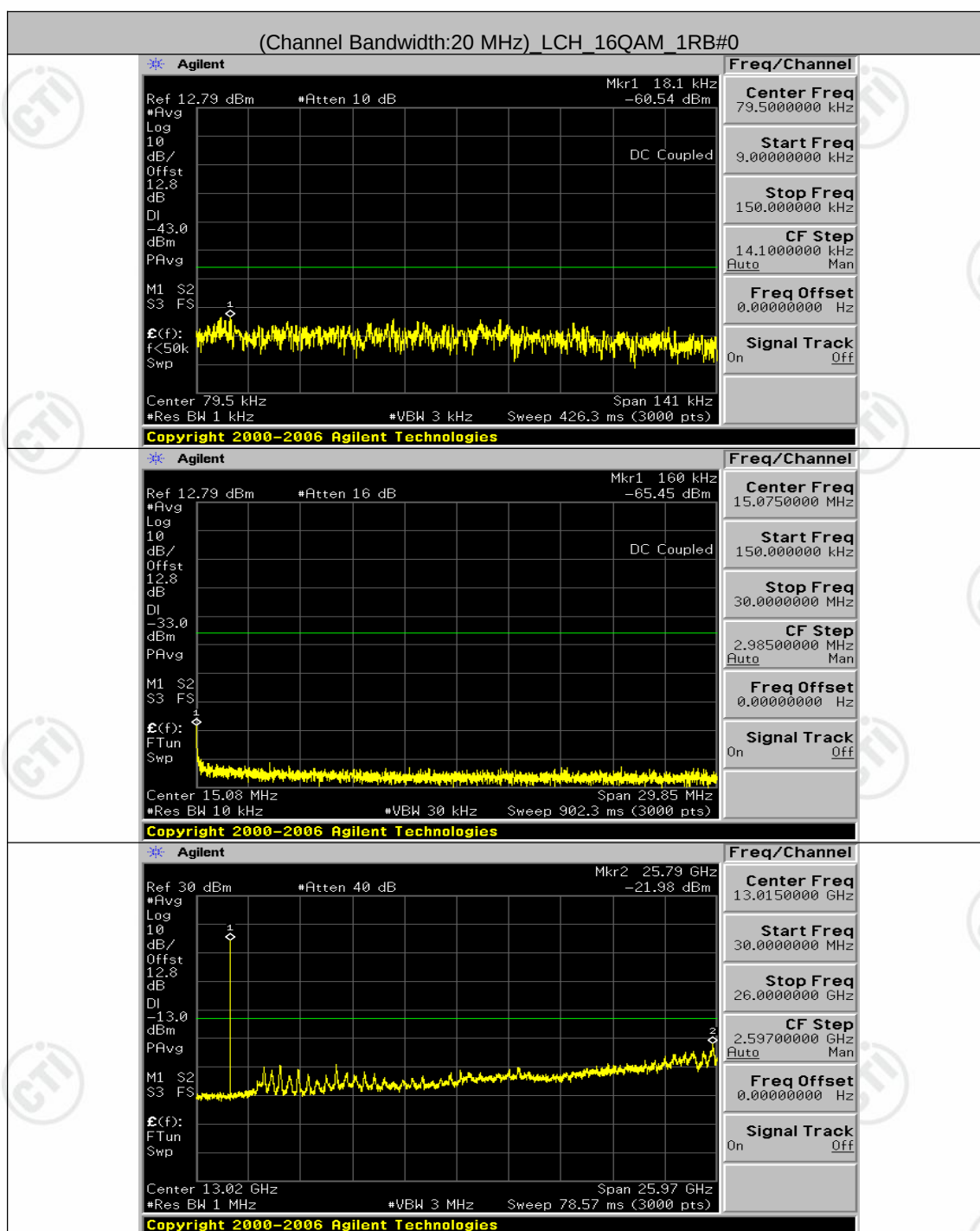


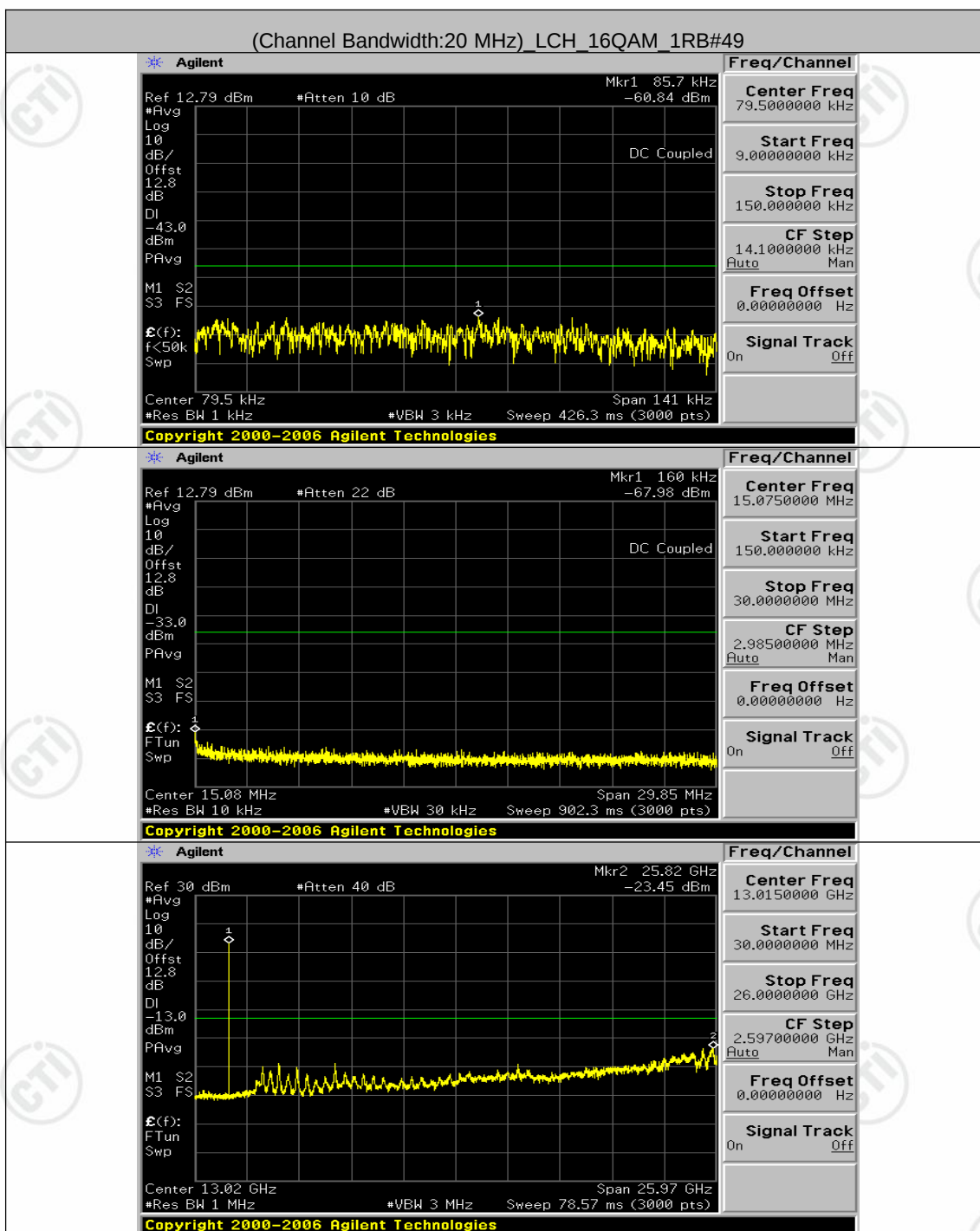


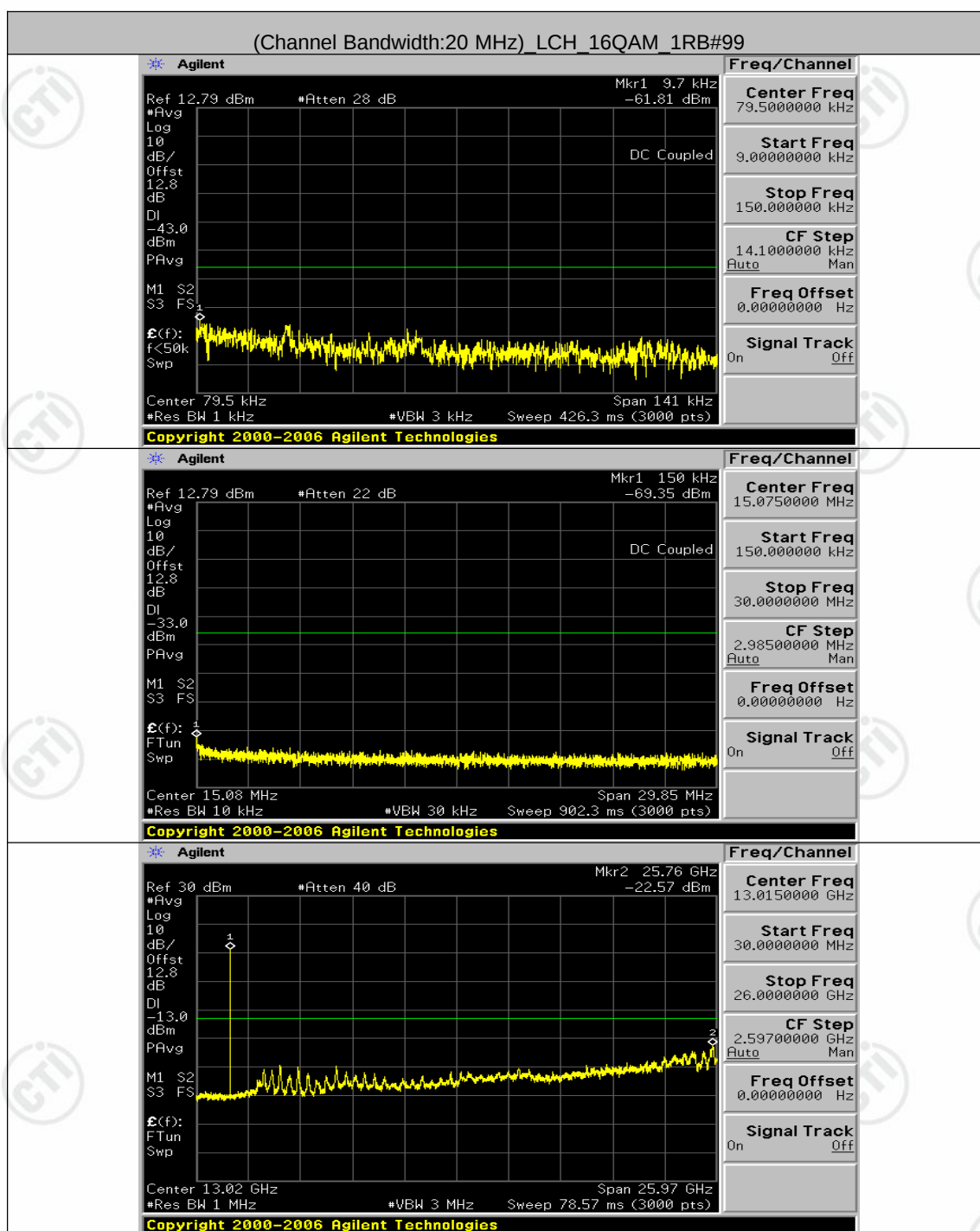


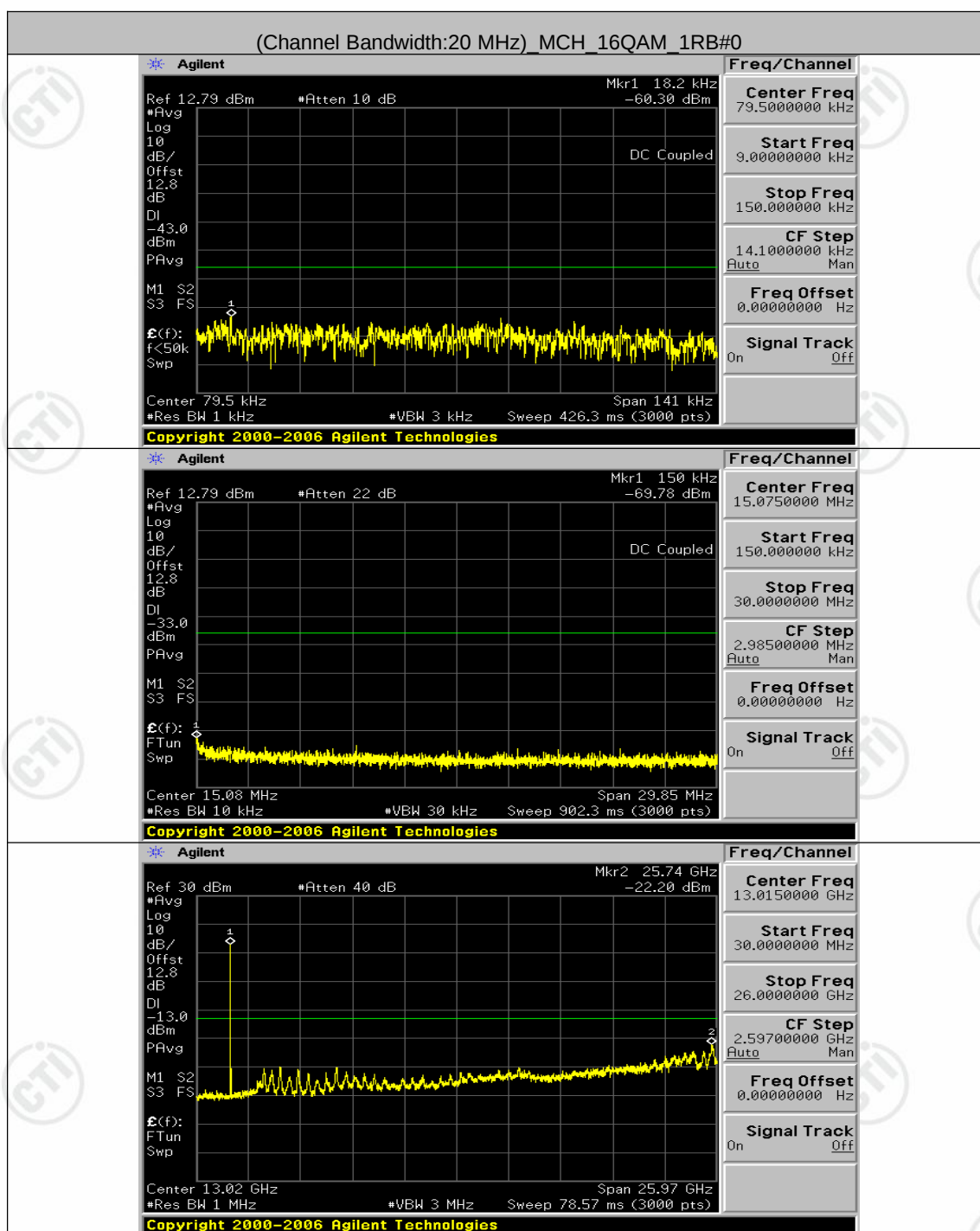


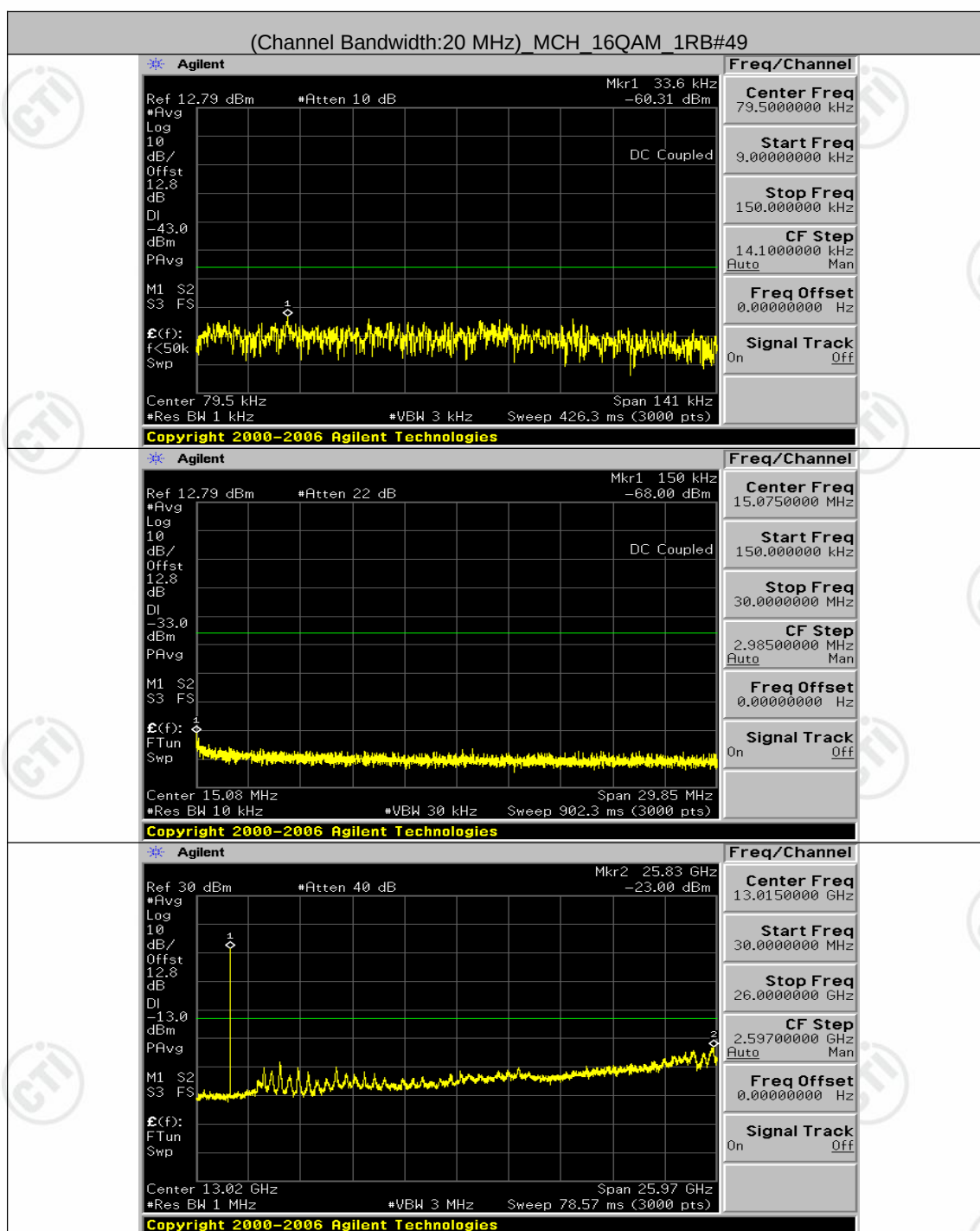


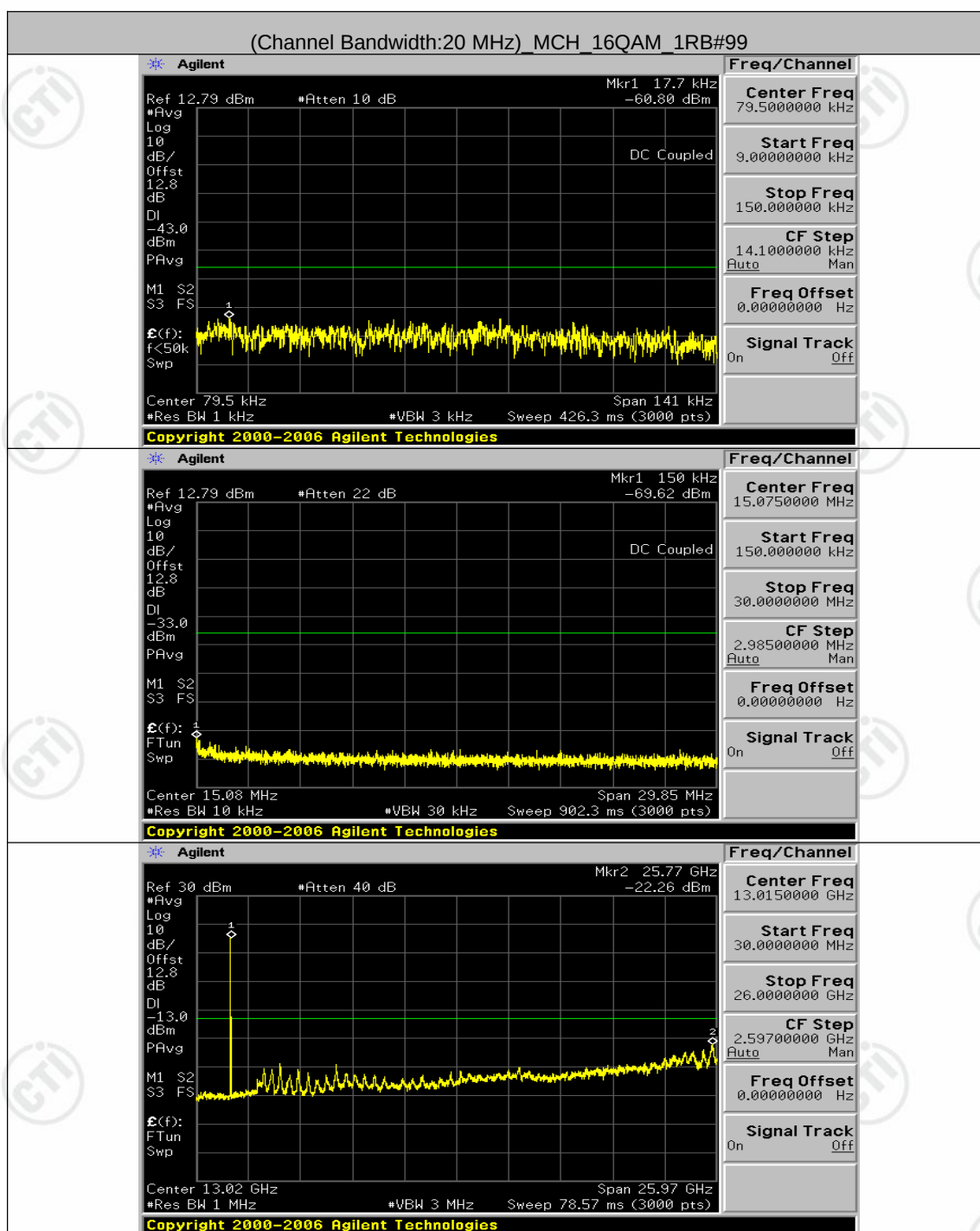


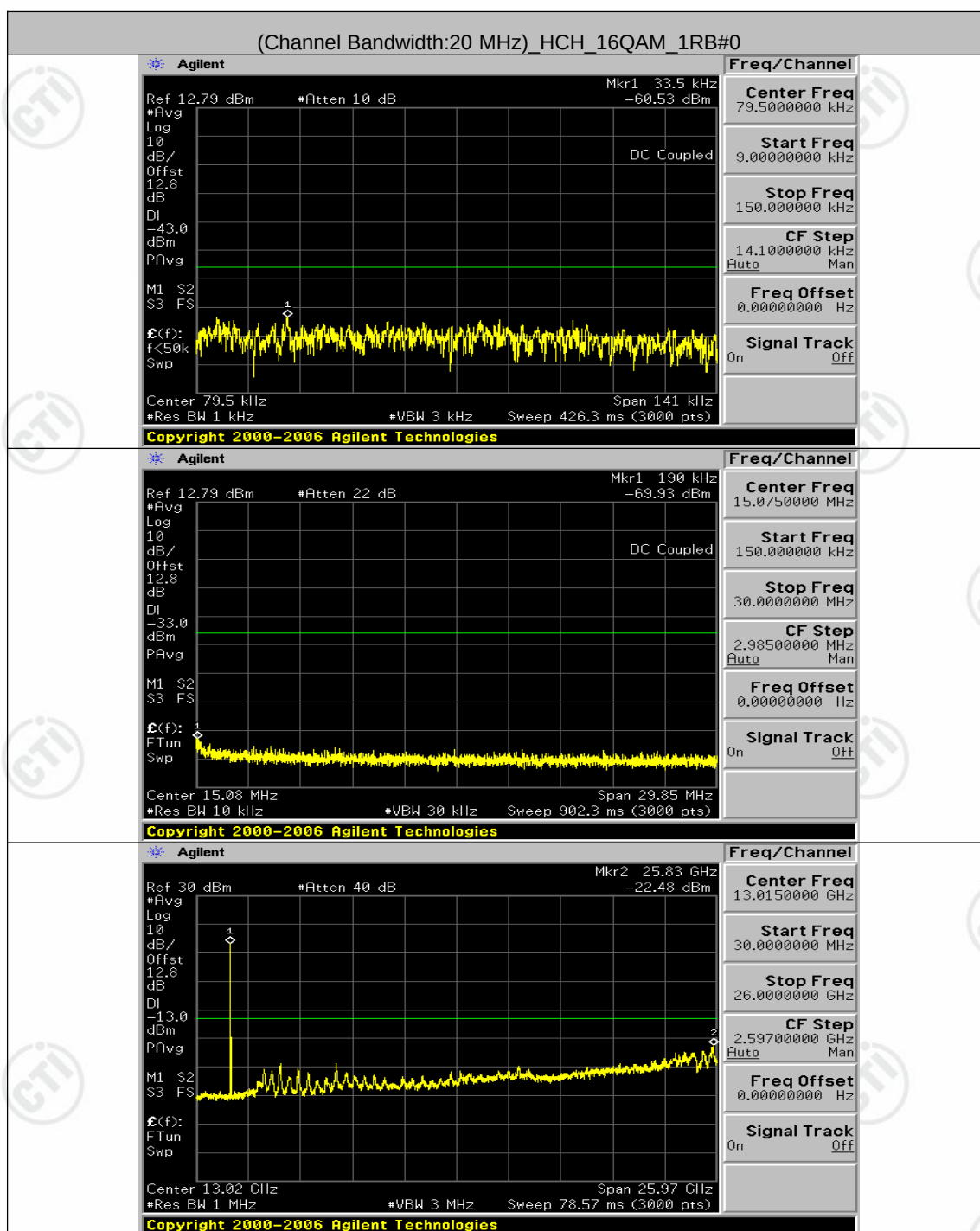


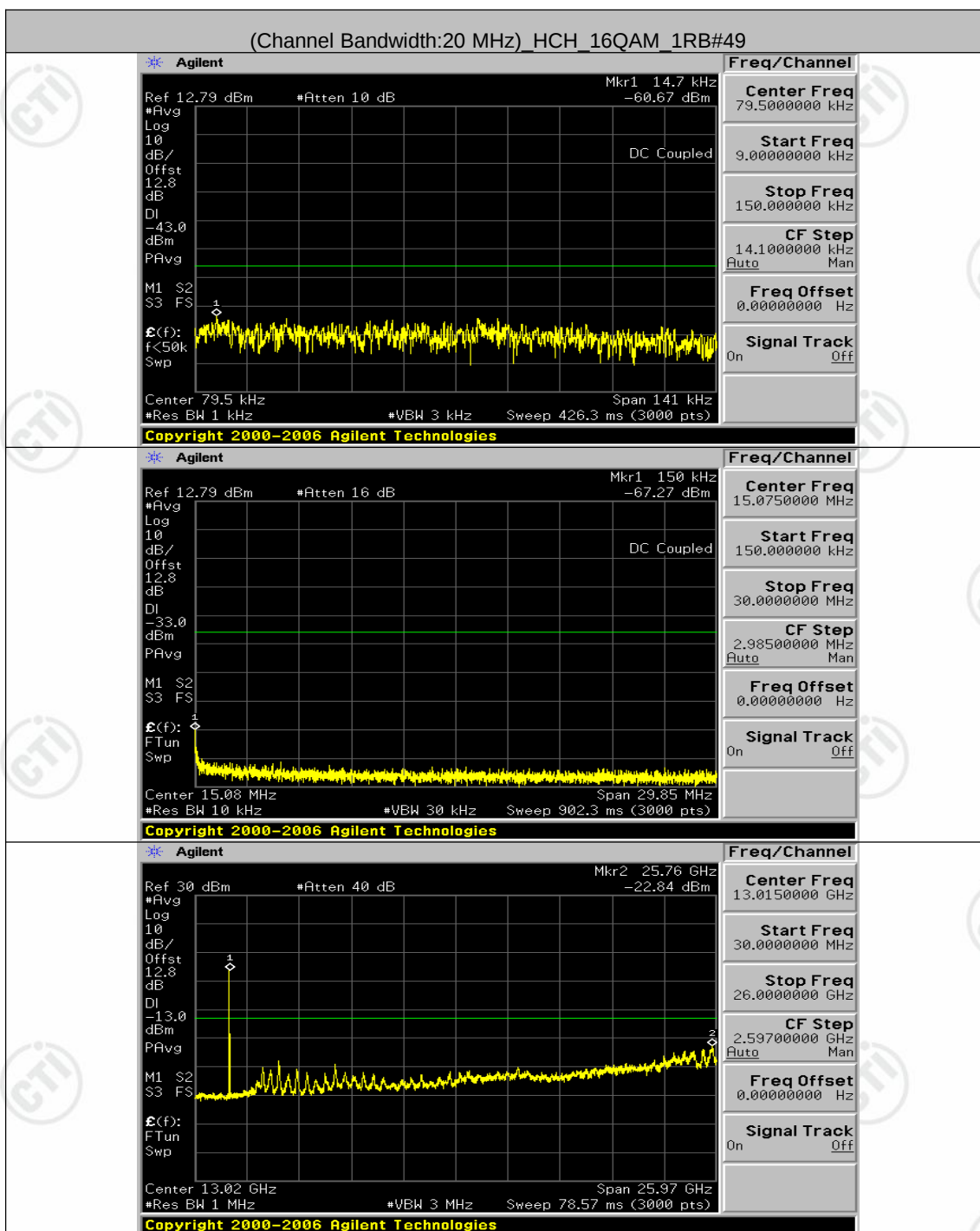


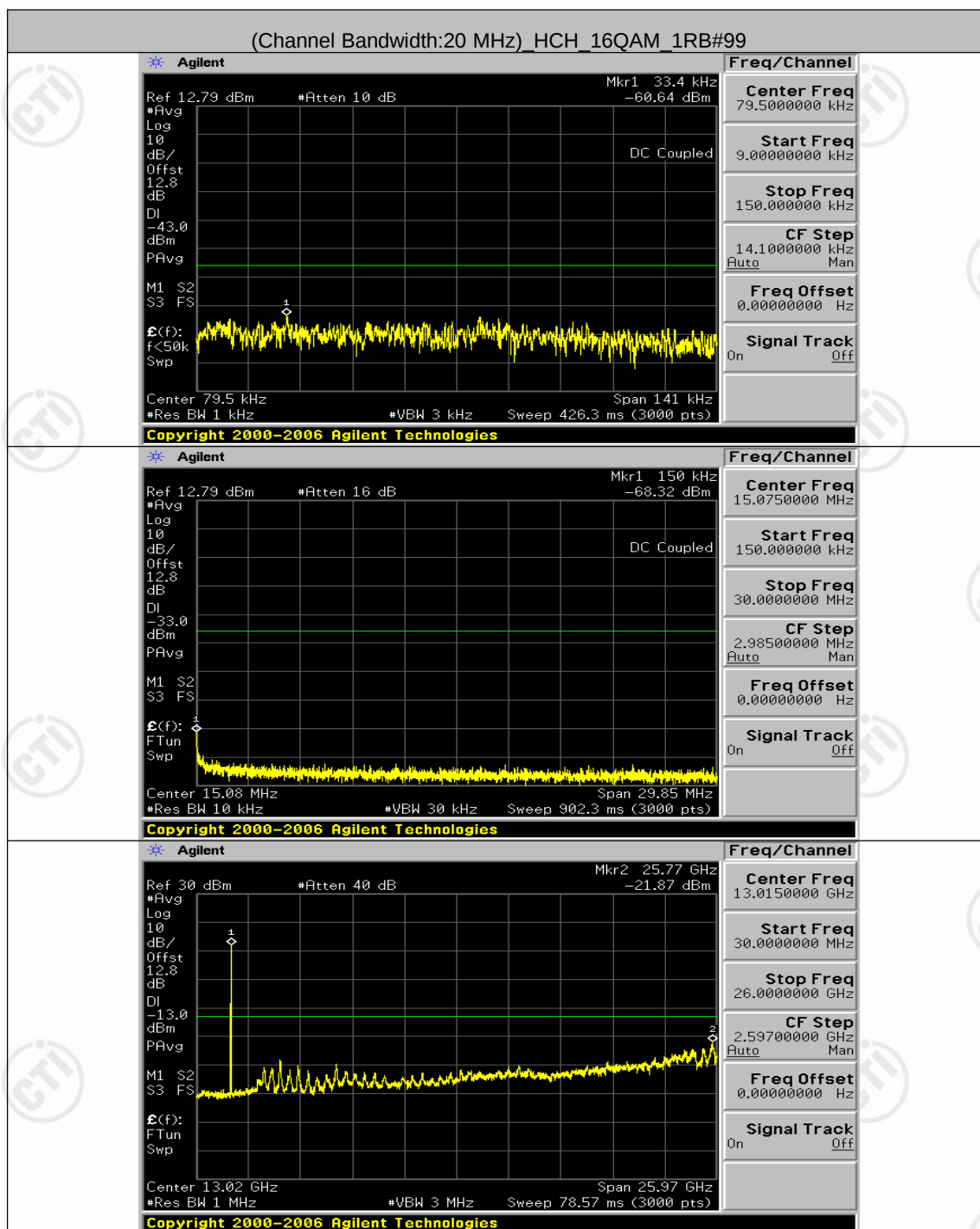












## Appendix F: Frequency Stability

### Test Result

Channel Bandwidth: 1.4 MHz

| Channel Bandwidth: 1.4 MHz |         |               |                  |                |                 |      |         |
|----------------------------|---------|---------------|------------------|----------------|-----------------|------|---------|
| Voltage                    |         |               |                  |                |                 |      |         |
| Modulation                 | Channel | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) |      | Verdict |
| QPSK                       | LCH     | VL            | TN               | -6.24          | -0.003646       |      | PASS    |
|                            |         | VN            | TN               | -4.72          | -0.002760       |      | PASS    |
|                            |         | VH            | TN               | -7.75          | -0.004532       |      | PASS    |
|                            | MCH     | VL            | TN               | 5.09           | 0.002939        |      | PASS    |
|                            |         | VN            | TN               | 2.30           | 0.001329        |      | PASS    |
|                            |         | VH            | TN               | 1.95           | 0.001123        |      | PASS    |
|                            | HCH     | VL            | TN               | -0.73          | -0.000416       |      | PASS    |
|                            |         | VN            | TN               | -4.91          | -0.002797       |      | PASS    |
|                            |         | VH            | TN               | -5.05          | -0.002878       |      | PASS    |
| 16QAM                      | LCH     | VL            | TN               | -4.94          | -0.002885       |      | PASS    |
|                            |         | VN            | TN               | -5.38          | -0.003144       |      | PASS    |
|                            |         | VH            | TN               | -2.60          | -0.001522       |      | PASS    |
