

## TEST REPORT

**Product** : Blackhawk LTE  
**Trade mark** : COVERT  
**Model/Type reference** : 5465  
**Serial Number** : N/A  
**Report Number** : EED32J00239601  
**FCC ID** : 2ANR6-5465  
**Date of Issue** : Dec. 26, 2017  
**Test Standards** : 47 CFR Part 2  
47 CFR Part 27 subpart C  
**Test result** : PASS

Prepared for:

**Covert Scouting Cameras, Inc**  
**4338 Greenridge Spa Rd, Lewisburg, Kentucky 42256, United States**

Prepared by:

**Centre Testing International Group Co., Ltd.**  
**Hongwei Industrial Zone, Bao'an 70 District,**  
**Shenzhen, Guangdong, China**  
**TEL: +86-755-3368 3668**  
**FAX: +86-755-3368 3385**



Tested By:

Tom-chen

Tom chen (Test Project)

Reviewed by:

Kevin Yang

Kevin yang (Reviewer)

Date:

Dec. 26, 2017

Compiled by:

Mill chen

Mill chen (Project Engineer)

Approved by:

Sheek Luo

Sheek Luo (Lab supervisor)

Check No.:3043880051

## 2 Version

| Version No. | Date          | Description |
|-------------|---------------|-------------|
| 00          | Dec. 26, 2017 | 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-E-2016<br>&KDB 971168 D01v03                           | PASS   |
| Equivalent Isotropically Radiated Power(EIRP) | Part 2.1046(a) / Part 27.50(d) | TIA-603-E-2016<br>&KDB 971168 D01v03                           | PASS   |
| peak-to-average ratio                         | Part 27.50(d)                  | KDB 971168 D01v03                                              | PASS   |
| 99% &26dBOccupied Bandwidth                   | Part 2.1049(h)                 | Part 27.53(h)<br>&KDB 971168 D01v03                            | PASS   |
| Band Edge at antenna terminals                | Part 2.1051/ Part 27.53(h)     | Part 27.53(h)<br>&KDB 971168 D01v03<br>&KDB 971168 D02v02r01   | PASS   |
| Spurious emissions at antenna terminals       | Part 2.1051/ Part 27.53(h)     | TIA-603-E-2016 &<br>KDB 971168 D01v03<br>&KDB 971168 D02v02r01 | PASS   |
| Field strength of spurious radiation          | Part 2.1053/ Part 27.53(h)     | TIA-603-E-2016<br>&KDB 971168 D01v03<br>&KDB 971168 D02v02r01  | PASS   |
| Frequency stability                           | Part 2.1055/Part 27.54         | TIA-603-E-2016 &<br>KDB 971168 D01v03                          | PASS   |
| LTE Band 13                                   |                                |                                                                |        |
| Test Item                                     | Test Requirement               | Test method                                                    | Result |
| Conducted output power                        | Part 2.1046(a) /Part 27.50(b)  | TIA-603-E-2016<br>&KDB 971168 D01v03                           | PASS   |
| Effective Radiated Power of Transmitter(ERP)  | Part 2.1046(a) / Part 27.50(b) | TIA-603-E-2016<br>&KDB 971168 D01v03                           | PASS   |
| 99% &26dBOccupied Bandwidth                   | Part 2.1049(h)                 | Part 27.53(c)<br>&KDB 971168 D01v03                            | PASS   |
| Band Edge at antenna terminals                | Part 2.1051/ Part 27.53(c)     | Part 27.53(c)<br>&KDB 971168 D01v03<br>&KDB 971168 D02v02r01   | PASS   |
| Spurious emissions at antenna terminals       | Part 2.1051/ Part 27.53(c)     | TIA-603-E-2016<br>&KDB 971168 D01v03<br>&KDB 971168 D02v02r01  | PASS   |
| Field strength of spurious radiation          | Part 2.1053/ Part 27.53(c)     | TIA-603-E-2016<br>&KDB 971168 D01v03<br>&KDB 971168 D02v02r01  | PASS   |
| Frequency stability                           | Part 2.1055/Part 27.54         | TIA-603-E-2016 &<br>KDB 971168 D01v03                          | PASS   |

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

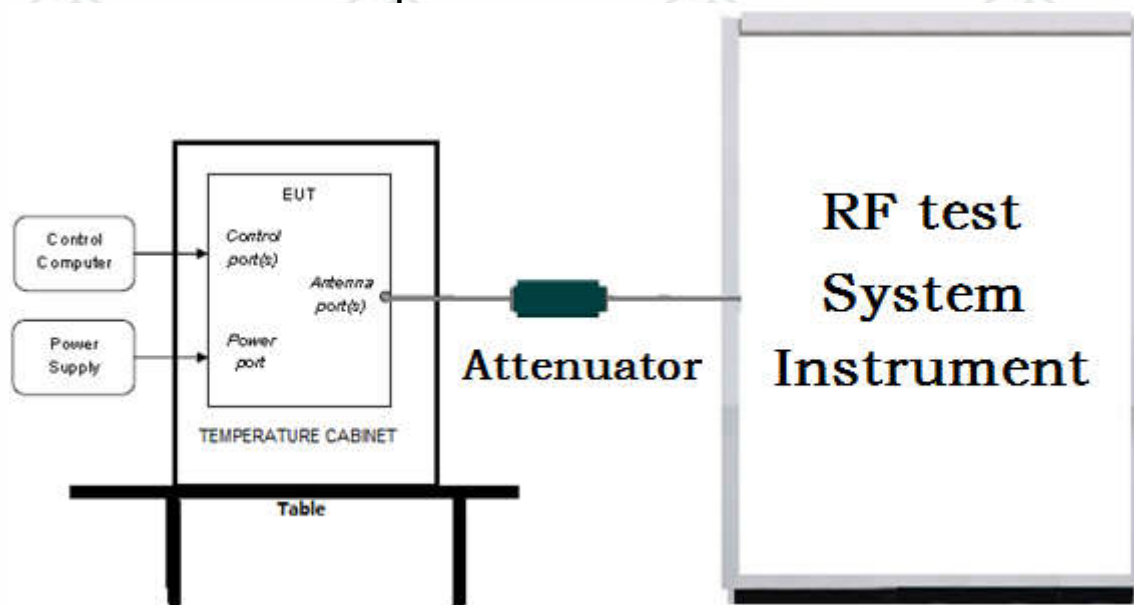
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## 5 Test Requirement

### 5.1 Test setup

#### 5.1.1 For Conducted test setup



#### 5.1.2 For Radiated Emissions test setup

Radiated Emissions setup:

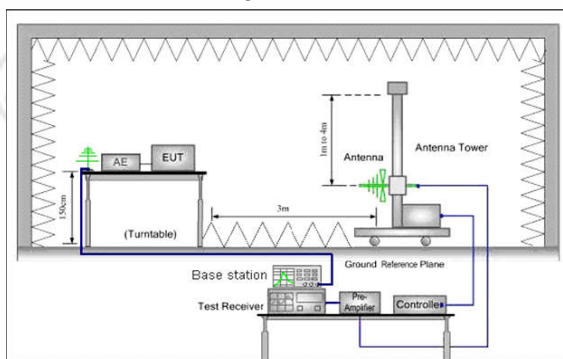


Figure 1.30MHz to 1GHz

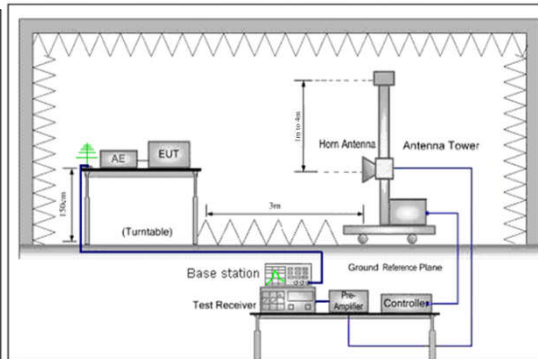


Figure 2. above 1GHz

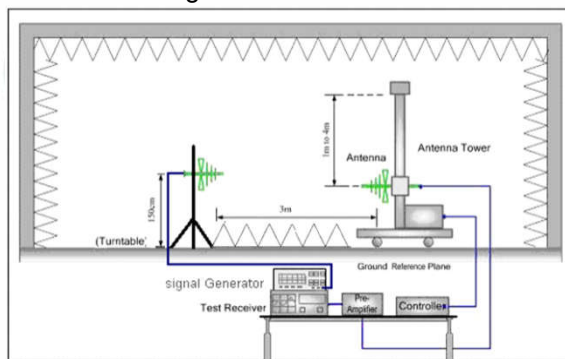


Figure 1.30MHz to 1GHz

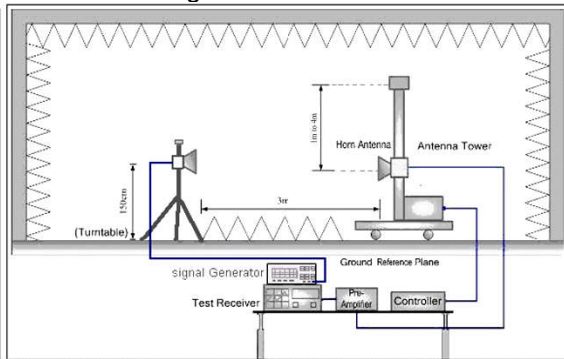


Figure 2. above 1GHz

## 5.2 Test Environment

| Operating Environment: |          |
|------------------------|----------|
| Temperature:           | 23°C     |
| Humidity:              | 51% 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                     |
| LTE band 13<br>TX:777–787MHz<br>RX:746–756MHz      | Low Range         | 5                | 23205       | 779.5                    | 5205        | 748.5                      |
|                                                    |                   | 10               | 23230       | 782.0                    | 5230        | 751.0                      |
|                                                    | Mid Range         | 5/10             | 23230       | 782.0                    | 5230        | 751.0                      |
|                                                    | High Range        | 5                | 23255       | 784.5                    | 5255        | 753.5                      |
|                                                    |                   | 10               | 23230       | 782.0                    | 5230        | 751.0                      |

## 6 General Information

### 6.1 Client Information

|                          |                                                                                                                       |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Applicant:               | Covert Scouting Cameras, Inc                                                                                          |
| Address of Applicant:    | 4338 Greenridge Spa Rd, Lewisburg, Kentucky 42256 , United States                                                     |
| Manufacturer:            | UOVision Technology (Shenzhen) Co.,Ltd.                                                                               |
| Address of Manufacturer: | 4th Floor, A1 Building, Shunheda Factory, liuxiandong Industrial Zone, Xili street, Nanshan District, Shenzhen, China |

### 6.2 General Description of EUT

|                                  |                                                       |
|----------------------------------|-------------------------------------------------------|
| Product Name:                    | Blackhawk LTE                                         |
| Test Model No.(EUT):             | 5465                                                  |
| Trade mark:                      | COVERT                                                |
| EUT Supports Radios application: | GPS: L1:1575.42MHz<br>4G LTE: FDD Band 4, FDD Band 13 |
| Power Supply:                    | DC 6-18V                                              |
| Hardware Version:                | L4V52MG(manufacturer declare)                         |
| Software Version:                | V1.00.01(manufacturer declare)                        |
| Sample Received Date:            | Oct. 27, 2017                                         |
| Sample tested Date:              | Oct. 27, 2017 to Dec. 15, 2017                        |

### 6.3 Product Specification subjective to this standard

|                  |                                                                                                                           |
|------------------|---------------------------------------------------------------------------------------------------------------------------|
| Frequency Band:  | LTE Band 4:TX(1710 MHz to 1755 MHz), RX(2110 MHz to 2155 MHz).<br>LTE Band 13: TX(777MHz to 787MHz), RX(746MHz to 756MHz) |
| Modulation Type: | QPSK, 16QAM                                                                                                               |
| Sample Type:     | portable production                                                                                                       |
| Antenna Type:    | External antenna                                                                                                          |
| Antenna Gain:    | LTE Band 4: 3 dBi<br>LTE Band 13: 3 dBi                                                                                   |
| Test Voltage:    | DC 18V                                                                                                                    |

### 6.4 Description of Support Units

The EUT has been tested independently.

### 6.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd.

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

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

No tests were sub-contracted.

### 6.6 Test Facility

FCC Designation No.: CN1164

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.

### 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    | 11-16-2017             | 11-15-2018                 |
| Signal Generator              | Agilent       | E4438C                       | MY45095744    | 03-14-2017             | 03-13-2018                 |
| Communication test set        | Agilent       | E5515C                       | GB47050534    | 03-14-2017             | 03-13-2018                 |
| Signal Generator              | Keysight      | E8257D                       | MY53401106    | 03-14-2017             | 03-13-2018                 |
| Communication test set        | R&S           | CMW500                       | 152394        | 03-14-2017             | 03-13-2018                 |
| High-pass filter              | Sinoscite     | FL3CX03WG18<br>NM12-0398-002 | ---           | 01-12-2017             | 01-11-2018                 |
| High-pass filter              | MICRO-TRONICS | SPA-F-63029-4                | ---           | 01-12-2017             | 01-11-2018                 |
| band rejection filter         | Sinoscite     | FL5CX01CA09C<br>L12-0395-001 | ---           | 01-12-2017             | 01-11-2018                 |
| band rejection filter         | Sinoscite     | FL5CX01CA08C<br>L12-0393-001 | ---           | 01-12-2017             | 01-11-2018                 |
| band rejection filter         | Sinoscite     | FL5CX02CA04C<br>L12-0396-002 | ---           | 01-12-2017             | 01-11-2018                 |
| band rejection filter         | Sinoscite     | FL5CX02CA03C<br>L12-0394-001 | ---           | 01-12-2017             | 01-11-2018                 |
| DC Power                      | Keysight      | E3642A                       | MY54426112    | 03-14-2017             | 03-13-2018                 |
| DC Power                      | Keysight      | E3642A                       | MY54426115    | 03-14-2017             | 03-13-2018                 |
| PC-2                          | Lenovo        | R4960d                       | ---           | 04-01-2017             | 03-31-2018                 |
| PC-3                          | Lenovo        | R4960d                       | ---           | 04-01-2017             | 03-31-2018                 |
| RF control unit               | JS Tonscend   | JS0806-1                     | 158060004     | 03-14-2017             | 03-13-2018                 |
| DC power Box                  | JS Tonscend   | JS0806-4                     | 158060007     | 04-01-2017             | 03-31-2018                 |
| LTE Automatic test software   | JS Tonscend   | JS1120-1                     | ---           | 04-01-2017             | 03-31-2018                 |
| WCDMA Automatic test software | JS Tonscend   | JS1120-3                     | ---           | 04-01-2017             | 03-31-2018                 |
| GSM Automatic test software   | JS Tonscend   | JS1120-3                     | ---           | 04-01-2017             | 03-31-2018                 |

| Radiated Spurious Emission & Radiated Emission |               |                              |               |                        |                            |
|------------------------------------------------|---------------|------------------------------|---------------|------------------------|----------------------------|
| Equipment                                      | Manufacturer  | Mode No.                     | Serial Number | Cal. date (mm-dd-yyyy) | Cal. Due date (mm-dd-yyyy) |
| 3M Chamber & Accessory Equipment               | TDK           | SAC-3                        | ---           | 06-05-2016             | 06-05-2019                 |
| TRILOG Broadband Antenna                       | SCHWARZBECK   | VULB9163                     | 9163-618      | 08-15-2017             | 08-14-2018                 |
| Microwave Preamplifier                         | Agilent       | 8449B                        | 3008A02425    | 02-16-2017             | 02-15-2018                 |
| Horn Antenna                                   | ETS-LINDGREN  | 3117                         | 00057407      | 07-20-2015             | 07-18-2018                 |
| Loop Antenna                                   | ETS           | 6502                         | 00071730      | 06-22-2017             | 06-21-2019                 |
| Spectrum Analyzer                              | R&S           | FSP40                        | 100416        | 06-13-2017             | 06-12-2018                 |
| Receiver                                       | R&S           | ESCI                         | 100435        | 06-14-2017             | 06-13-2018                 |
| Multi device Controller                        | maturio       | NCD/070/10711<br>112         | ---           | 01-12-2017             | 01-11-2018                 |
| LISN                                           | schwarzbeck   | NNBM8125                     | 81251547      | 06-13-2017             | 06-12-2018                 |
| LISN                                           | schwarzbeck   | NNBM8125                     | 81251548      | 06-13-2017             | 06-12-2018                 |
| Signal Generator                               | Agilent       | E4438C                       | MY45095744    | 03-14-2017             | 03-13-2018                 |
| Signal Generator                               | Keysight      | E8257D                       | MY53401106    | 03-14-2017             | 03-13-2018                 |
| Temperature/ Humidity Indicator                | TAYLOR        | 1451                         | 1905          | 05-08-2017             | 05-07-2018                 |
| Communication test set                         | Agilent       | E5515C                       | GB47050534    | 03-14-2017             | 03-13-2018                 |
| Cable line                                     | Fulai(7M)     | SF106                        | 5219/6A       | 01-12-2017             | 01-11-2018                 |
| Cable line                                     | Fulai(6M)     | SF106                        | 5220/6A       | 01-12-2017             | 01-11-2018                 |
| Cable line                                     | Fulai(3M)     | SF106                        | 5216/6A       | 01-12-2017             | 01-11-2018                 |
| Cable line                                     | Fulai(3M)     | SF106                        | 5217/6A       | 01-12-2017             | 01-11-2018                 |
| Communication test set                         | R&S           | CMW500                       | 152394        | 03-14-2017             | 03-13-2018                 |
| High-pass filter                               | Sinoscite     | FL3CX03WG18<br>NM12-0398-002 | ---           | 01-12-2017             | 01-11-2018                 |
| High-pass filter                               | MICRO-TRONICS | SPA-F-63029-4                | ---           | 01-12-2017             | 01-11-2018                 |
| band rejection filter                          | Sinoscite     | FL5CX01CA09C<br>L12-0395-001 | ---           | 01-12-2017             | 01-11-2018                 |
| band rejection filter                          | Sinoscite     | FL5CX01CA08C<br>L12-0393-001 | ---           | 01-12-2017             | 01-11-2018                 |
| band rejection filter                          | Sinoscite     | FL5CX02CA04C<br>L12-0396-002 | ---           | 01-12-2017             | 01-11-2018                 |
| band rejection filter                          | Sinoscite     | FL5CX02CA03C<br>L12-0394-001 | ---           | 01-12-2017             | 01-11-2018                 |

## 8 Radio Technical Requirements Specification

### Reference documents for testing:

| No. | Identity       | Document Title                                                                           |
|-----|----------------|------------------------------------------------------------------------------------------|
| 1   | PART 27        | PART 27 – MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES Subpart C – Technical Standards |
| 2   | PART 2         | Frequency allocations and radio treaty matters; general rules and regulations            |
| 3   | TIA-603-E      | Land Mobile FM or PM -Communications Equipment -Measurement and Performance Standards    |
| 4   | KDB971168 D01  | KDB971168 D01 Power Meas License Digital Systems v03                                     |
| 5   | KDB 971168 D02 | KDB971168 D02 Misc Rev Approv License Devices v02r01                                     |
| 6   | KDB 412172 D01 | KDB 412172 D01 Determining ERP and EIRP v01r01                                           |

### Test Results List:

| Test Requirement                              | Test method                                                        | Test item                                          | Verdict | Note        |
|-----------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------|---------|-------------|
| Part 2.1046(a)/<br>Part 27.50(d)(b)           | TIA-603-E<br>&KDB 971168 D01v03                                    | Conducted output power                             | PASS    | Appendix A) |
| Part 27.50(d)                                 | KDB 971168 D01v03                                                  | peak-to-average ratio                              | PASS    | Appendix B) |
| Part 2.1049(h)                                | Part 27.53(h)(c)<br>&KDB 971168 D01v03                             | 99% & 26dB<br>Occupied<br>Bandwidth                | PASS    | Appendix C) |
| Part 2.1051/<br>Part 27.53(h)(c)              | Part 27.53(h)(c)<br>&KDB 971168 D01v03<br>&KDB 971168<br>D02v02r01 | Band Edge at<br>antenna terminals                  | PASS    | Appendix D) |
| Part 2.1051/ Part 2.1057/<br>Part 27.53(h)(c) | TIA-603-E<br>&KDB 971168 D01v03<br>&KDB 971168<br>D02v02r01        | Spurious emissions<br>at antenna<br>terminals      | PASS    | Appendix E) |
| Part 2.1055/<br>Part 27.54                    | TIA-603-E<br>&KDB 971168 D01v03                                    | Frequency stability                                | PASS    | Appendix F) |
| Part 2.1053/ Part 2.1057/<br>Part 27.53(h)(c) | TIA-603-E<br>&KDB 971168 D01v03<br>&KDB 971168<br>D02v02r01        | Field strength of<br>spurious radiation            | PASS    | Appendix G) |
| Part 2.1046(a)/<br>Part 27.50(d)(b)           | TIA-603-E<br>&KDB 971168 D01v03                                    | Effective Radiated<br>Power of<br>Transmitter(ERP) | PASS    | Appendix A) |

## Appendix A: Conducted Output Power and Effective (Isotropic) Radiated Power

|                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |            |             |       |           |              |
|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------|-------------|-------|-----------|--------------|
| Description of the Conducted Output Power Measurement and ERP/EIRP Measurement: | <p>A system simulator was used to establish communication with the EUT. Its parameters were set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.</p> <p>According to KDB 412172 D01 Power Approach</p> <p><math>EIRP = P_T + G_T - L_C</math>, <math>ERP = EIRP - 2.15</math>, where</p> <p><math>P_T</math> = transmitter output power in dBm</p> <p><math>G_T</math> = gain of the transmitting antenna in dBi</p> <p><math>L_C</math> = signal attenuation in the connecting cable between the transmitter and antenna in dB</p> |              |            |             |       |           |              |
| Measurement Procedure:                                                          | <p>1. The transmitter output port was connected to the system simulator.</p> <p>2. Set EUT at maximum power through the system simulator.</p> <p>3. Select lowest, middle, and highest channels for each band and different modulation.</p> <p>4. Measure and record the power level from the system simulator.</p>                                                                                                                                                                                                                                                                                                                        |              |            |             |       |           |              |
| Limit:                                                                          | <table><tr><td>Mode</td><td>LTE band 4</td><td>LTE band 13</td></tr><tr><td>Limit</td><td>30dBm(1W)</td><td>34.77dBm(3W)</td></tr></table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Mode         | LTE band 4 | LTE band 13 | Limit | 30dBm(1W) | 34.77dBm(3W) |
| Mode                                                                            | LTE band 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | LTE band 13  |            |             |       |           |              |
| Limit                                                                           | 30dBm(1W)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 34.77dBm(3W) |            |             |       |           |              |

**Test Result**
**LTE Band 4**
**LTE Band 4 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      | 22.45               | 25.45         | PASS    |
|                            |         | 1                | 3      | 22.53               | 25.53         | PASS    |
|                            |         | 1                | 5      | 22.49               | 25.49         | PASS    |
|                            |         | 3                | 0      | 22.25               | 25.25         | PASS    |
|                            |         | 3                | 2      | 22.20               | 25.20         | PASS    |
|                            |         | 3                | 3      | 22.27               | 25.27         | PASS    |
|                            |         | 6                | 0      | 21.15               | 24.15         | PASS    |
|                            |         |                  |        |                     |               |         |
|                            | MCH     | 1                | 0      | 22.82               | 25.82         | PASS    |
|                            |         | 1                | 3      | 22.83               | 25.83         | PASS    |
|                            |         | 1                | 5      | 22.72               | 25.72         | PASS    |
|                            |         | 3                | 0      | 22.66               | 25.66         | PASS    |
|                            |         | 3                | 2      | 22.62               | 25.62         | PASS    |
|                            |         | 3                | 3      | 22.64               | 25.64         | PASS    |
|                            |         | 6                | 0      | 21.69               | 24.69         | PASS    |
|                            |         |                  |        |                     |               |         |
|                            | HCH     | 1                | 0      | 22.73               | 25.73         | PASS    |
|                            |         | 1                | 3      | 22.69               | 25.69         | PASS    |
|                            |         | 1                | 5      | 22.49               | 25.49         | PASS    |
|                            |         | 3                | 0      | 22.46               | 25.46         | PASS    |
|                            |         | 3                | 2      | 22.52               | 25.52         | PASS    |
|                            |         | 3                | 3      | 22.43               | 25.43         | PASS    |
|                            |         | 6                | 0      | 21.40               | 24.40         | PASS    |
|                            |         |                  |        |                     |               |         |
| 16QAM                      | LCH     | 1                | 0      | 21.63               | 24.63         | PASS    |
|                            |         | 1                | 3      | 21.78               | 24.78         | PASS    |
|                            |         | 1                | 5      | 21.70               | 24.70         | PASS    |
|                            |         | 3                | 0      | 21.56               | 24.56         | PASS    |
|                            |         | 3                | 2      | 21.66               | 24.66         | PASS    |
|                            |         | 3                | 3      | 21.77               | 24.77         | PASS    |
|                            |         | 6                | 0      | 20.63               | 23.63         | PASS    |
|                            |         |                  |        |                     |               |         |
|                            | MCH     | 1                | 0      | 21.79               | 24.79         | PASS    |
|                            |         | 1                | 3      | 21.82               | 24.82         | PASS    |
|                            |         | 1                | 5      | 21.75               | 24.75         | PASS    |
|                            |         | 3                | 0      | 22.04               | 25.04         | PASS    |
|                            |         | 3                | 2      | 21.89               | 24.89         | PASS    |
|                            |         |                  |        |                     |               |         |

|  |     |   |   |       |       |      |
|--|-----|---|---|-------|-------|------|
|  |     | 3 | 3 | 21.91 | 24.91 | PASS |
|  |     | 6 | 0 | 20.88 | 23.88 | PASS |
|  | HCH | 1 | 0 | 21.73 | 24.73 | PASS |
|  |     | 1 | 3 | 21.83 | 24.83 | PASS |
|  |     | 1 | 5 | 21.58 | 24.58 | PASS |
|  |     | 3 | 0 | 21.98 | 24.98 | PASS |
|  |     | 3 | 2 | 21.65 | 24.65 | PASS |
|  |     | 3 | 3 | 21.76 | 24.76 | PASS |
|  |     | 6 | 0 | 20.81 | 23.81 | PASS |
|  |     |   |   |       |       |      |

**LTE Band 4 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      | 21.84               | 24.84         | PASS    |
|                          |         | 1                | 7      | 22.09               | 25.09         | PASS    |
|                          |         | 1                | 14     | 22.20               | 25.20         | PASS    |
|                          |         | 8                | 0      | 20.91               | 23.91         | PASS    |
|                          |         | 8                | 4      | 21.08               | 24.08         | PASS    |
|                          |         | 8                | 7      | 20.95               | 23.95         | PASS    |
|                          |         | 15               | 0      | 20.89               | 23.89         | PASS    |
|                          |         |                  |        |                     |               |         |
|                          | MCH     | 1                | 0      | 22.62               | 25.62         | PASS    |
|                          |         | 1                | 7      | 22.46               | 25.46         | PASS    |
|                          |         | 1                | 14     | 22.59               | 25.59         | PASS    |
|                          |         | 8                | 0      | 21.60               | 24.60         | PASS    |
|                          |         | 8                | 4      | 21.45               | 24.45         | PASS    |
|                          |         | 8                | 7      | 21.45               | 24.45         | PASS    |
|                          |         | 15               | 0      | 21.51               | 24.51         | PASS    |
|                          |         |                  |        |                     |               |         |
|                          | HCH     | 1                | 0      | 22.41               | 25.41         | PASS    |
|                          |         | 1                | 7      | 22.44               | 25.44         | PASS    |
|                          |         | 1                | 14     | 22.55               | 25.55         | PASS    |
|                          |         | 8                | 0      | 21.31               | 24.31         | PASS    |
|                          |         | 8                | 4      | 21.33               | 24.33         | PASS    |
|                          |         | 8                | 7      | 21.29               | 24.29         | PASS    |
|                          |         | 15               | 0      | 21.33               | 24.33         | PASS    |
|                          |         |                  |        |                     |               |         |
| 16QAM                    | LCH     | 1                | 0      | 23.14               | 26.14         | PASS    |
|                          |         | 1                | 7      | 22.93               | 25.93         | PASS    |
|                          |         | 1                | 14     | 23.11               | 26.11         | PASS    |
|                          |         | 8                | 0      | 22.15               | 25.15         | PASS    |

|  |     |    |    |       |       |      |
|--|-----|----|----|-------|-------|------|
|  |     | 8  | 4  | 22.38 | 25.38 | PASS |
|  |     | 8  | 7  | 22.09 | 25.09 | PASS |
|  |     | 15 | 0  | 22.08 | 25.08 | PASS |
|  | MCH | 1  | 0  | 21.33 | 24.33 | PASS |
|  |     | 1  | 7  | 21.41 | 24.41 | PASS |
|  |     | 1  | 14 | 21.47 | 24.47 | PASS |
|  |     | 8  | 0  | 20.76 | 23.76 | PASS |
|  |     | 8  | 4  | 20.65 | 23.65 | PASS |
|  |     | 8  | 7  | 20.65 | 23.65 | PASS |
|  |     | 15 | 0  | 20.58 | 23.58 | PASS |
|  | HCH | 1  | 0  | 22.09 | 25.09 | PASS |
|  |     | 1  | 7  | 22.55 | 25.55 | PASS |
|  |     | 1  | 14 | 21.42 | 24.42 | PASS |
|  |     | 8  | 0  | 21.47 | 24.47 | PASS |
|  |     | 8  | 4  | 21.57 | 24.57 | PASS |
|  |     | 8  | 7  | 21.56 | 24.56 | PASS |
|  |     | 15 | 0  | 21.65 | 24.65 | PASS |

**LTE Band 4 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      | 21.92               | 24.92         | PASS    |
|                          |         | 1                | 12     | 22.14               | 25.14         | PASS    |
|                          |         | 1                | 24     | 22.22               | 25.22         | PASS    |
|                          |         | 12               | 0      | 20.80               | 23.80         | PASS    |
|                          |         | 12               | 6      | 20.94               | 23.94         | PASS    |
|                          |         | 12               | 13     | 20.94               | 23.94         | PASS    |
|                          |         | 25               | 0      | 20.90               | 23.90         | PASS    |
|                          | MCH     | 1                | 0      | 22.43               | 25.43         | PASS    |
|                          |         | 1                | 12     | 22.36               | 25.36         | PASS    |
|                          |         | 1                | 24     | 22.45               | 25.45         | PASS    |
|                          |         | 12               | 0      | 21.39               | 24.39         | PASS    |
|                          |         | 12               | 6      | 21.33               | 24.33         | PASS    |
|                          |         | 12               | 13     | 21.35               | 24.35         | PASS    |
|                          |         | 25               | 0      | 21.48               | 24.48         | PASS    |
|                          | HCH     | 1                | 0      | 22.53               | 25.53         | PASS    |
|                          |         | 1                | 12     | 22.68               | 25.68         | PASS    |
|                          |         | 1                | 24     | 22.35               | 25.35         | PASS    |

|       |     |    |    |       |       |      |
|-------|-----|----|----|-------|-------|------|
| 16QAM |     | 12 | 0  | 21.45 | 24.45 | PASS |
|       |     | 12 | 6  | 21.43 | 24.43 | PASS |
|       |     | 12 | 13 | 21.39 | 24.39 | PASS |
|       |     | 25 | 0  | 21.42 | 24.42 | PASS |
|       | LCH | 1  | 0  | 21.30 | 24.30 | PASS |
|       |     | 1  | 12 | 21.57 | 24.57 | PASS |
|       |     | 1  | 24 | 22.14 | 25.14 | PASS |
|       |     | 12 | 0  | 21.50 | 24.50 | PASS |
|       |     | 12 | 6  | 21.33 | 24.33 | PASS |
|       |     | 12 | 13 | 21.60 | 24.60 | PASS |
|       |     | 25 | 0  | 21.52 | 24.52 | PASS |
|       | MCH | 1  | 0  | 21.73 | 24.73 | PASS |
|       |     | 1  | 12 | 21.63 | 24.63 | PASS |
|       |     | 1  | 24 | 21.49 | 24.49 | PASS |
|       |     | 12 | 0  | 21.01 | 24.01 | PASS |
|       |     | 12 | 6  | 20.91 | 23.91 | PASS |
|       |     | 12 | 13 | 20.94 | 23.94 | PASS |
|       |     | 25 | 0  | 21.31 | 24.31 | PASS |
|       | HCH | 1  | 0  | 21.69 | 24.69 | PASS |
|       |     | 1  | 12 | 22.13 | 25.13 | PASS |
|       |     | 1  | 24 | 21.78 | 24.78 | PASS |
|       |     | 12 | 0  | 20.80 | 23.80 | PASS |
|       |     | 12 | 6  | 21.15 | 24.15 | PASS |
|       |     | 12 | 13 | 21.17 | 24.17 | PASS |
|       |     | 25 | 0  | 21.00 | 24.00 | PASS |

**LTE Band 4 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      | 22.15               | 25.15         | PASS    |
|                           |         | 1                | 24     | 22.85               | 25.85         | PASS    |
|                           |         | 1                | 49     | 22.84               | 25.84         | PASS    |
|                           |         | 25               | 0      | 21.11               | 24.11         | PASS    |
|                           |         | 25               | 12     | 21.47               | 24.47         | PASS    |
|                           |         | 25               | 25     | 21.55               | 24.55         | PASS    |
|                           |         | 50               | 0      | 21.24               | 24.24         | PASS    |
|                           | MCH     | 1                | 0      | 22.72               | 25.72         | PASS    |
|                           |         | 1                | 24     | 22.37               | 25.37         | PASS    |

|  |     |    |    |       |       |      |
|--|-----|----|----|-------|-------|------|
|  |     | 1  | 49 | 22.45 | 25.45 | PASS |
|  |     | 25 | 0  | 21.61 | 24.61 | PASS |
|  |     | 25 | 12 | 21.44 | 24.44 | PASS |
|  |     | 25 | 25 | 21.45 | 24.45 | PASS |
|  |     | 50 | 0  | 21.61 | 24.61 | PASS |
|  | HCH | 1  | 0  | 22.62 | 25.62 | PASS |
|  |     | 1  | 24 | 23.04 | 26.04 | PASS |
|  |     | 1  | 49 | 22.31 | 25.31 | PASS |
|  |     | 25 | 0  | 21.46 | 24.46 | PASS |
|  |     | 25 | 12 | 21.61 | 24.61 | PASS |
|  |     | 25 | 25 | 21.43 | 24.43 | PASS |
|  |     | 50 | 0  | 21.42 | 24.42 | PASS |

**LTE Band 4 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      | 22.03               | 25.03         | PASS    |
|                           |         | 1                | 37     | 23.01               | 26.01         | PASS    |
|                           |         | 1                | 74     | 22.37               | 25.37         | PASS    |
|                           |         | 37               | 0      | 20.93               | 23.93         | PASS    |
|                           |         | 37               | 18     | 21.30               | 24.30         | PASS    |
|                           |         | 37               | 38     | 21.23               | 24.23         | PASS    |
|                           |         | 75               | 0      | 22.09               | 25.09         | PASS    |
|                           | MCH     | 1                | 0      | 22.84               | 25.84         | PASS    |
|                           |         | 1                | 37     | 22.53               | 25.53         | PASS    |
|                           |         | 1                | 74     | 22.57               | 25.57         | PASS    |
|                           |         | 37               | 0      | 21.66               | 24.66         | PASS    |
|                           |         | 37               | 18     | 21.38               | 24.38         | PASS    |
|                           |         | 37               | 38     | 21.44               | 24.44         | PASS    |
|                           |         | 75               | 0      | 21.73               | 24.73         | PASS    |
|                           | HCH     | 1                | 0      | 23.05               | 26.05         | PASS    |
|                           |         | 1                | 37     | 23.64               | 26.64         | PASS    |
|                           |         | 1                | 74     | 22.94               | 25.94         | PASS    |
|                           |         | 37               | 0      | 21.64               | 24.64         | PASS    |
|                           |         | 37               | 18     | 21.84               | 24.84         | PASS    |
|                           |         | 37               | 38     | 21.86               | 24.86         | PASS    |
|                           |         | 75               | 0      | 21.62               | 24.62         | PASS    |

**LTE Band 4 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      | 22.13               | 25.13         | PASS    |
|                           |         | 1                | 49     | 23.04               | 26.04         | PASS    |
|                           |         | 1                | 99     | 22.08               | 25.08         | PASS    |
|                           |         | 50               | 0      | 21.13               | 24.13         | PASS    |
|                           |         | 50               | 25     | 21.52               | 24.52         | PASS    |
|                           |         | 50               | 50     | 21.21               | 24.21         | PASS    |
|                           |         | 100              | 0      | 21.79               | 24.79         | PASS    |
|                           |         |                  |        |                     |               |         |
|                           | MCH     | 1                | 0      | 21.88               | 24.88         | PASS    |
|                           |         | 1                | 49     | 20.92               | 23.92         | PASS    |
|                           |         | 1                | 99     | 22.34               | 25.34         | PASS    |
|                           |         | 50               | 0      | 21.67               | 24.67         | PASS    |
|                           |         | 50               | 25     | 21.32               | 24.32         | PASS    |
|                           |         | 50               | 50     | 21.35               | 24.35         | PASS    |
|                           |         | 100              | 0      | 21.53               | 24.53         | PASS    |
|                           |         |                  |        |                     |               |         |
|                           | HCH     | 1                | 0      | 22.81               | 25.81         | PASS    |
|                           |         | 1                | 49     | 22.88               | 25.88         | PASS    |
|                           |         | 1                | 99     | 22.67               | 25.67         | PASS    |
|                           |         | 50               | 0      | 21.55               | 24.55         | PASS    |
|                           |         | 50               | 25     | 21.72               | 24.72         | PASS    |
|                           |         | 50               | 50     | 21.55               | 24.55         | PASS    |
|                           |         | 100              | 0      | 21.45               | 24.45         | PASS    |
|                           |         |                  |        |                     |               |         |

**LTE Band 13**
**LTE Band 13 Channel Bandwidth: 5 MHz**

| Channel Bandwidth: 5 MHz |         |                  |        |                     |             |         |
|--------------------------|---------|------------------|--------|---------------------|-------------|---------|
| Modulation               | Channel | RB Configuration |        | Average Power [dBm] | E.r.p [dBm] | Verdict |
|                          |         | Size             | Offset |                     |             |         |
| QPSK                     | LCH     | 1                | 0      | 21.80               | 24.80       | PASS    |
|                          |         | 1                | 12     | 22.76               | 25.76       | PASS    |
|                          |         | 1                | 24     | 21.52               | 24.52       | PASS    |
|                          |         | 12               | 0      | 21.03               | 24.03       | PASS    |
|                          |         | 12               | 6      | 21.30               | 24.30       | PASS    |
|                          |         | 12               | 13     | 20.55               | 23.55       | PASS    |
|                          |         | 25               | 0      | 20.96               | 23.96       | PASS    |
|                          | MCH     | 1                | 0      | 21.86               | 24.86       | PASS    |
|                          |         | 1                | 12     | 21.60               | 24.60       | PASS    |
|                          |         | 1                | 24     | 21.69               | 24.69       | PASS    |
|                          |         | 12               | 0      | 21.08               | 24.08       | PASS    |
|                          |         | 12               | 6      | 20.87               | 23.87       | PASS    |
|                          |         | 12               | 13     | 20.70               | 23.70       | PASS    |
|                          |         | 25               | 0      | 21.00               | 24.00       | PASS    |
|                          | HCH     | 1                | 0      | 21.90               | 24.90       | PASS    |
|                          |         | 1                | 12     | 22.04               | 25.04       | PASS    |
|                          |         | 1                | 24     | 22.59               | 25.59       | PASS    |
|                          |         | 12               | 0      | 20.96               | 23.96       | PASS    |
|                          |         | 12               | 6      | 21.11               | 24.11       | PASS    |
|                          |         | 12               | 13     | 21.40               | 24.40       | PASS    |
|                          |         | 25               | 0      | 21.04               | 24.04       | PASS    |
| 16QAM                    | LCH     | 1                | 0      | 20.21               | 23.21       | PASS    |
|                          |         | 1                | 12     | 21.24               | 24.24       | PASS    |
|                          |         | 1                | 24     | 20.14               | 23.14       | PASS    |
|                          |         | 12               | 0      | 20.20               | 23.20       | PASS    |
|                          |         | 12               | 6      | 20.21               | 23.21       | PASS    |
|                          |         | 12               | 13     | 20.19               | 23.19       | PASS    |
|                          |         | 25               | 0      | 20.30               | 23.30       | PASS    |
|                          | MCH     | 1                | 0      | 20.71               | 23.71       | PASS    |
|                          |         | 1                | 12     | 20.38               | 23.38       | PASS    |
|                          |         | 1                | 24     | 20.30               | 23.30       | PASS    |
|                          |         | 12               | 0      | 20.35               | 23.35       | PASS    |
|                          |         | 12               | 6      | 20.41               | 23.41       | PASS    |

|  |     |    |    |       |       |      |
|--|-----|----|----|-------|-------|------|
|  |     | 12 | 13 | 20.41 | 23.41 | PASS |
|  |     | 25 | 0  | 20.38 | 23.38 | PASS |
|  | HCH | 1  | 0  | 20.55 | 23.55 | PASS |
|  |     | 1  | 12 | 20.90 | 23.90 | PASS |
|  |     | 1  | 24 | 21.25 | 24.25 | PASS |
|  |     | 12 | 0  | 20.30 | 23.30 | PASS |
|  |     | 12 | 6  | 20.33 | 23.33 | PASS |
|  |     | 12 | 13 | 20.32 | 23.32 | PASS |
|  |     | 25 | 0  | 20.25 | 23.25 | PASS |
|  |     |    |    |       |       |      |