|                            | MCH     | VL            | TN               | 2.13           | 0.001230        |      | PASS    |
|                            |         | VN            | TN               | 4.18           | 0.002411        |      | PASS    |
|                            |         | VH            | TN               | 5.26           | 0.003039        |      | PASS    |
|                            | HCH     | VL            | TN               | -1.46          | -0.000832       |      | PASS    |
|                            |         | VN            | TN               | -2.53          | -0.001443       |      | PASS    |
|                            |         | VH            | TN               | -1.22          | -0.000693       |      | PASS    |
| Temperature                |         |               |                  |                |                 |      |         |
| Modulation                 | Channel | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) |      | Verdict |
| QPSK                       | LCH     | VN            | -30              | -5.12          | -0.002994       |      | PASS    |
|                            |         | VN            | -20              | -2.65          | -0.001547       |      | PASS    |
|                            |         | VN            | -10              | -3.95          | -0.002308       |      | PASS    |
|                            |         | VN            | 0                | -5.08          | -0.002969       |      | PASS    |
|                            |         | VN            | 10               | -4.46          | -0.002609       |      | PASS    |
|                            |         | VN            | 20               | -7.65          | -0.004474       |      | PASS    |
|                            |         | VN            | 30               | -1.67          | -0.000978       |      | PASS    |
|                            |         | VN            | 40               | -2.72          | -0.001589       |      | PASS    |
|                            |         | VN            | 50               | -1.34          | -0.000786       |      | PASS    |
|                            | MCH     | VN            | -30              | 3.62           | 0.002089        |      | PASS    |
|                            |         | VN            | -20              | 2.03           | 0.001172        |      | PASS    |
|                            |         | VN            | -10              | 1.17           | 0.000677        |      | PASS    |
|                            |         | VN            | 0                | 5.08           | 0.002931        |      | PASS    |
|                            |         | VN            | 10               | 1.62           | 0.000933        |      | PASS    |
|                            |         | VN            | 20               | 5.22           | 0.003014        |      | PASS    |
|                            |         | VN            | 30               | 4.45           | 0.002568        |      | PASS    |
|                            |         | VN            | 40               | 0.46           | 0.000264        |      | PASS    |
|                            |         | VN            | 50               | 0.76           | 0.000438        |      | PASS    |
|                            | HCH     | VN            | -30              | 1.00           | 0.000571        |      | PASS    |
|                            |         | VN            | -20              | -6.12          | -0.003490       |      | PASS    |
|                            |         | VN            | -10              | -1.07          | -0.000612       |      | PASS    |
| VN                         |         | 0             | -4.79            | -0.002732      |                 | PASS |         |

|       |     |    |     |       |           |      |
|-------|-----|----|-----|-------|-----------|------|
| 16QAM |     | VN | 10  | -0.84 | -0.000481 | PASS |
|       |     | VN | 20  | -6.08 | -0.003466 | PASS |
|       |     | VN | 30  | -2.75 | -0.001566 | PASS |
|       |     | VN | 40  | -5.09 | -0.002903 | PASS |
|       |     | VN | 50  | -0.50 | -0.000285 | PASS |
|       | LCH | VN | -30 | -7.14 | -0.004173 | PASS |
|       |     | VN | -20 | -7.31 | -0.004273 | PASS |
|       |     | VN | -10 | -2.88 | -0.001681 | PASS |
|       |     | VN | 0   | -2.69 | -0.001572 | PASS |
|       |     | VN | 10  | -5.15 | -0.003010 | PASS |
|       |     | VN | 20  | -2.63 | -0.001539 | PASS |
|       |     | VN | 30  | -2.70 | -0.001580 | PASS |
|       |     | VN | 40  | -4.09 | -0.002392 | PASS |
|       |     | VN | 50  | -1.24 | -0.000728 | PASS |
|       | MCH | VN | -30 | 2.43  | 0.001404  | PASS |
|       |     | VN | -20 | 4.23  | 0.002444  | PASS |
|       |     | VN | -10 | 5.01  | 0.002890  | PASS |
|       |     | VN | 0   | -1.04 | -0.000603 | PASS |
|       |     | VN | 10  | 4.85  | 0.002799  | PASS |
|       |     | VN | 20  | -0.11 | -0.000066 | PASS |
|       |     | VN | 30  | 4.76  | 0.002750  | PASS |
|       |     | VN | 40  | -0.13 | -0.000074 | PASS |