**LTE Band 13 Channel Bandwidth: 10 MHz**

| Channel Bandwidth: 10 MHz |         |                  |        |                     |             |         |
|---------------------------|---------|------------------|--------|---------------------|-------------|---------|
| Modulation                | Channel | RB Configuration |        | Average Power [dBm] | E.r.p [dBm] | Verdict |
|                           |         | Size             | Offset |                     |             |         |
| QPSK                      | LCH     | 1                | 0      | 21.65               | 24.65       | PASS    |
|                           |         | 1                | 24     | 22.11               | 25.11       | PASS    |
|                           |         | 1                | 49     | 22.15               | 25.15       | PASS    |
|                           |         | 25               | 0      | 20.82               | 23.82       | PASS    |
|                           |         | 25               | 12     | 20.80               | 23.80       | PASS    |
|                           |         | 25               | 25     | 20.82               | 23.82       | PASS    |
|                           |         | 50               | 0      | 20.85               | 23.85       | PASS    |
|                           |         |                  |        |                     |             |         |
|                           | MCH     | 1                | 0      | 21.57               | 24.57       | PASS    |
|                           |         | 1                | 24     | 21.94               | 24.94       | PASS    |
|                           |         | 1                | 49     | 22.05               | 25.05       | PASS    |
|                           |         | 25               | 0      | 20.77               | 23.77       | PASS    |
|                           |         | 25               | 12     | 20.69               | 23.69       | PASS    |
|                           |         | 25               | 25     | 20.71               | 23.71       | PASS    |
|                           |         | 50               | 0      | 20.73               | 23.73       | PASS    |
|                           |         |                  |        |                     |             |         |
|                           | HCH     | 1                | 0      | 21.53               | 24.53       | PASS    |
|                           |         | 1                | 24     | 21.89               | 24.89       | PASS    |
|                           |         | 1                | 49     | 22.02               | 25.02       | PASS    |
|                           |         | 25               | 0      | 20.69               | 23.69       | PASS    |
|                           |         | 25               | 12     | 20.60               | 23.60       | PASS    |
|                           |         | 25               | 25     | 20.75               | 23.75       | PASS    |
|                           |         | 50               | 0      | 20.67               | 23.67       | PASS    |
|                           |         |                  |        |                     |             |         |

## Appendix B: Peak-to-Average Ratio

|                               |                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b>      | Part 27.50(d)(b)                                                                                                                                                                                                                                                                                                                                |
| <b>Test Method:</b>           | KDB 971168 D01                                                                                                                                                                                                                                                                                                                                  |
| <b>Test Setup:</b>            | Refer to section 5 for details                                                                                                                                                                                                                                                                                                                  |
| <b>Limit:</b>                 | 13dB                                                                                                                                                                                                                                                                                                                                            |
| <b>Measurement Procedure:</b> | Use one of the procedures to measure the total peak power and record as PPK. Use one of the applicable procedures to measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from:<br>$PAPR (dB) = PPK (dBm) - PAvg (dBm)$ . |
| <b>Instruments Used:</b>      | Refer to section 7 for details                                                                                                                                                                                                                                                                                                                  |
| <b>Test Results:</b>          | Pass                                                                                                                                                                                                                                                                                                                                            |

### Test Result

#### LTE Band 4

##### LTE Band 4 Channel Bandwidth: 1.4 MHz

| Channel Bandwidth: 1.4 MHz |         |                  |        |                               |               |         |
|----------------------------|---------|------------------|--------|-------------------------------|---------------|---------|
| Modulation                 | Channel | RB Configuration |        | Peak-to-Average Ratio<br>(dB) | Limit<br>(dB) | Verdict |
|                            |         | Size             | Offset |                               |               |         |
| QPSK                       | LCH     | 1                | 0      | 4.27                          | <13           | PASS    |
|                            |         | 1                | 3      | 4.22                          | <13           | PASS    |
|                            |         | 1                | 5      | 4.38                          | <13           | PASS    |
|                            |         | 3                | 0      | 4.48                          | <13           | PASS    |
|                            |         | 3                | 2      | 4.45                          | <13           | PASS    |
|                            |         | 3                | 3      | 4.51                          | <13           | PASS    |
|                            |         | 6                | 0      | 4.91                          | <13           | PASS    |
|                            | MCH     | 1                | 0      | 3.98                          | <13           | PASS    |
|                            |         | 1                | 3      | 3.85                          | <13           | PASS    |
|                            |         | 1                | 5      | 3.95                          | <13           | PASS    |
|                            |         | 3                | 0      | 4.06                          | <13           | PASS    |
|                            |         | 3                | 2      | 3.99                          | <13           | PASS    |
|                            |         | 3                | 3      | 4.05                          | <13           | PASS    |
|                            |         | 6                | 0      | 4.6                           | <13           | PASS    |
|                            | HCH     | 1                | 0      | 3.38                          | <13           | PASS    |
|                            |         | 1                | 3      | 3.17                          | <13           | PASS    |
|                            |         | 1                | 5      | 3.2                           | <13           | PASS    |
|                            |         | 3                | 0      | 3.51                          | <13           | PASS    |
|                            |         | 3                | 2      | 3.28                          | <13           | PASS    |
|                            |         | 3                | 3      | 3.27                          | <13           | PASS    |
|                            |         | 6                | 0      | 4.2                           | <13           | PASS    |
| 16QAM                      | LCH     | 1                | 0      | 5.16                          | <13           | PASS    |

|  |     |   |   |      |     |      |
|--|-----|---|---|------|-----|------|
|  |     | 1 | 3 | 5.01 | <13 | PASS |
|  |     | 1 | 5 | 5.24 | <13 | PASS |
|  |     | 3 | 0 | 5.29 | <13 | PASS |
|  |     | 3 | 2 | 5.27 | <13 | PASS |
|  |     | 3 | 3 | 5.33 | <13 | PASS |
|  |     | 6 | 0 | 5.73 | <13 | PASS |
|  | MCH | 1 | 0 | 4.86 | <13 | PASS |
|  |     | 1 | 3 | 4.7  | <13 | PASS |
|  |     | 1 | 5 | 4.78 | <13 | PASS |
|  |     | 3 | 0 | 4.91 | <13 | PASS |
|  |     | 3 | 2 | 4.84 | <13 | PASS |
|  |     | 3 | 3 | 4.88 | <13 | PASS |
|  |     | 6 | 0 | 5.46 | <13 | PASS |
|  | HCH | 1 | 0 | 4.59 | <13 | PASS |
|  |     | 1 | 3 | 4.43 | <13 | PASS |
|  |     | 1 | 5 | 4.39 | <13 | PASS |
|  |     | 3 | 0 | 4.61 | <13 | PASS |
|  |     | 3 | 2 | 4.45 | <13 | PASS |
|  |     | 3 | 3 | 4.39 | <13 | PASS |
|  |     | 6 | 0 | 5.24 | <13 | PASS |

**LTE Band 4 Channel Bandwidth: 3 MHz**

| Channel Bandwidth: 3 MHz |         |                  |        |                               |               |         |
|--------------------------|---------|------------------|--------|-------------------------------|---------------|---------|
| Modulation               | Channel | RB Configuration |        | Peak-to-Average Ratio<br>[dB] | Limit<br>[dB] | Verdict |
|                          |         | Size             | Offset |                               |               |         |
| QPSK                     | LCH     | 1                | 0      | 4.41                          | <13           | PASS    |
|                          |         | 1                | 7      | 4.36                          | <13           | PASS    |
|                          |         | 1                | 14     | 4.63                          | <13           | PASS    |
|                          |         | 8                | 0      | 4.78                          | <13           | PASS    |
|                          |         | 8                | 4      | 4.79                          | <13           | PASS    |
|                          |         | 8                | 7      | 4.85                          | <13           | PASS    |
|                          |         | 15               | 0      | 5.11                          | <13           | PASS    |
|                          | MCH     | 1                | 0      | 4                             | <13           | PASS    |
|                          |         | 1                | 7      | 3.85                          | <13           | PASS    |
|                          |         | 1                | 14     | 3.97                          | <13           | PASS    |
|                          |         | 8                | 0      | 4.48                          | <13           | PASS    |
|                          |         | 8                | 4      | 4.43                          | <13           | PASS    |
|                          |         | 8                | 7      | 4.48                          | <13           | PASS    |
|                          |         | 15               | 0      | 4.72                          | <13           | PASS    |

|       |     |    |    |      |     |      |
|-------|-----|----|----|------|-----|------|
|       | HCH | 1  | 0  | 3.99 | <13 | PASS |
|       |     | 1  | 7  | 3.36 | <13 | PASS |
|       |     | 1  | 14 | 3.1  | <13 | PASS |
|       |     | 8  | 0  | 4.48 | <13 | PASS |
|       |     | 8  | 4  | 4.27 | <13 | PASS |
|       |     | 8  | 7  | 4.08 | <13 | PASS |
|       |     | 15 | 0  | 4.57 | <13 | PASS |
| 16QAM | LCH | 1  | 0  | 5.3  | <13 | PASS |
|       |     | 1  | 7  | 5.34 | <13 | PASS |
|       |     | 1  | 14 | 5.33 | <13 | PASS |
|       |     | 8  | 0  | 5.62 | <13 | PASS |
|       |     | 8  | 4  | 5.62 | <13 | PASS |
|       |     | 8  | 7  | 5.72 | <13 | PASS |
|       |     | 15 | 0  | 5.94 | <13 | PASS |
|       | MCH | 1  | 0  | 4.97 | <13 | PASS |
|       |     | 1  | 7  | 4.68 | <13 | PASS |
|       |     | 1  | 14 | 4.94 | <13 | PASS |
|       |     | 8  | 0  | 5.38 | <13 | PASS |
|       |     | 8  | 4  | 5.29 | <13 | PASS |
|       |     | 8  | 7  | 5.36 | <13 | PASS |
|       |     | 15 | 0  | 5.57 | <13 | PASS |
|       | HCH | 1  | 0  | 5.16 | <13 | PASS |
|       |     | 1  | 7  | 4.57 | <13 | PASS |
|       |     | 1  | 14 | 4.36 | <13 | PASS |
|       |     | 8  | 0  | 5.48 | <13 | PASS |
|       |     | 8  | 4  | 5.3  | <13 | PASS |
|       |     | 8  | 7  | 5.11 | <13 | PASS |
|       |     | 15 | 0  | 5.5  | <13 | PASS |

**LTE Band 4 Channel Bandwidth: 5 MHz**

| Channel Bandwidth: 5 MHz |         |                  |        |                               |               |         |
|--------------------------|---------|------------------|--------|-------------------------------|---------------|---------|
| Modulation               | Channel | RB Configuration |        | Peak-to-Average Ratio<br>[dB] | Limit<br>[dB] | Verdict |
|                          |         | Size             | Offset |                               |               |         |
| QPSK                     | LCH     | 1                | 0      | 4.4                           | <13           | PASS    |
|                          |         | 1                | 12     | 4.39                          | <13           | PASS    |
|                          |         | 1                | 24     | 4.48                          | <13           | PASS    |
|                          |         | 12               | 0      | 4.78                          | <13           | PASS    |
|                          |         | 12               | 6      | 4.78                          | <13           | PASS    |
|                          |         | 12               | 13     | 4.86                          | <13           | PASS    |

|       |     |    |    |      |     |      |
|-------|-----|----|----|------|-----|------|
|       | MCH | 25 | 0  | 5.23 | <13 | PASS |
|       |     | 1  | 0  | 3.99 | <13 | PASS |
|       |     | 1  | 12 | 3.79 | <13 | PASS |
|       |     | 1  | 24 | 4.03 | <13 | PASS |
|       |     | 12 | 0  | 4.46 | <13 | PASS |
|       |     | 12 | 6  | 4.43 | <13 | PASS |
|       |     | 12 | 13 | 4.49 | <13 | PASS |
|       |     | 25 | 0  | 4.91 | <13 | PASS |
|       | HCH | 1  | 0  | 4.28 | <13 | PASS |
|       |     | 1  | 12 | 3.59 | <13 | PASS |
|       |     | 1  | 24 | 3.08 | <13 | PASS |
|       |     | 12 | 0  | 4.66 | <13 | PASS |
|       |     | 12 | 6  | 4.43 | <13 | PASS |
|       |     | 12 | 13 | 4.12 | <13 | PASS |
|       |     | 25 | 0  | 4.86 | <13 | PASS |
|       |     | 25 | 0  | 4.86 | <13 | PASS |
| 16QAM | LCH | 1  | 0  | 5.28 | <13 | PASS |
|       |     | 1  | 12 | 5.09 | <13 | PASS |
|       |     | 1  | 24 | 5.28 | <13 | PASS |
|       |     | 12 | 0  | 5.68 | <13 | PASS |
|       |     | 12 | 6  | 5.64 | <13 | PASS |
|       |     | 12 | 13 | 5.73 | <13 | PASS |
|       |     | 25 | 0  | 6.08 | <13 | PASS |
|       |     | 25 | 0  | 6.08 | <13 | PASS |
|       | MCH | 1  | 0  | 4.89 | <13 | PASS |
|       |     | 1  | 12 | 4.69 | <13 | PASS |
|       |     | 1  | 24 | 4.96 | <13 | PASS |
|       |     | 12 | 0  | 5.39 | <13 | PASS |
|       |     | 12 | 6  | 5.26 | <13 | PASS |
|       |     | 12 | 13 | 5.39 | <13 | PASS |
|       |     | 25 | 0  | 5.7  | <13 | PASS |
|       |     | 25 | 0  | 5.7  | <13 | PASS |
|       | HCH | 1  | 0  | 5.24 | <13 | PASS |
|       |     | 1  | 12 | 4.89 | <13 | PASS |
|       |     | 1  | 24 | 4.43 | <13 | PASS |
|       |     | 12 | 0  | 5.67 | <13 | PASS |
|       |     | 12 | 6  | 5.37 | <13 | PASS |
|       |     | 12 | 13 | 5.15 | <13 | PASS |
|       |     | 25 | 0  | 5.78 | <13 | PASS |
|       |     | 25 | 0  | 5.78 | <13 | PASS |

**LTE Band 4 Channel Bandwidth: 10 MHz**

| Channel Bandwidth: 10 MHz |         |                  |        |                               |               |         |
|---------------------------|---------|------------------|--------|-------------------------------|---------------|---------|
| Modulation                | Channel | RB Configuration |        | Peak-to-Average Ratio<br>[dB] | Limit<br>[dB] | Verdict |
|                           |         | Size             | Offset |                               |               |         |
| QPSK                      | LCH     | 1                | 0      | 4.38                          | <13           | PASS    |
|                           |         | 1                | 24     | 4.39                          | <13           | PASS    |
|                           |         | 1                | 49     | 4.38                          | <13           | PASS    |
|                           |         | 25               | 0      | 4.68                          | <13           | PASS    |
|                           |         | 25               | 12     | 5.02                          | <13           | PASS    |
|                           |         | 25               | 25     | 4.63                          | <13           | PASS    |
|                           |         | 50               | 0      | 4.91                          | <13           | PASS    |
|                           |         | 50               | 0      | 4.91                          | <13           | PASS    |
|                           | MCH     | 1                | 0      | 3.99                          | <13           | PASS    |
|                           |         | 1                | 24     | 3.87                          | <13           | PASS    |
|                           |         | 1                | 49     | 4.06                          | <13           | PASS    |
|                           |         | 25               | 0      | 4.46                          | <13           | PASS    |
|                           |         | 25               | 12     | 4.77                          | <13           | PASS    |
|                           |         | 25               | 25     | 4.52                          | <13           | PASS    |
|                           |         | 50               | 0      | 4.81                          | <13           | PASS    |
|                           |         | 50               | 0      | 4.81                          | <13           | PASS    |
|                           | HCH     | 1                | 0      | 4.36                          | <13           | PASS    |
|                           |         | 1                | 24     | 4.14                          | <13           | PASS    |
|                           |         | 1                | 49     | 3.13                          | <13           | PASS    |
|                           |         | 25               | 0      | 4.68                          | <13           | PASS    |
|                           |         | 25               | 12     | 4.89                          | <13           | PASS    |
|                           |         | 25               | 25     | 4.41                          | <13           | PASS    |
|                           |         | 50               | 0      | 4.88                          | <13           | PASS    |
|                           |         | 50               | 0      | 4.88                          | <13           | PASS    |

**LTE Band 4 Channel Bandwidth: 15 MHz**

| Channel Bandwidth: 15 MHz |         |                  |        |                               |               |         |
|---------------------------|---------|------------------|--------|-------------------------------|---------------|---------|
| Modulation                | Channel | RB Configuration |        | Peak-to-Average Ratio<br>[dB] | Limit<br>[dB] | Verdict |
|                           |         | Size             | Offset |                               |               |         |
| QPSK                      | LCH     | 1                | 0      | 5.55                          | <13           | PASS    |
|                           |         | 1                | 37     | 4.39                          | <13           | PASS    |
|                           |         | 1                | 74     | 5.97                          | <13           | PASS    |
|                           |         | 37               | 0      | 5.4                           | <13           | PASS    |
|                           |         | 37               | 18     | 5.24                          | <13           | PASS    |
|                           |         | 37               | 38     | 5.22                          | <13           | PASS    |
|                           |         | 75               | 0      | 5.48                          | <13           | PASS    |
|                           |         | 75               | 0      | 5.48                          | <13           | PASS    |
|                           | MCH     | 1                | 0      | 5.21                          | <13           | PASS    |
|                           |         | 1                | 37     | 3.68                          | <13           | PASS    |

|  |     |    |    |      |     |      |
|--|-----|----|----|------|-----|------|
|  |     | 1  | 74 | 5.62 | <13 | PASS |
|  |     | 37 | 0  | 4.98 | <13 | PASS |
|  |     | 37 | 18 | 5.01 | <13 | PASS |
|  |     | 37 | 38 | 5.27 | <13 | PASS |
|  |     | 75 | 0  | 8.45 | <13 | PASS |
|  | HCH | 1  | 0  | 5.58 | <13 | PASS |
|  |     | 1  | 37 | 4.29 | <13 | PASS |
|  |     | 1  | 74 | 5.34 | <13 | PASS |
|  |     | 37 | 0  | 5.37 | <13 | PASS |
|  |     | 37 | 18 | 5.31 | <13 | PASS |
|  |     | 37 | 38 | 5.23 | <13 | PASS |
|  |     | 75 | 0  | 8.44 | <13 | PASS |

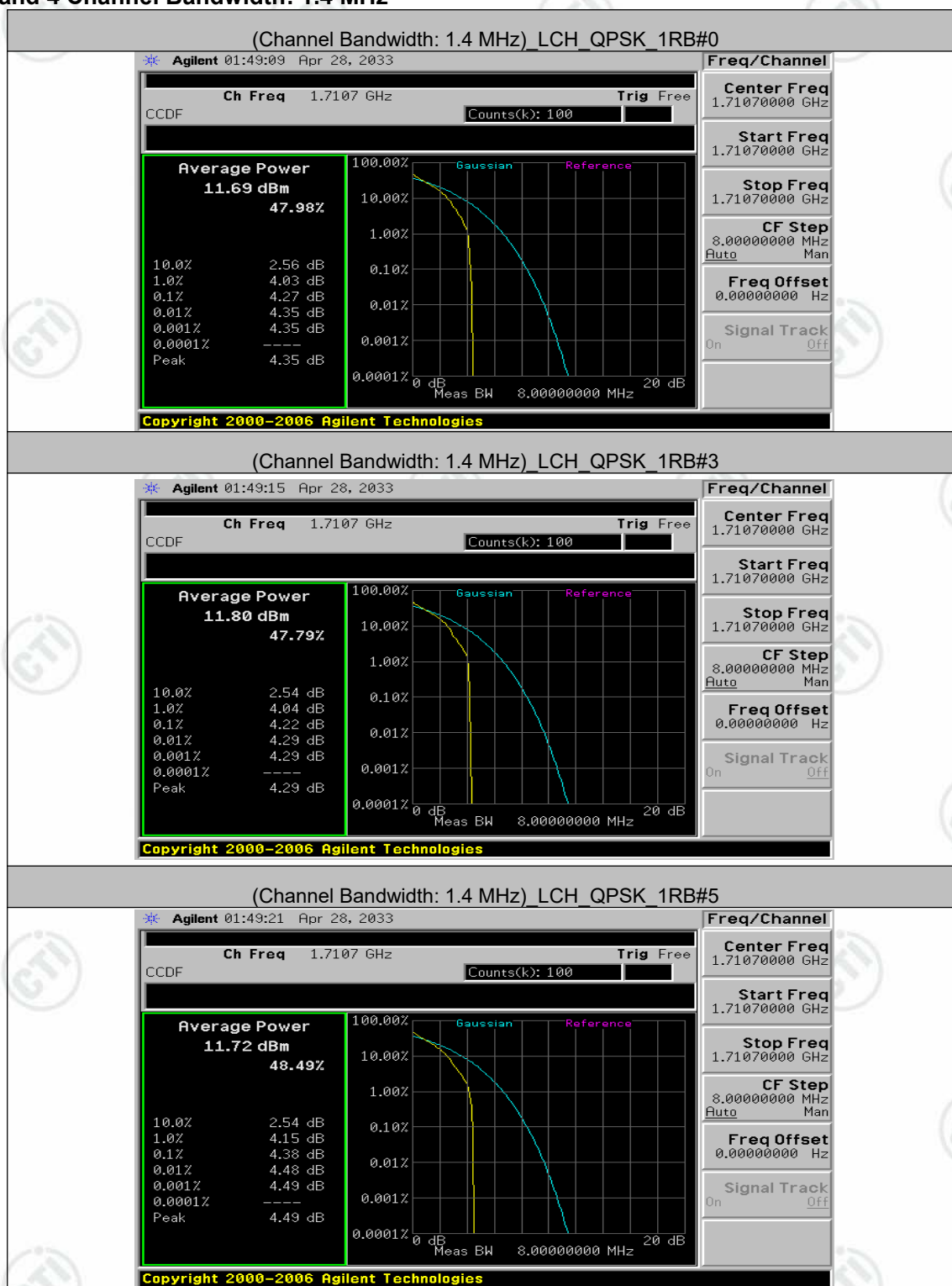
**LTE Band 4 Channel Bandwidth: 20 MHz**

| Channel Bandwidth: 20 MHz |         |                  |        |                               |               |         |
|---------------------------|---------|------------------|--------|-------------------------------|---------------|---------|
| Modulation                | Channel | RB Configuration |        | Peak-to-Average Ratio<br>[dB] | Limit<br>[dB] | Verdict |
|                           |         | Size             | Offset |                               |               |         |
| QPSK                      | LCH     | 1                | 0      | 4.96                          | <13           | PASS    |
|                           |         | 1                | 49     | 4.29                          | <13           | PASS    |
|                           |         | 1                | 99     | 4.69                          | <13           | PASS    |
|                           |         | 50               | 0      | 5.97                          | <13           | PASS    |
|                           |         | 50               | 25     | 4.92                          | <13           | PASS    |
|                           |         | 50               | 50     | 6.18                          | <13           | PASS    |
|                           |         | 100              | 0      | 8.41                          | <13           | PASS    |
|                           | MCH     | 1                | 0      | 3.54                          | <13           | PASS    |
|                           |         | 1                | 49     | 3.9                           | <13           | PASS    |
|                           |         | 1                | 99     | 4.94                          | <13           | PASS    |
|                           |         | 50               | 0      | 5.88                          | <13           | PASS    |
|                           |         | 50               | 25     | 4.79                          | <13           | PASS    |
|                           |         | 50               | 50     | 6.17                          | <13           | PASS    |
|                           |         | 100              | 0      | 8.49                          | <13           | PASS    |
|                           | HCH     | 1                | 0      | 4.6                           | <13           | PASS    |
|                           |         | 1                | 49     | 4.29                          | <13           | PASS    |
|                           |         | 1                | 99     | 4.76                          | <13           | PASS    |
|                           |         | 50               | 0      | 6.05                          | <13           | PASS    |
|                           |         | 50               | 25     | 5                             | <13           | PASS    |
|                           |         | 50               | 50     | 6.28                          | <13           | PASS    |
|                           |         | 100              | 0      | 8.45                          | <13           | PASS    |