|       |     | VN | 50  | 5.35  | 0.003088  | PASS |
|       | HCH | VN | -30 | -2.88 | -0.001639 | PASS |
|       |     | VN | -20 | -3.36 | -0.001916 | PASS |
|       |     | VN | -10 | -0.56 | -0.000318 | PASS |
|       |     | VN | 0   | -0.60 | -0.000342 | PASS |
|       |     | VN | 10  | 0.13  | 0.000073  | PASS |
|       |     | VN | 20  | 0.36  | 0.000204  | PASS |
|       |     | VN | 30  | -0.46 | -0.000261 | PASS |
|       |     | VN | 40  | -3.05 | -0.001737 | PASS |
|       |     | VN | 50  | -4.53 | -0.002585 | PASS |

**Channel Bandwidth: 3 MHz**

| Channel Bandwidth: 3 MHz |         |               |                  |                |                 |         |
|--------------------------|---------|---------------|------------------|----------------|-----------------|---------|
| Voltage                  |         |               |                  |                |                 |         |
| Modulation               | Channel | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Verdict |
| QPSK                     | LCH     | VL            | TN               | -4.33          | -0.002533       | PASS    |
|                          |         | VN            | TN               | -3.18          | -0.001856       | PASS    |
|                          |         | VH            | TN               | 0.50           | 0.000293        | PASS    |
|                          | MCH     | VL            | TN               | -2.15          | -0.001239       | PASS    |
|                          |         | VN            | TN               | 3.79           | 0.002188        | PASS    |
|                          |         | VH            | TN               | 0.97           | 0.000561        | PASS    |
|                          | HCH     | VL            | TN               | -4.51          | -0.002570       | PASS    |
|                          |         | VN            | TN               | -8.33          | -0.004748       | PASS    |
|                          |         | VH            | TN               | -5.85          | -0.003337       | PASS    |
| 16QAM                    | LCH     | VL            | TN               | -1.07          | -0.000627       | PASS    |
|                          |         | VN            | TN               | 1.16           | 0.000677        | PASS    |
|                          |         | VH            | TN               | -0.29          | -0.000167       | PASS    |
|                          | MCH     | VL            | TN               | 1.56           | 0.000900        | PASS    |

|             |         |               |                  |                |                 |  |         |
|-------------|---------|---------------|------------------|----------------|-----------------|--|---------|
|             |         | VN            | TN               | 1.69           | 0.000974        |  | PASS    |
|             |         | VH            | TN               | -1.40          | -0.000809       |  | PASS    |
|             | HCH     | VL            | TN               | -7.04          | -0.004014       |  | PASS    |
|             |         | VN            | TN               | -4.79          | -0.002733       |  | PASS    |
|             |         | VH            | TN               | -8.08          | -0.004609       |  | PASS    |
| Temperature |         |               |                  |                |                 |  |         |
| Modulation  | Channel | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) |  | Verdict |
| QPSK        | LCH     | VN            | -30              | -1.56          | -0.000911       |  | PASS    |
|             |         | VN            | -20              | -1.26          | -0.000736       |  | PASS    |
|             |         | VN            | -10              | 0.94           | 0.000552        |  | PASS    |
|             |         | VN            | 0                | -1.75          | -0.001020       |  | PASS    |
|             |         | VN            | 10               | -6.21          | -0.003627       |  | PASS    |
|             |         | VN            | 20               | -0.31          | -0.000184       |  | PASS    |
|             |         | VN            | 30               | 0.44           | 0.000259        |  | PASS    |
|             |         | VN            | 40               | -3.71          | -0.002165       |  | PASS    |
|             |         | VN            | 50               | -0.69          | -0.000401       |  | PASS    |
|             | MCH     | VN            | -30              | 0.36           | 0.000206        |  | PASS    |
|             |         | VN            | -20              | 3.39           | 0.001957        |  | PASS    |
|             |         | VN            | -10              | 5.15           | 0.002972        |  | PASS    |
|             |         | VN            | 0                | 2.16           | 0.001247        |  | PASS    |
|             |         | VN            | 10               | -0.19          | -0.000107       |  | PASS    |
|             |         | VN            | 20               | 1.27           | 0.000735        |  | PASS    |
|             |         | VN            | 30               | 1.06           | 0.000611        |  | PASS    |
|             |         | VN            | 40               | 0.67           | 0.000388        |  | PASS    |
|             |         | VN            | 50               | 4.23           | 0.002444        |  | PASS    |
|             | HCH     | VN            | -30              | -4.79          | -0.002733       |  | PASS    |
|             |         | VN            | -20              | -7.47          | -0.004258       |  | PASS    |
|             |         | VN            | -10              | -3.63          | -0.002072       |  | PASS    |
|             |         | VN            | 0                | -3.29          | -0.001876       |  | PASS    |
|             |         | VN            | 10               | -8.03          | -0.004577       |  | PASS    |
|             |         | VN            | 20               | -5.76          | -0.003288       |  | PASS    |
|             |         | VN            | 30               | -3.71          | -0.002113       |  | PASS    |
|             |         | VN            | 40               | -7.45          | -0.004250       |  | PASS    |
|             |         | VN            | 50               | -5.84          | -0.003328       |  | PASS    |
| 16QAM       | LCH     | VN            | -30              | -2.78          | -0.001621       |  | PASS    |
|             |         | VN            | -20              | -4.43          | -0.002591       |  | PASS    |
|             |         | VN            | -10              | 0.01           | 0.000008        |  | PASS    |
|             |         | VN            | 0                | -1.54          | -0.000903       |  | PASS    |
|             |         | VN            | 10               | 0.54           | 0.000318        |  | PASS    |
|             |         | VN            | 20               | -0.27          | -0.000159       |  | PASS    |
|             |         | VN            | 30               | 1.63           | 0.000953        |  | PASS    |
|             |         | VN            | 40               | -1.36          | -0.000794       |  | PASS    |
|             |         | VN            | 50               | 0.63           | 0.000368        |  | PASS    |
|             | MCH     | VN            | -30              | 2.63           | 0.001519        |  | PASS    |
|             |         | VN            | -20              | 0.31           | 0.000182        |  | PASS    |
|             |         | VN            | -10              | 3.76           | 0.002172        |  | PASS    |
|             |         | VN            | 0                | 3.66           | 0.002114        |  | PASS    |
|             |         | VN            | 10               | 1.23           | 0.000710        |  | PASS    |
|             |         | VN            | 20               | -1.83          | -0.001057       |  | PASS    |
|             |         | VN            | 30               | 3.05           | 0.001759        |  | PASS    |
|             |         | VN            | 40               | 1.02           | 0.000586        |  | PASS    |

|  |     |    |     |       |           |      |
|--|-----|----|-----|-------|-----------|------|
|  |     | VN | 50  | 2.35  | 0.001354  | PASS |
|  | HCH | VN | -30 | -4.65 | -0.002651 | PASS |
|  |     | VN | -20 | -8.24 | -0.004699 | PASS |
|  |     | VN | -10 | -3.18 | -0.001811 | PASS |
|  |     | VN | 0   | -8.00 | -0.004560 | PASS |
|  |     | VN | 10  | -5.98 | -0.003410 | PASS |
|  |     | VN | 20  | -2.90 | -0.001656 | PASS |
|  |     | VN | 30  | -5.74 | -0.003271 | PASS |
|  |     | VN | 40  | -8.55 | -0.004879 | PASS |
|  |     | VN | 50  | -3.78 | -0.002154 | PASS |

**Channel Bandwidth: 5 MHz**

| Channel Bandwidth: 5 MHz |         |               |                  |                |                 |         |
|--------------------------|---------|---------------|------------------|----------------|-----------------|---------|
| Voltage                  |         |               |                  |                |                 |         |
| Modulation               | Channel | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Verdict |
| QPSK                     | LCH     | VL            | TN               | -5.68          | -0.003316       | PASS    |
|                          |         | VN            | TN               | -6.48          | -0.003784       | PASS    |
|                          |         | VH            | TN               | -5.18          | -0.003024       | PASS    |
|                          | MCH     | VL            | TN               | -0.26          | -0.000149       | PASS    |
|                          |         | VN            | TN               | -1.00          | -0.000578       | PASS    |
|                          |         | VH            | TN               | 0.86           | 0.000495        | PASS    |
|                          | HCH     | VL            | TN               | -2.92          | -0.001665       | PASS    |
|                          |         | VN            | TN               | -3.86          | -0.002204       | PASS    |
|                          |         | VH            | TN               | -4.88          | -0.002783       | PASS    |
| 16QAM                    | LCH     | VL            | TN               | -4.86          | -0.002840       | PASS    |
|                          |         | VN            | TN               | -6.15          | -0.003592       | PASS    |
|                          |         | VH            | TN               | -6.62          | -0.003868       | PASS    |
|                          | MCH     | VL            | TN               | 3.19           | 0.001841        | PASS    |
|                          |         | VN            | TN               | 4.98           | 0.002873        | PASS    |
|                          |         | VH            | TN               | 0.77           | 0.000446        | PASS    |
|                          | HCH     | VL            | TN               | -1.30          | -0.000743       | PASS    |
|                          |         | VN            | TN               | -5.82          | -0.003322       | PASS    |
|                          |         | VH            | TN               | -2.37          | -0.001355       | PASS    |
| Temperature              |         |               |                  |                |                 |         |
| Modulation               | Channel | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Verdict |
| QPSK                     | LCH     | VN            | -30              | -3.89          | -0.002272       | PASS    |
|                          |         | VN            | -20              | -1.82          | -0.001061       | PASS    |
|                          |         | VN            | -10              | -6.25          | -0.003650       | PASS    |
|                          |         | VN            | 0                | -4.66          | -0.002723       | PASS    |
|                          |         | VN            | 10               | -6.77          | -0.003951       | PASS    |
|                          |         | VN            | 20               | -2.89          | -0.001687       | PASS    |
|                          |         | VN            | 30               | -6.41          | -0.003742       | PASS    |
|                          |         | VN            | 40               | -1.82          | -0.001061       | PASS    |
|                          |         | VN            | 50               | -7.17          | -0.004185       | PASS    |
|                          | MCH     | VN            | -30              | 2.92           | 0.001684        | PASS    |
|                          |         | VN            | -20              | 5.02           | 0.002898        | PASS    |
|                          |         | VN            | -10              | 1.13           | 0.000652        | PASS    |
|                          |         | VN            | 0                | 5.36           | 0.003096        | PASS    |
|                          |         | VN            | 10               | 4.95           | 0.002857        | PASS    |

|       |     |    |     |       |           |      |
|-------|-----|----|-----|-------|-----------|------|
|       |     | VN | 20  | 2.96  | 0.001709  | PASS |
|       |     | VN | 30  | 4.88  | 0.002816  | PASS |
|       |     | VN | 40  | -0.69 | -0.000396 | PASS |
|       |     | VN | 50  | 4.29  | 0.002477  | PASS |
|       | HCH | VN | -30 | -5.84 | -0.003330 | PASS |
|       |     | VN | -20 | -3.19 | -0.001820 | PASS |
|       |     | VN | -10 | -1.67 | -0.000955 | PASS |
|       |     | VN | 0   | -5.34 | -0.003045 | PASS |
|       |     | VN | 10  | -5.39 | -0.003077 | PASS |
|       |     | VN | 20  | -0.89 | -0.000506 | PASS |
|       |     | VN | 30  | -4.63 | -0.002645 | PASS |
|       |     | VN | 40  | -2.95 | -0.001682 | PASS |
|       |     | VN | 50  | -5.29 | -0.003020 | PASS |
| 16QAM | LCH | VN | -30 | -0.13 | -0.000075 | PASS |
|       |     | VN | -20 | -6.37 | -0.003717 | PASS |
|       |     | VN | -10 | -3.53 | -0.002063 | PASS |
|       |     | VN | 0   | -5.02 | -0.002932 | PASS |
|       |     | VN | 10  | -6.37 | -0.003717 | PASS |
|       |     | VN | 20  | -2.25 | -0.001311 | PASS |
|       |     | VN | 30  | -1.22 | -0.000710 | PASS |
|       |     | VN | 40  | -5.12 | -0.002990 | PASS |
|       | MCH | VN | 50  | -7.08 | -0.004135 | PASS |
|       |     | VN | -30 | 4.28  | 0.002469  | PASS |
|       |     | VN | -20 | -0.94 | -0.000545 | PASS |
|       |     | VN | -10 | 1.33  | 0.000768  | PASS |
|       |     | VN | 0   | -0.17 | -0.000099 | PASS |
|       |     | VN | 10  | 6.32  | 0.003650  | PASS |
|       |     | VN | 20  | 4.19  | 0.002419  | PASS |
|       |     | VN | 30  | -0.39 | -0.000223 | PASS |
|       | HCH | VN | 40  | 3.32  | 0.001916  | PASS |
|       |     | VN | 50  | -1.02 | -0.000586 | PASS |
|       |     | VN | -30 | -5.39 | -0.003077 | PASS |
|       |     | VN | -20 | -4.58 | -0.002612 | PASS |
|       |     | VN | -10 | -5.15 | -0.002939 | PASS |
|       |     | VN | 0   | -1.13 | -0.000645 | PASS |
|       |     | VN | 10  | -2.95 | -0.001682 | PASS |
|       |     | VN | 20  | -2.03 | -0.001159 | PASS |
|       |     | VN | 30  | -0.86 | -0.000490 | PASS |
|       |     | VN | 40  | -2.35 | -0.001339 | PASS |
|       |     | VN | 50  | -5.79 | -0.003306 | PASS |