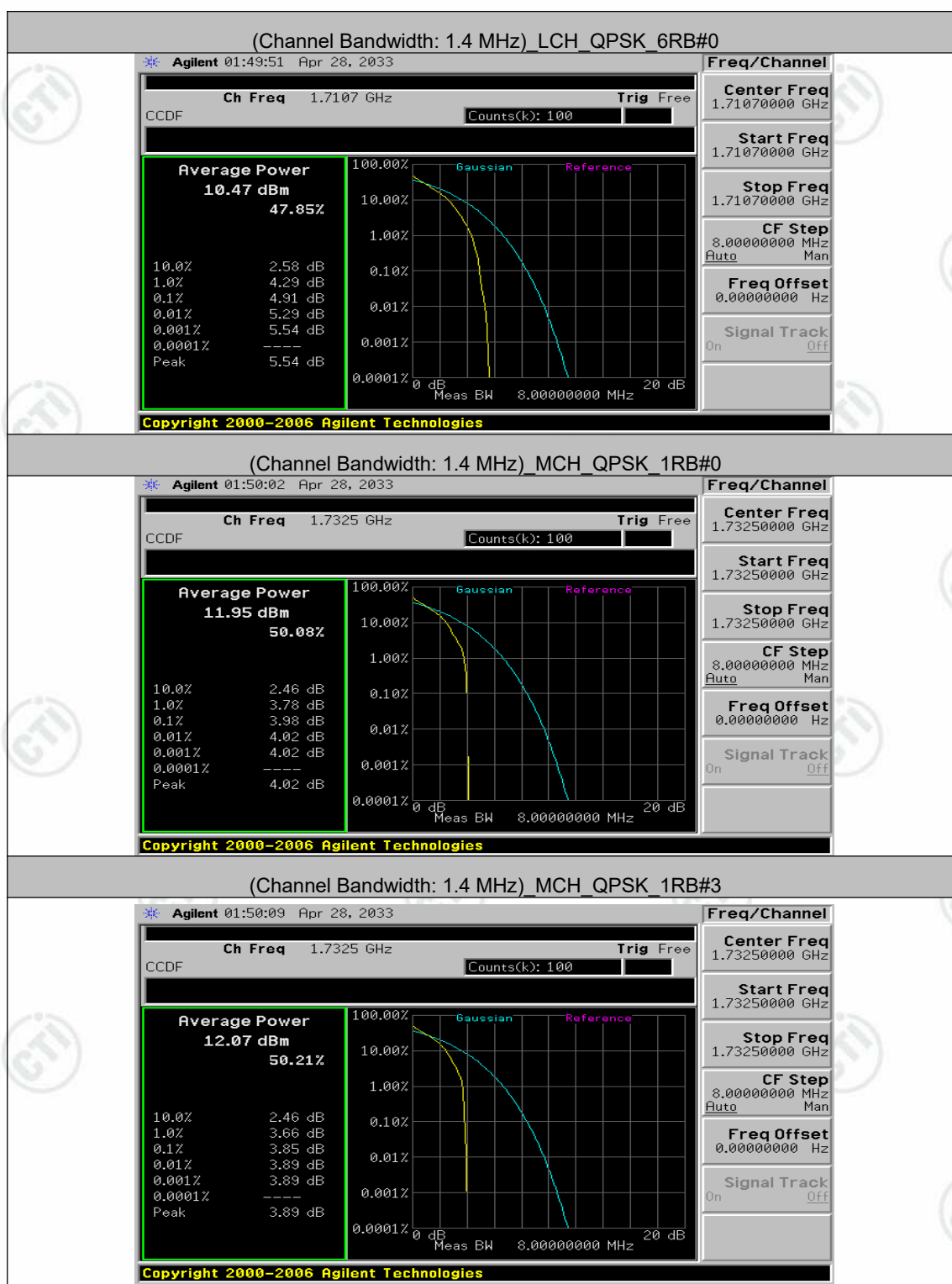
## Test Graphs

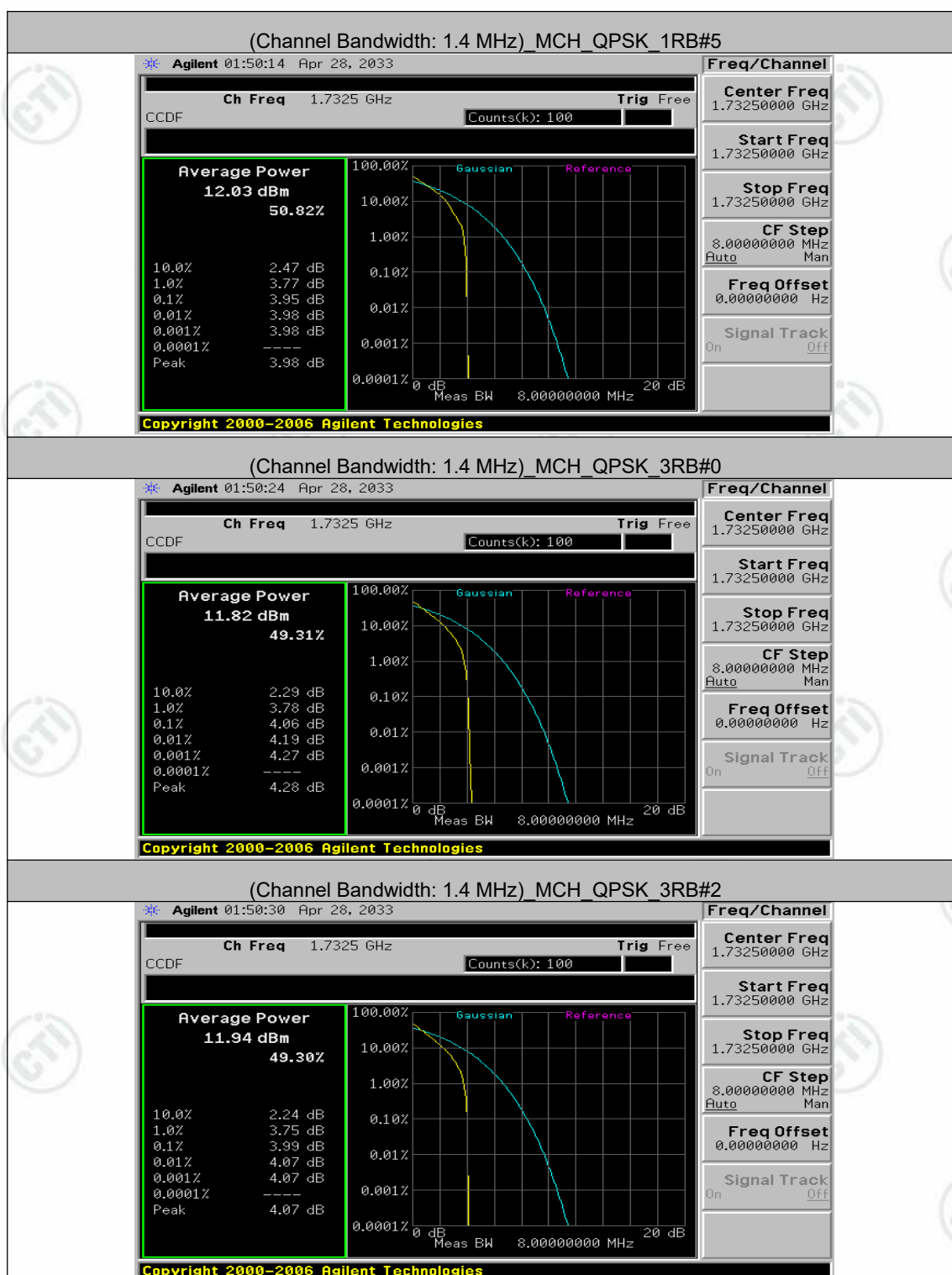
### LTE Band 4

#### LTE Band 4 Channel Bandwidth: 1.4 MHz

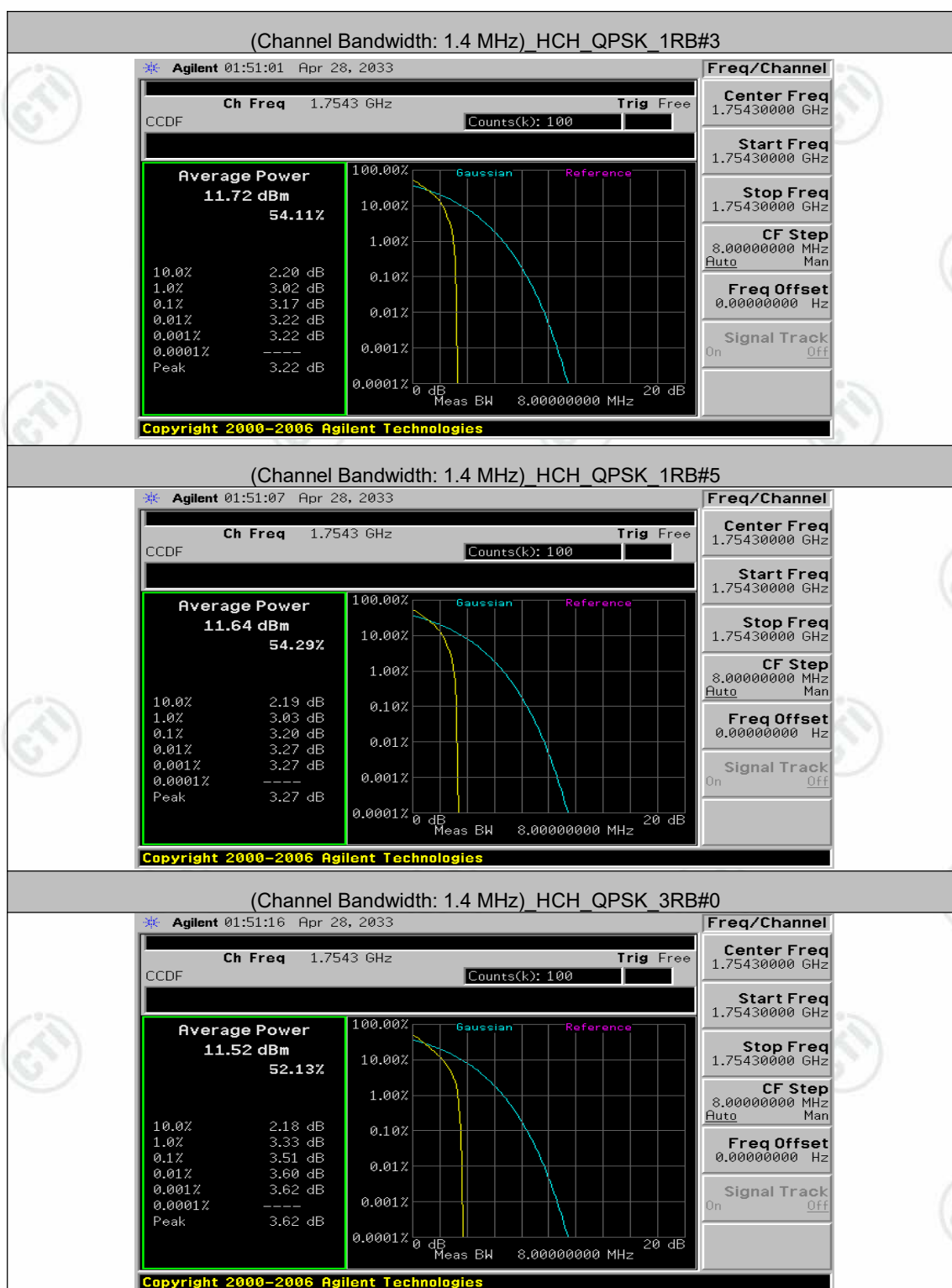




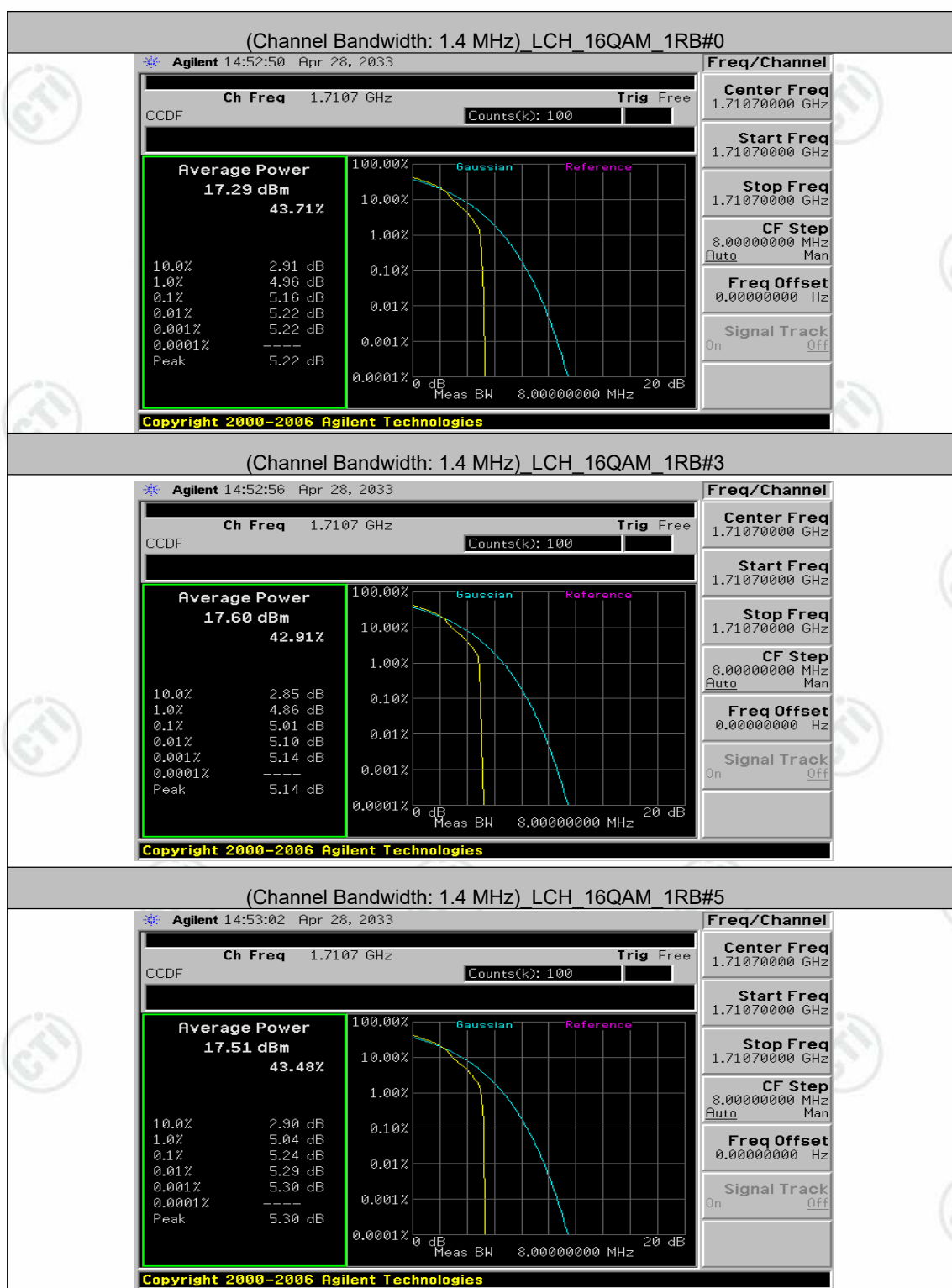










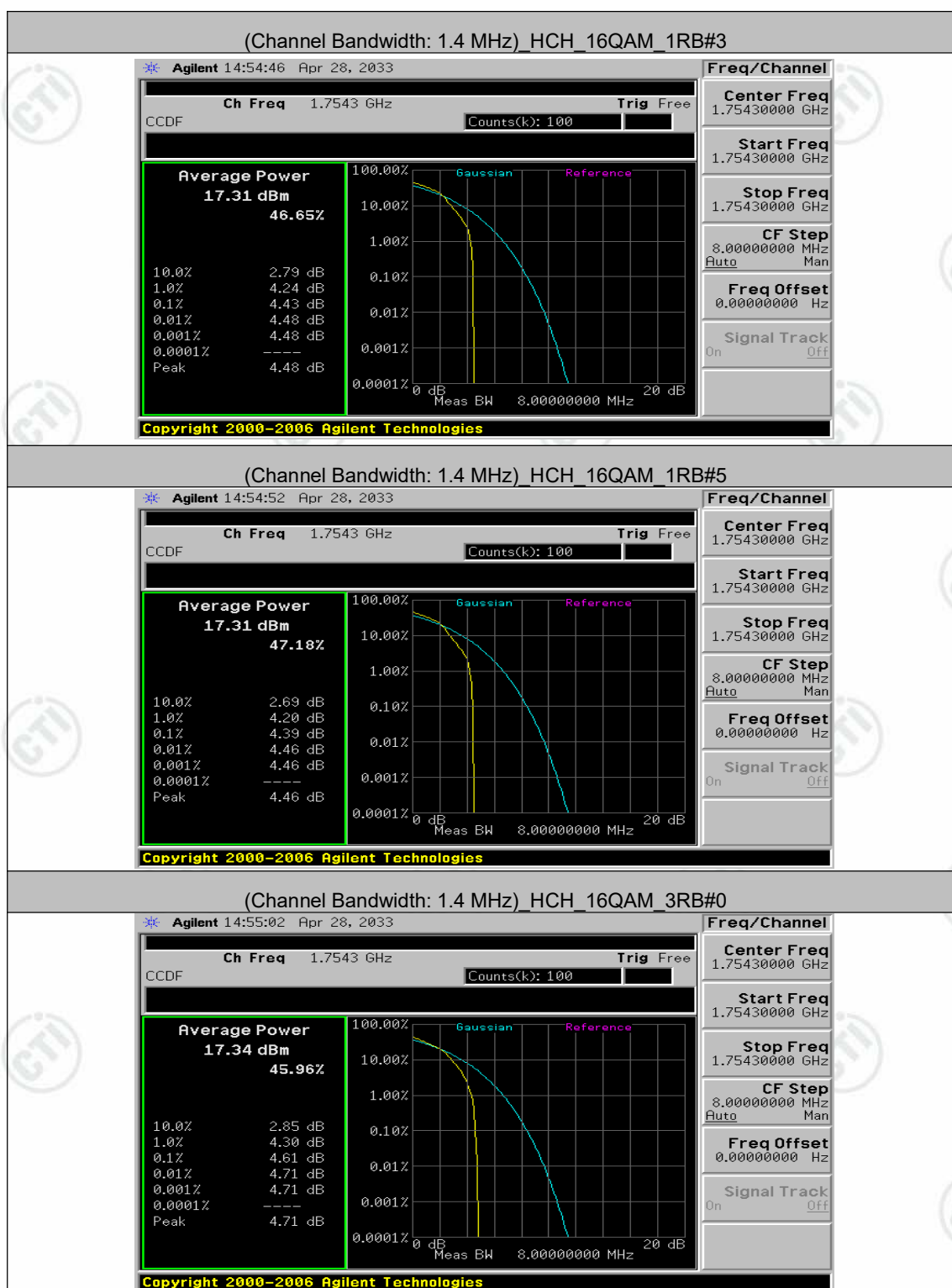


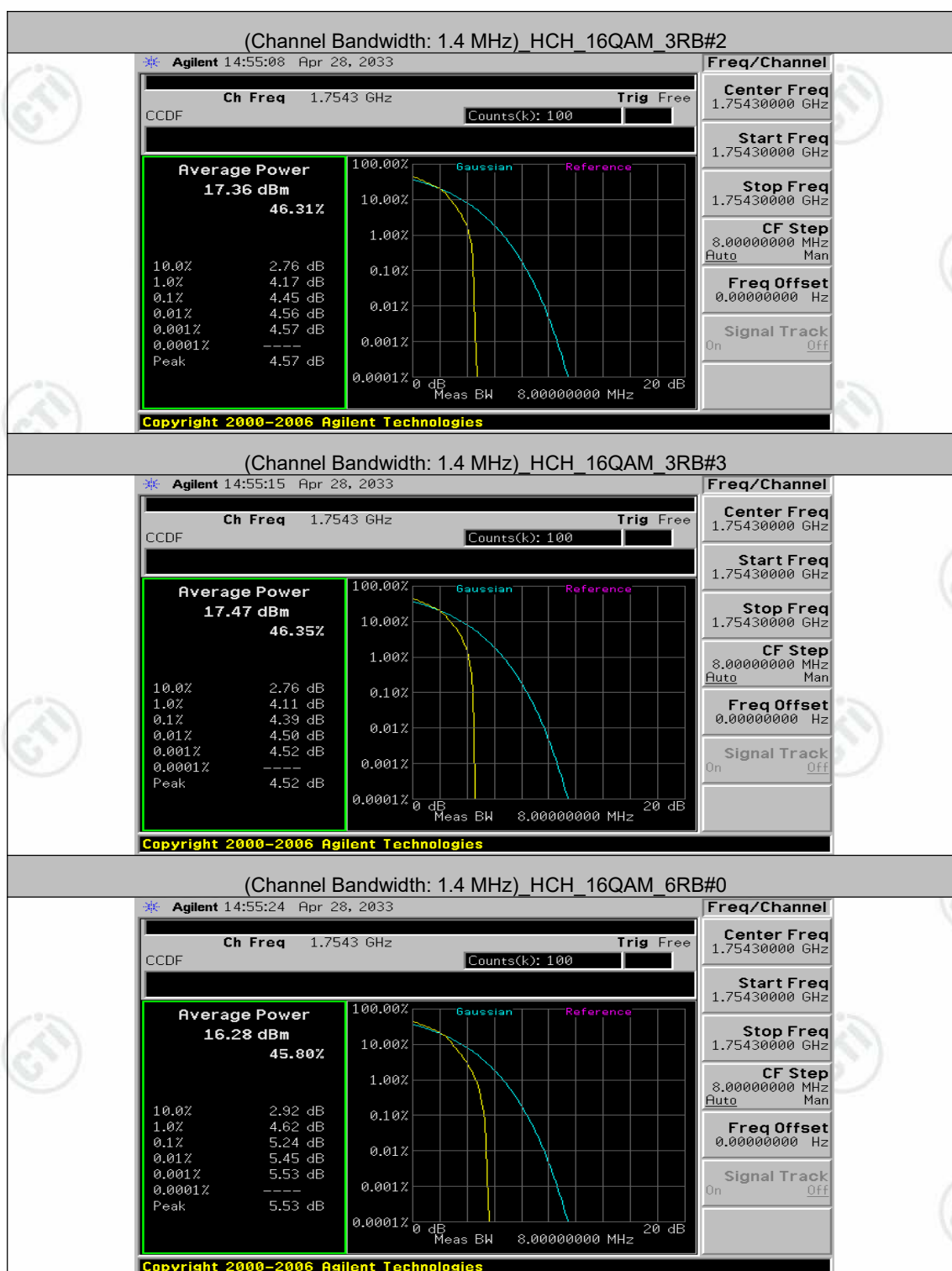












**LTE Band 4 Channel Bandwidth: 3 MHz**

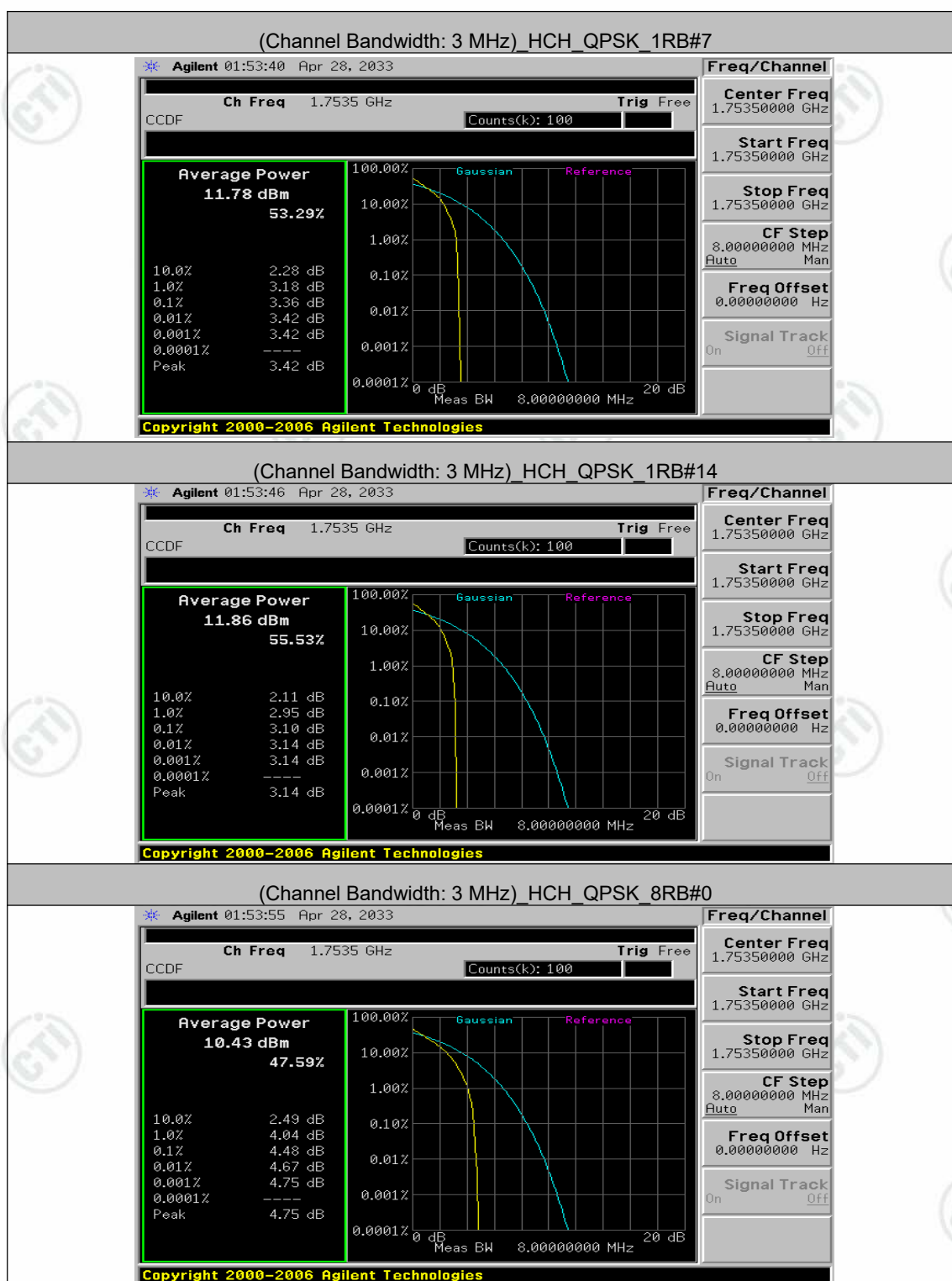




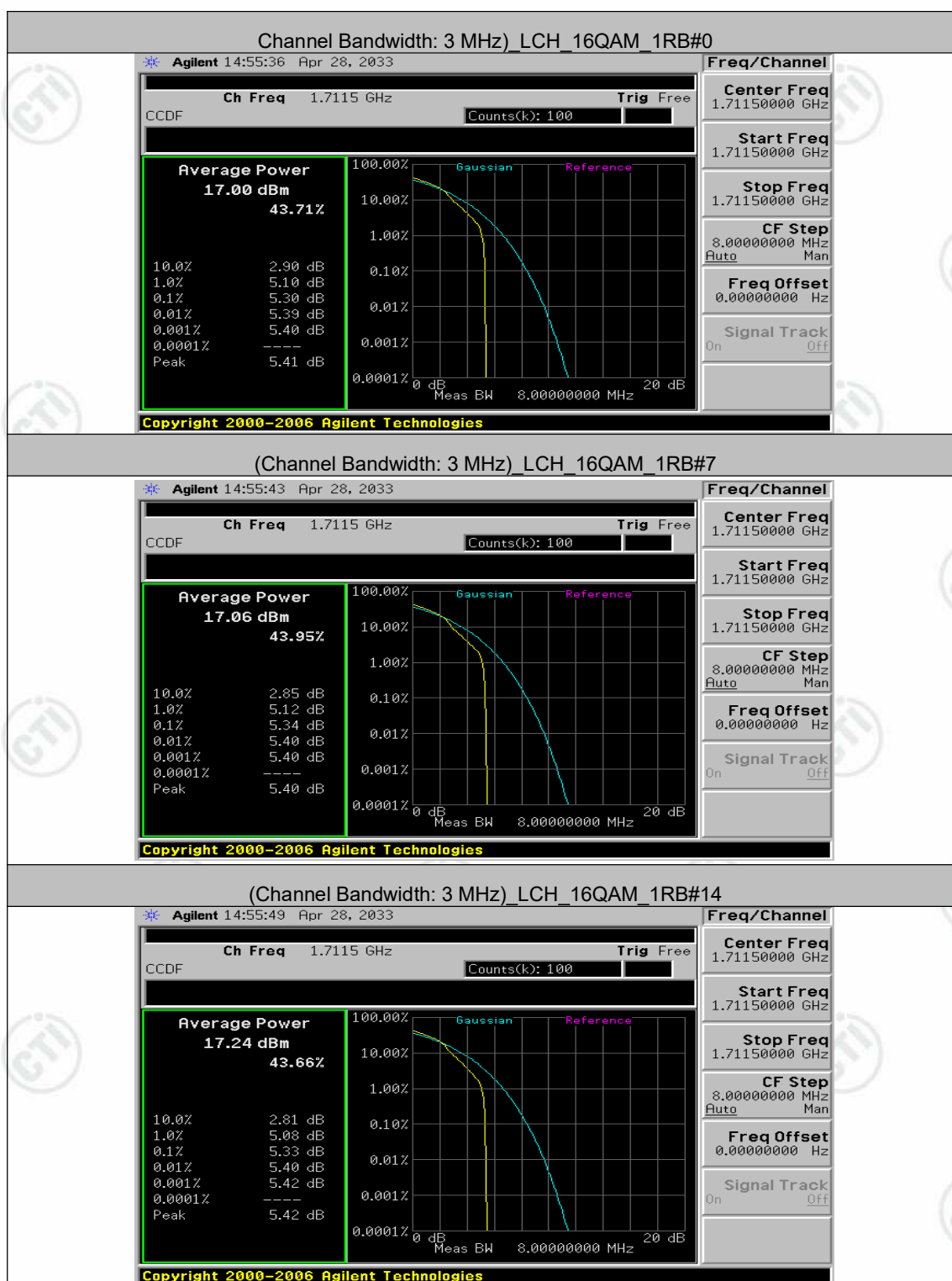




















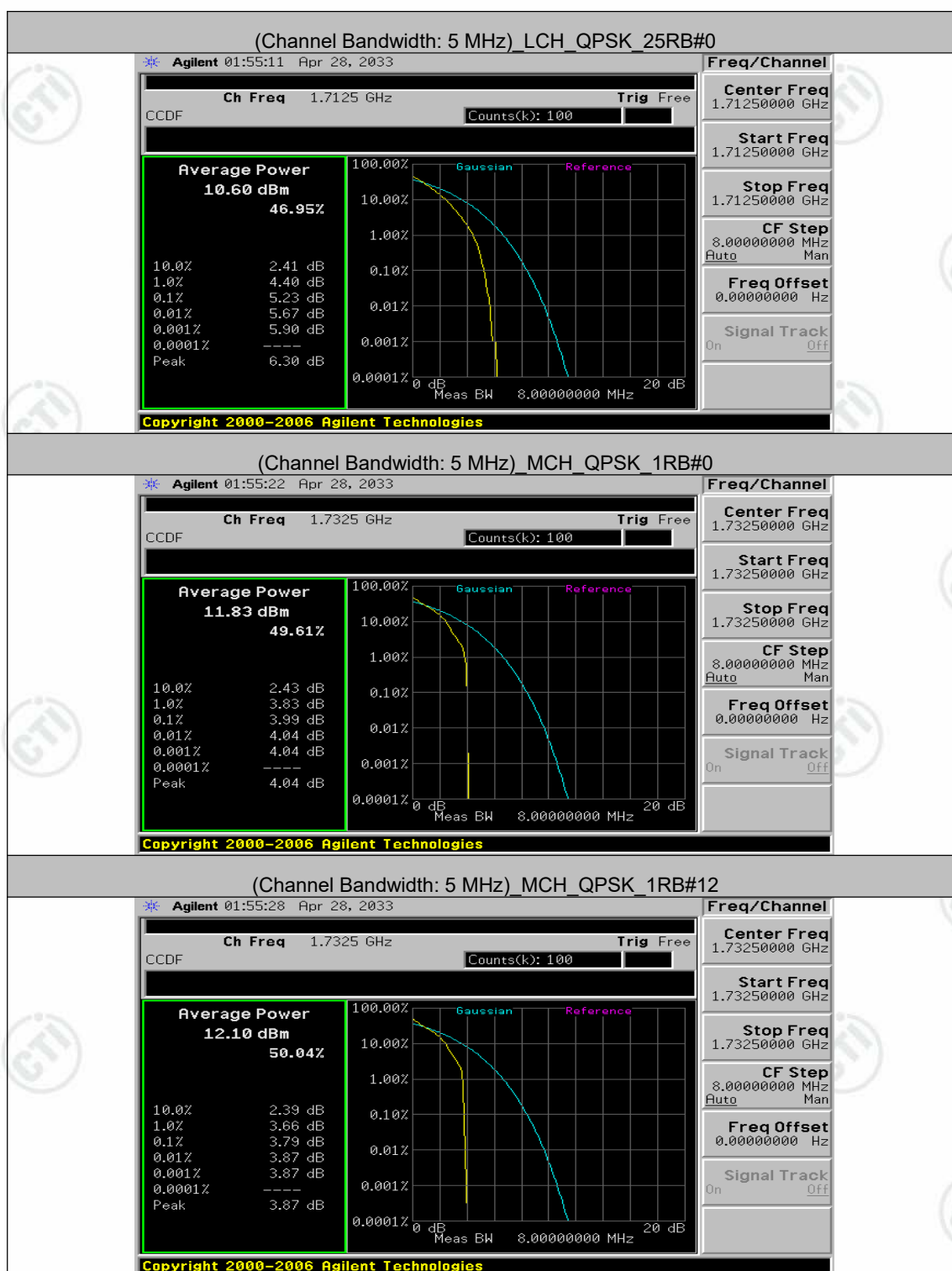


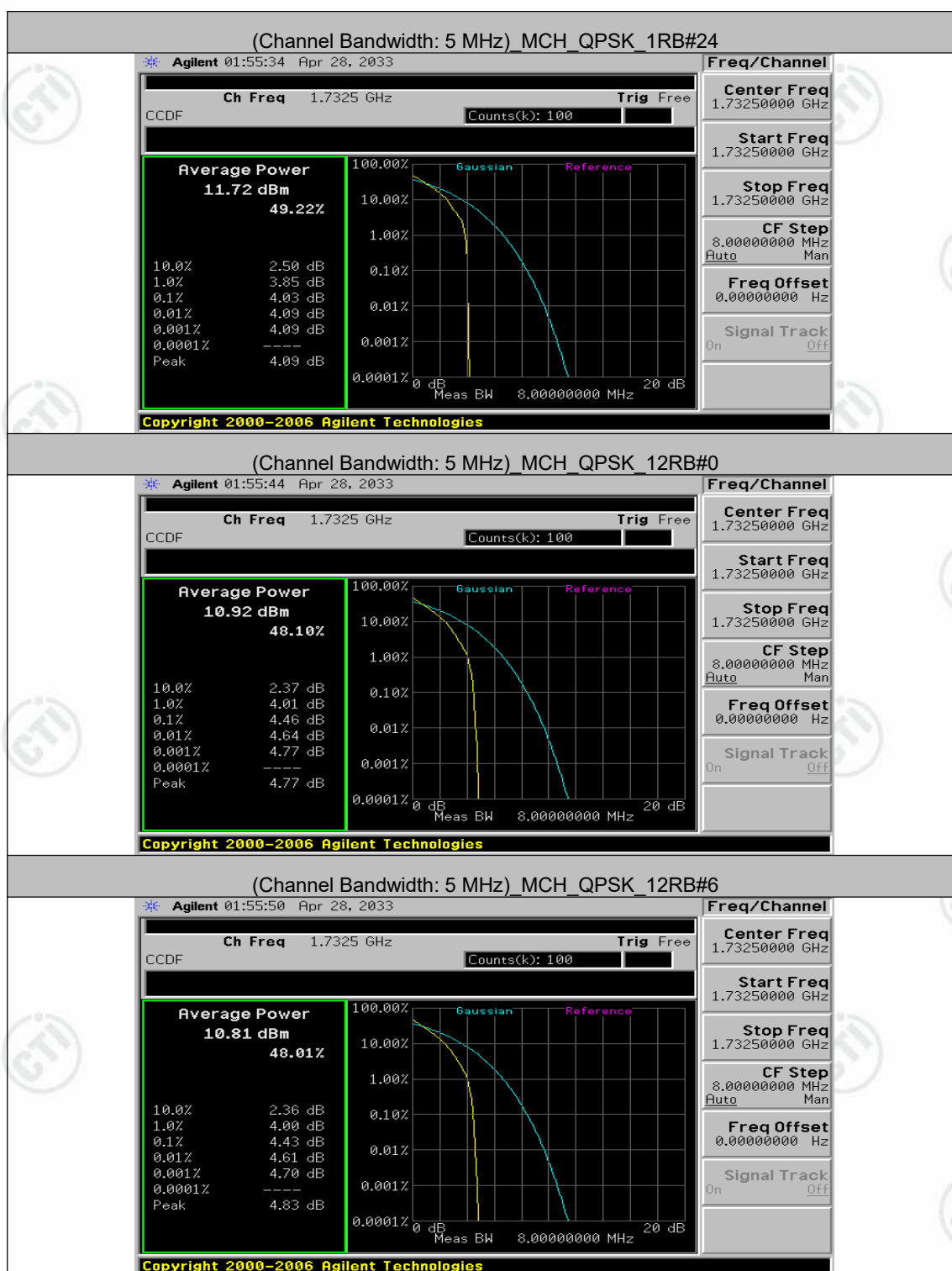


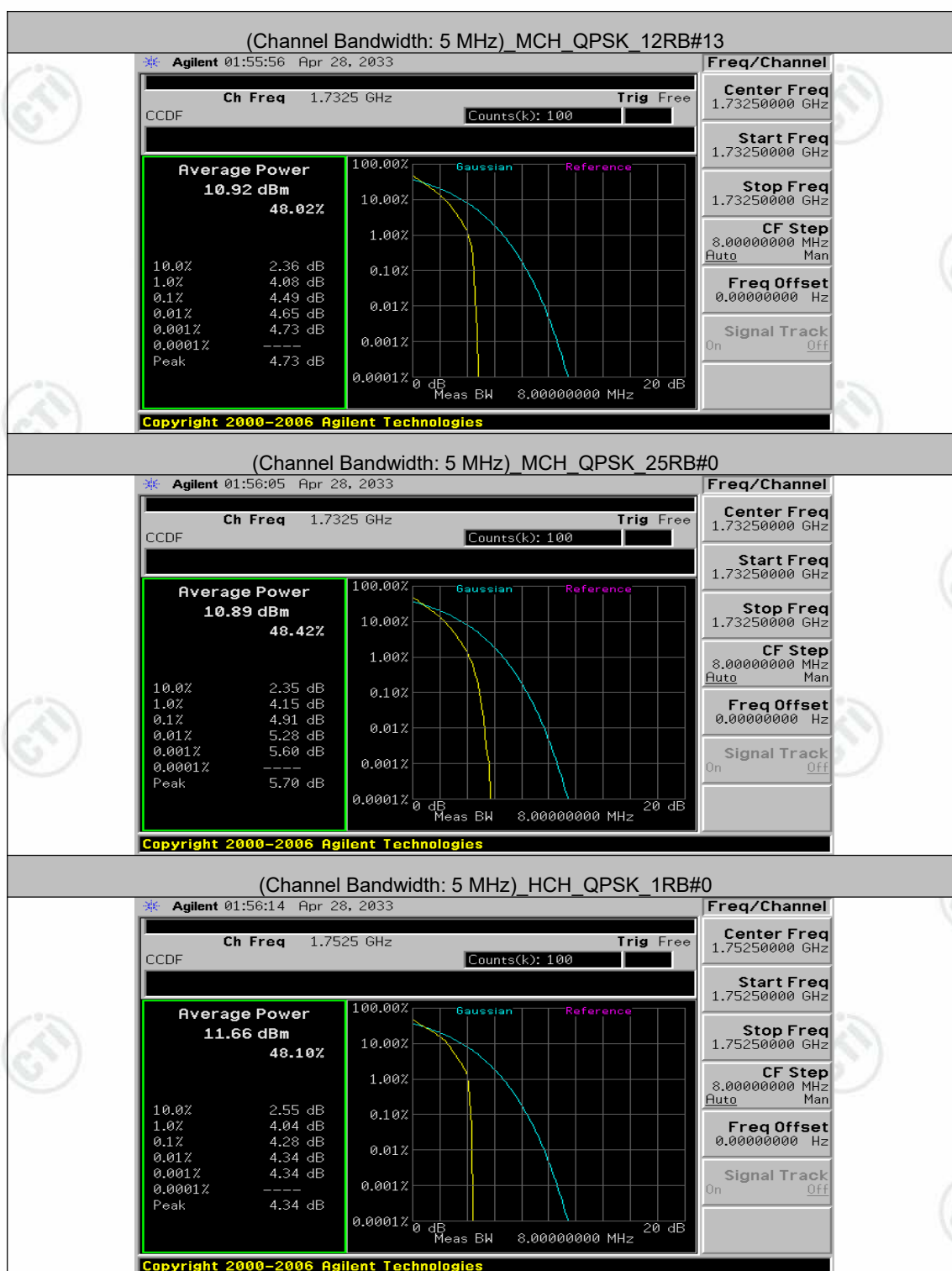
**LTE Band 4 Channel Bandwidth: 5 MHz**

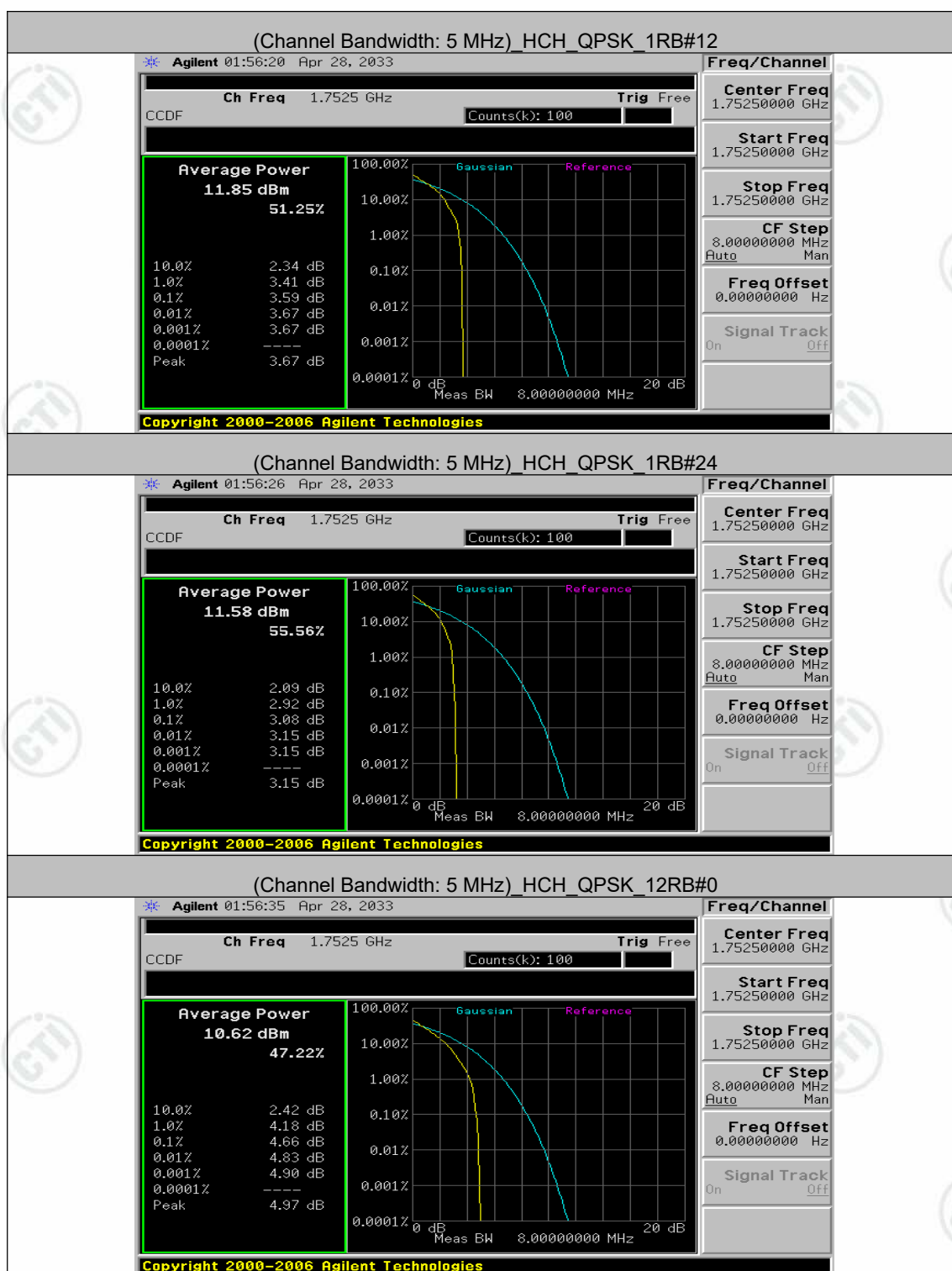


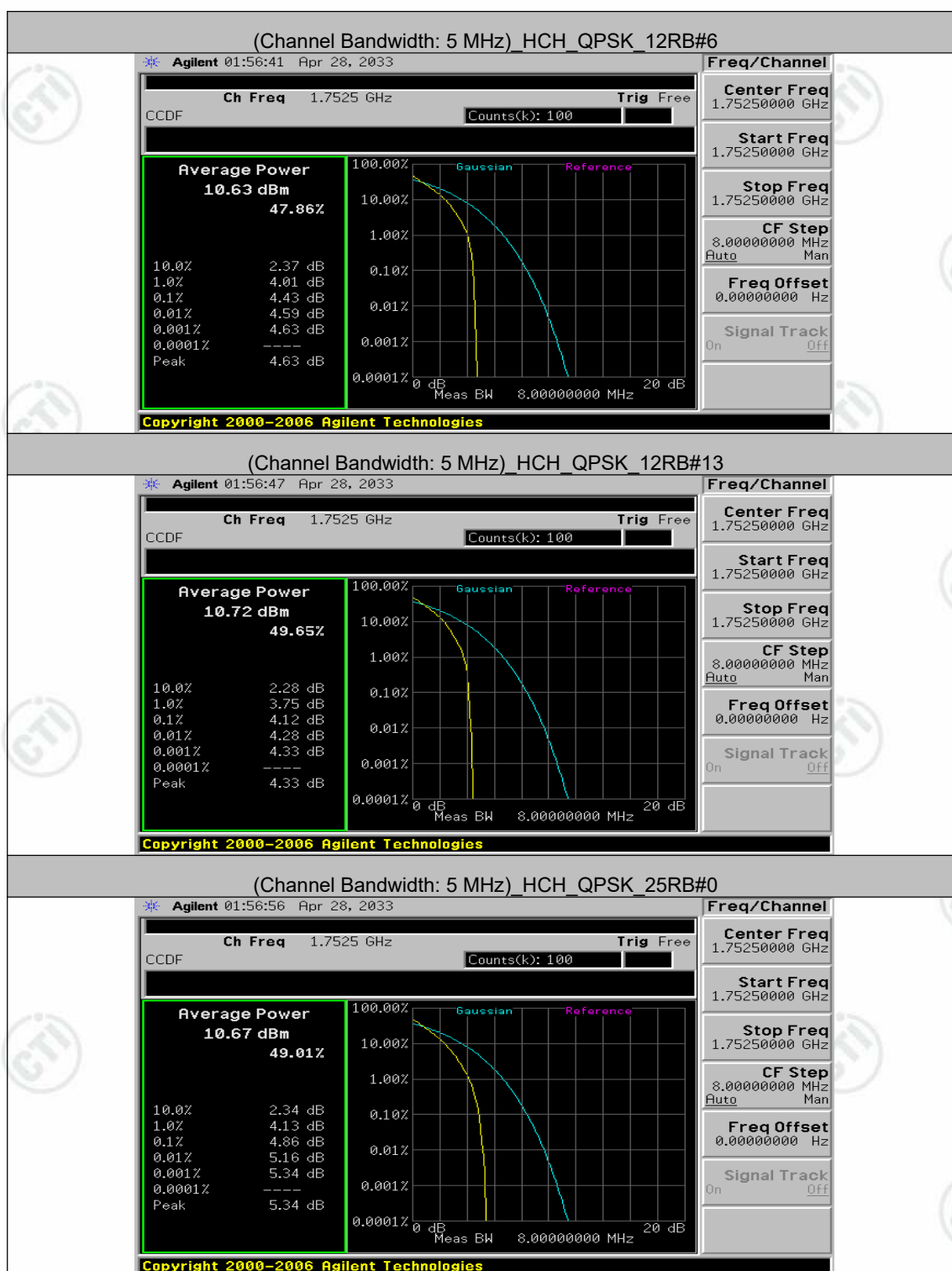


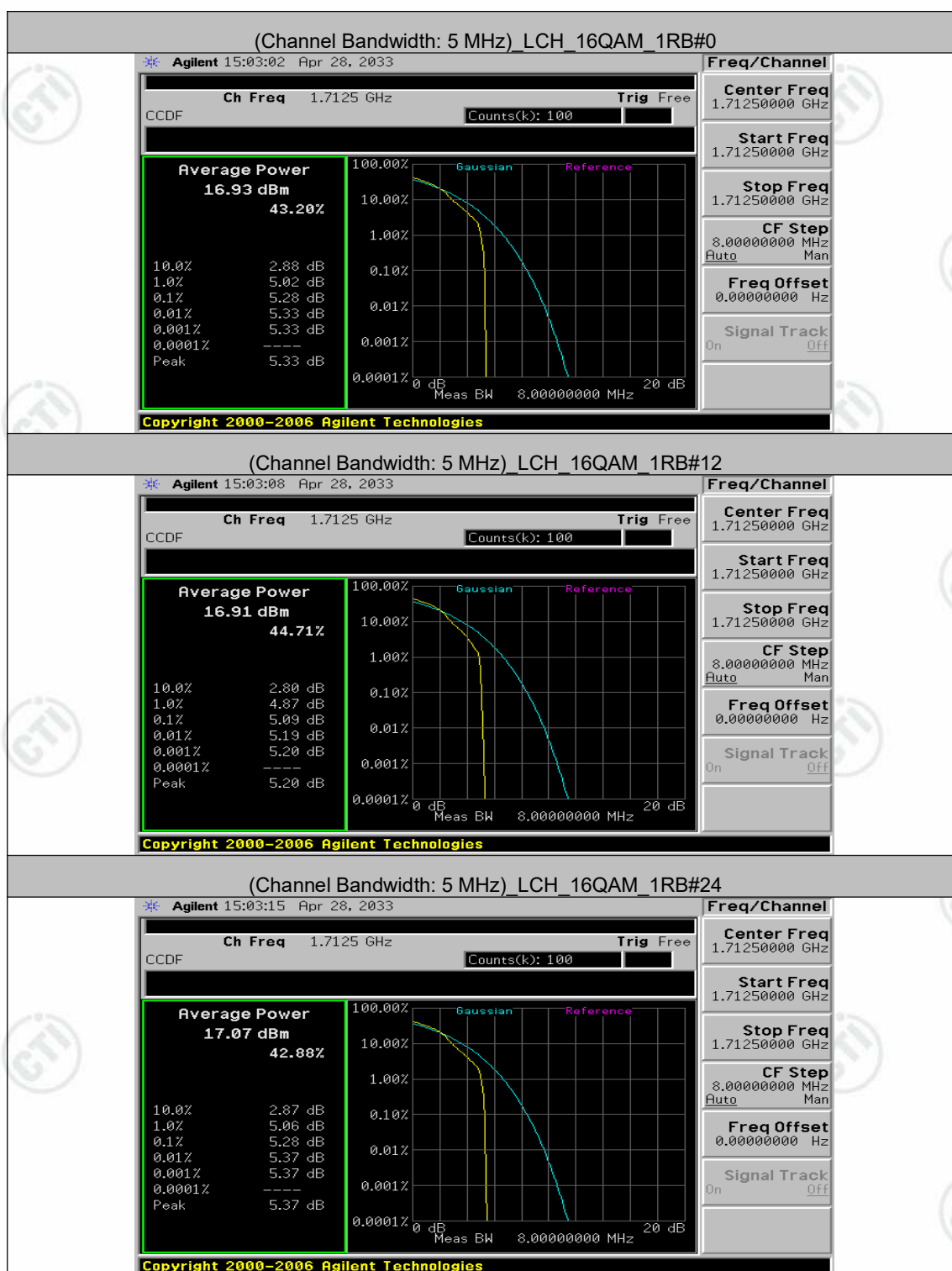


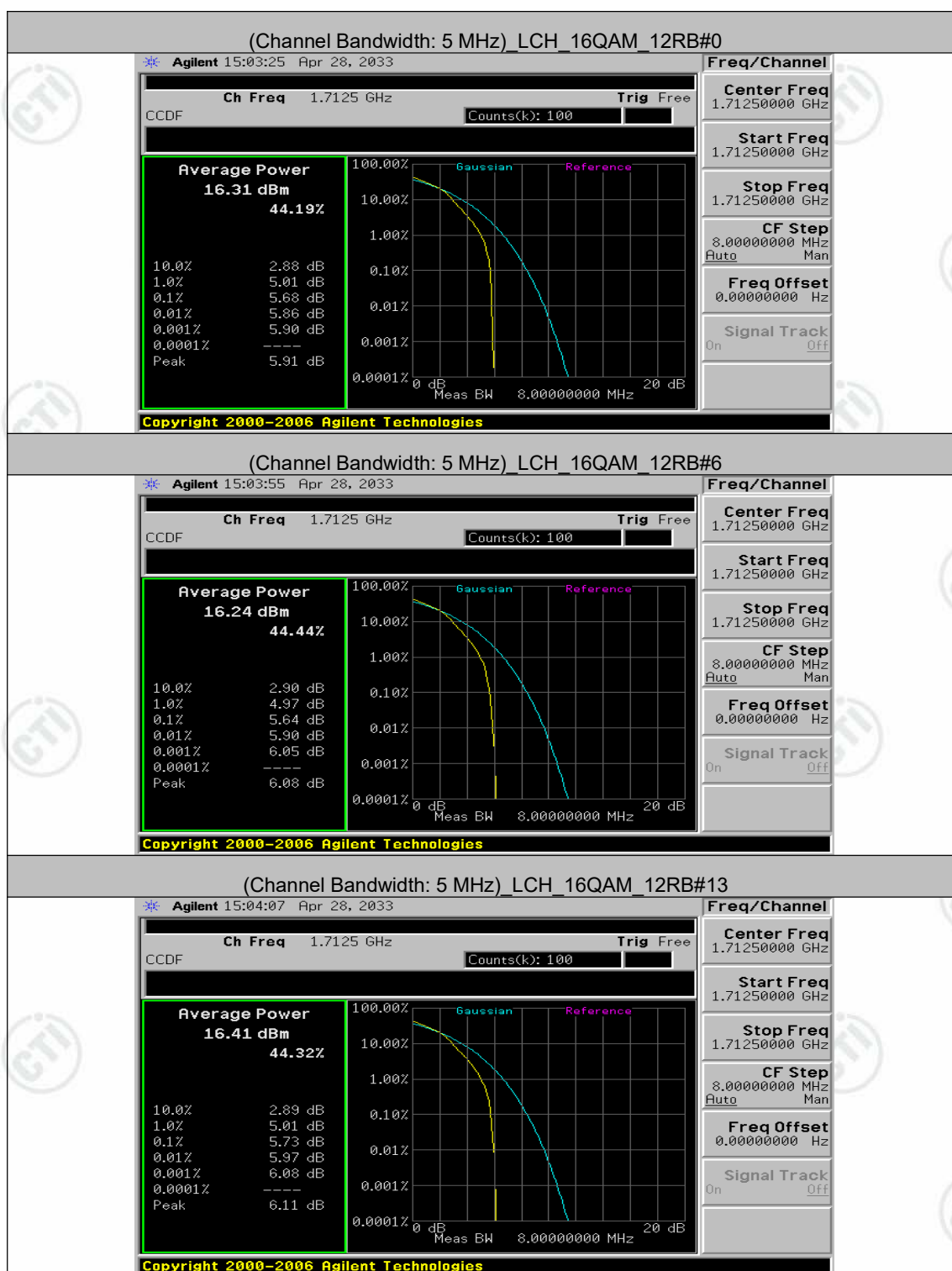


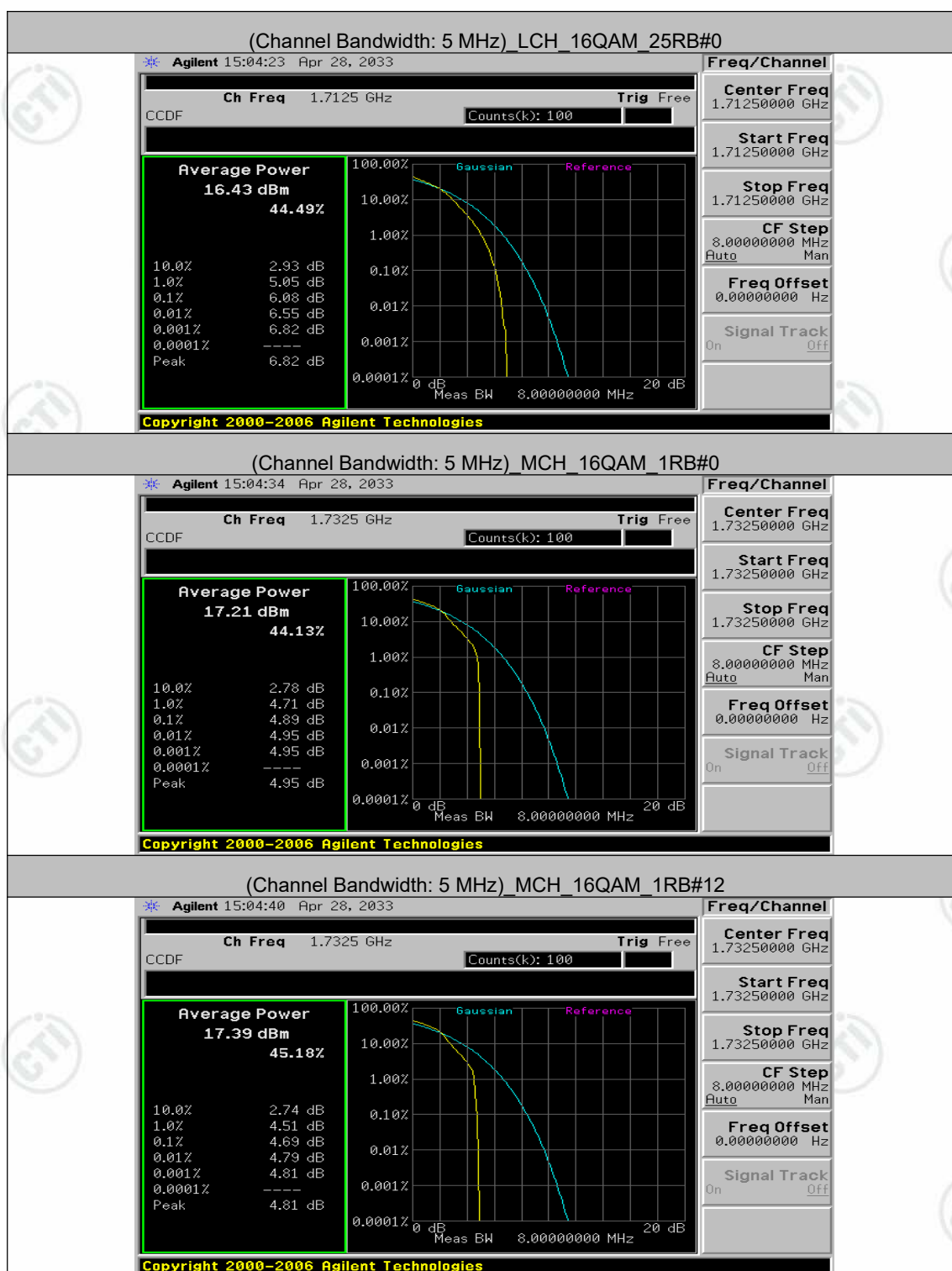


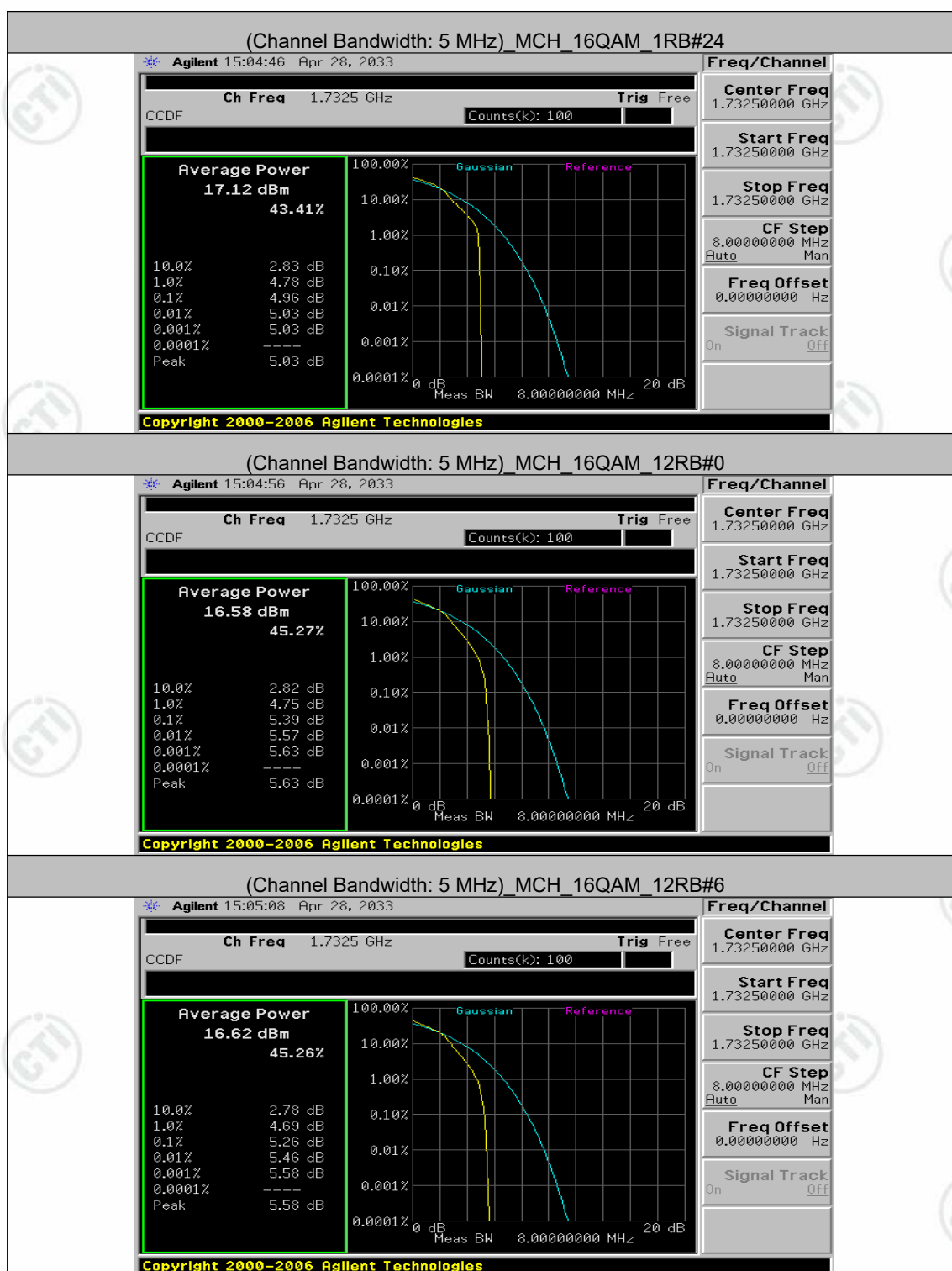


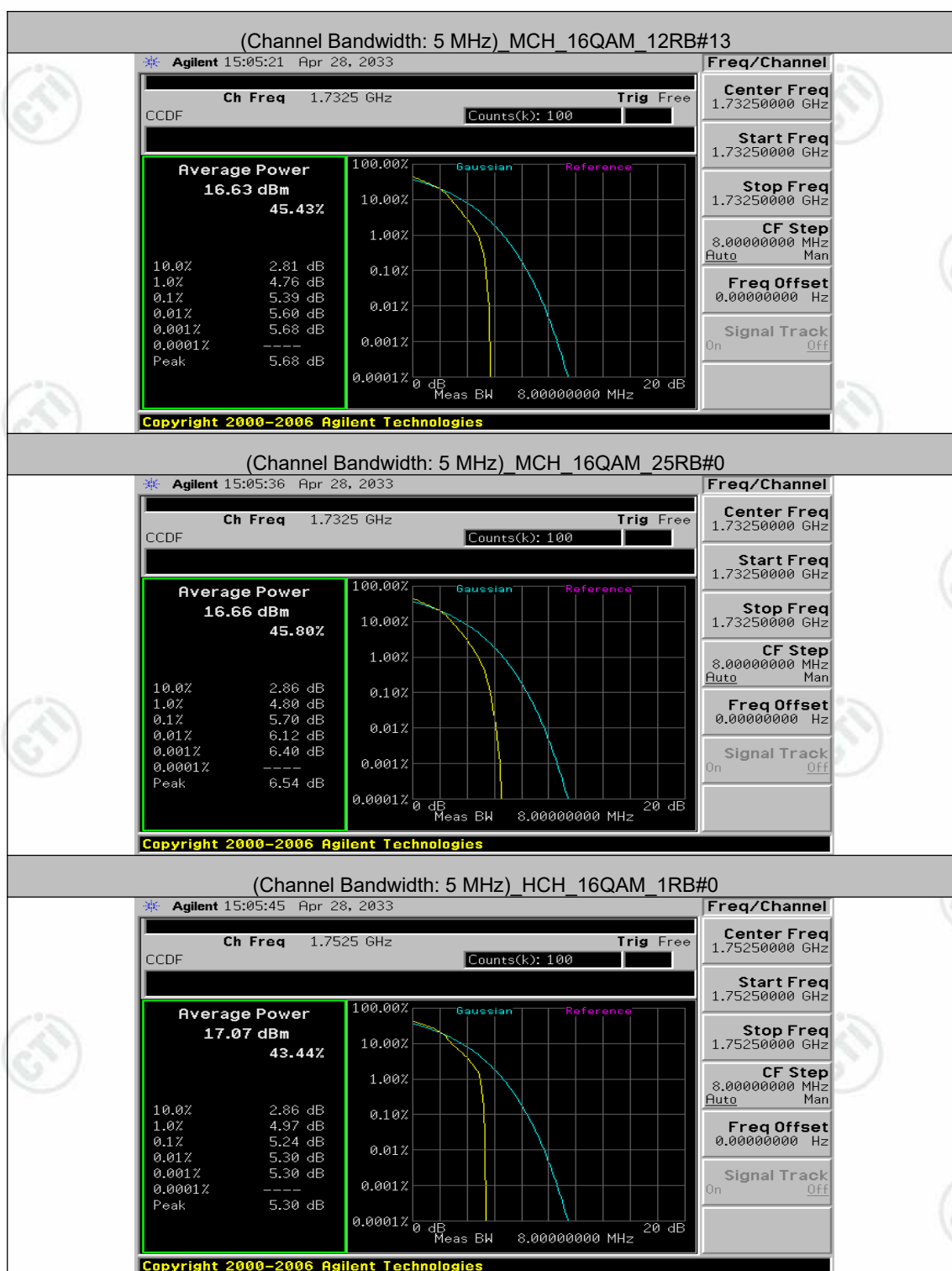


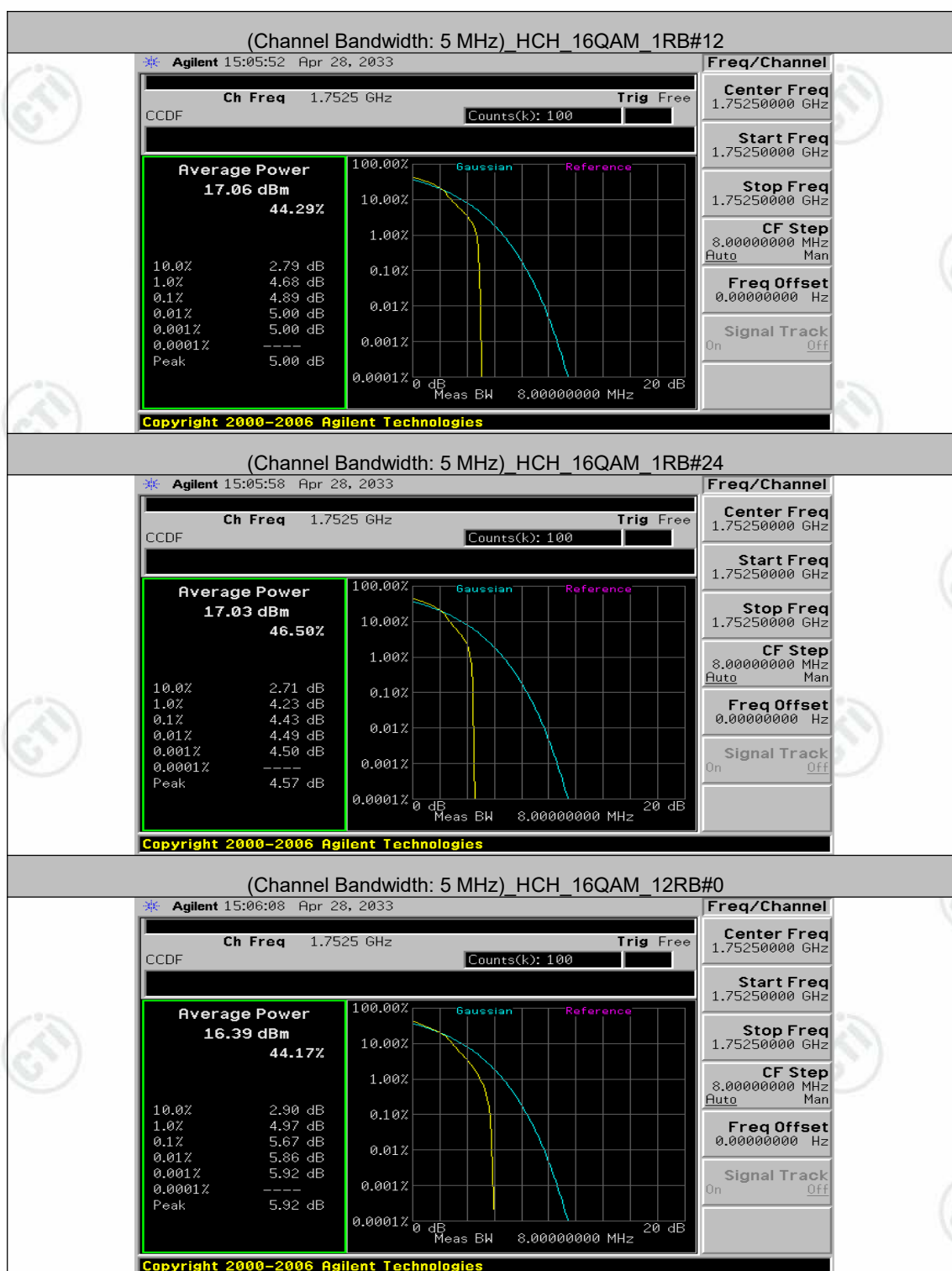


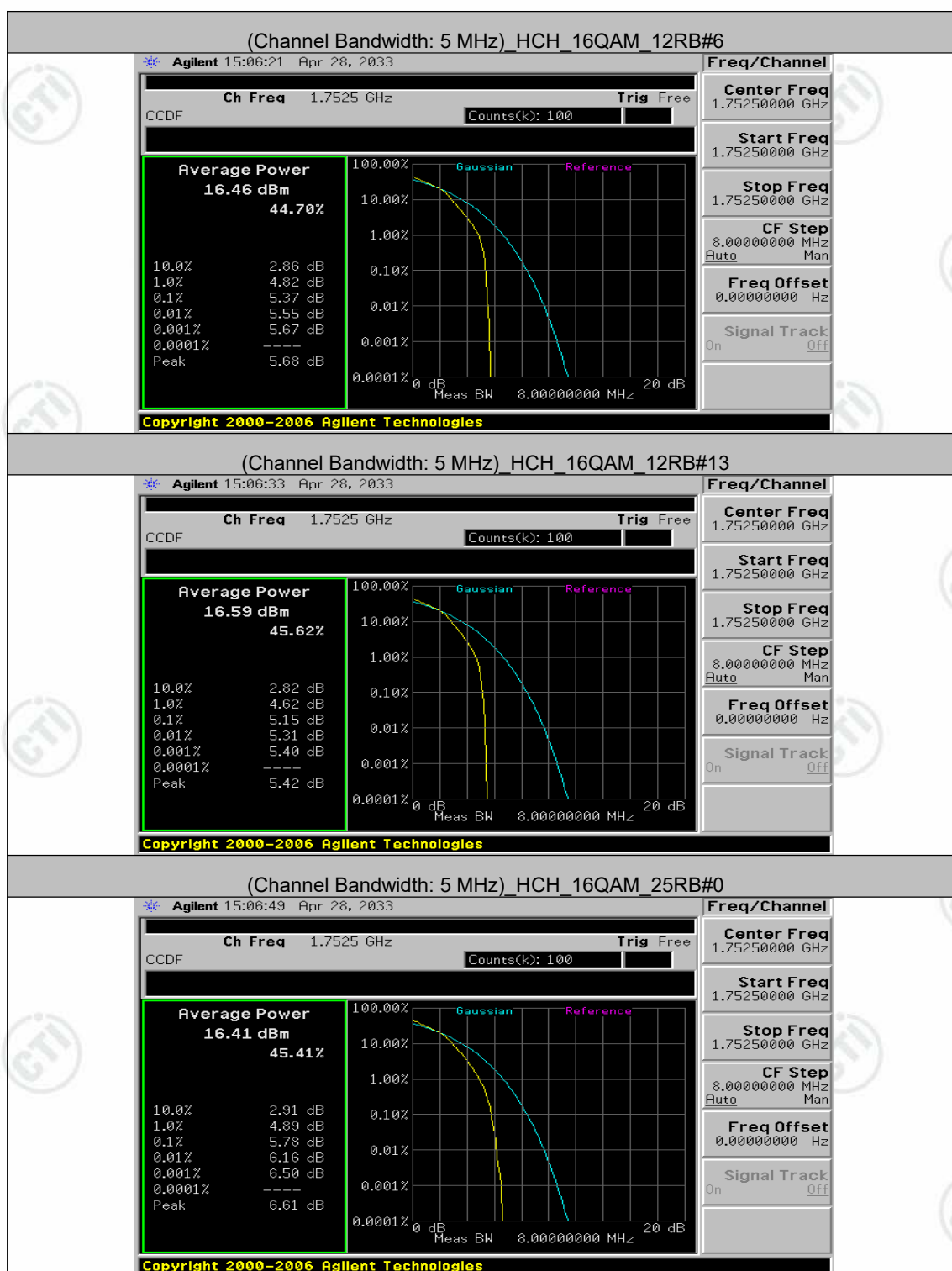






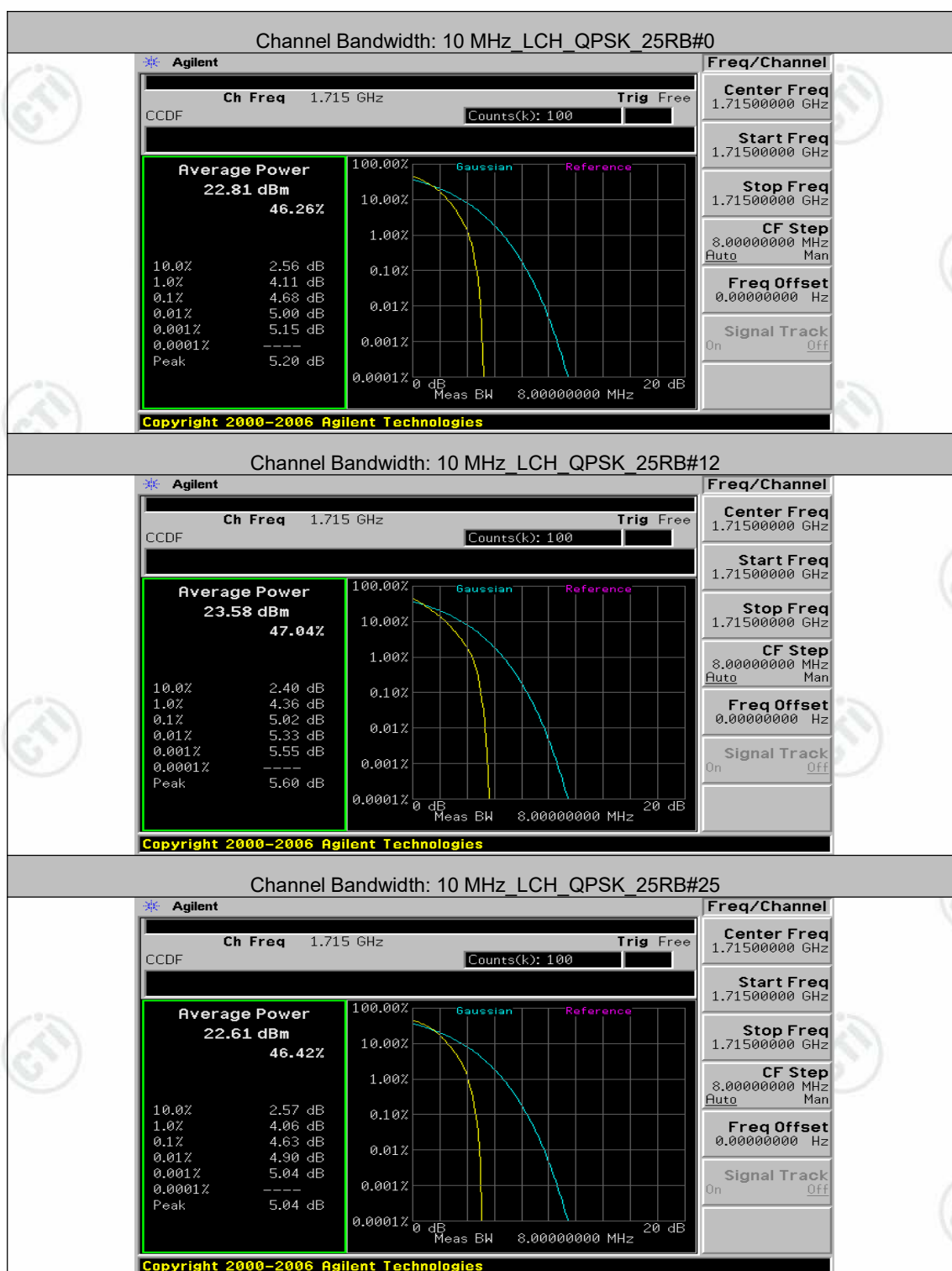




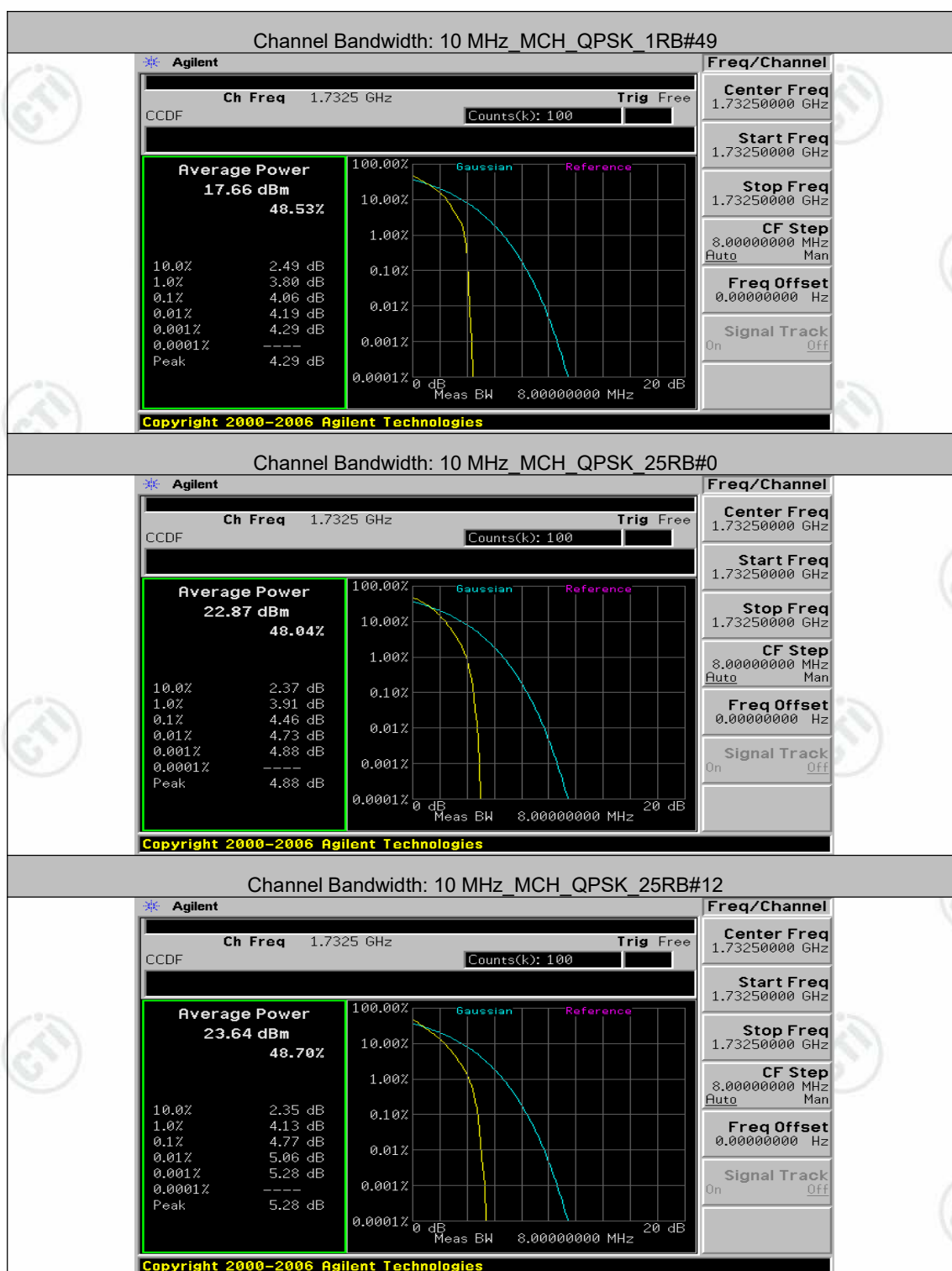


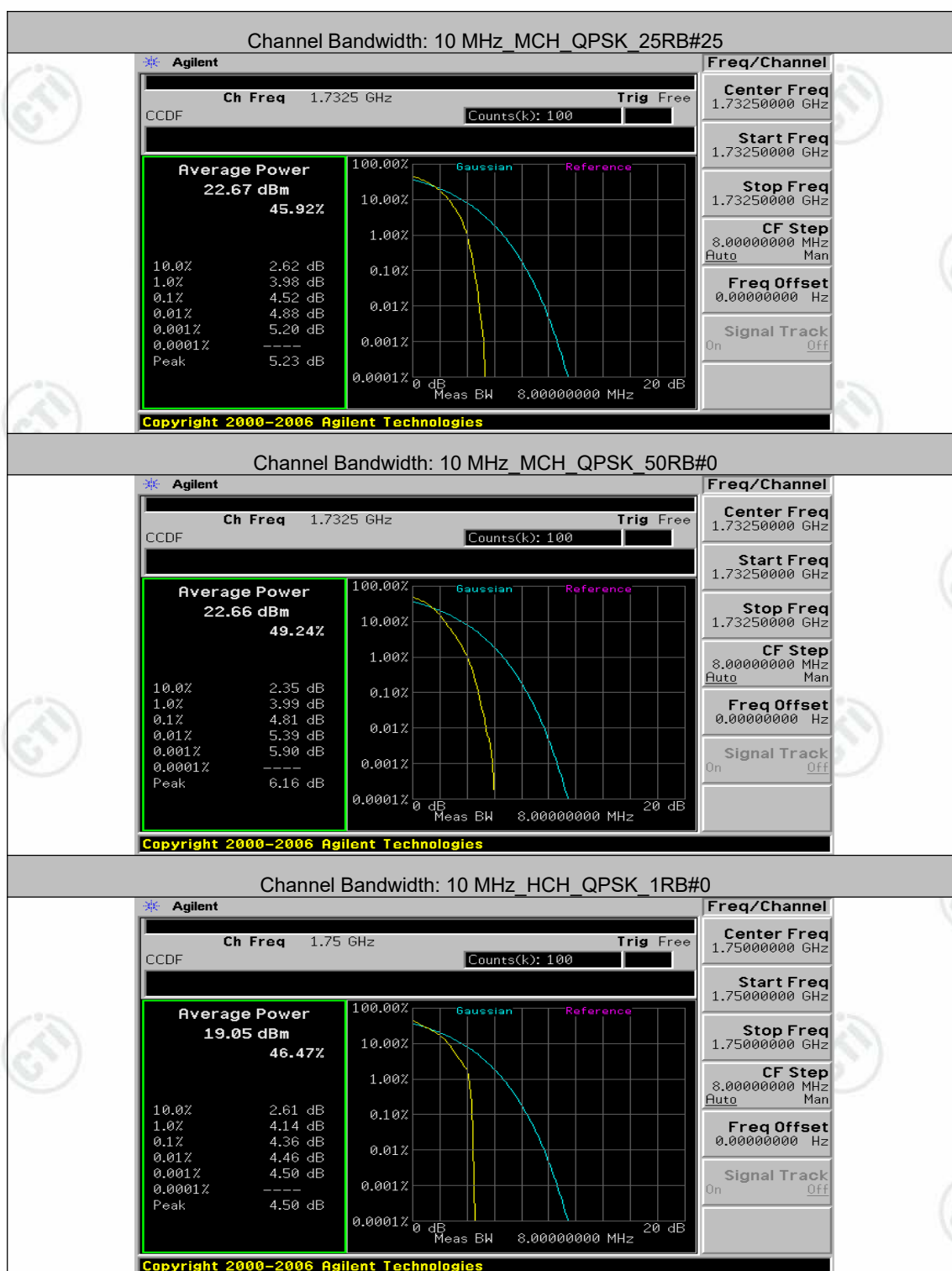
LTE Band 4 Channel Bandwidth: 10 MHz



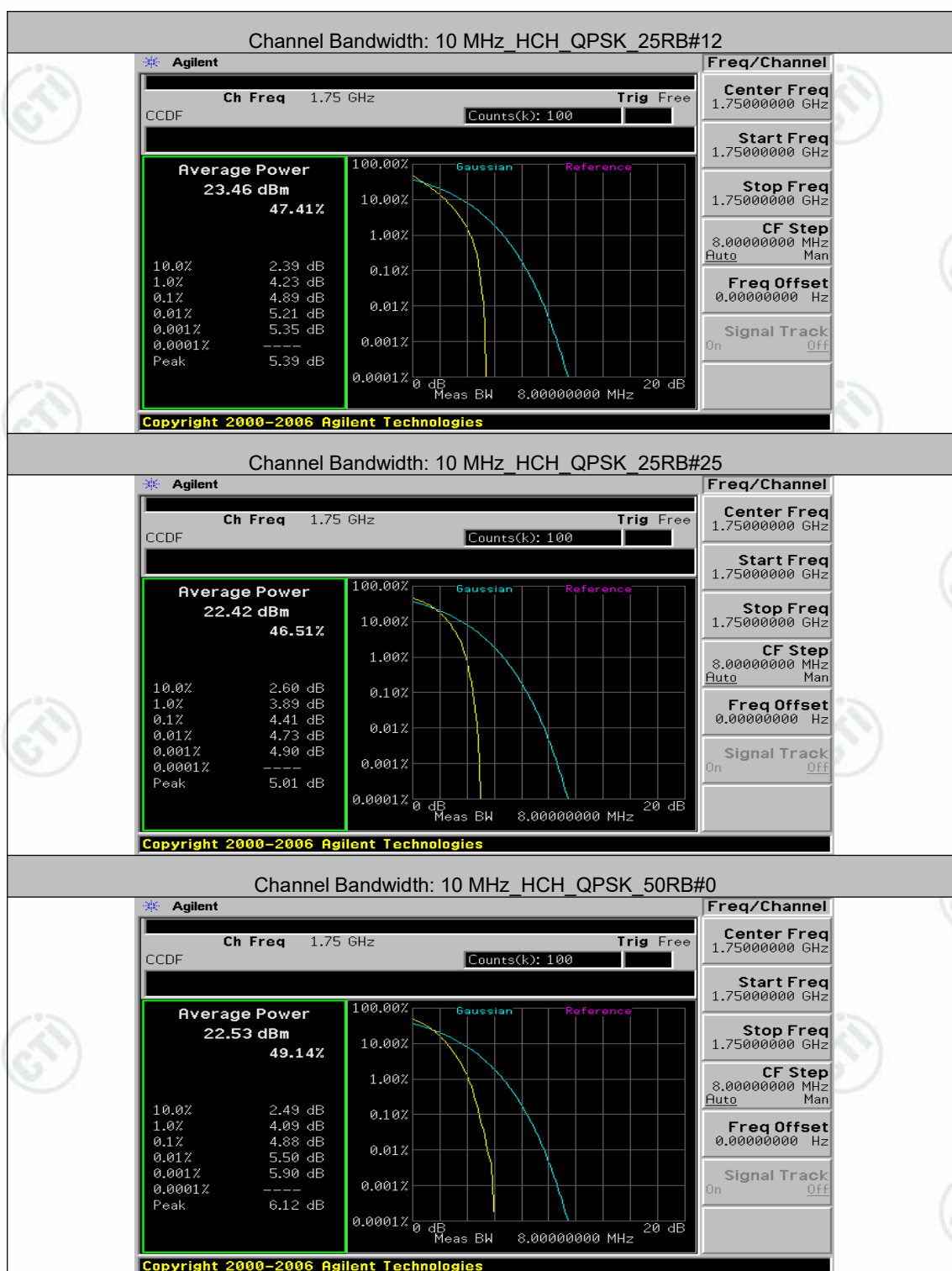




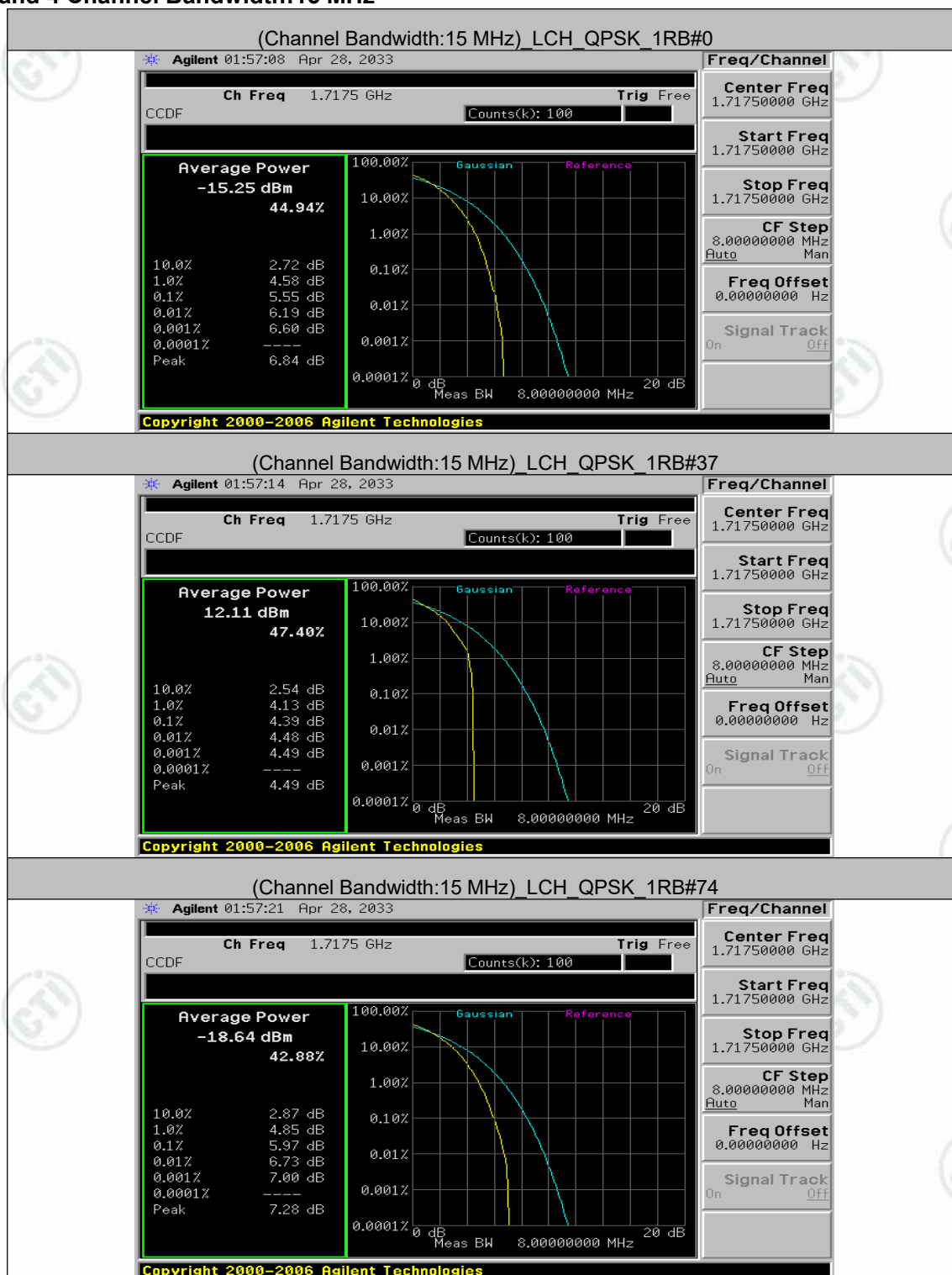


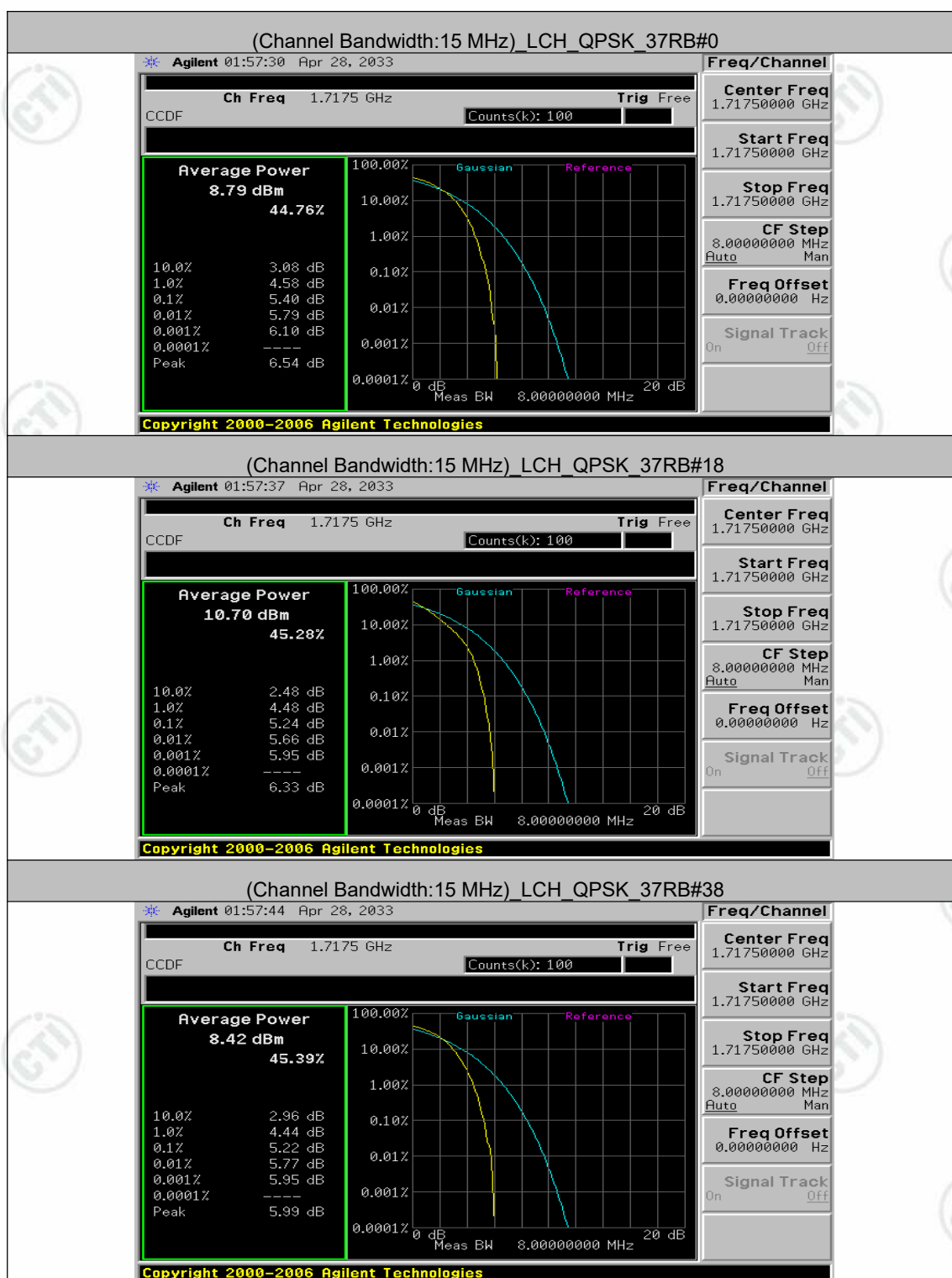


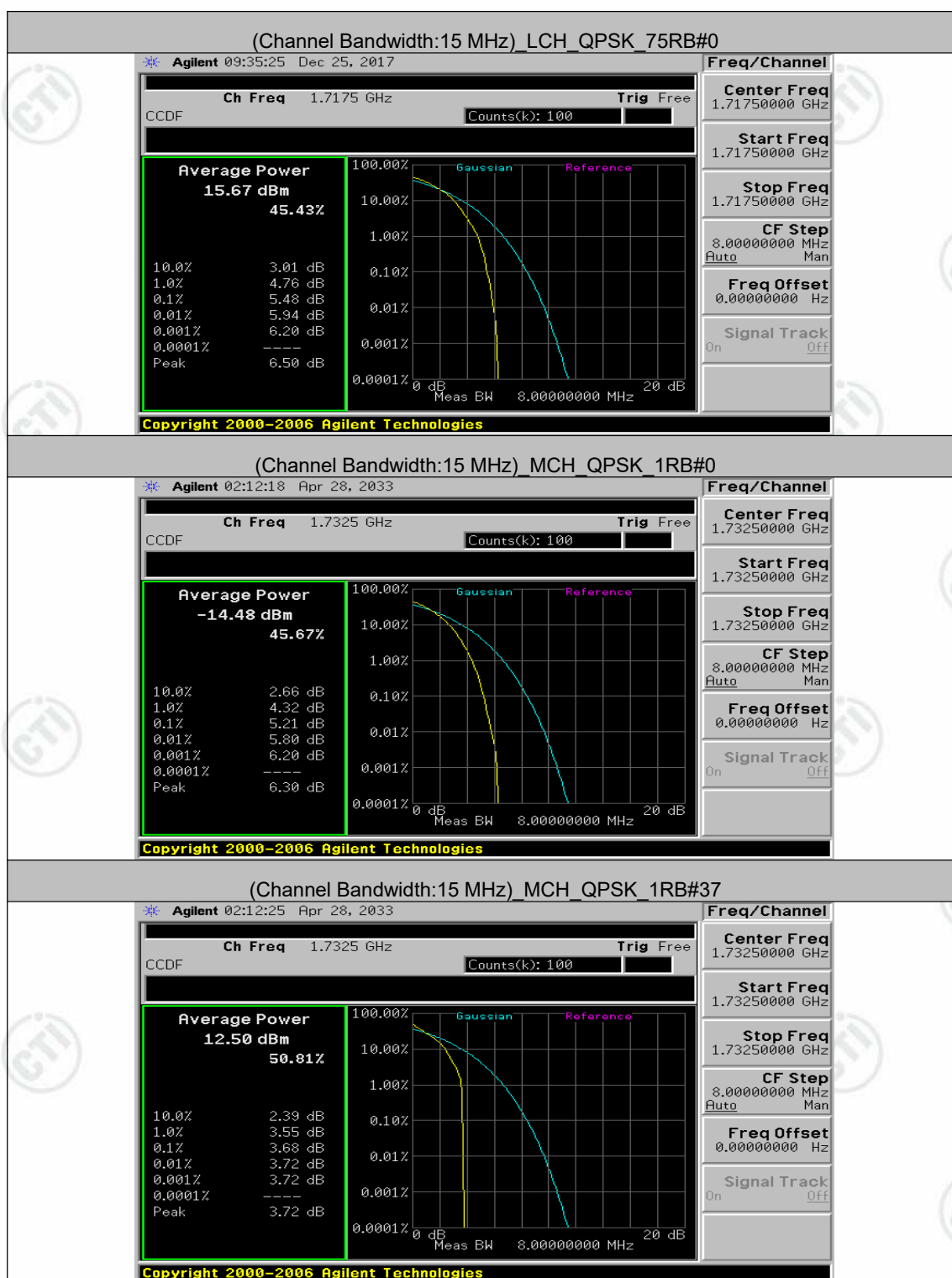


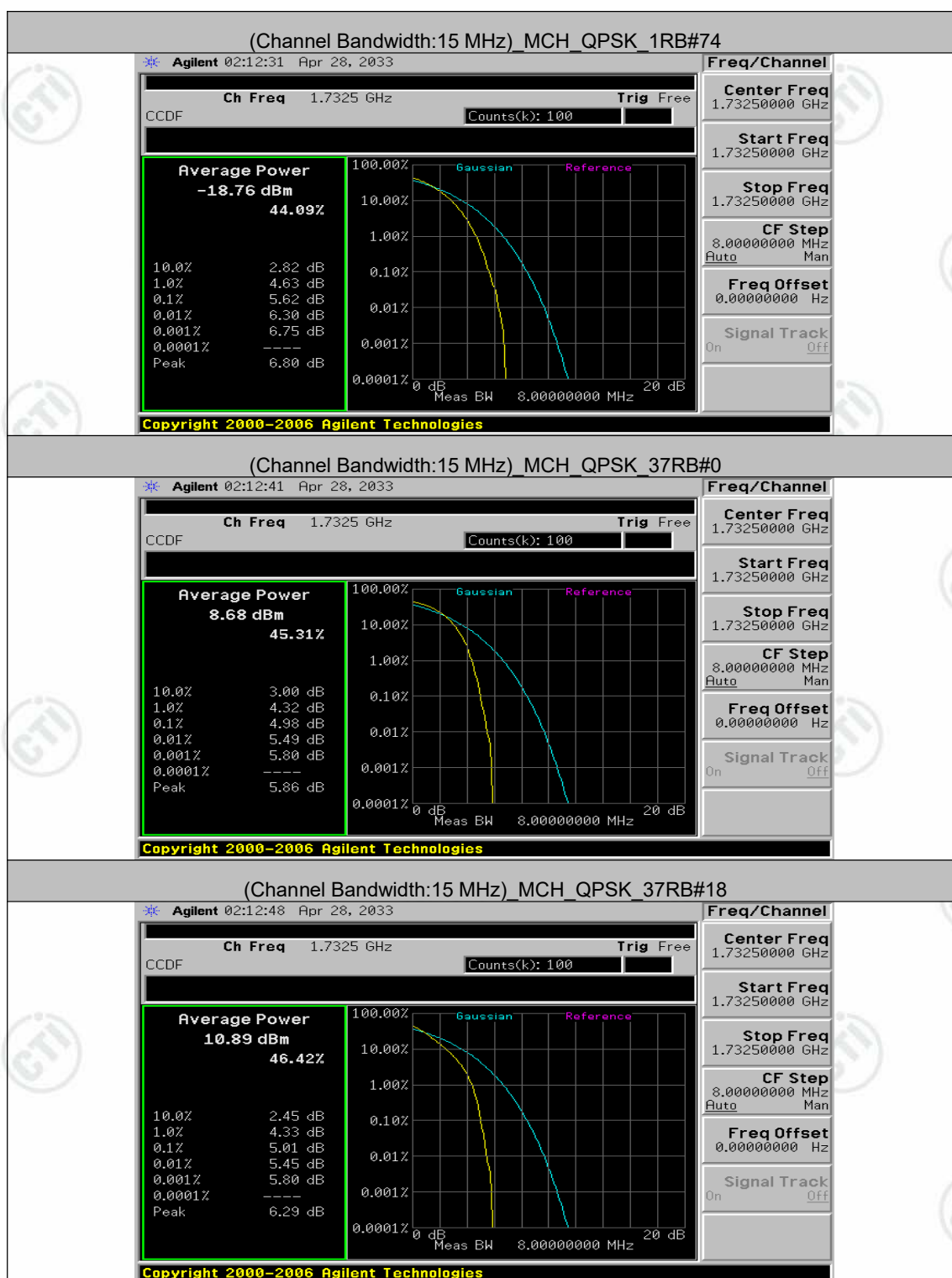


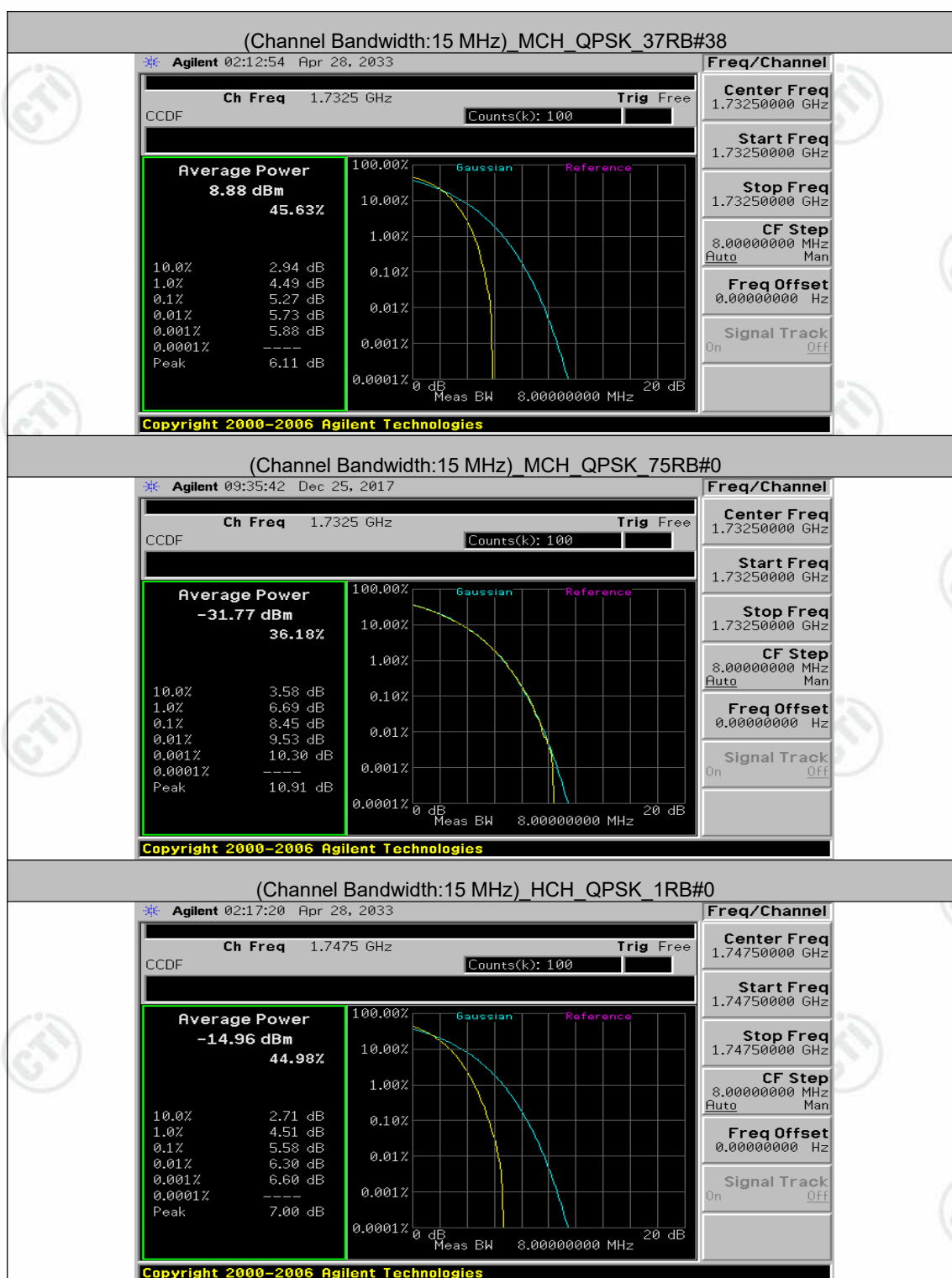
**LTE Band 4 Channel Bandwidth:15 MHz**

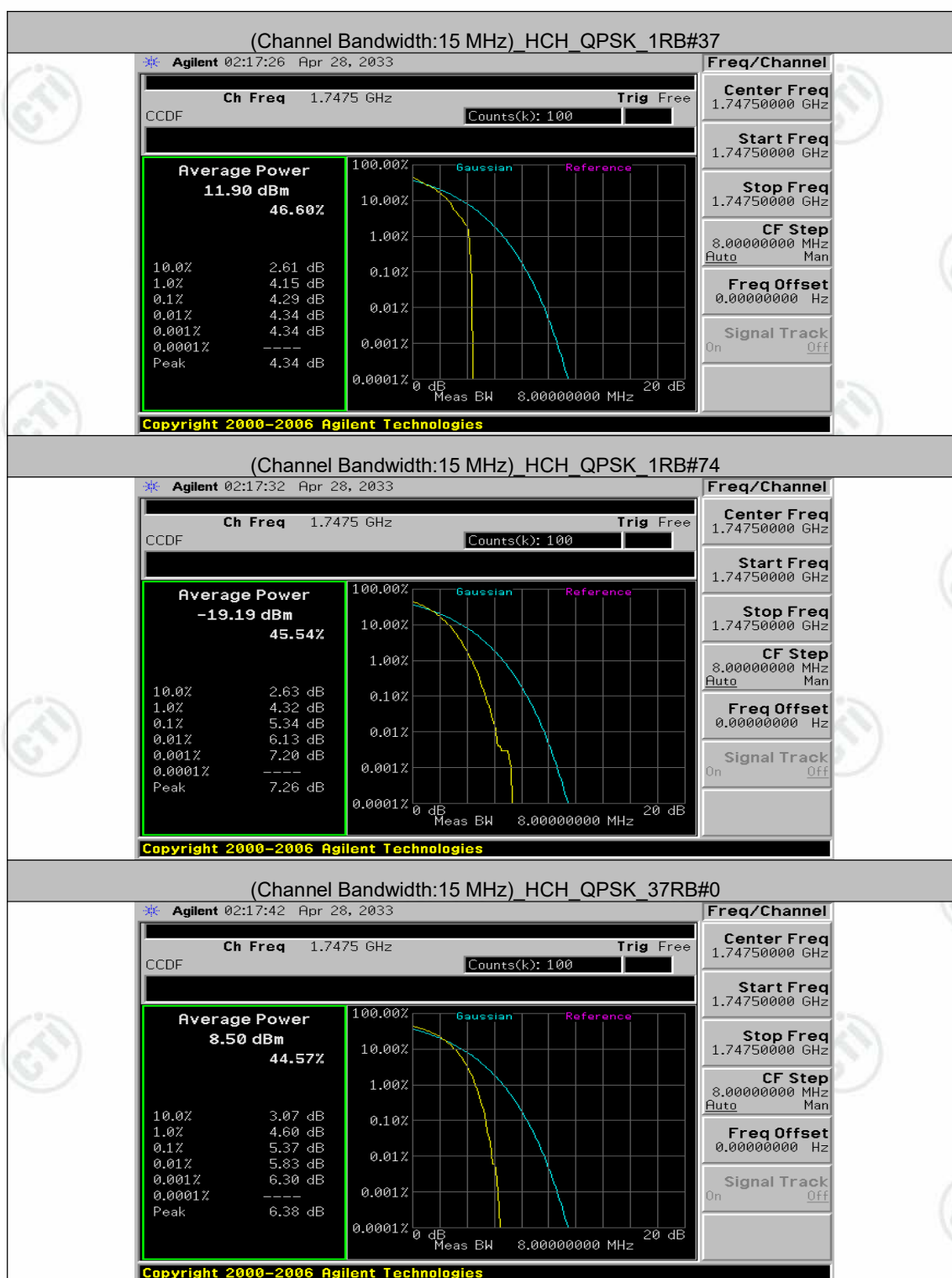


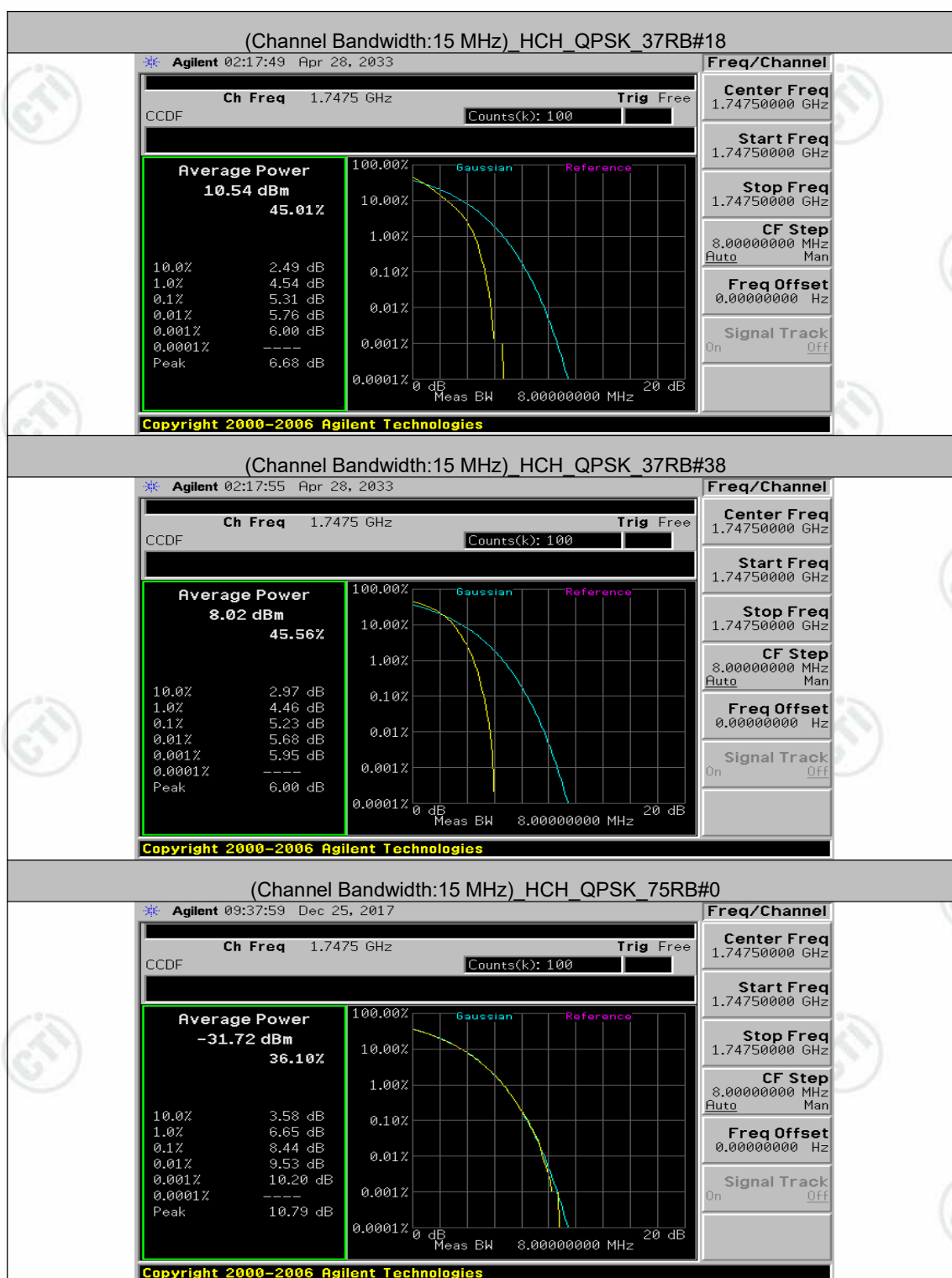






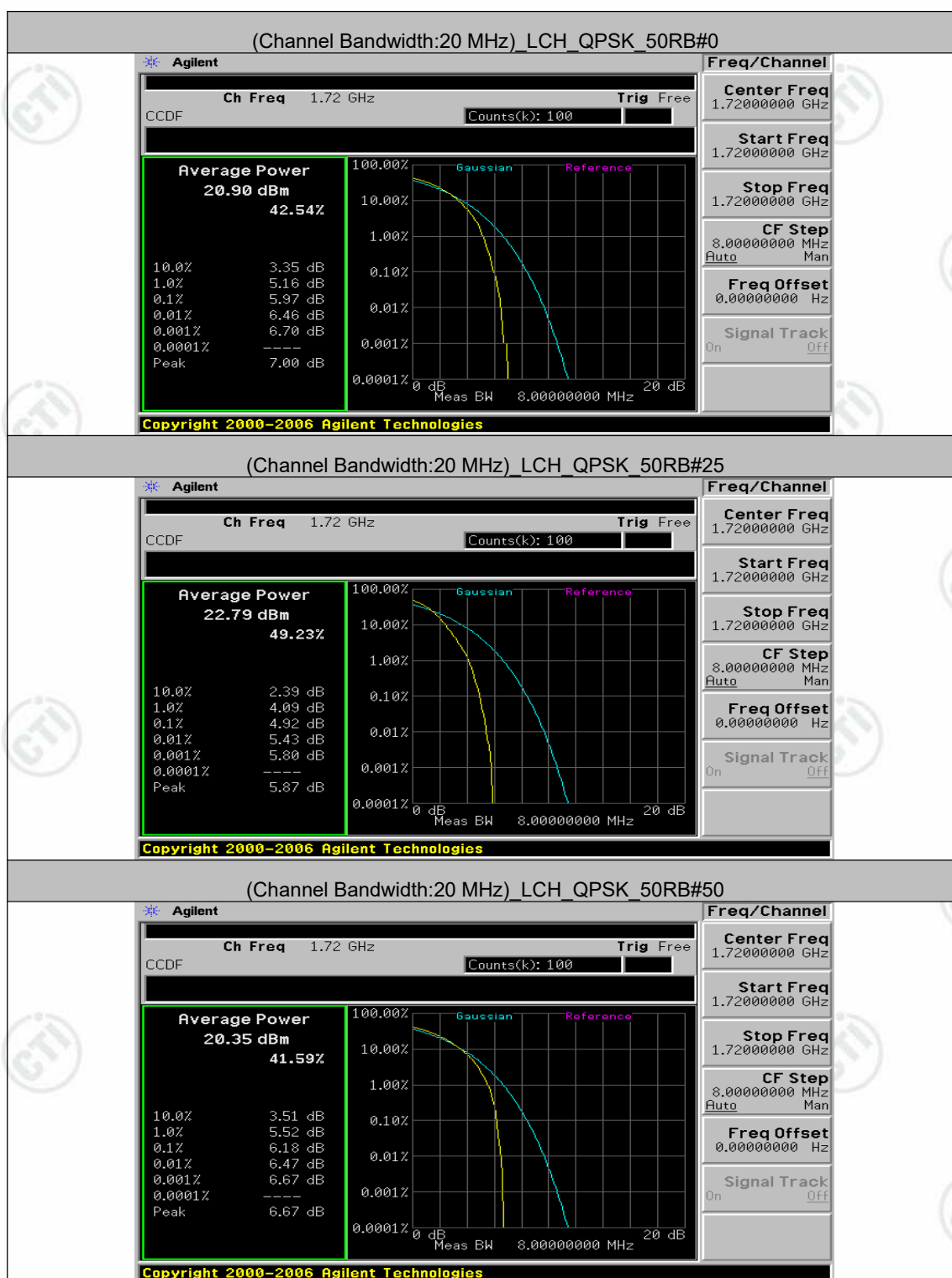






**LTE Band 4 Channel Bandwidth:20MHz**

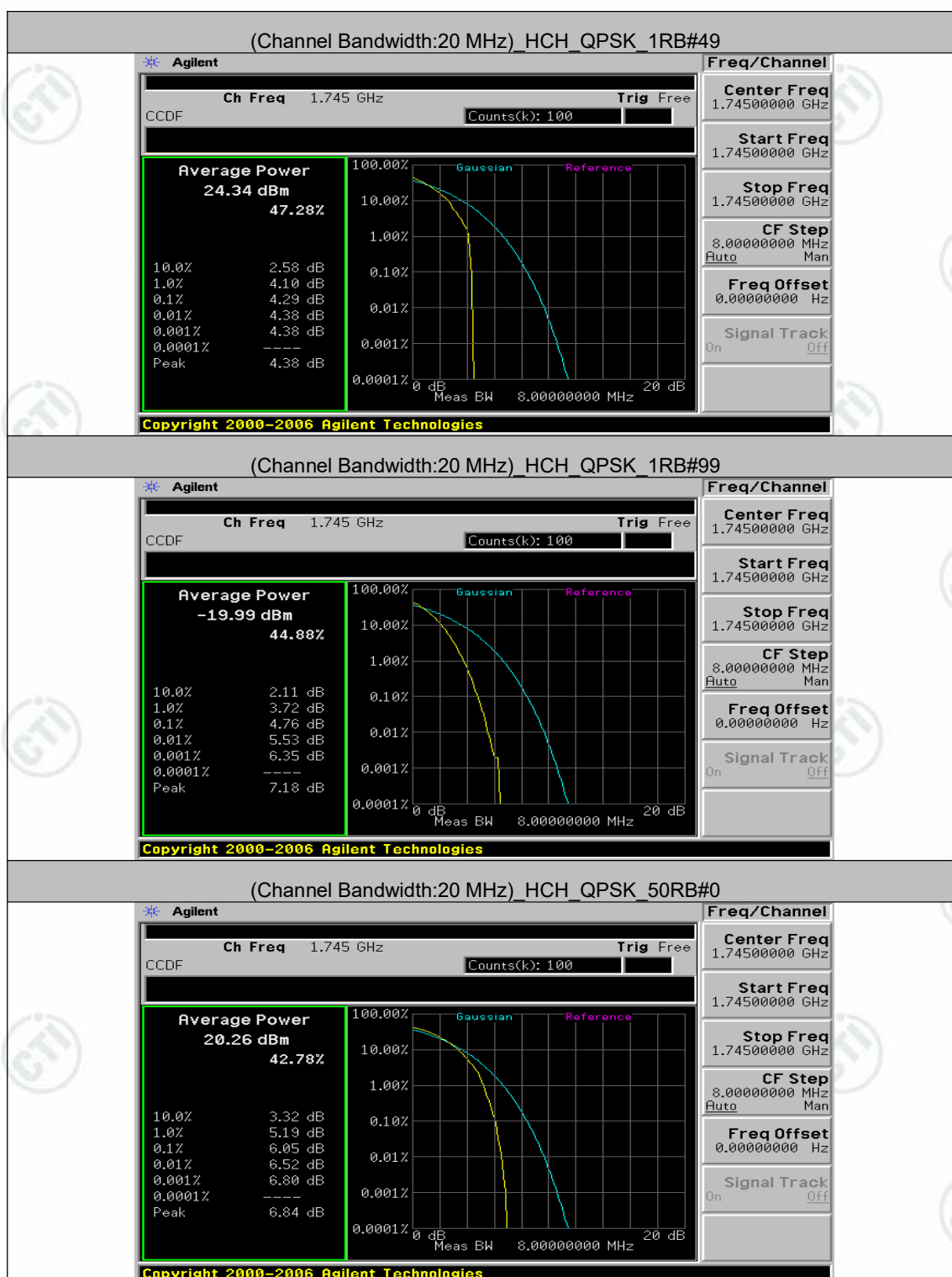


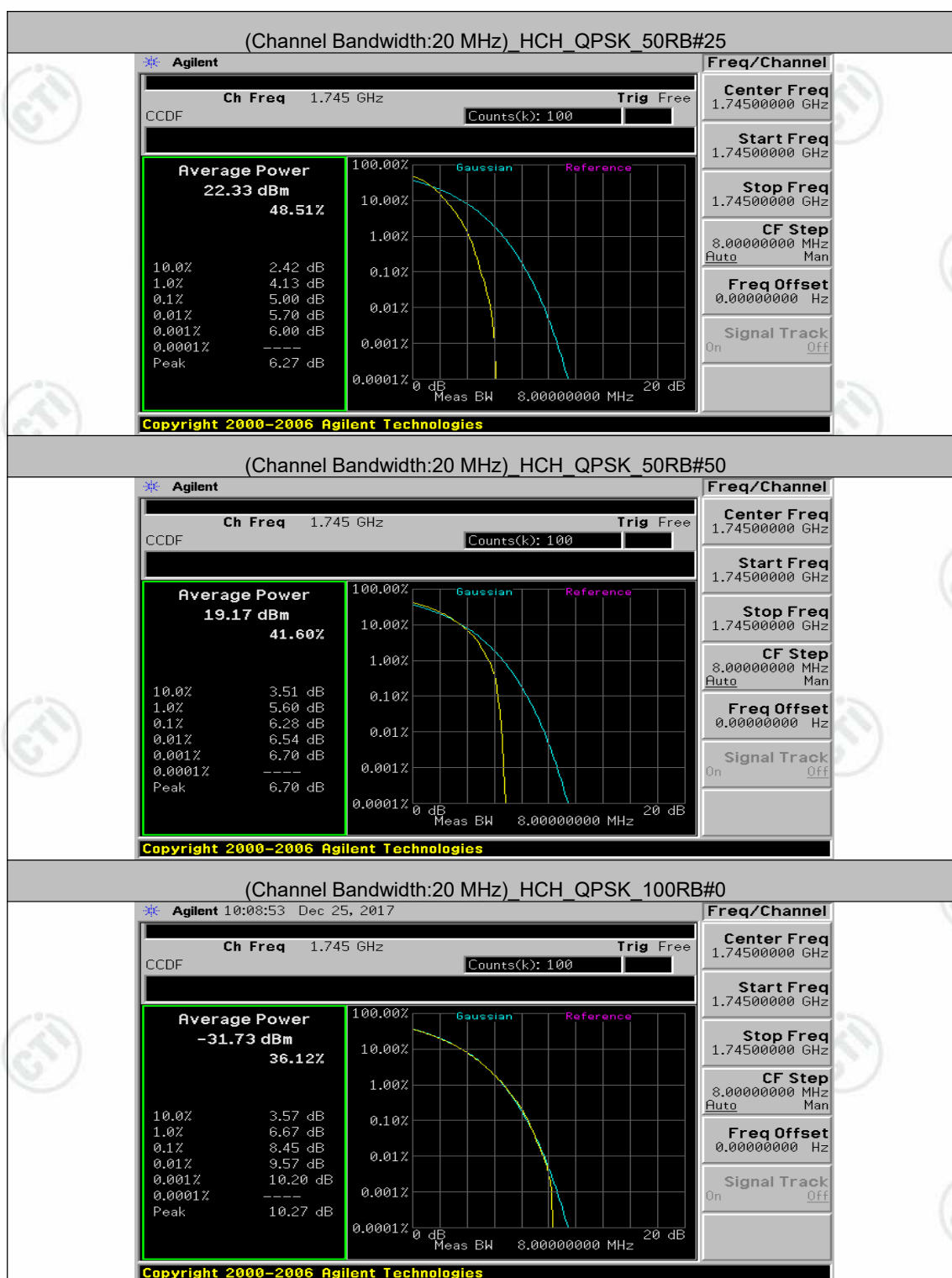












## Appendix C: 26dB Bandwidth and Occupied Bandwidth

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b>      | Part 2.1049(h)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Test Method:</b>           | Part 27.53(h)(c) & KDB 971168 D01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Test Setup:</b>            | Refer to section 5 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Limit:</b>                 | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Measurement Procedure:</b> | The transmitter output was connected to a calibrated coaxial cable, attenuator and Spectrum analyser, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel, middle channel and high channel).the resolution bandwidth of the analyser is set to 100kHz or 1% of the emission bandwidth, the EUT emission bandwidth is measured as the width of the signal between two points, outside of which all emission are attenuated at least 26dB below the transmitter power. The video bandwidth of the spectrum analyzer was set at threeice the resolution bandwidth. Detector Mode was set to peak or peak hold power. |