**Channel Bandwidth: 10 MHz**

| Channel Bandwidth: 10 MHz |         |               |                  |                |                 |  |         |
|---------------------------|---------|---------------|------------------|----------------|-----------------|--|---------|
| Voltage                   |         |               |                  |                |                 |  |         |
| Modulation                | Channel | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) |  | Verdict |
| QPSK                      | LCH     | VL            | TN               | 0.66           | 0.000384        |  | PASS    |
|                           |         | VN            | TN               | -2.35          | -0.001368       |  | PASS    |
|                           |         | VH            | TN               | -0.44          | -0.000259       |  | PASS    |
|                           | MCH     | VL            | TN               | -1.13          | -0.000652       |  | PASS    |
|                           |         | VN            | TN               | -1.13          | -0.000652       |  | PASS    |
|                           |         | VH            | TN               | -0.06          | -0.000033       |  | PASS    |
|                           | HCH     | VL            | TN               | 0.39           | 0.000221        |  | PASS    |
|                           |         | VN            | TN               | 4.75           | 0.002714        |  | PASS    |
|                           |         | VH            | TN               | 2.90           | 0.001659        |  | PASS    |
| 16QAM                     | LCH     | VL            | TN               | 1.16           | 0.000676        |  | PASS    |
|                           |         | VN            | TN               | 2.69           | 0.001568        |  | PASS    |
|                           |         | VH            | TN               | -0.07          | -0.000042       |  | PASS    |
|                           | MCH     | VL            | TN               | -1.36          | -0.000784       |  | PASS    |
|                           |         | VN            | TN               | 1.75           | 0.001007        |  | PASS    |
|                           |         | VH            | TN               | 1.33           | 0.000768        |  | PASS    |
|                           | HCH     | VL            | TN               | 6.61           | 0.003777        |  | PASS    |
|                           |         | VN            | TN               | 4.94           | 0.002820        |  | PASS    |
|                           |         | VH            | TN               | 3.86           | 0.002207        |  | PASS    |
| Temperature               |         |               |                  |                |                 |  |         |
| Modulation                | Channel | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) |  | Verdict |
| 16QAM                     | LCH     | VN            | -30              | 0.72           | 0.000417        |  | PASS    |
|                           |         | VN            | -20              | -0.31          | -0.000184       |  | PASS    |
|                           |         | VN            | -10              | 0.94           | 0.000551        |  | PASS    |
|                           |         | VN            | 0                | 0.21           | 0.000125        |  | PASS    |
|                           |         | VN            | 10               | -1.93          | -0.001126       |  | PASS    |
|                           |         | VN            | 20               | -1.13          | -0.000659       |  | PASS    |
|                           |         | VN            | 30               | 3.68           | 0.002144        |  | PASS    |
|                           |         | VN            | 40               | -1.19          | -0.000692       |  | PASS    |
|                           |         | VN            | 50               | 0.46           | 0.000267        |  | PASS    |
|                           | MCH     | VN            | -30              | 5.88           | 0.003394        |  | PASS    |
|                           |         | VN            | -20              | 5.56           | 0.003212        |  | PASS    |
|                           |         | VN            | -10              | 2.92           | 0.001684        |  | PASS    |
|                           |         | VN            | 0                | 2.49           | 0.001437        |  | PASS    |
|                           |         | VN            | 10               | 1.16           | 0.000669        |  | PASS    |
|                           |         | VN            | 20               | 0.53           | 0.000306        |  | PASS    |
|                           |         | VN            | 30               | 0.80           | 0.000462        |  | PASS    |
|                           |         | VN            | 40               | 4.63           | 0.002675        |  | PASS    |
|                           |         | VN            | 50               | 3.32           | 0.001916        |  | PASS    |
|                           | HCH     | VN            | -30              | 1.22           | 0.000695        |  | PASS    |
|                           |         | VN            | -20              | 0.23           | 0.000131        |  | PASS    |
|                           |         | VN            | -10              | -0.24          | -0.000139       |  | PASS    |
|                           |         | VN            | 0                | 2.00           | 0.001144        |  | PASS    |
|                           |         | VN            | 10               | -0.19          | -0.000106       |  | PASS    |
|                           |         | VN            | 20               | 4.81           | 0.002747        |  | PASS    |
|                           |         | VN            | 30               | -0.53          | -0.000302       |  | PASS    |
|                           |         | VN            | 40               | 0.82           | 0.000466        |  | PASS    |

|      |     |    |     |       |           |      |
|------|-----|----|-----|-------|-----------|------|
|      |     | VN | 50  | 2.06  | 0.001177  | PASS |
| QPSK | LCH | VN | -30 | -2.45 | -0.001426 | PASS |
|      |     | VN | -20 | 0.00  | 0.000000  | PASS |
|      |     | VN | -10 | -1.85 | -0.001076 | PASS |
|      |     | VN | 0   | -2.36 | -0.001376 | PASS |
|      |     | VN | 10  | 1.85  | 0.001076  | PASS |
|      |     | VN | 20  | -2.37 | -0.001385 | PASS |
|      |     | VN | 30  | -1.65 | -0.000959 | PASS |
|      |     | VN | 40  | -2.90 | -0.001693 | PASS |
|      |     | VN | 50  | -0.93 | -0.000542 | PASS |
|      | MCH | VN | -30 | 0.26  | 0.000149  | PASS |
|      |     | VN | -20 | -0.87 | -0.000504 | PASS |
|      |     | VN | -10 | 0.19  | 0.000107  | PASS |
|      |     | VN | 0   | 2.79  | 0.001610  | PASS |
|      |     | VN | 10  | 0.36  | 0.000206  | PASS |
|      |     | VN | 20  | 4.15  | 0.002395  | PASS |
|      |     | VN | 30  | 3.12  | 0.001800  | PASS |
|      |     | VN | 40  | 3.82  | 0.002205  | PASS |
|      |     | VN | 50  | 3.03  | 0.001750  | PASS |
|      | HCH | VN | -30 | 0.97  | 0.000556  | PASS |
|      |     | VN | -20 | -1.57 | -0.000899 | PASS |
|      |     | VN | -10 | 3.60  | 0.002060  | PASS |
|      |     | VN | 0   | 3.18  | 0.001815  | PASS |
|      |     | VN | 10  | -0.09 | -0.000049 | PASS |
|      |     | VN | 20  | 2.68  | 0.001529  | PASS |
|      |     | VN | 30  | -0.84 | -0.000482 | PASS |
|      |     | VN | 40  | 2.25  | 0.001283  | PASS |
|      |     | VN | 50  | 2.10  | 0.001202  | PASS |

**Channel Bandwidth: 15 MHz**

| Channel Bandwidth: 15 MHz |         |               |                  |                |                 |         |
|---------------------------|---------|---------------|------------------|----------------|-----------------|---------|
| Voltage                   |         |               |                  |                |                 |         |
| Modulation                | Channel | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Verdict |
| QPSK                      | LCH     | VL            | TN               | -5.24          | -0.003048       | PASS    |
|                           |         | VN            | TN               | -5.56          | -0.003240       | PASS    |
|                           |         | VH            | TN               | -4.26          | -0.002482       | PASS    |
|                           | MCH     | VL            | TN               | 2.22           | 0.001280        | PASS    |
|                           |         | VN            | TN               | 1.20           | 0.000694        | PASS    |
|                           |         | VH            | TN               | 1.75           | 0.001007        | PASS    |
|                           | HCH     | VL            | TN               | -0.11          | -0.000065       | PASS    |
|                           |         | VN            | TN               | -4.59          | -0.002628       | PASS    |
|                           |         | VH            | TN               | -1.87          | -0.001072       | PASS    |
| 16QAM                     | LCH     | VL            | TN               | -5.84          | -0.003398       | PASS    |
|                           |         | VN            | TN               | -6.44          | -0.003748       | PASS    |
|                           |         | VH            | TN               | -3.62          | -0.002107       | PASS    |
|                           | MCH     | VL            | TN               | 0.83           | 0.000479        | PASS    |
|                           |         | VN            | TN               | 3.22           | 0.001858        | PASS    |
|                           |         | VH            | TN               | 1.33           | 0.000768        | PASS    |
|                           | HCH     | VL            | TN               | -2.03          | -0.001162       | PASS    |
|                           |         | VN            | TN               | -3.06          | -0.001752       | PASS    |

|             |         | VH            | TN               | -0.40          | -0.000229       | PASS    |
|-------------|---------|---------------|------------------|----------------|-----------------|---------|
| Temperature |         |               |                  |                |                 |         |
| Modulation  | Channel | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Verdict |
| QPSK        | LCH     | VN            | -30              | -7.41          | -0.004314       | PASS    |
|             |         | VN            | -20              | -5.68          | -0.003307       | PASS    |
|             |         | VN            | -10              | -3.99          | -0.002324       | PASS    |
|             |         | VN            | 0                | -7.58          | -0.004414       | PASS    |
|             |         | VN            | 10               | -6.17          | -0.003590       | PASS    |
|             |         | VN            | 20               | -9.18          | -0.005347       | PASS    |
|             |         | VN            | 30               | -5.62          | -0.003273       | PASS    |
|             |         | VN            | 40               | -8.33          | -0.004847       | PASS    |
|             |         | VN            | 50               | -4.49          | -0.002615       | PASS    |
|             | MCH     | VN            | -30              | 0.34           | 0.000198        | PASS    |
|             |         | VN            | -20              | 1.63           | 0.000941        | PASS    |
|             |         | VN            | -10              | 1.22           | 0.000702        | PASS    |
|             |         | VN            | 0                | 1.59           | 0.000917        | PASS    |
|             |         | VN            | 10               | 3.28           | 0.001891        | PASS    |
|             |         | VN            | 20               | 2.23           | 0.001288        | PASS    |
|             |         | VN            | 30               | 1.59           | 0.000917        | PASS    |
|             |         | VN            | 40               | 1.29           | 0.000743        | PASS    |
|             |         | VN            | 50               | 1.54           | 0.000892        | PASS    |
|             | HCH     | VN            | -30              | -2.26          | -0.001293       | PASS    |
|             |         | VN            | -20              | 1.46           | 0.000835        | PASS    |
|             |         | VN            | -10              | -2.30          | -0.001318       | PASS    |
|             |         | VN            | 0                | -2.96          | -0.001695       | PASS    |
|             |         | VN            | 10               | -2.47          | -0.001416       | PASS    |
|             |         | VN            | 20               | -4.55          | -0.002603       | PASS    |
|             |         | VN            | 30               | 0.57           | 0.000327        | PASS    |
|             |         | VN            | 40               | -0.74          | -0.000426       | PASS    |
|             |         | VN            | 50               | 0.06           | 0.000033        | PASS    |
| 16QAM       | LCH     | VN            | -30              | -7.07          | -0.004115       | PASS    |
|             |         | VN            | -20              | -8.33          | -0.004847       | PASS    |
|             |         | VN            | -10              | -1.66          | -0.000966       | PASS    |
|             |         | VN            | 0                | -1.63          | -0.000950       | PASS    |
|             |         | VN            | 10               | -3.58          | -0.002082       | PASS    |
|             |         | VN            | 20               | -5.02          | -0.002923       | PASS    |
|             |         | VN            | 30               | -8.18          | -0.004764       | PASS    |
|             |         | VN            | 40               | -8.14          | -0.004739       | PASS    |
|             |         | VN            | 50               | -5.79          | -0.003373       | PASS    |
|             | MCH     | VN            | -30              | 0.47           | 0.000272        | PASS    |
|             |         | VN            | -20              | 4.79           | 0.002766        | PASS    |
|             |         | VN            | -10              | 3.89           | 0.002246        | PASS    |
|             |         | VN            | 0                | 1.90           | 0.001098        | PASS    |
|             |         | VN            | 10               | 2.82           | 0.001627        | PASS    |
|             |         | VN            | 20               | 0.86           | 0.000495        | PASS    |
|             |         | VN            | 30               | 4.42           | 0.002551        | PASS    |
|             |         | VN            | 40               | 1.12           | 0.000644        | PASS    |
|             |         | VN            | 50               | 1.22           | 0.000702        | PASS    |
|             | HCH     | VN            | -30              | 1.22           | 0.000696        | PASS    |
|             |         | VN            | -20              | -0.46          | -0.000262       | PASS    |
|             |         | VN            | -10              | -4.79          | -0.002742       | PASS    |

|  |    |    |       |           |      |
|--|----|----|-------|-----------|------|
|  | VN | 0  | -1.07 | -0.000614 | PASS |
|  | VN | 10 | -2.90 | -0.001662 | PASS |
|  | VN | 20 | -0.72 | -0.000409 | PASS |
|  | VN | 30 | -2.10 | -0.001203 | PASS |
|  | VN | 40 | -3.46 | -0.001981 | PASS |
|  | VN | 50 | -0.74 | -0.000426 | PASS |