| <b>Instruments Used:</b>      | Refer to section 7 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Test Results:</b>          | Pass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## Test Result

### LTE Band 4

#### LTE Band 4 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      | 1.0817                   | 1.257                | PASS    |
|                            | MCH     | 6                | 0      | 1.0791                   | 1.234                | PASS    |
|                            | HCH     | 6                | 0      | 1.0827                   | 1.293                | PASS    |
| 16QAM                      | LCH     | 6                | 0      | 1.0779                   | 1.240                | PASS    |
|                            | MCH     | 6                | 0      | 1.0788                   | 1.250                | PASS    |
|                            | HCH     | 6                | 0      | 1.0793                   | 1.279                | PASS    |

#### LTE Band 4 Channel Bandwidth: 3 MHz

| Channel Bandwidth: 3 MHz |         |                  |        |                          |                      |         |
|--------------------------|---------|------------------|--------|--------------------------|----------------------|---------|
| Modulation               | Channel | RB Configuration |        | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
|                          |         | Size             | Offset |                          |                      |         |
| QPSK                     | LCH     | 15               | 0      | 2.6820                   | 2.926                | PASS    |
|                          | MCH     | 15               | 0      | 2.6623                   | 2.895                | PASS    |
|                          | HCH     | 15               | 0      | 2.6822                   | 2.938                | PASS    |
| 16QAM                    | LCH     | 15               | 0      | 2.6820                   | 2.953                | PASS    |
|                          | MCH     | 15               | 0      | 2.6817                   | 2.922                | PASS    |
|                          | HCH     | 15               | 0      | 2.6809                   | 2.927                | PASS    |

#### LTE Band 4 Channel Bandwidth: 5 MHz

| Channel Bandwidth: 5 MHz |         |                  |        |                          |                      |         |
|--------------------------|---------|------------------|--------|--------------------------|----------------------|---------|
| Modulation               | Channel | RB Configuration |        | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
|                          |         | Size             | Offset |                          |                      |         |
| QPSK                     | LCH     | 25               | 0      | 4.4801                   | 4.930                | PASS    |
|                          | MCH     | 25               | 0      | 4.4748                   | 4.896                | PASS    |
|                          | HCH     | 25               | 0      | 4.4670                   | 4.891                | PASS    |
| 16QAM                    | LCH     | 25               | 0      | 4.4747                   | 4.923                | PASS    |
|                          | MCH     | 25               | 0      | 4.4655                   | 4.916                | PASS    |
|                          | HCH     | 25               | 0      | 4.4655                   | 4.916                | PASS    |

**LTE Band 4 Channel Bandwidth: 10 MHz**

| Channel Bandwidth: 10MHz |         |                  |        |                          |                      |         |
|--------------------------|---------|------------------|--------|--------------------------|----------------------|---------|
| Modulation               | Channel | RB Configuration |        | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
|                          |         | Size             | Offset |                          |                      |         |
| QPSK                     | LCH     | 50               | 0      | 8.9131                   | 9.728                | PASS    |
|                          | MCH     | 50               | 0      | 8.9159                   | 9.716                | PASS    |
|                          | HCH     | 50               | 0      | 8.9104                   | 9.701                | PASS    |

**LTE Band 4 Channel Bandwidth: 15 MHz**

| Channel Bandwidth: 15MHz |         |                  |        |                          |                      |         |
|--------------------------|---------|------------------|--------|--------------------------|----------------------|---------|
| Modulation               | Channel | RB Configuration |        | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
|                          |         | Size             | Offset |                          |                      |         |
| QPSK                     | LCH     | 75               | 0      | 13.3150                  | 14.348               | PASS    |
|                          | MCH     | 75               | 0      | 13.3513                  | 14.442               | PASS    |
|                          | HCH     | 75               | 0      | 13.3863                  | 14.445               | PASS    |