**Channel Bandwidth: 20 MHz**

| Channel Bandwidth: 20 MHz |         |               |                  |                |                 |         |
|---------------------------|---------|---------------|------------------|----------------|-----------------|---------|
| Voltage                   |         |               |                  |                |                 |         |
| Modulation                | Channel | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Verdict |
| QPSK                      | LCH     | VL            | TN               | -0.26          | -0.000150       | PASS    |
|                           |         | VN            | TN               | -0.09          | -0.000050       | PASS    |
|                           |         | VH            | TN               | -0.30          | -0.000175       | PASS    |
|                           | MCH     | VL            | TN               | 2.00           | 0.001156        | PASS    |
|                           |         | VN            | TN               | 1.73           | 0.000999        | PASS    |
|                           |         | VH            | TN               | -0.99          | -0.000570       | PASS    |
|                           | HCH     | VL            | TN               | 4.03           | 0.002312        | PASS    |
|                           |         | VN            | TN               | 6.19           | 0.003550        | PASS    |
|                           |         | VH            | TN               | 4.33           | 0.002484        | PASS    |
| 16QAM                     | LCH     | VL            | TN               | -0.83          | -0.000482       | PASS    |
|                           |         | VN            | TN               | 0.74           | 0.000432        | PASS    |
|                           |         | VH            | TN               | -0.93          | -0.000541       | PASS    |
|                           | MCH     | VL            | TN               | -1.65          | -0.000950       | PASS    |
|                           |         | VN            | TN               | 1.32           | 0.000760        | PASS    |
|                           |         | VH            | TN               | 0.03           | 0.000017        | PASS    |
|                           | HCH     | VL            | TN               | 5.04           | 0.002886        | PASS    |
|                           |         | VN            | TN               | 4.86           | 0.002787        | PASS    |
|                           |         | VH            | TN               | 5.42           | 0.003107        | PASS    |
| Temperature               |         |               |                  |                |                 |         |
| Modulation                | Channel | Voltage [Vdc] | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Verdict |
| QPSK                      | LCH     | VN            | -30              | -1.72          | -0.000998       | PASS    |
|                           |         | VN            | -20              | -1.29          | -0.000749       | PASS    |
|                           |         | VN            | -10              | 0.47           | 0.000274        | PASS    |
|                           |         | VN            | 0                | -1.66          | -0.000965       | PASS    |
|                           |         | VN            | 10               | -3.52          | -0.002046       | PASS    |
|                           |         | VN            | 20               | -0.60          | -0.000349       | PASS    |
|                           |         | VN            | 30               | -2.86          | -0.001663       | PASS    |
|                           |         | VN            | 40               | -0.36          | -0.000208       | PASS    |
|                           |         | VN            | 50               | 0.13           | 0.000075        | PASS    |
|                           | MCH     | VN            | -30              | 0.41           | 0.000239        | PASS    |
|                           |         | VN            | -20              | 0.79           | 0.000454        | PASS    |
|                           |         | VN            | -10              | 3.28           | 0.001891        | PASS    |
|                           |         | VN            | 0                | 1.04           | 0.000603        | PASS    |
|                           |         | VN            | 10               | 2.12           | 0.001222        | PASS    |
|                           |         | VN            | 20               | 1.79           | 0.001032        | PASS    |
|                           |         | VN            | 30               | 1.79           | 0.001032        | PASS    |
| VN                        | 40      | 1.70          | 0.000983         | PASS           |                 |         |
| VN                        | 50      | 5.06          | 0.002923         | PASS           |                 |         |

|       |     |    |     |       |           |      |
|-------|-----|----|-----|-------|-----------|------|
|       | HCH | VN | -30 | 4.46  | 0.002558  | PASS |
|       |     | VN | -20 | 4.91  | 0.002812  | PASS |
|       |     | VN | -10 | 3.81  | 0.002181  | PASS |
|       |     | VN | 0   | 3.68  | 0.002107  | PASS |
|       |     | VN | 10  | 3.05  | 0.001746  | PASS |
|       |     | VN | 20  | 5.46  | 0.003132  | PASS |
|       |     | VN | 30  | 4.35  | 0.002492  | PASS |
|       |     | VN | 40  | 7.07  | 0.004050  | PASS |
|       |     | VN | 50  | 3.89  | 0.002230  | PASS |
| 16QAM | LCH | VN | -30 | -3.79 | -0.002204 | PASS |
|       |     | VN | -20 | -2.40 | -0.001397 | PASS |
|       |     | VN | -10 | -3.56 | -0.002071 | PASS |
|       |     | VN | 0   | -3.42 | -0.001988 | PASS |
|       |     | VN | 10  | -0.04 | -0.000025 | PASS |
|       |     | VN | 20  | -1.29 | -0.000749 | PASS |
|       |     | VN | 30  | -0.20 | -0.000116 | PASS |
|       |     | VN | 40  | -1.76 | -0.001023 | PASS |
|       |     | VN | 50  | -3.89 | -0.002262 | PASS |
|       | MCH | VN | -30 | 0.77  | 0.000446  | PASS |
|       |     | VN | -20 | 0.74  | 0.000429  | PASS |
|       |     | VN | -10 | 0.59  | 0.000339  | PASS |
|       |     | VN | 0   | 0.51  | 0.000297  | PASS |
|       |     | VN | 10  | 1.13  | 0.000652  | PASS |
|       |     | VN | 20  | 3.65  | 0.002106  | PASS |
|       |     | VN | 30  | 1.46  | 0.000842  | PASS |
|       |     | VN | 40  | 2.99  | 0.001726  | PASS |
|       |     | VN | 50  | 1.44  | 0.000834  | PASS |
|       | HCH | VN | -30 | 5.36  | 0.003074  | PASS |
|       |     | VN | -20 | 2.15  | 0.001230  | PASS |
|       |     | VN | -10 | 4.79  | 0.002746  | PASS |
|       |     | VN | 0   | 4.28  | 0.002451  | PASS |
|       |     | VN | 10  | 4.06  | 0.002328  | PASS |
|       |     | VN | 20  | 5.36  | 0.003074  | PASS |
|       |     | VN | 30  | 3.18  | 0.001820  | PASS |
|       |     | VN | 40  | 6.37  | 0.003648  | PASS |
|       |     | VN | 50  | 6.87  | 0.003935  | PASS |

## Appendix G): 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 1.5m high table at a 3 meter fully Anechoic Chamber. The antenna of the transmitter was extended to its maximum length. modulation mode and the measuring receiver shall be tuned to the frequency of the transmitter under test.</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:**  
**Above 1GHz**  
**QPSK**

| Band 4 19957 channel/BW1.4(lowest channel) |             |               |                               |             |                 |        |                  |
|--------------------------------------------|-------------|---------------|-------------------------------|-------------|-----------------|--------|------------------|
| Frequency (MHz)                            | Height (cm) | Azimuth (deg) | Spurious Emission Level (dBm) | Limit (dBm) | Over Limit (dB) | Result | Antenna Polaxis. |
| 1346.929                                   | 155         | 5             | -53.83                        | -13         | -40.83          | Pass   | H                |
| 3561.636                                   | 150         | 200           | -48.91                        | -13         | -35.91          | Pass   | H                |
| 6544.350                                   | 150         | 36            | -44.93                        | -13         | -31.93          | Pass   | H                |
| 8571.377                                   | 156         | 78            | -45.84                        | -13         | -32.84          | Pass   | H                |
| 10971.980                                  | 149         | 200           | -44.76                        | -13         | -31.76          | Pass   | H                |
| 12653.000                                  | 144         | 151           | -41.46                        | -13         | -28.46          | Pass   | H                |
| 1350.362                                   | 150         | 47            | -53.16                        | -13         | -40.16          | Pass   | V                |
| 3579.815                                   | 150         | 90            | -48.52                        | -13         | -35.52          | Pass   | V                |
| 4455.890                                   | 144         | 210           | -48.51                        | -13         | -35.51          | Pass   | V                |
| 6396.125                                   | 150         | 22            | -45.49                        | -13         | -32.49          | Pass   | V                |
| 7941.185                                   | 150         | 67            | -45.43                        | -13         | -32.43          | Pass   | V                |
| 12272.340                                  | 155         | 20            | -41.95                        | -13         | -28.95          | Pass   | V                |

| Band 4 20175 channel/BW1.4(middle channel) |             |               |                               |             |                 |        |                  |
|--------------------------------------------|-------------|---------------|-------------------------------|-------------|-----------------|--------|------------------|
| Frequency (MHz)                            | Height (cm) | Azimuth (deg) | Spurious Emission Level (dBm) | Limit (dBm) | Over Limit (dB) | Result | Antenna Polaxis. |
| 1346.929                                   | 150         | 201           | -55.73                        | -13         | -42.73          | Pass   | H                |
| 3463.291                                   | 151         | 20            | -46.89                        | -13         | -33.89          | Pass   | H                |
| 4421.992                                   | 150         | 36            | -48.34                        | -13         | -35.34          | Pass   | H                |
| 5574.673                                   | 155         | 78            | -47.37                        | -13         | -34.37          | Pass   | H                |
| 8022.456                                   | 156         | 225           | -46.32                        | -13         | -33.32          | Pass   | H                |
| 11084.270                                  | 149         | 56            | -42.79                        | -13         | -29.79          | Pass   | H                |
| 1350.362                                   | 150         | 151           | -53.18                        | -13         | -40.18          | Pass   | V                |
| 4467.247                                   | 158         | 31            | -48.61                        | -13         | -35.61          | Pass   | V                |
| 6544.350                                   | 150         | 207           | -45.25                        | -13         | -32.25          | Pass   | V                |
| 8659.098                                   | 159         | 89            | -45.56                        | -13         | -32.56          | Pass   | V                |
| 11112.520                                  | 150         | 60            | -43.13                        | -13         | -30.13          | Pass   | V                |
| 12303.620                                  | 160         | 3             | -41.64                        | -13         | -28.64          | Pass   | V                |

| Band 4 20393 channel/BW1.4(highest channel) |             |               |                               |             |                 |        |                  |
|---------------------------------------------|-------------|---------------|-------------------------------|-------------|-----------------|--------|------------------|
| Frequency (MHz)                             | Height (cm) | Azimuth (deg) | Spurious Emission Level (dBm) | Limit (dBm) | Over Limit (dB) | Result | Antenna Polaxis. |
| 1350.362                                    | 151         | 49            | -55.18                        | -13         | -42.18          | Pass   | H                |
| 3507.652                                    | 158         | 215           | -48.79                        | -13         | -35.79          | Pass   | H                |
| 5338.579                                    | 150         | 286           | -47.90                        | -13         | -34.90          | Pass   | H                |
| 6511.117                                    | 150         | 300           | -44.59                        | -13         | -31.59          | Pass   | H                |
| 9204.600                                    | 155         | 58            | -44.95                        | -13         | -31.95          | Pass   | H                |
| 12303.620                                   | 152         | 300           | -42.27                        | -13         | -29.27          | Pass   | H                |
| 1346.929                                    | 153         | 161           | -52.64                        | -13         | -39.64          | Pass   | V                |
| 3507.652                                    | 150         | 20            | -45.46                        | -13         | -32.46          | Pass   | V                |
| 4310.849                                    | 149         | 79            | -48.78                        | -13         | -35.78          | Pass   | V                |
| 6001.768                                    | 160         | 36            | -46.34                        | -13         | -33.34          | Pass   | V                |
| 8615.126                                    | 150         | 360           | -45.94                        | -13         | -32.94          | Pass   | V                |
| 10036.730                                   | 150         | 354           | -44.35                        | -13         | -31.35          | Pass   | V                |