**LTE Band 4 Channel Bandwidth: 20 MHz**

| Channel Bandwidth: 20MHz |         |                  |        |                          |                      |         |
|--------------------------|---------|------------------|--------|--------------------------|----------------------|---------|
| Modulation               | Channel | RB Configuration |        | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
|                          |         | Size             | Offset |                          |                      |         |
| QPSK                     | LCH     | 100              | 0      | 17.7020                  | 19.045               | PASS    |
|                          | MCH     | 100              | 0      | 17.8136                  | 19.027               | PASS    |
|                          | HCH     | 100              | 0      | 17.8298                  | 19.240               | PASS    |

**LTE Band 13 Channel Bandwidth: 5 MHz**

| Channel Bandwidth: 5 MHz |         |                  |        |                          |                      |         |
|--------------------------|---------|------------------|--------|--------------------------|----------------------|---------|
| Modulation               | Channel | RB Configuration |        | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
|                          |         | Size             | Offset |                          |                      |         |
| QPSK                     | LCH     | 25               | 0      | 4.4491                   | 4.865                | PASS    |
|                          | MCH     | 25               | 0      | 4.4779                   | 4.912                | PASS    |
|                          | HCH     | 25               | 0      | 4.4778                   | 4.863                | PASS    |
| 16QAM                    | LCH     | 25               | 0      | 4.4520                   | 4.907                | PASS    |
|                          | MCH     | 25               | 0      | 4.4828                   | 4.923                | PASS    |
|                          | HCH     | 25               | 0      | 4.4829                   | 4.950                | PASS    |

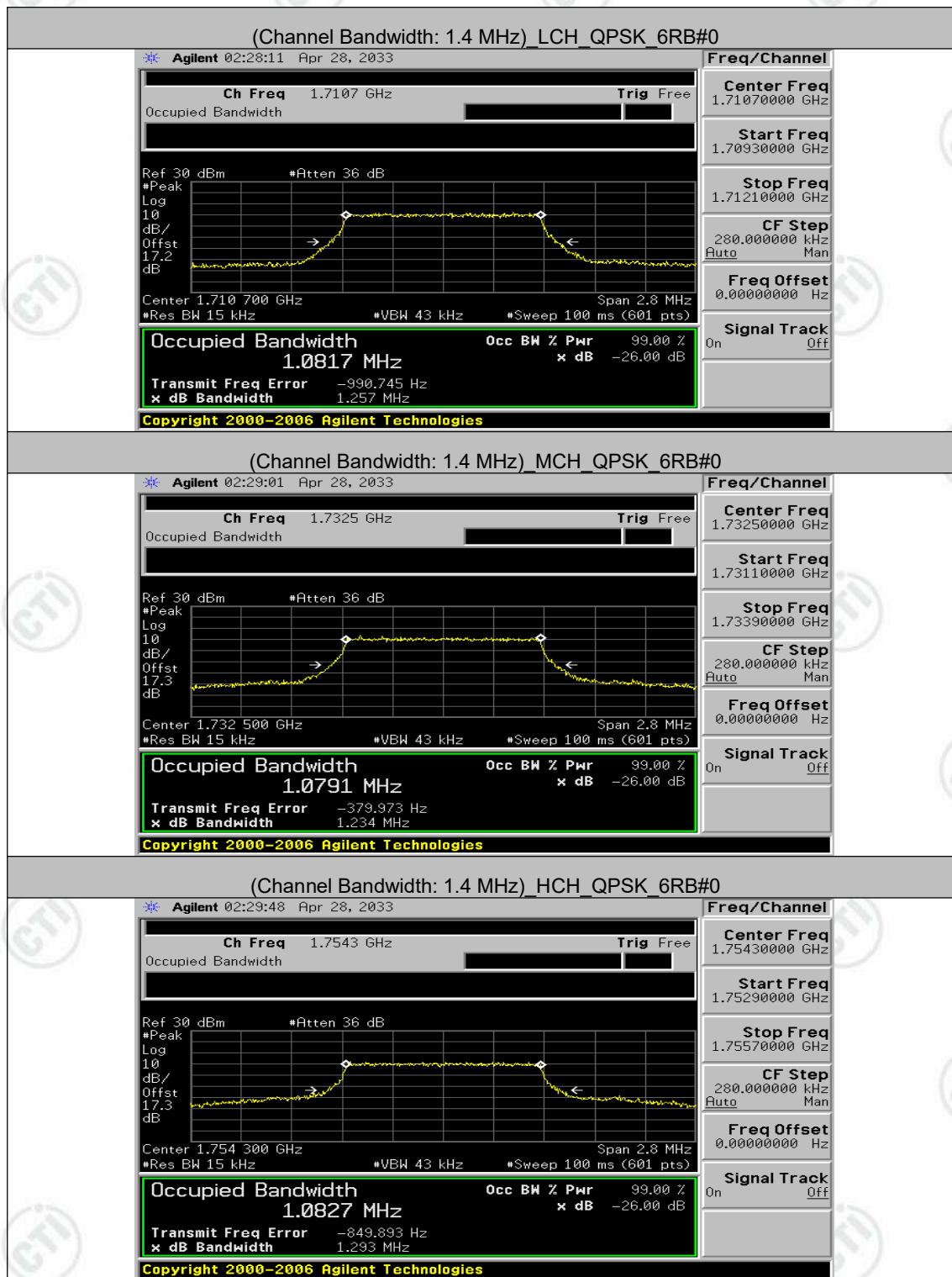
**LTE Band 13 Channel Bandwidth: 10 MHz**

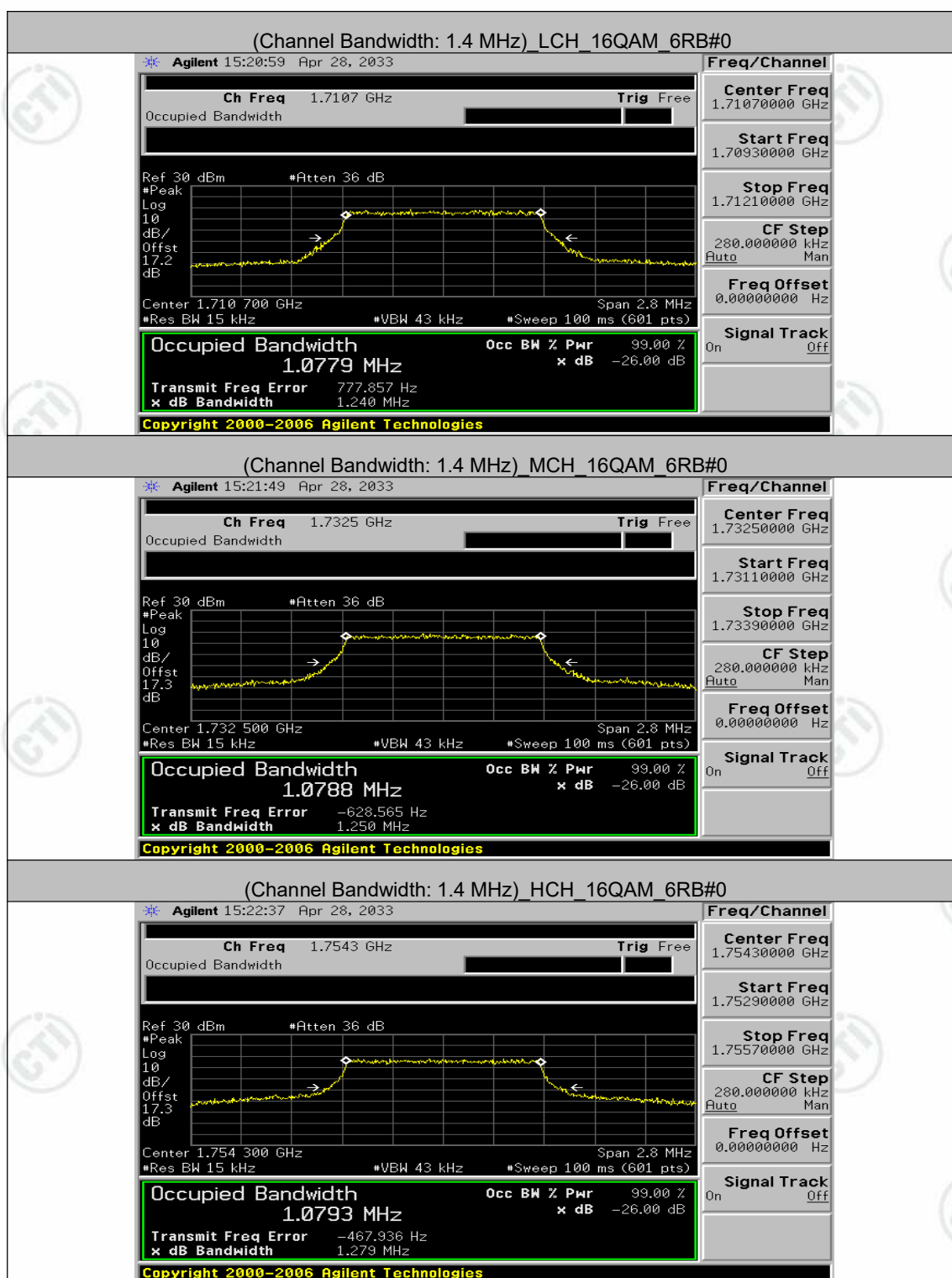
| Channel Bandwidth: 10MHz |         |                  |        |                          |                      |         |
|--------------------------|---------|------------------|--------|--------------------------|----------------------|---------|
| Modulation               | Channel | RB Configuration |        | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
|                          |         | Size             | Offset |                          |                      |         |
| QPSK                     | LCH     | 50               | 0      | 8.9000                   | 9.672                | PASS    |
|                          | MCH     | 50               | 0      | 8.9170                   | 9.671                | PASS    |
|                          | HCH     | 50               | 0      | 8.9125                   | 9.703                | PASS    |

## Test Graphs

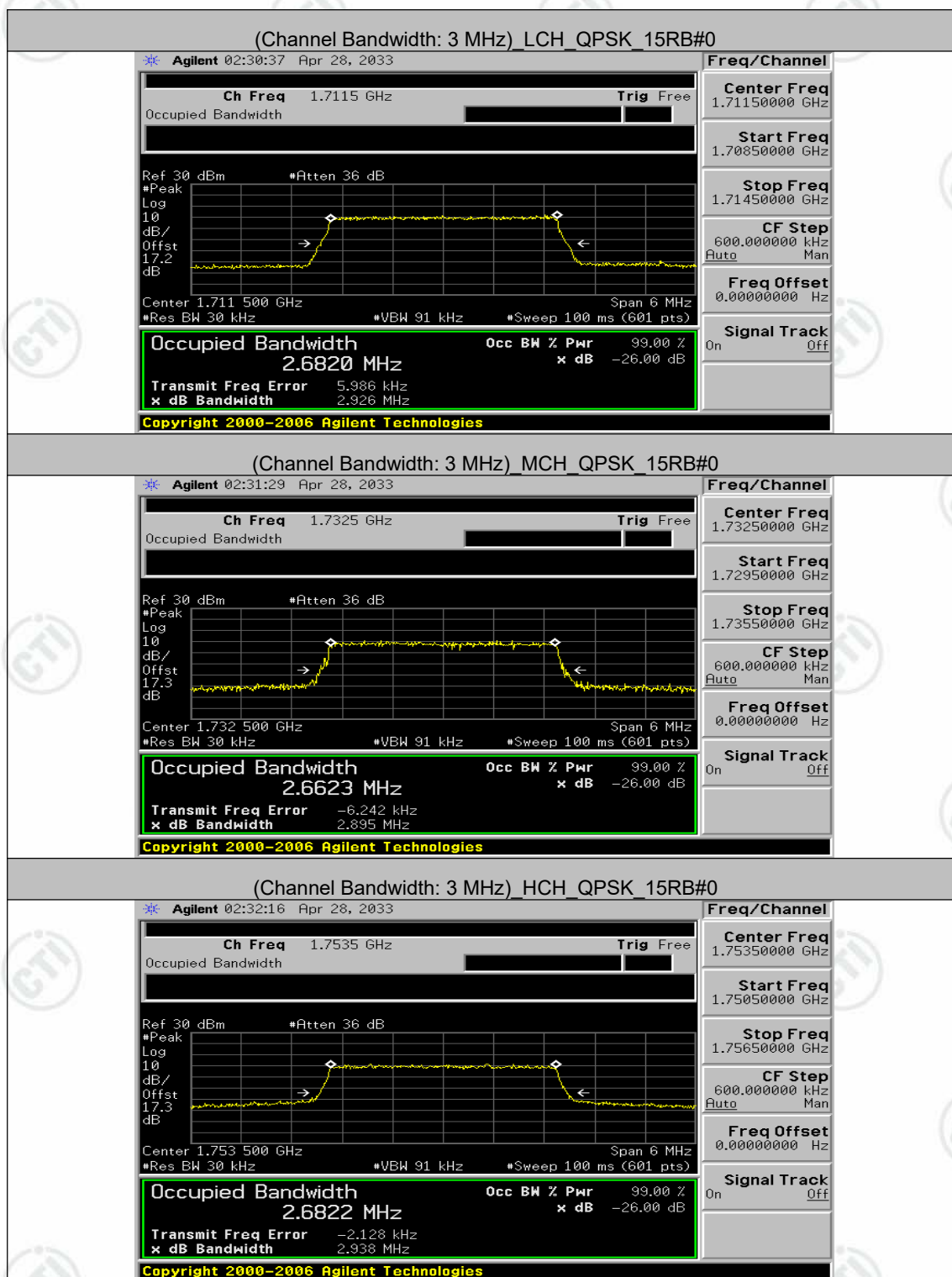
### LTE Band 4

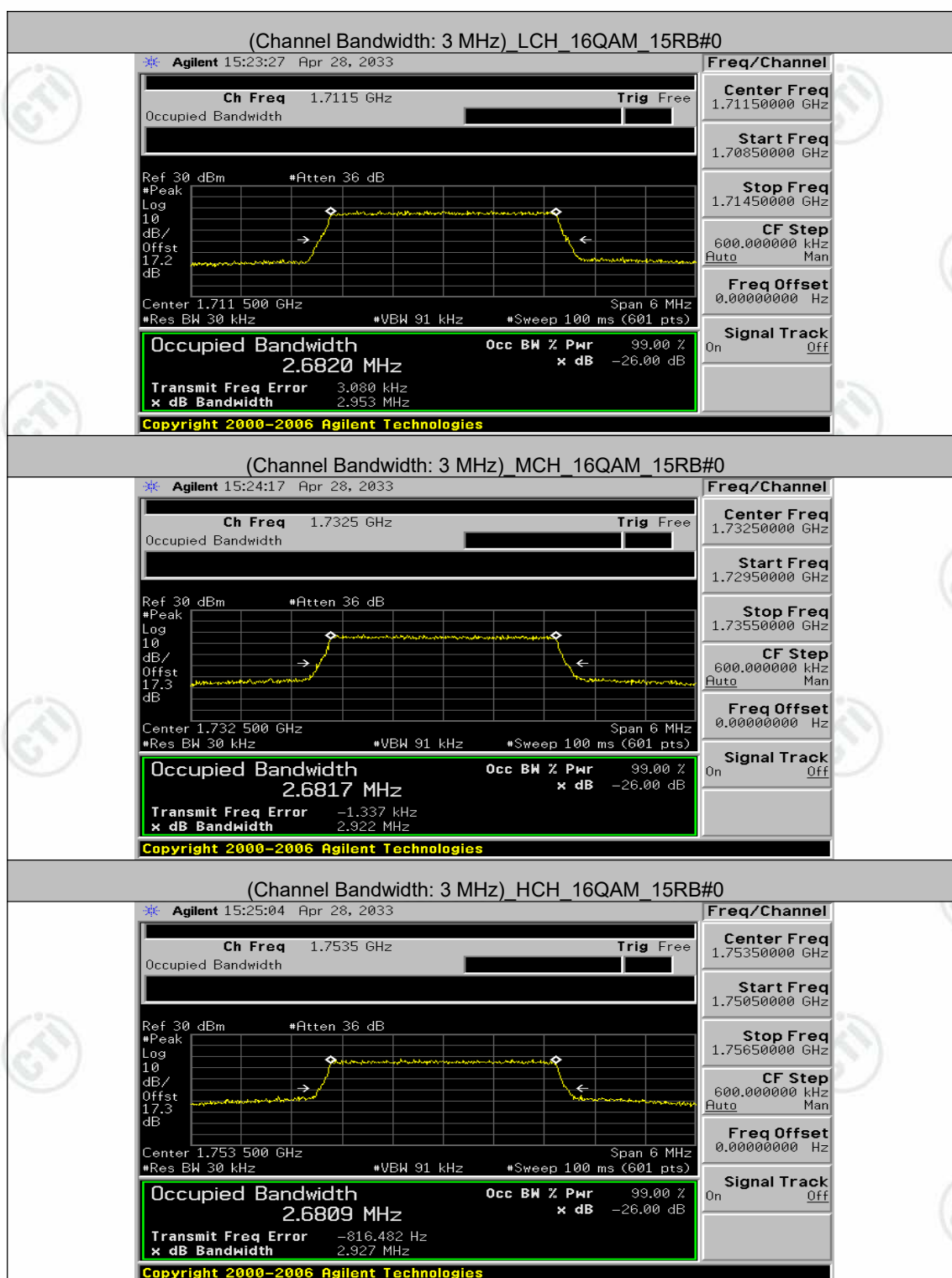
#### LTE Band 4 Channel Bandwidth: 1.4 MHz



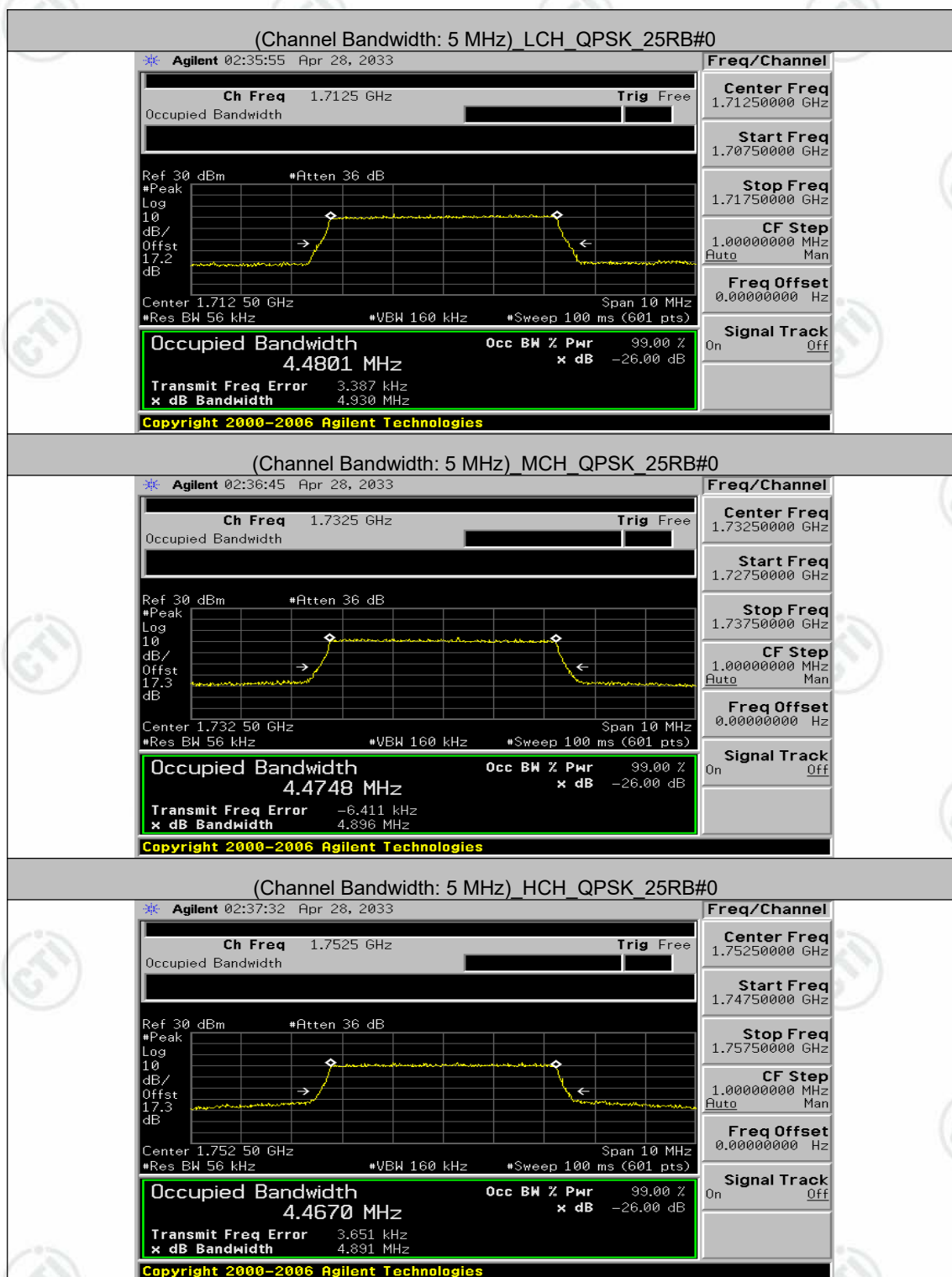


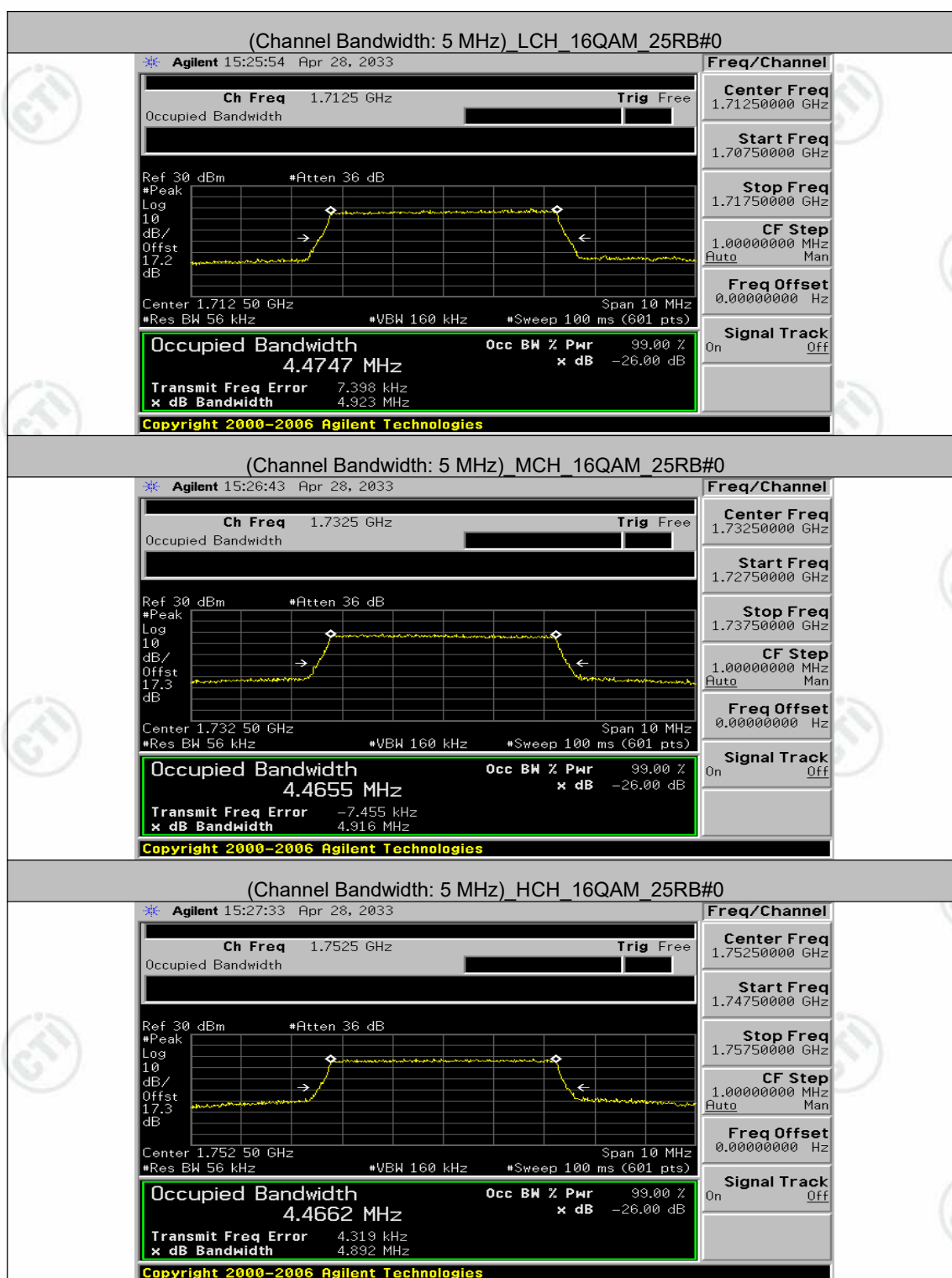
**LTE Band 4 Channel Bandwidth: 3 MHz**



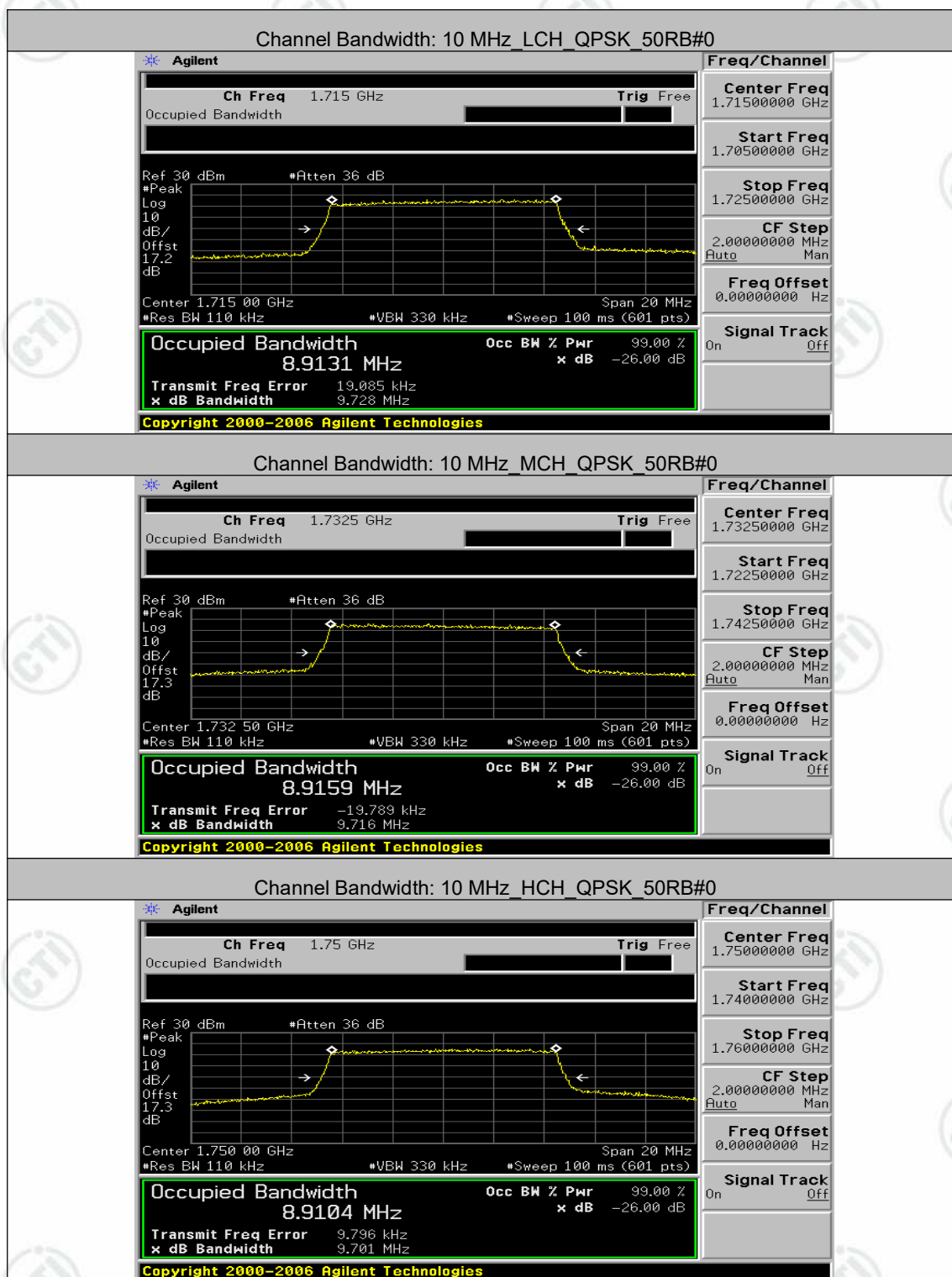


**LTE Band 4 Channel Bandwidth: 5 MHz**

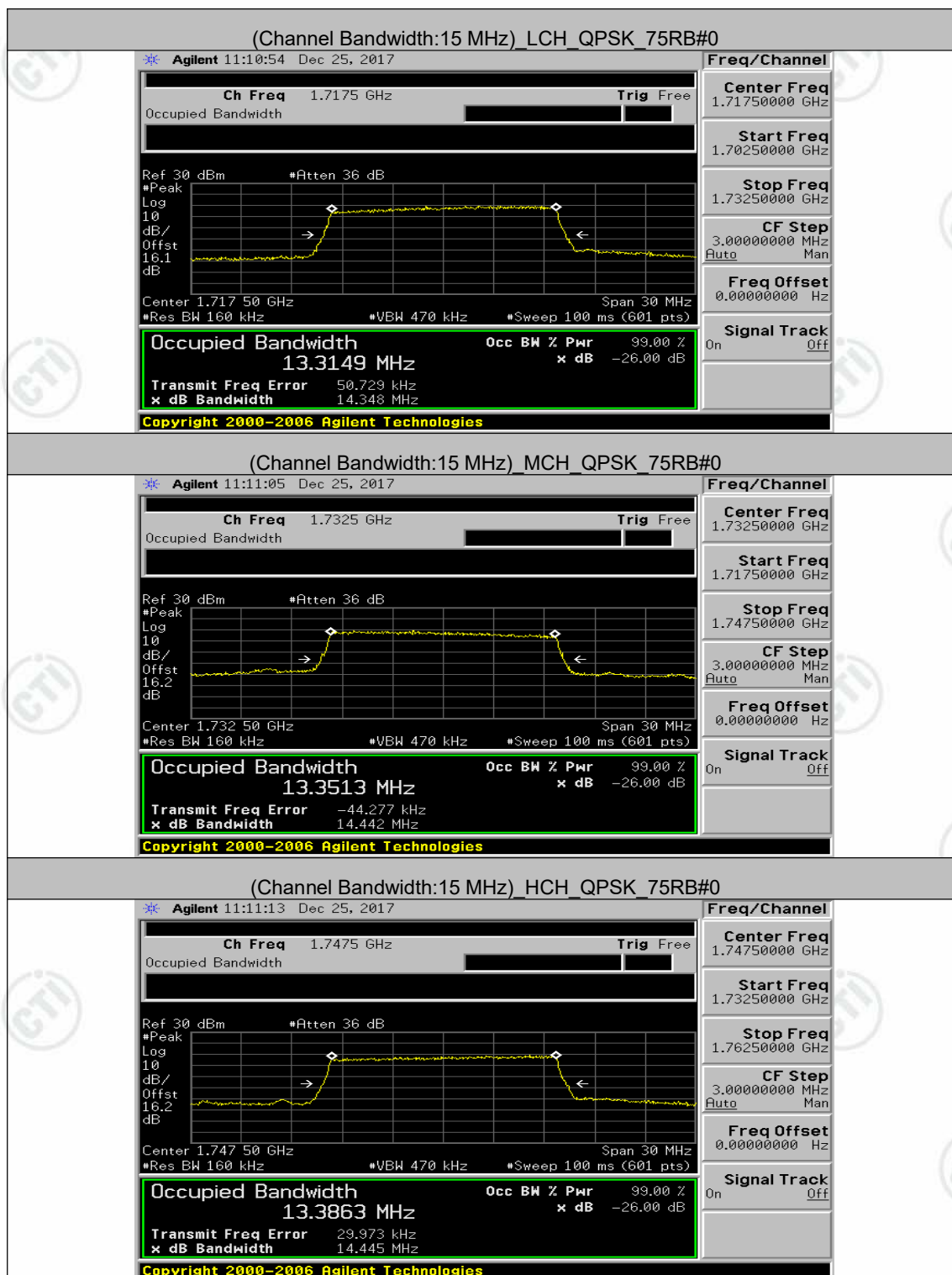




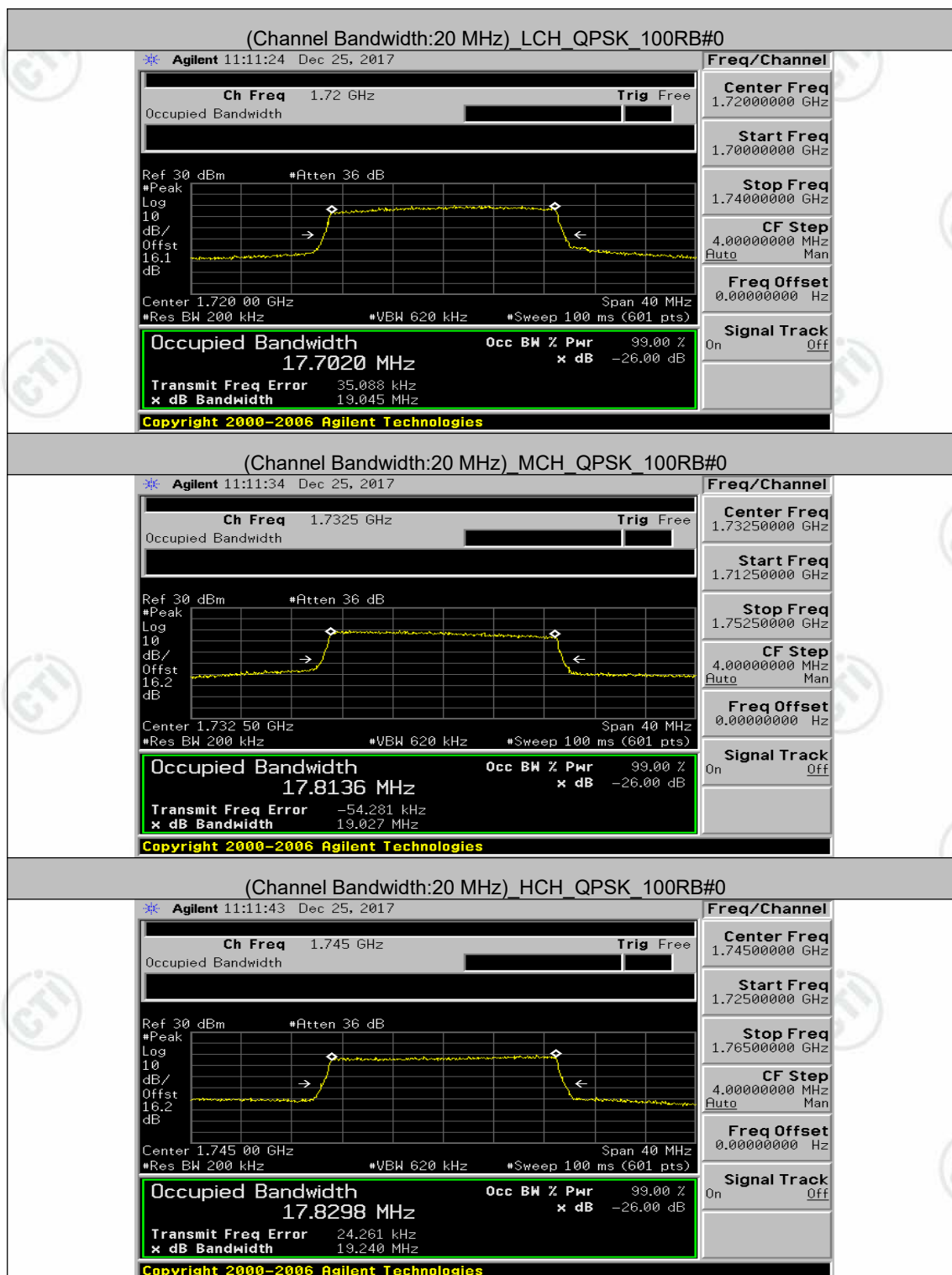
**LTE Band 4 Channel Bandwidth: 10 MHz**



**LTE Band 4 Channel Bandwidth: 15 MHz**



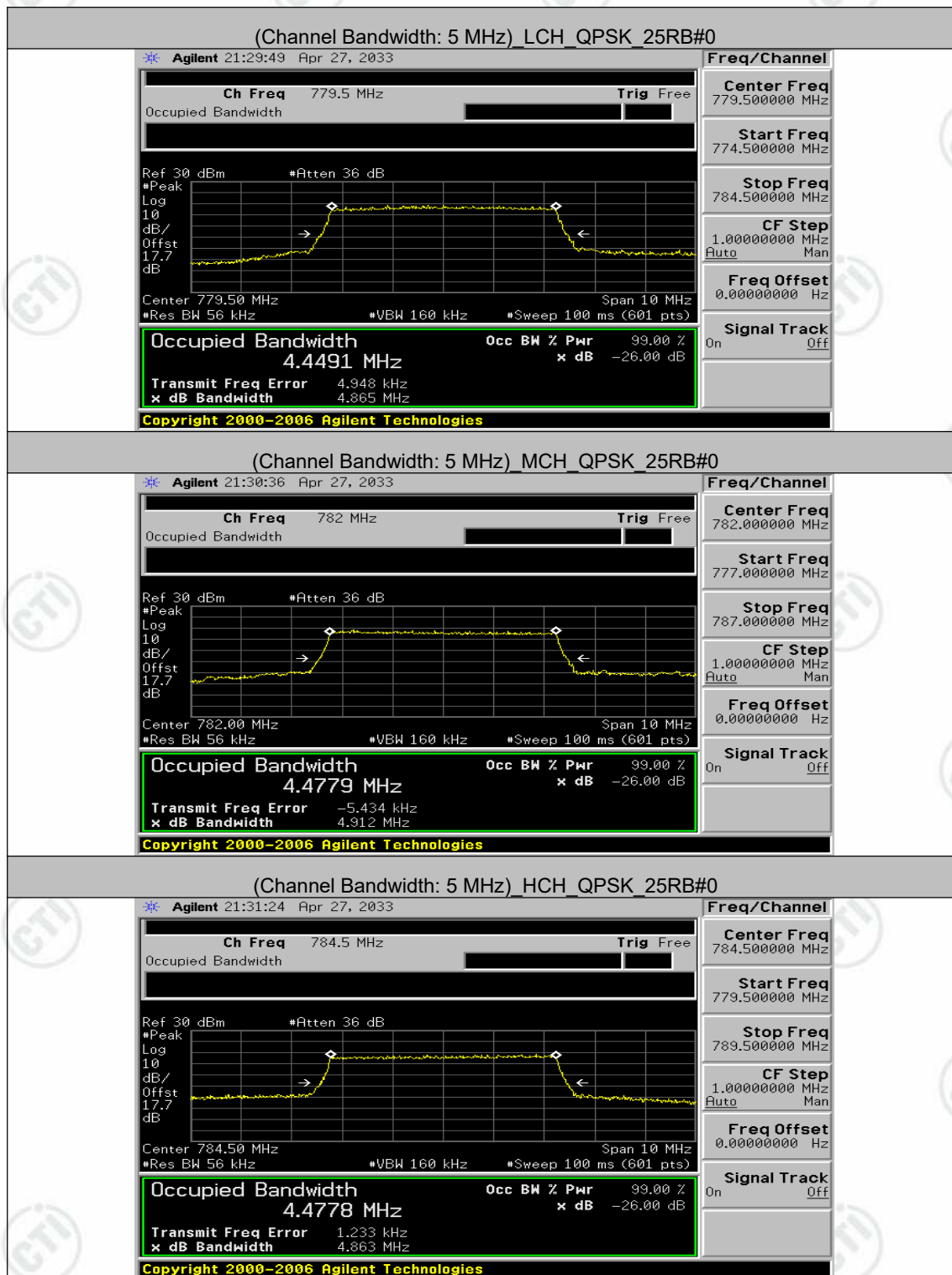
**LTE Band 4 Channel Bandwidth: 20 MHz**