#### 16QAM

| Band 4 19957 channel/BW1.4(lowest channel) |             |               |                               |             |                 |        |                  |
|--------------------------------------------|-------------|---------------|-------------------------------|-------------|-----------------|--------|------------------|
| Frequency (MHz)                            | Height (cm) | Azimuth (deg) | Spurious Emission Level (dBm) | Limit (dBm) | Over Limit (dB) | Result | Antenna Polaxis. |
| 1350.362                                   | 154         | 120           | -51.49                        | -13         | -38.49          | Pass   | H                |
| 3419.491                                   | 150         | 74            | -40.20                        | -13         | -27.20          | Pass   | H                |
| 5338.579                                   | 150         | 85            | -46.75                        | -13         | -33.75          | Pass   | H                |
| 6645.070                                   | 153         | 228           | -43.81                        | -13         | -30.81          | Pass   | H                |
| 9562.854                                   | 150         | 30            | -44.50                        | -13         | -31.50          | Pass   | H                |
| 11933.470                                  | 150         | 161           | -42.33                        | -13         | -29.33          | Pass   | H                |
| 1198.095                                   | 148         | 20            | -55.49                        | -13         | -42.49          | Pass   | V                |
| 3419.491                                   | 151         | 100           | -44.16                        | -13         | -31.16          | Pass   | V                |
| 5338.579                                   | 150         | 78            | -46.53                        | -13         | -33.53          | Pass   | V                |
| 6527.712                                   | 153         | 360           | -44.12                        | -13         | -31.12          | Pass   | V                |
| 9275.160                                   | 152         | 43            | -43.66                        | -13         | -30.66          | Pass   | V                |
| 12241.140                                  | 150         | 336           | -41.21                        | -13         | -28.21          | Pass   | V                |

| Band 4 20175 channel/BW1.4(middle channel) |             |               |                               |             |                 |        |                  |
|--------------------------------------------|-------------|---------------|-------------------------------|-------------|-----------------|--------|------------------|
| Frequency (MHz)                            | Height (cm) | Azimuth (deg) | Spurious Emission Level (dBm) | Limit (dBm) | Over Limit (dB) | Result | Antenna Polaxis. |
| 1350.362                                   | 150         | 55            | -52.75                        | -13         | -39.75          | Pass   | H                |
| 3463.291                                   | 156         | 355           | -43.42                        | -13         | -30.42          | Pass   | H                |
| 4785.075                                   | 152         | 151           | -47.75                        | -13         | -34.75          | Pass   | H                |
| 6001.768                                   | 150         | 24            | -45.37                        | -13         | -32.37          | Pass   | H                |
| 8593.224                                   | 150         | 20            | -45.44                        | -13         | -32.44          | Pass   | H                |
| 12272.340                                  | 149         | 11            | -41.38                        | -13         | -28.38          | Pass   | H                |
| 1350.362                                   | 150         | 33            | -54.61                        | -13         | -41.61          | Pass   | V                |
| 3738.129                                   | 160         | 247           | -47.41                        | -13         | -34.41          | Pass   | V                |
| 4467.247                                   | 155         | 229           | -47.25                        | -13         | -34.25          | Pass   | V                |
| 6494.564                                   | 153         | 20            | -44.68                        | -13         | -31.68          | Pass   | V                |
| 9204.600                                   | 157         | 100           | -44.40                        | -13         | -31.40          | Pass   | V                |
| 12303.620                                  | 150         | 80            | -40.95                        | -13         | -27.95          | Pass   | V                |

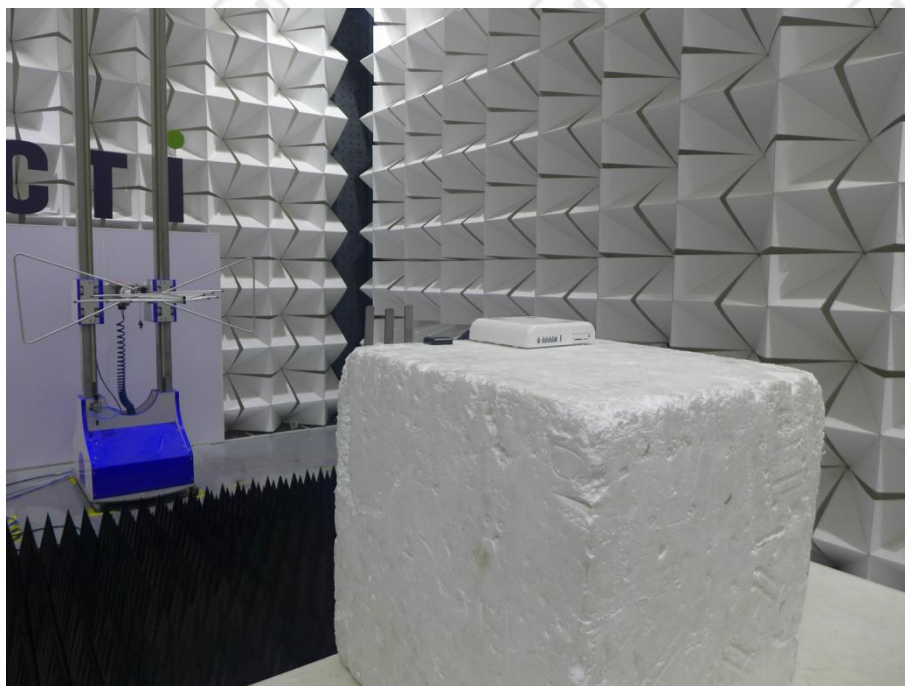
| Band 4 20393 channel/BW1.4(highest channel) |             |               |                               |             |                 |        |                  |
|---------------------------------------------|-------------|---------------|-------------------------------|-------------|-----------------|--------|------------------|
| Frequency (MHz)                             | Height (cm) | Azimuth (deg) | Spurious Emission Level (dBm) | Limit (dBm) | Over Limit (dB) | Result | Antenna Polaxis. |
| 1350.362                                    | 151         | 55            | -56.16                        | -13         | -43.16          | Pass   | H                |
| 3747.656                                    | 150         | 360           | -48.14                        | -13         | -35.14          | Pass   | H                |
| 4834.046                                    | 150         | 227           | -47.79                        | -13         | -34.79          | Pass   | H                |
| 5925.863                                    | 152         | 10            | -44.52                        | -13         | -31.52          | Pass   | H                |
| 8703.294                                    | 158         | 50            | -45.12                        | -13         | -32.12          | Pass   | H                |
| 12210.020                                   | 149         | 99            | -42.10                        | -13         | -29.10          | Pass   | H                |
| 1118.517                                    | 142         | 36            | -55.46                        | -13         | -42.46          | Pass   | V                |
| 3393.477                                    | 150         | 227           | -49.22                        | -13         | -36.22          | Pass   | V                |
| 4332.852                                    | 150         | 261           | -46.51                        | -13         | -33.51          | Pass   | V                |
| 6396.125                                    | 156         | 20            | -44.60                        | -13         | -31.60          | Pass   | V                |
| 9538.543                                    | 150         | 100           | -44.34                        | -13         | -31.34          | Pass   | V                |
| 12272.340                                   | 150         | 35            | -41.32                        | -13         | -28.32          | Pass   | V                |

Note:

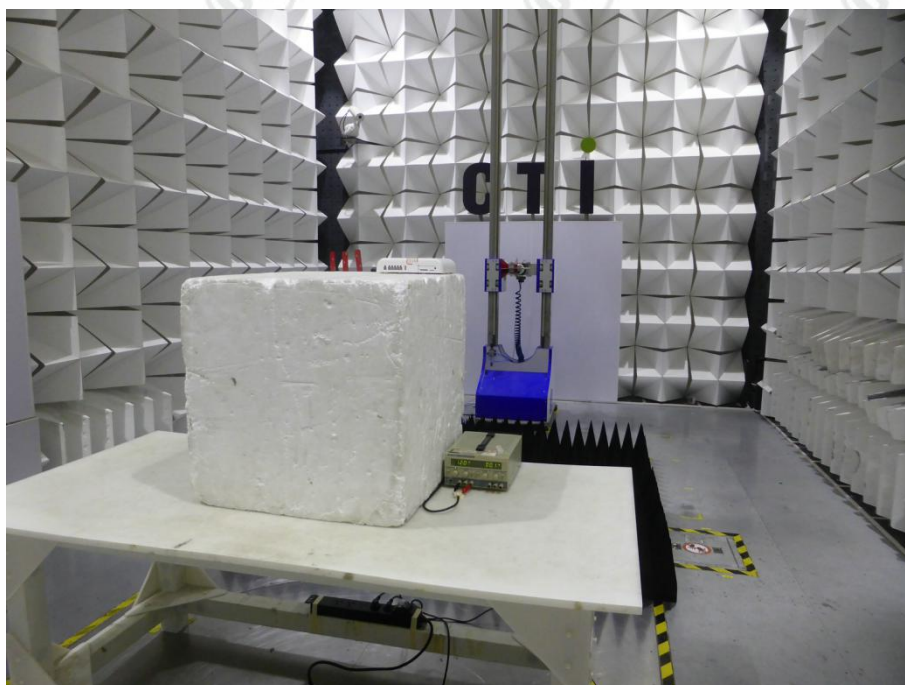
1) Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 1GHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below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

## PHOTOGRAPHS OF TEST SETUP

Test model No.: TN-IVS-8000



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



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

**Annex A: Appendix A: PHOTOGRAPHS OF EUT Constructional Details**  
(Please See Appendix A)

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

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