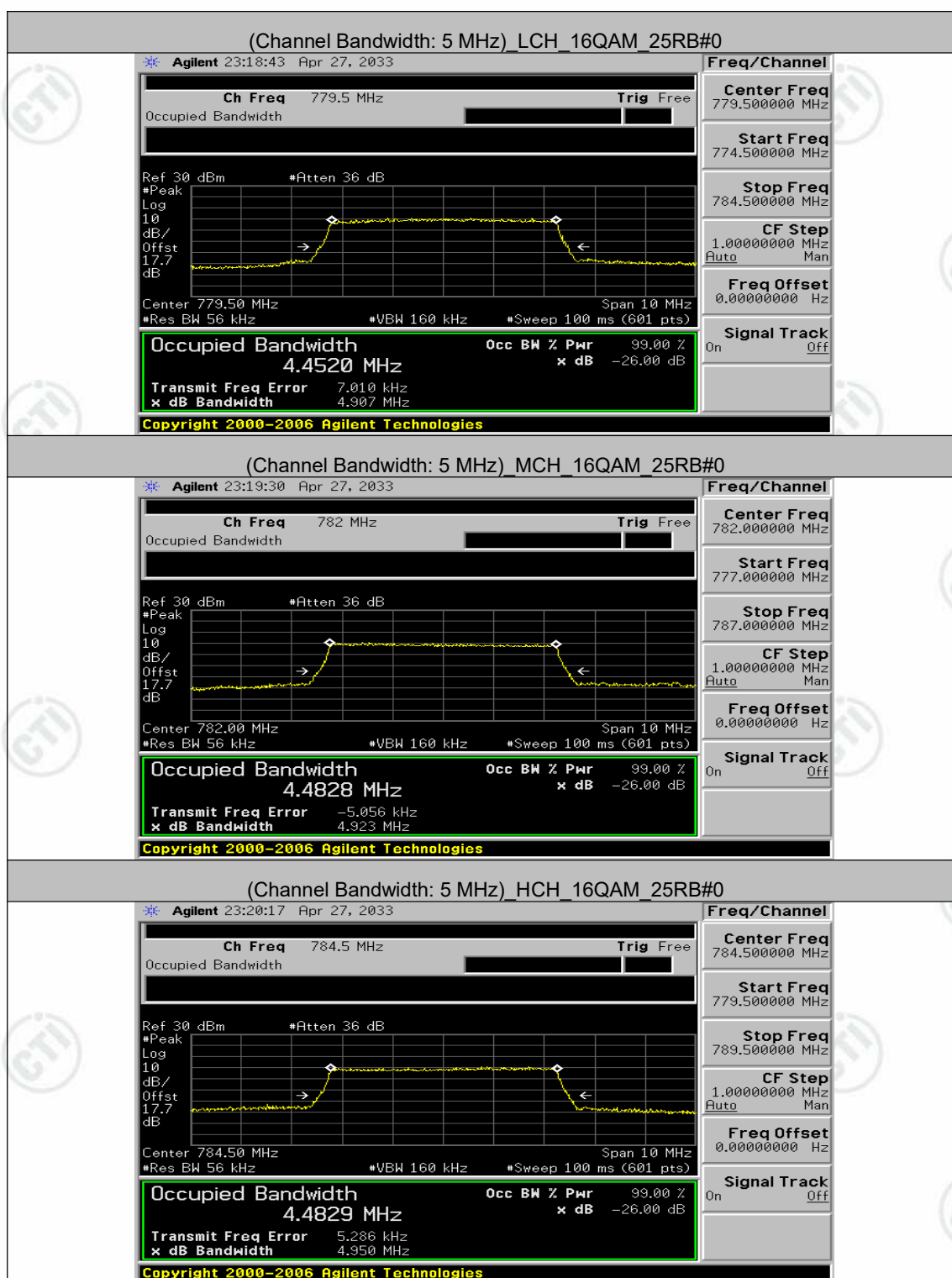


## Test Graphs

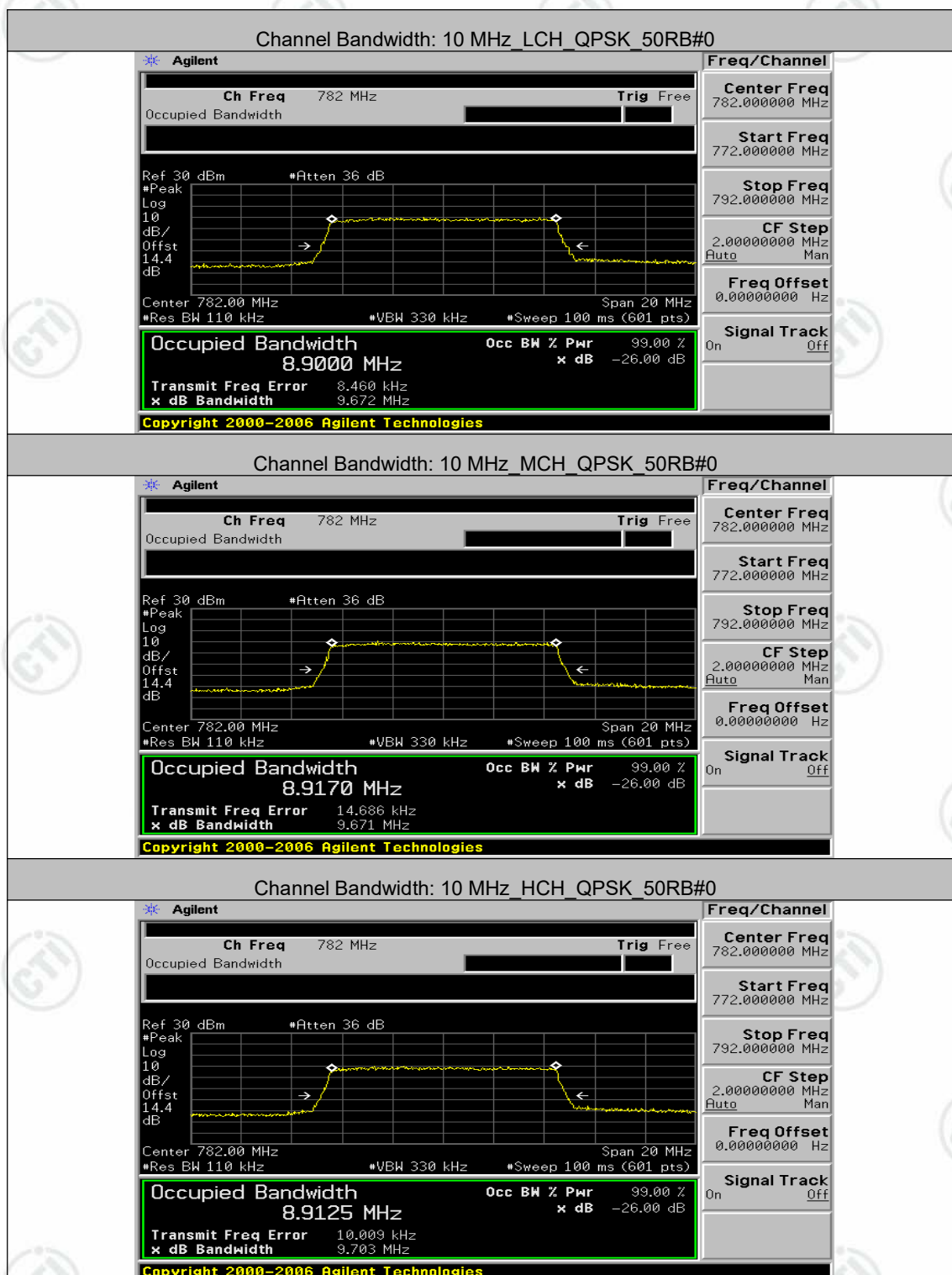
### LTE Band 13

#### LTE Band 13 Channel Bandwidth: 5 MHz





**LTE Band 13 Channel Bandwidth: 10 MHz**



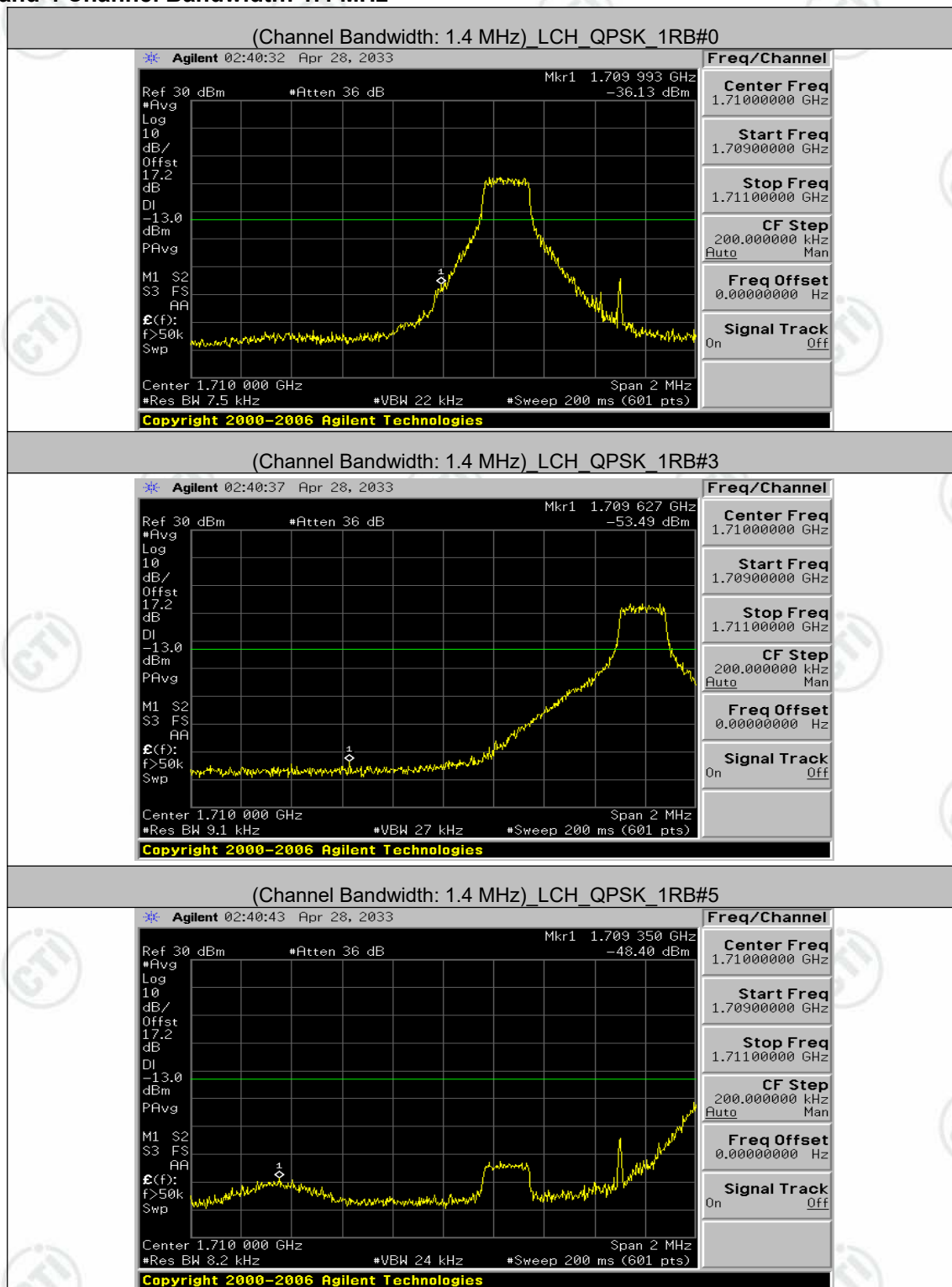
## Appendix D: Band Edge

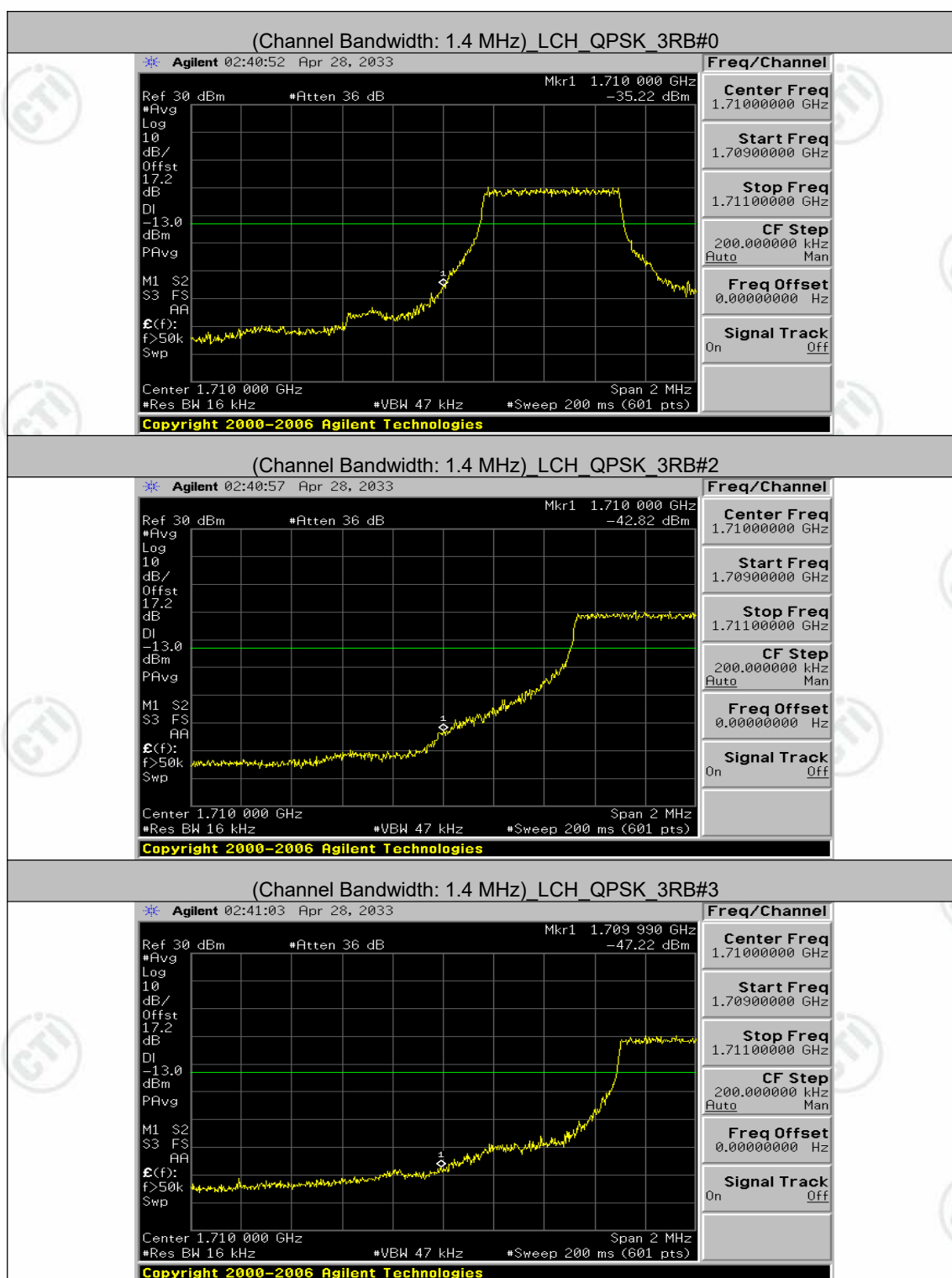
|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b>      | Part 2.1051/Part 2.1057                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Test Method:</b>           | KDB 971168 D01&KDB 971168 D02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Test Setup:</b>            | Refer to section 5 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Measurement Procedure:</b> | The transmitter output was connected to a calibrated coaxial cable, attenuator and Spectrum analyzer, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel and high channel).the equipment operates below 10GHz: to the tenth harmonic of the highest fundamental frequency or to 40GHz.whichever is lower, the resolution bandwidth of the spectrum analyzer was set at 100kHz for spurious emissions below 1 GHz, and 1 MHz for spurious emissions above 1GHz.the video bandwidth of the spectrum analyzer was set at thrice the resolution bandwidth. Detector Mode was set to mean or average power. |
| <b>Instruments Used:</b>      | Refer to section 7 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Limit:</b>                 | Attenuated at least $43+10\log(P)$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Test Results:</b>          | Pass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

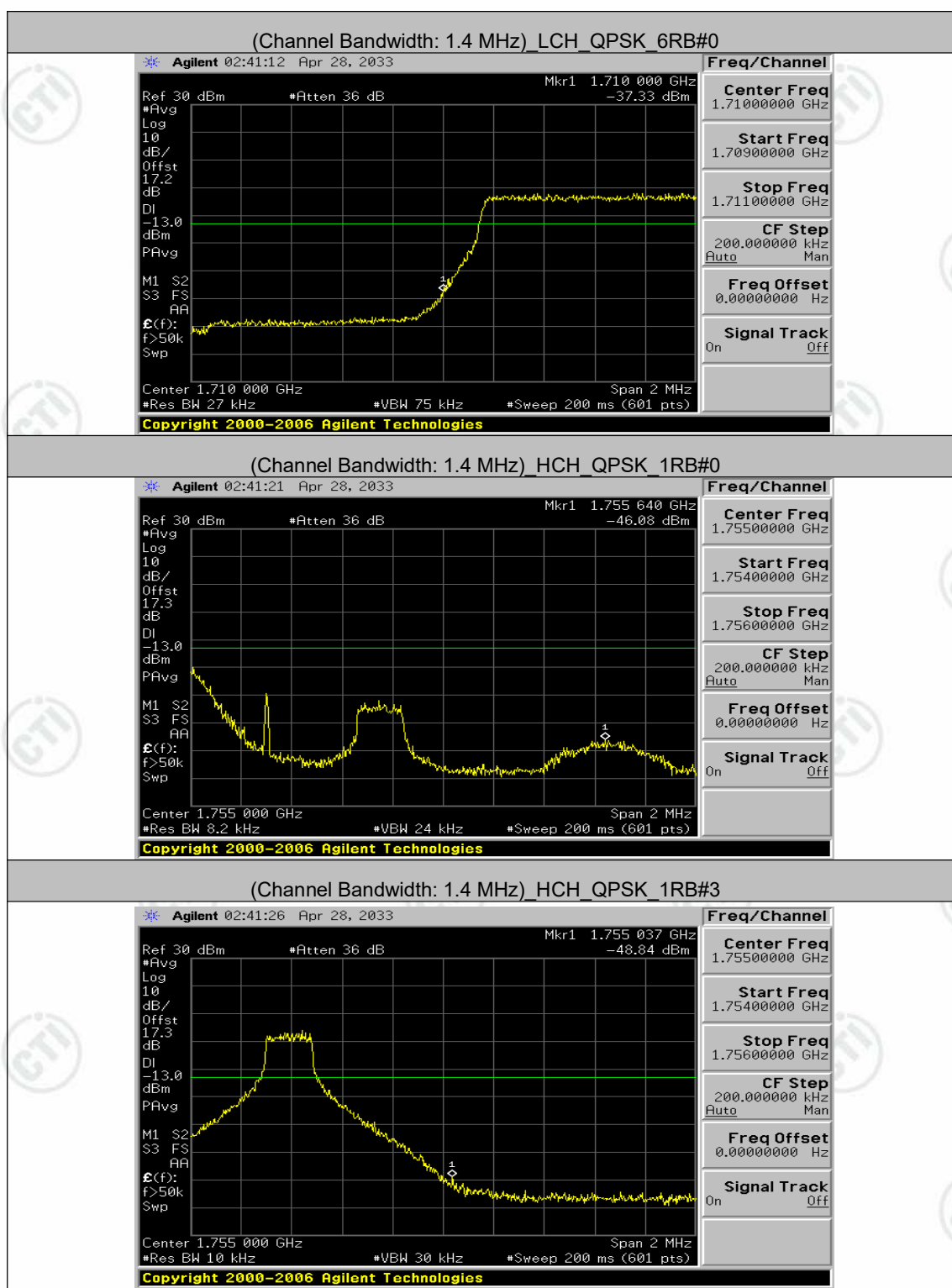
## Test Graphs

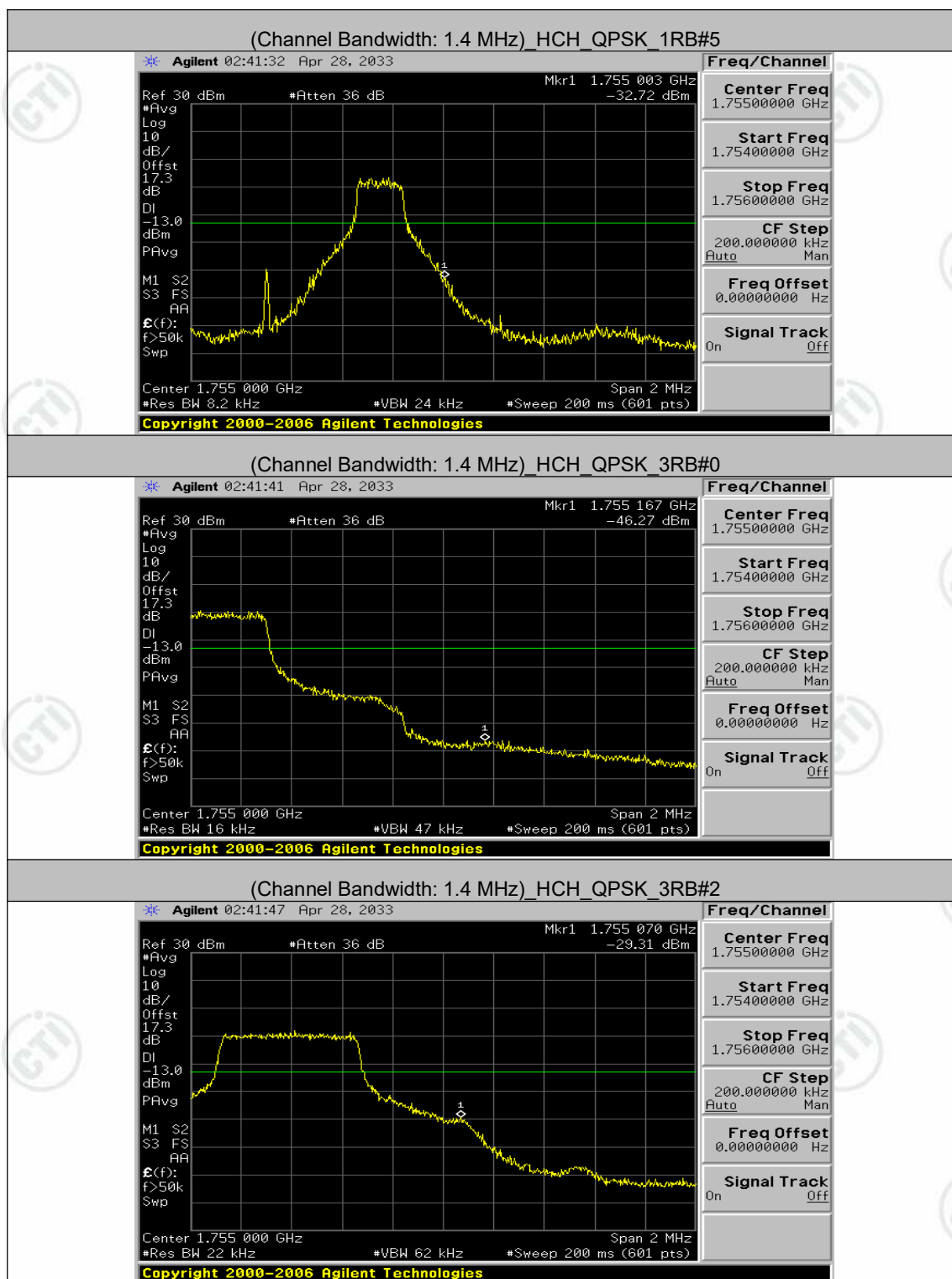
### LTE Band 4

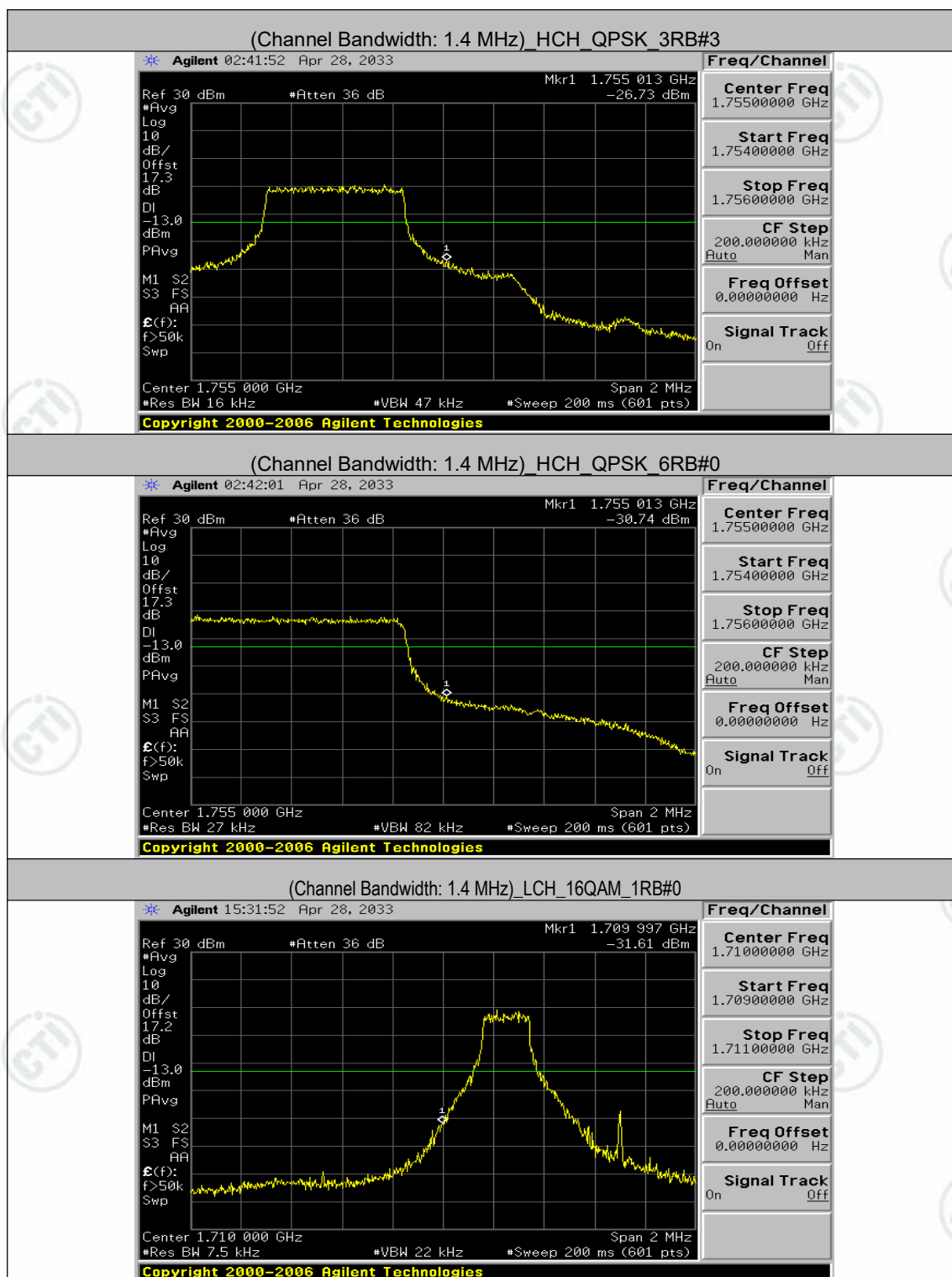
#### LTE Band 4 Channel Bandwidth: 1.4 MHz

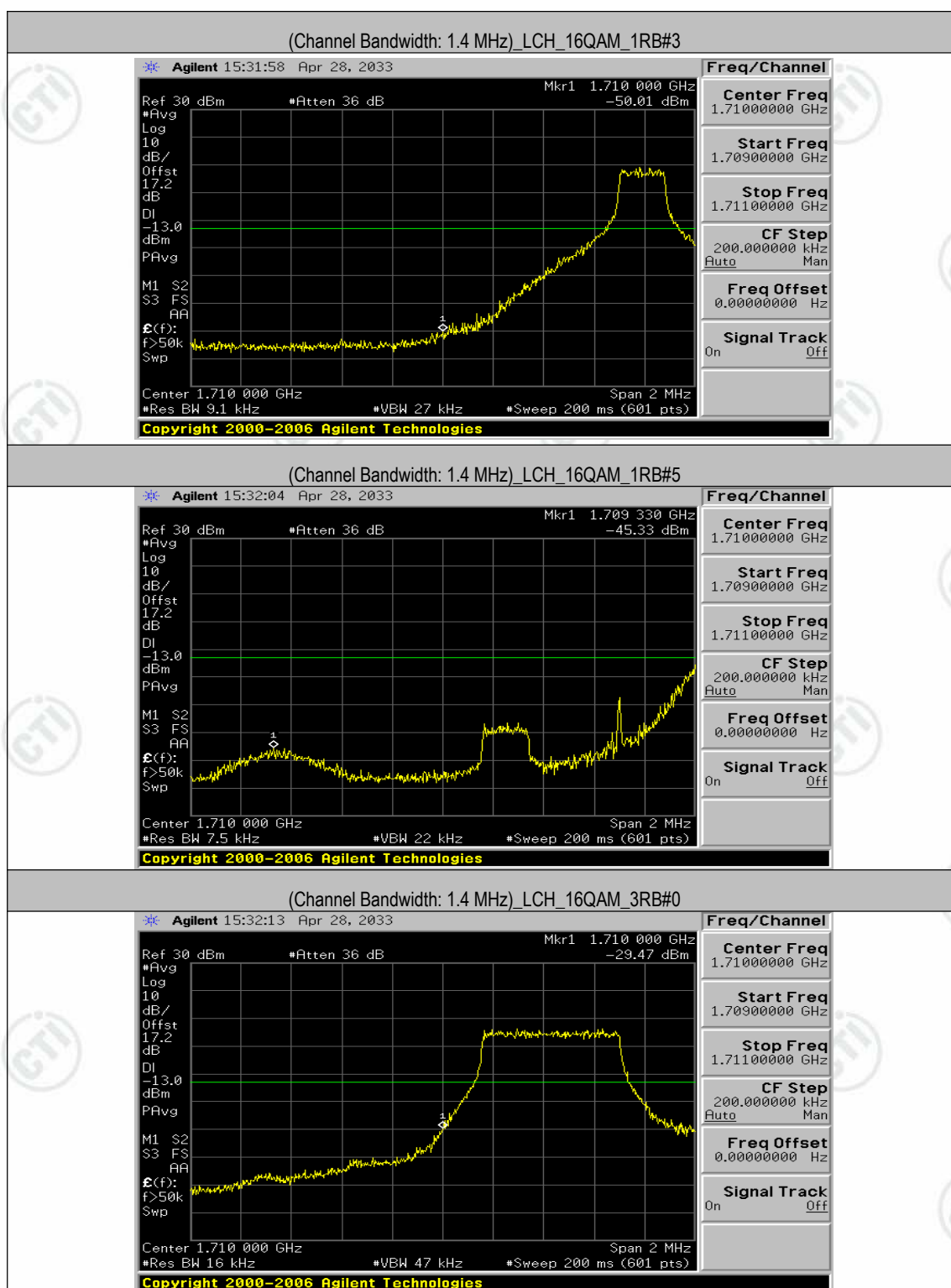


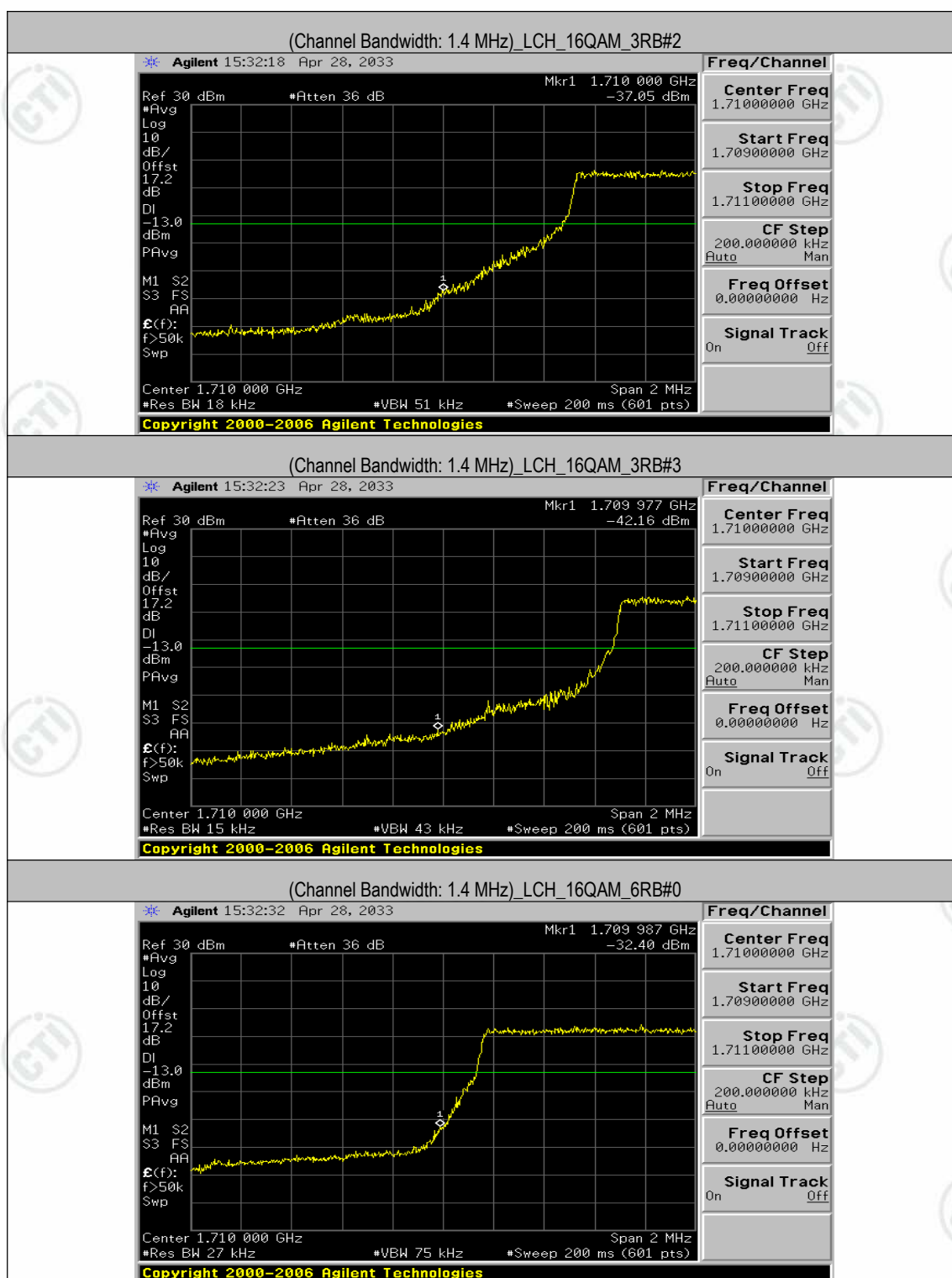


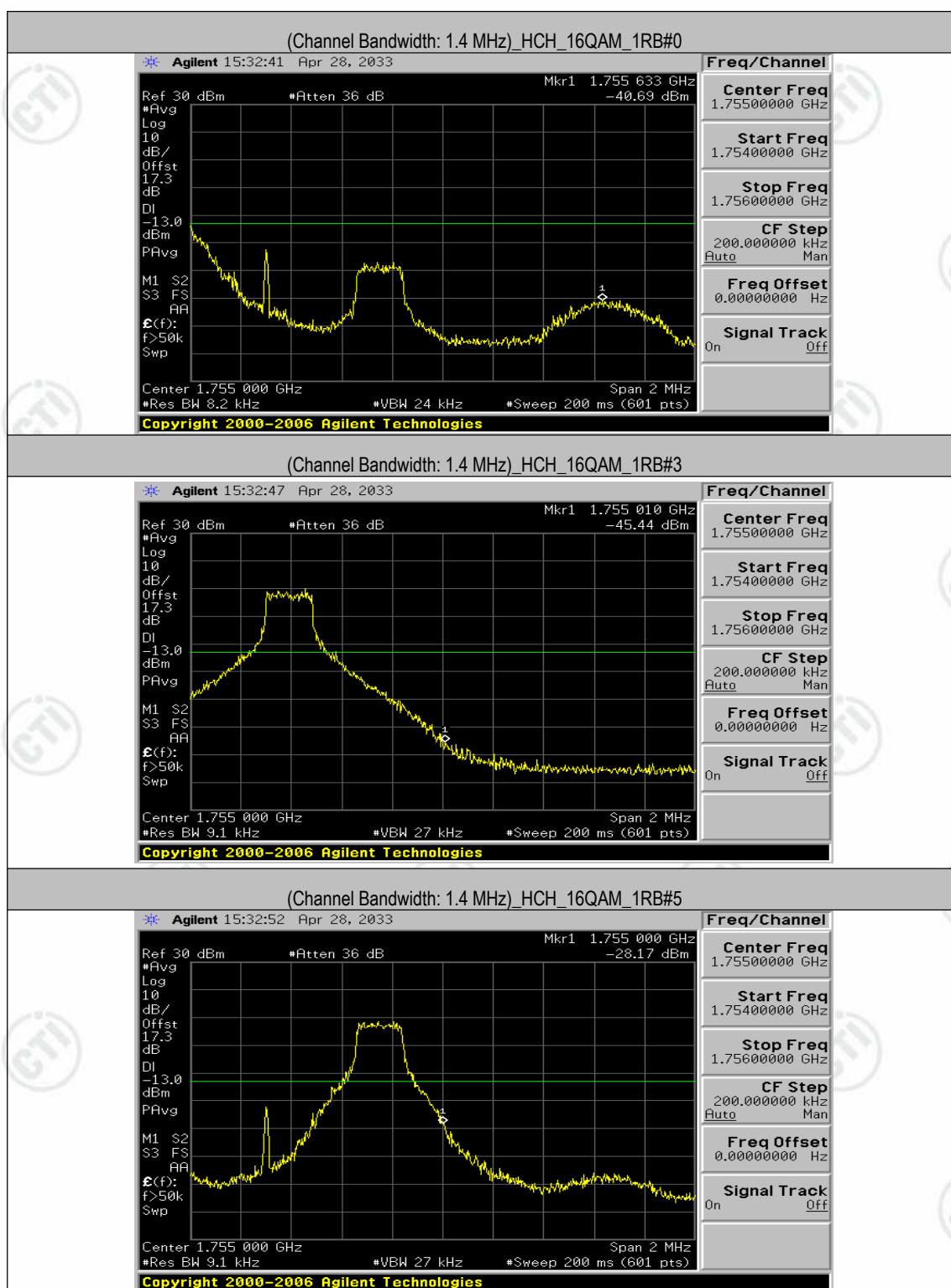


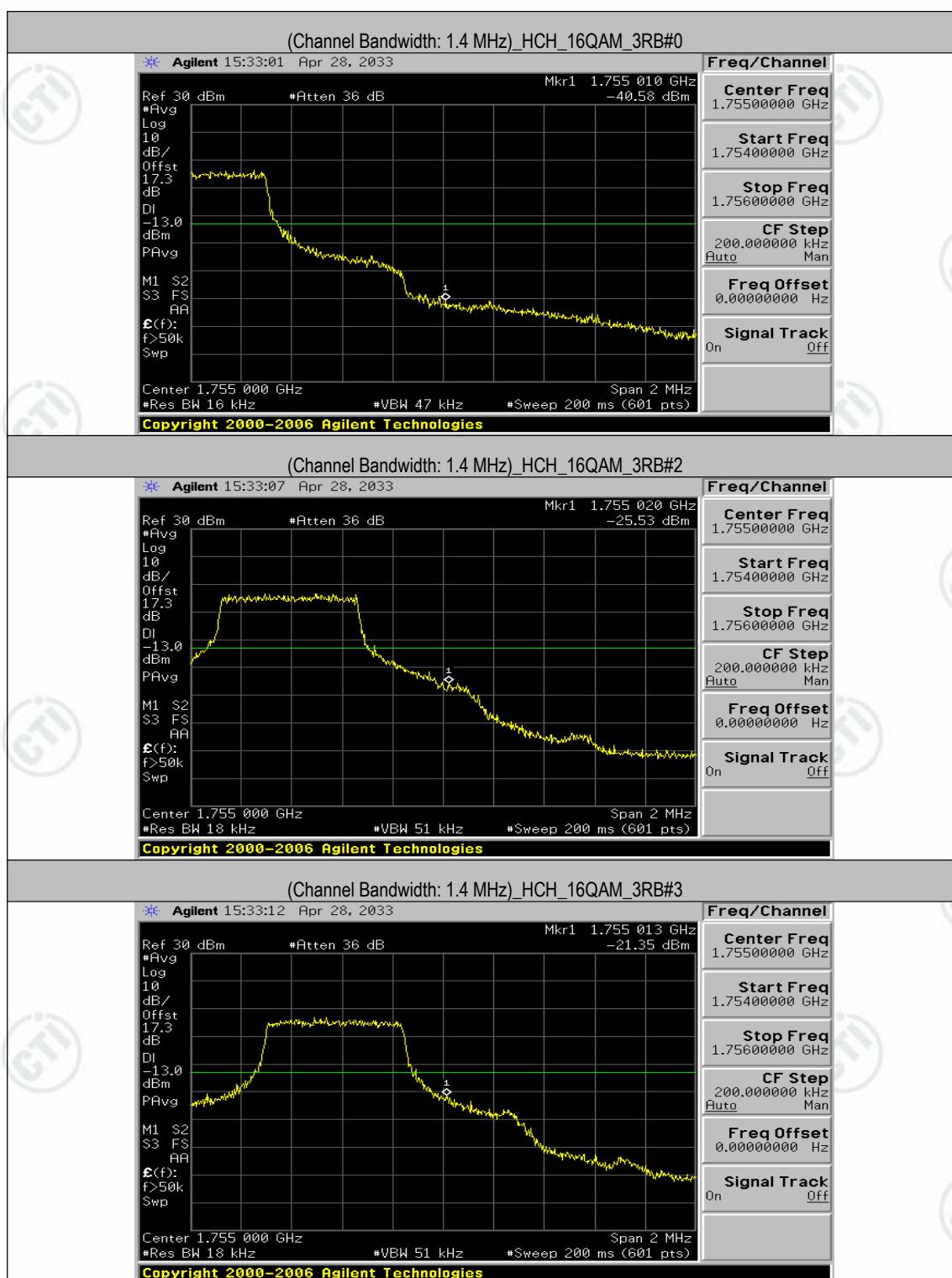


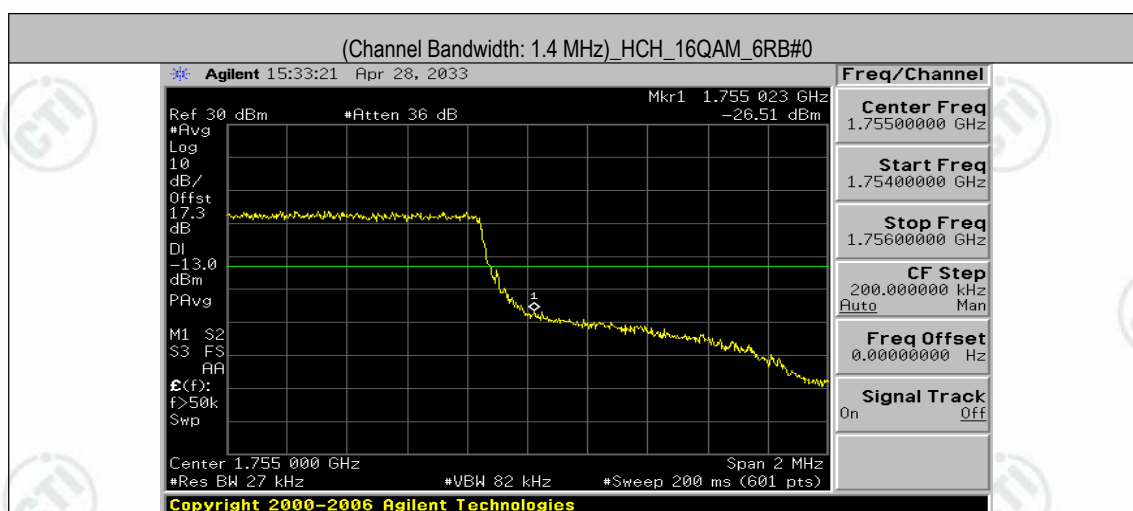




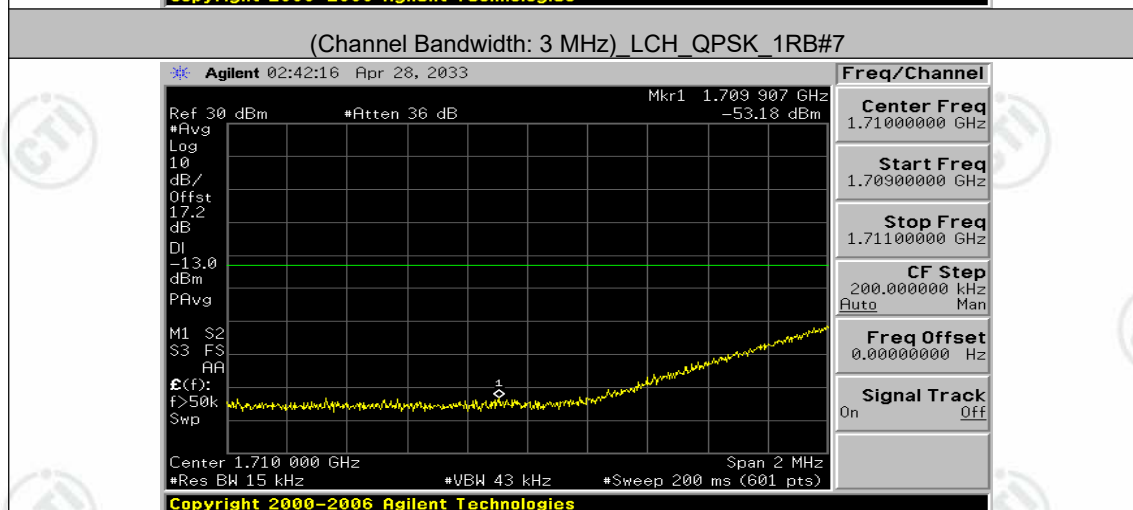
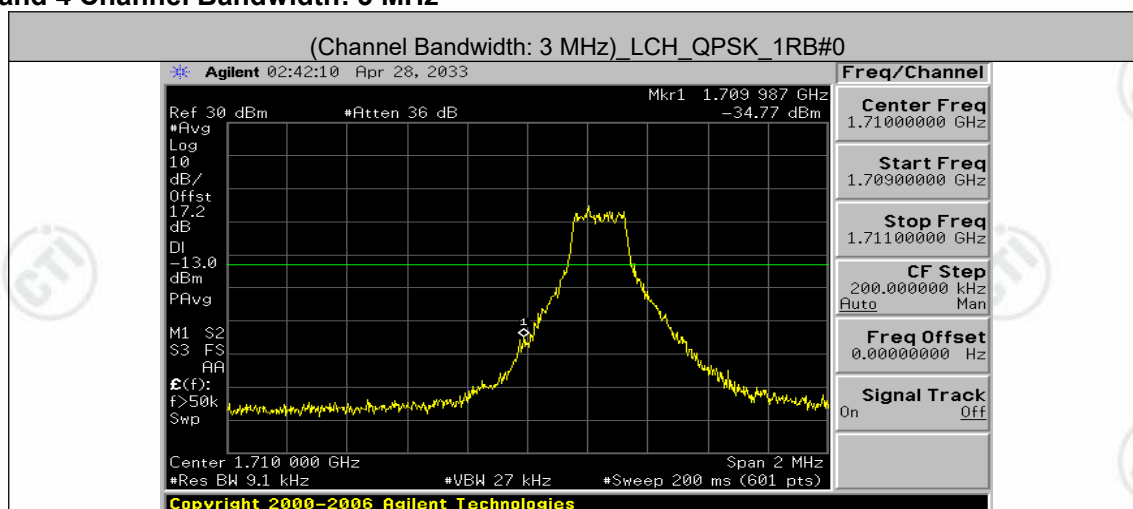


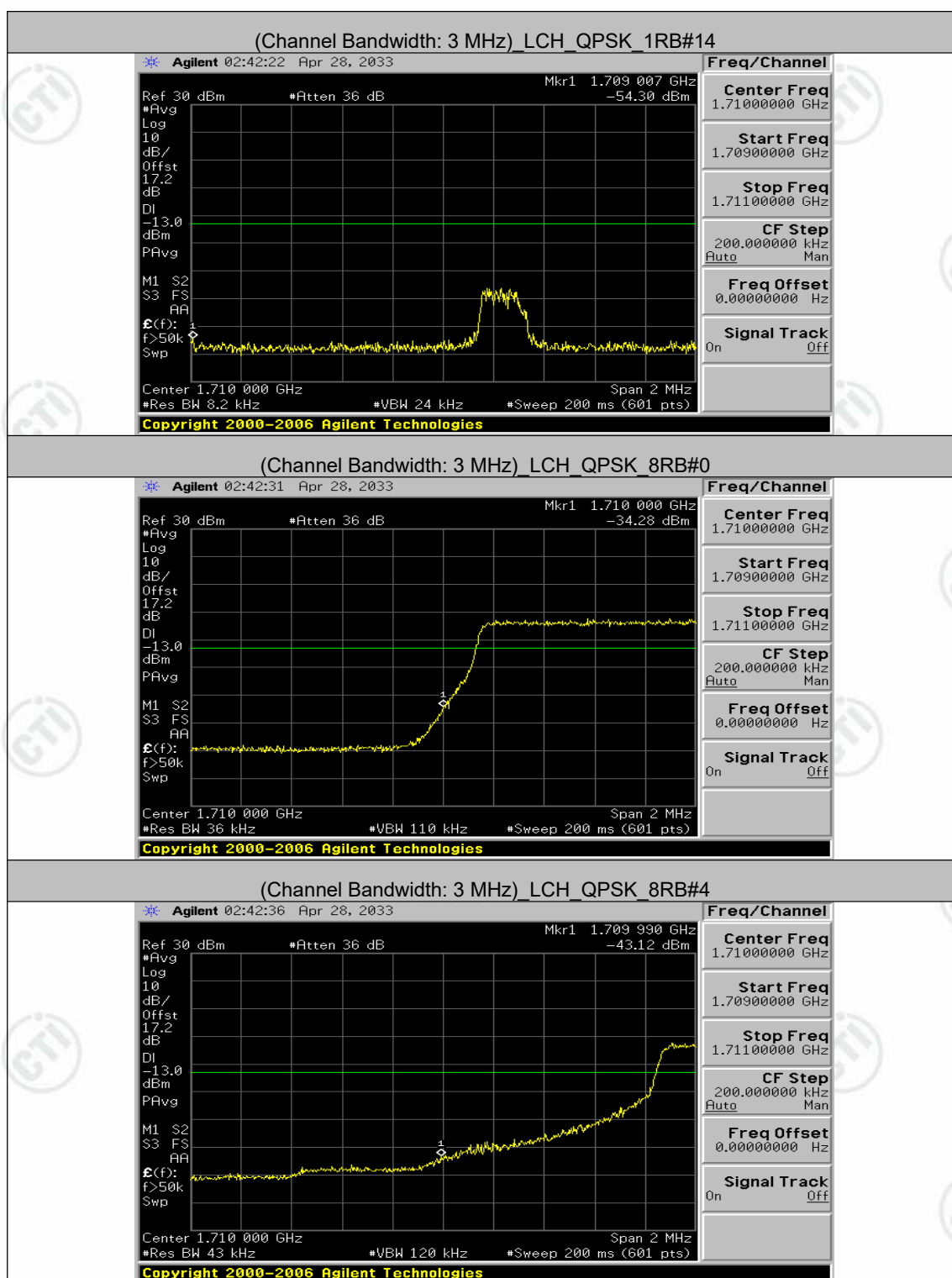


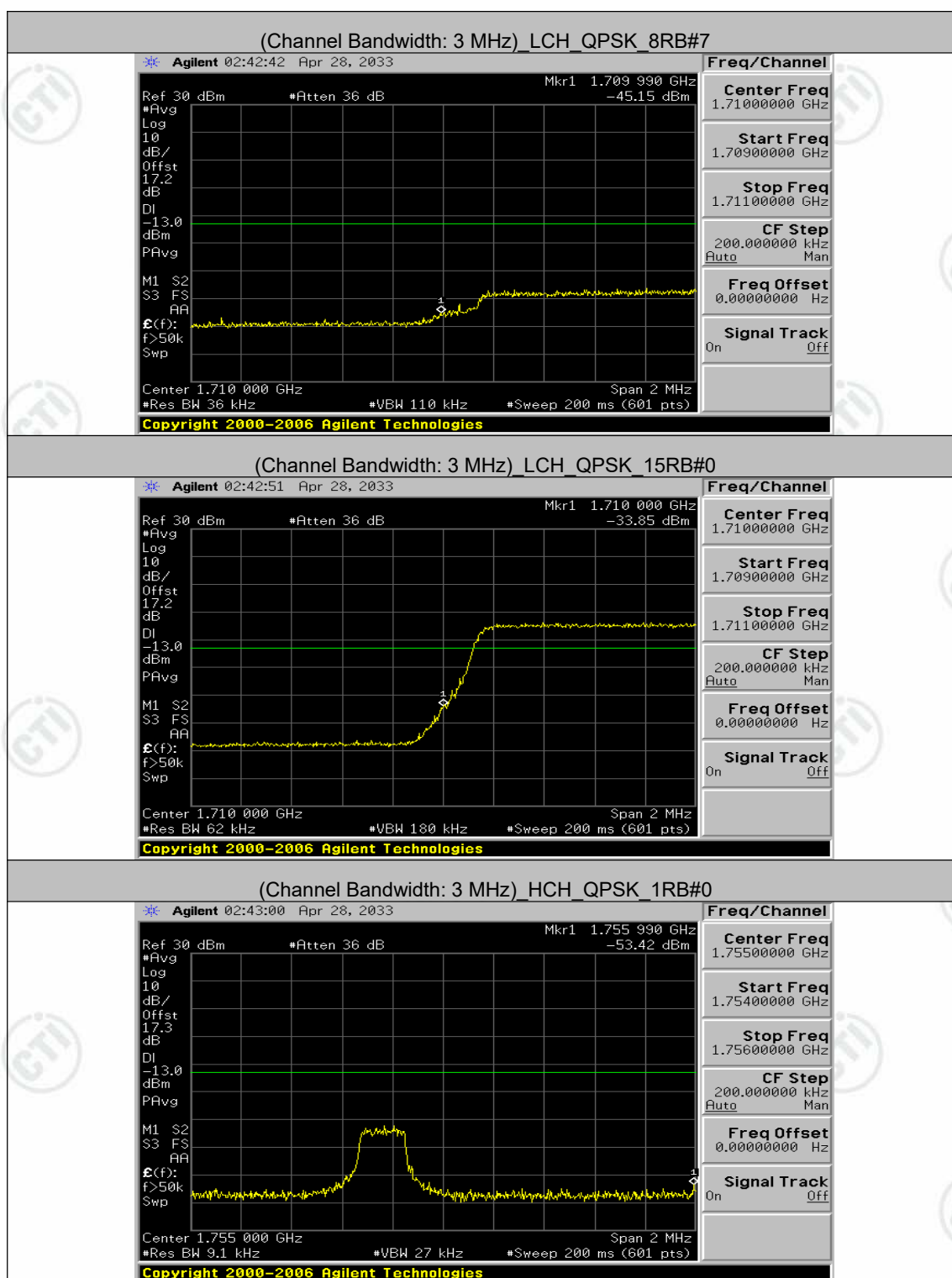


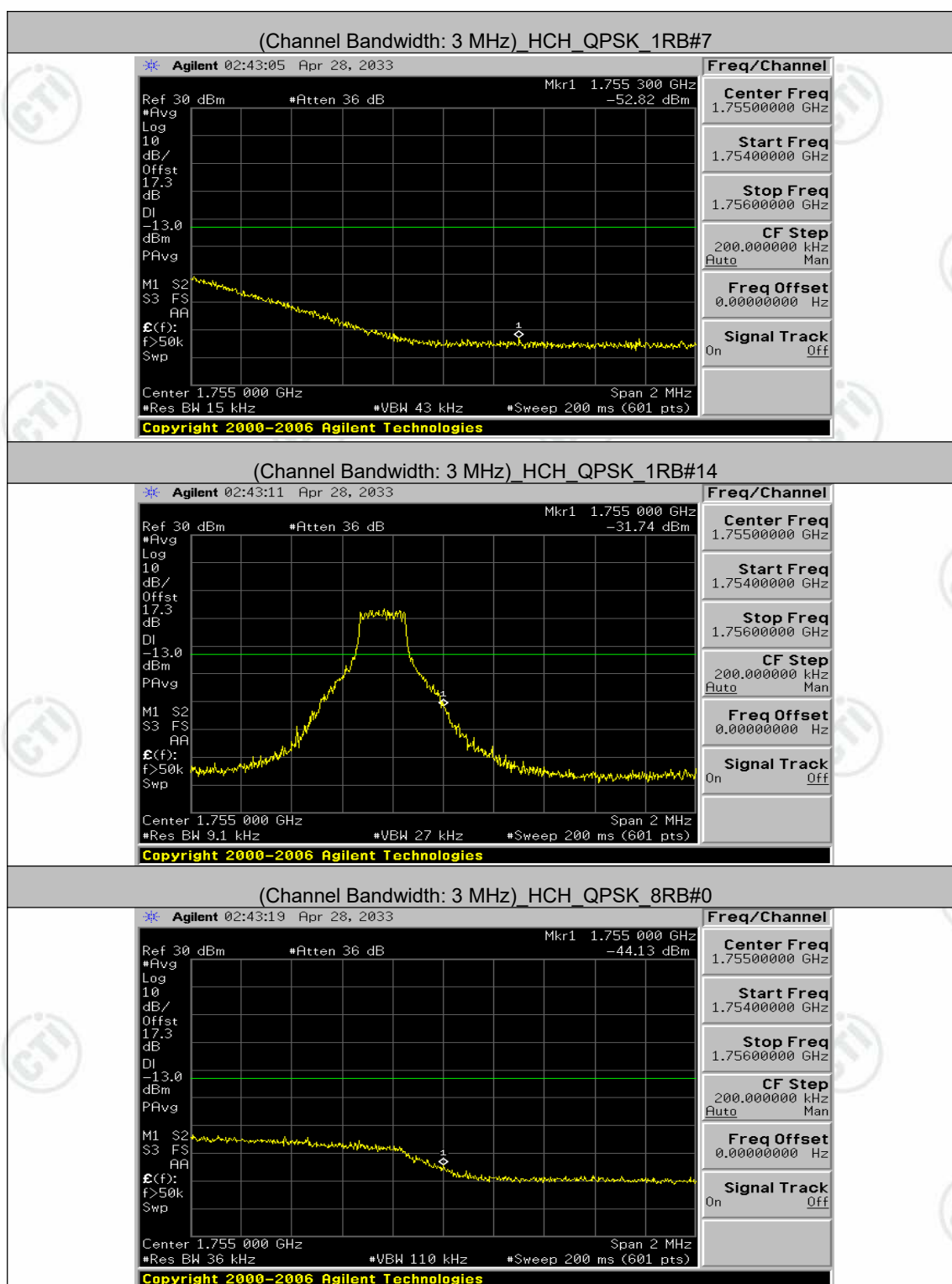


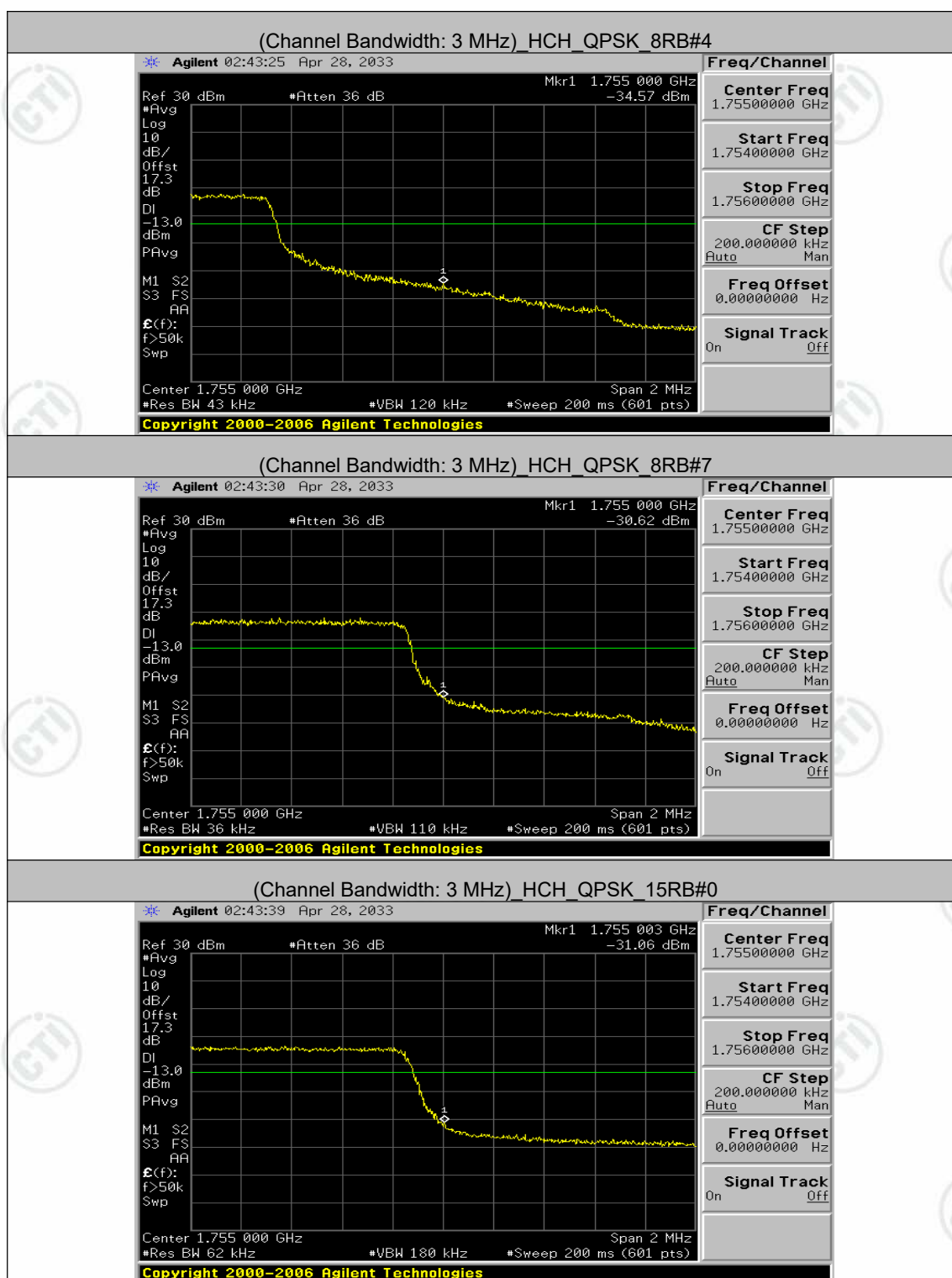
### LTE Band 4 Channel Bandwidth: 3 MHz

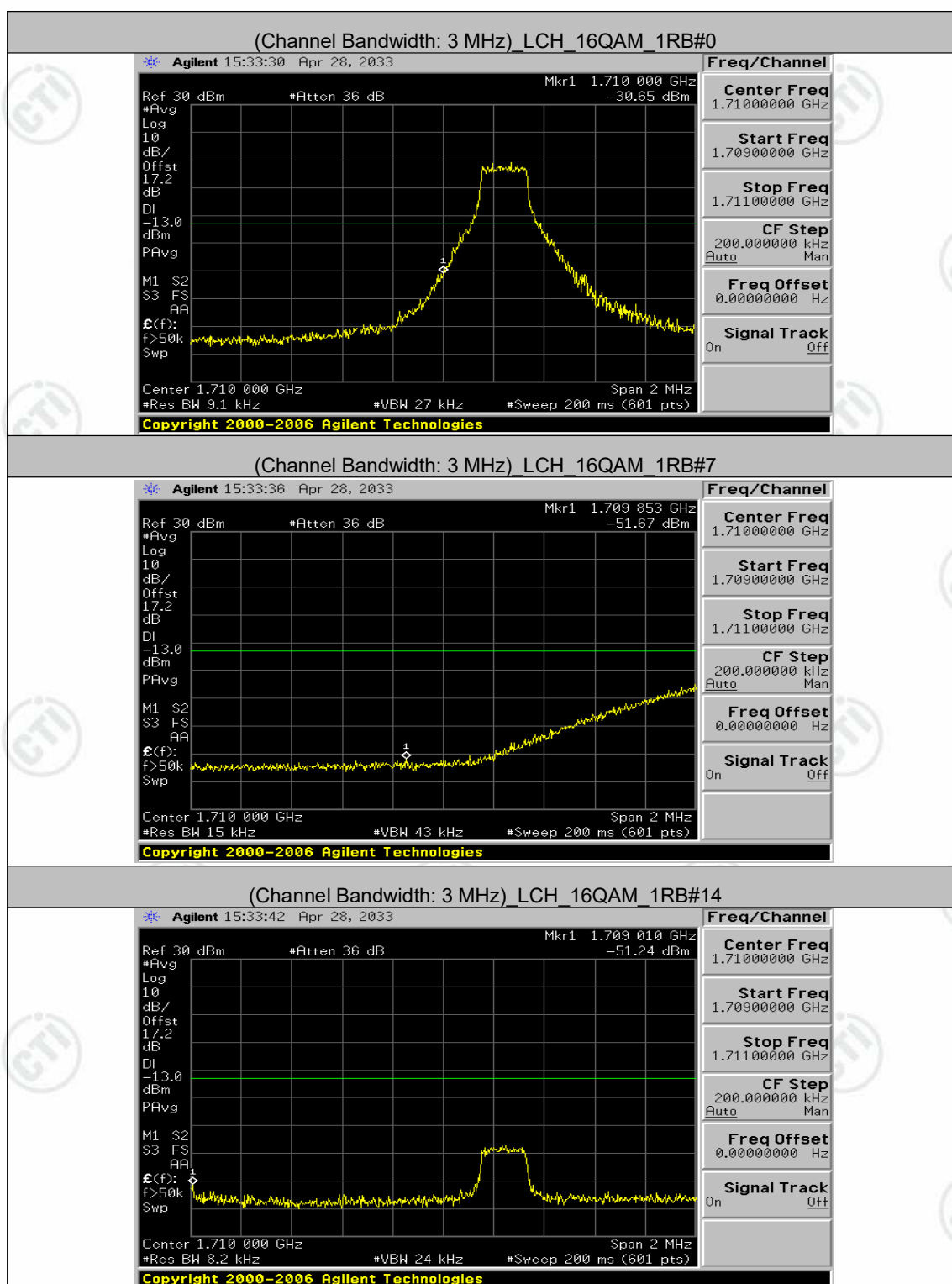


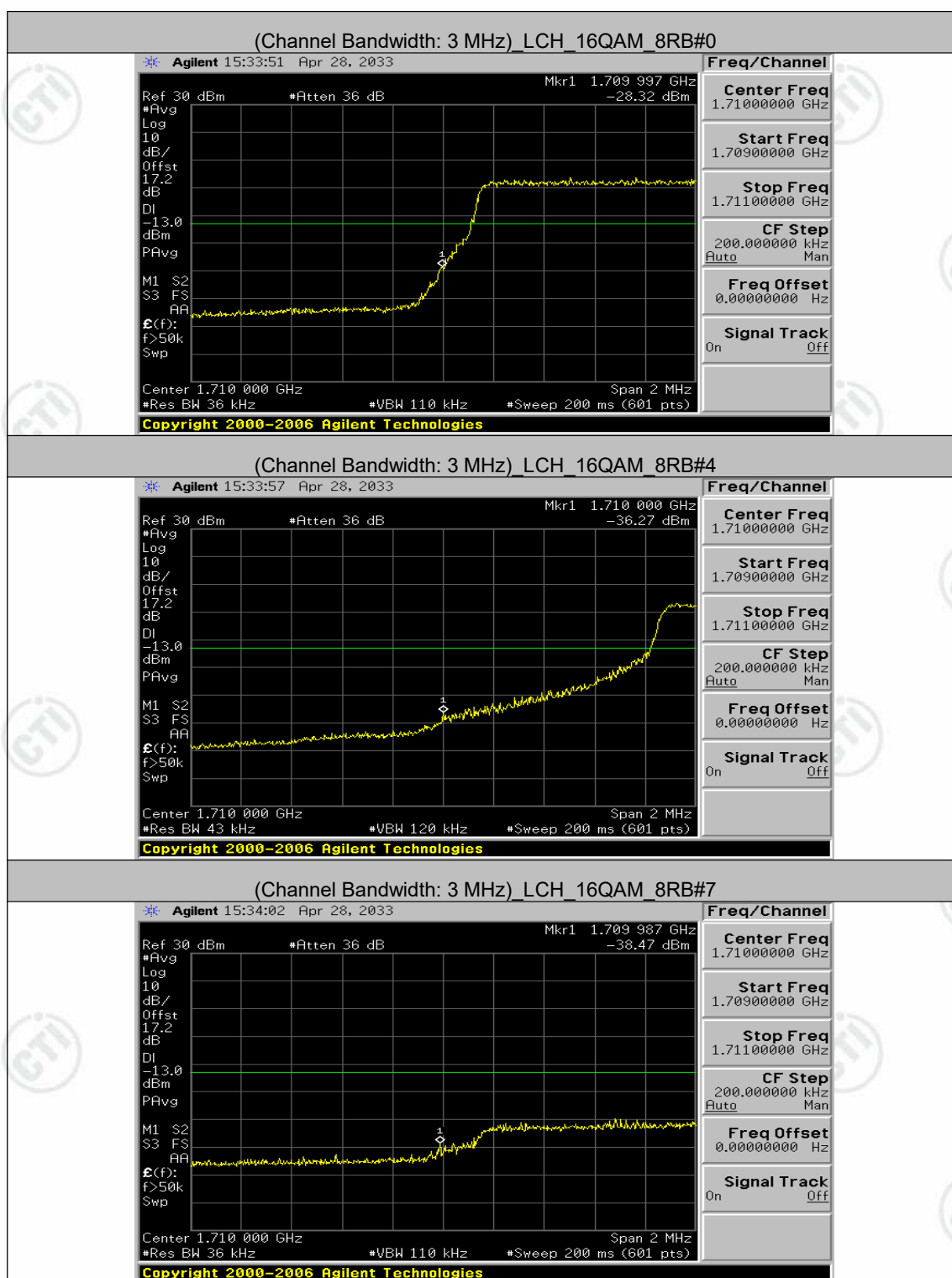


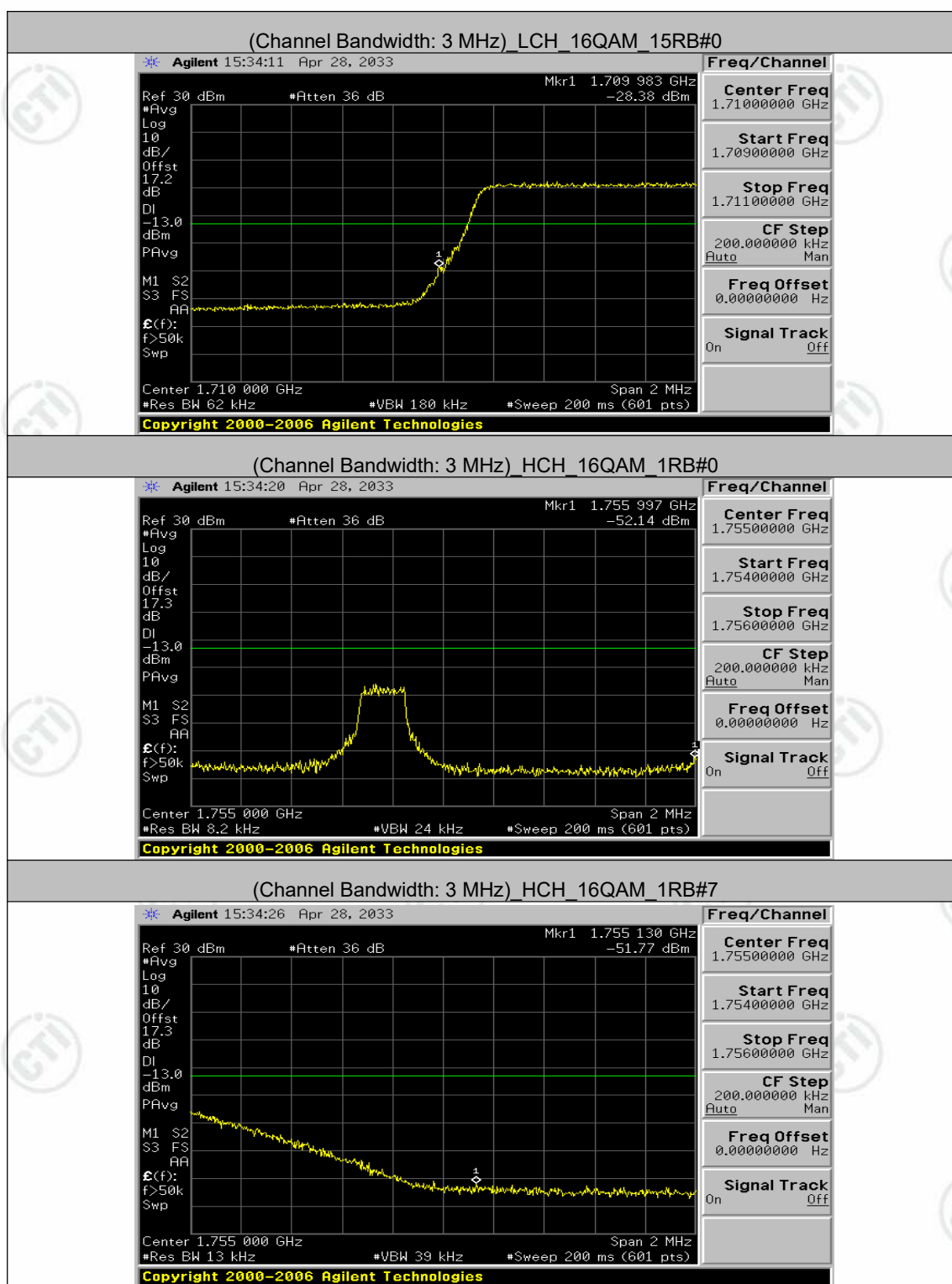


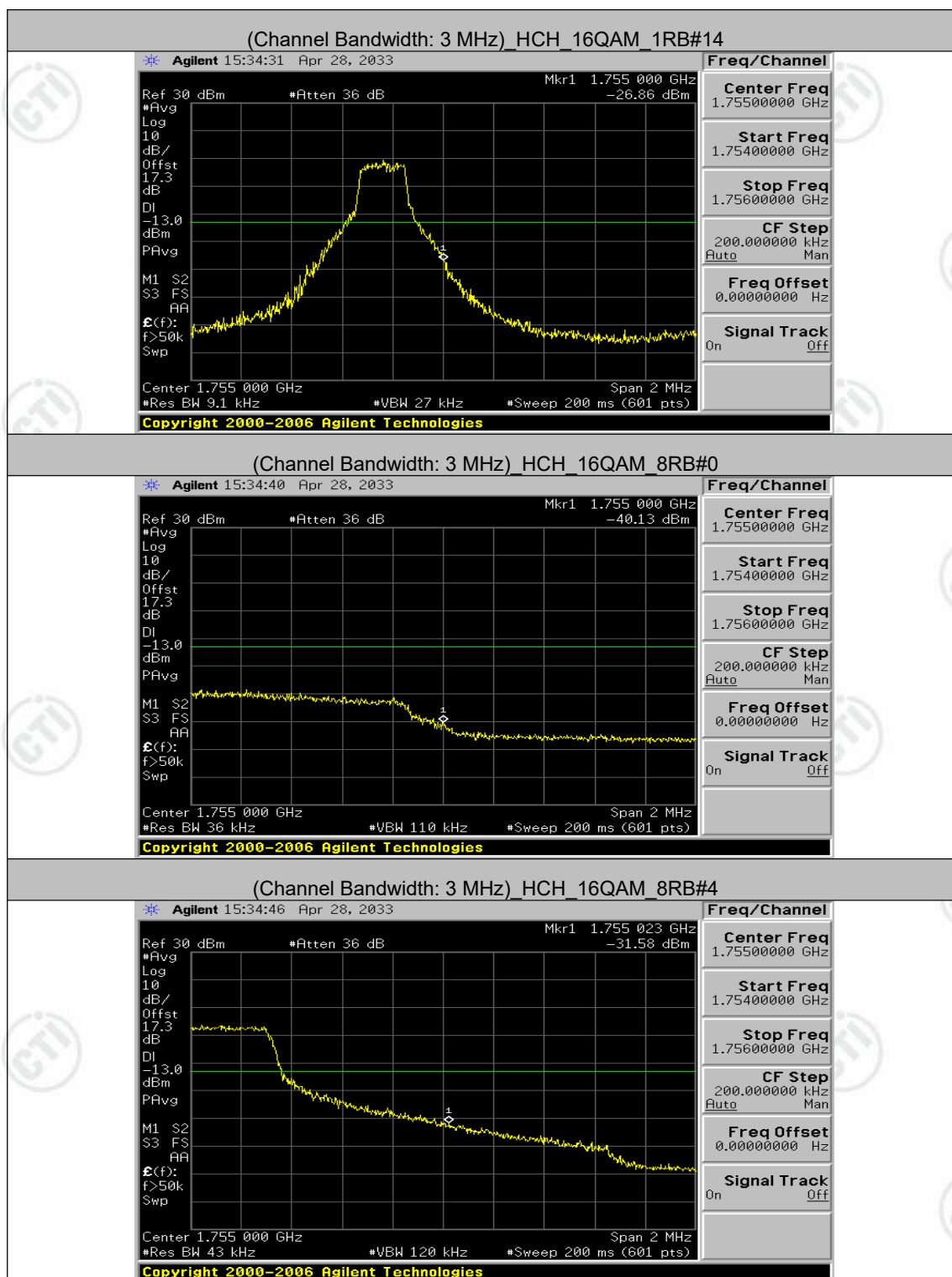


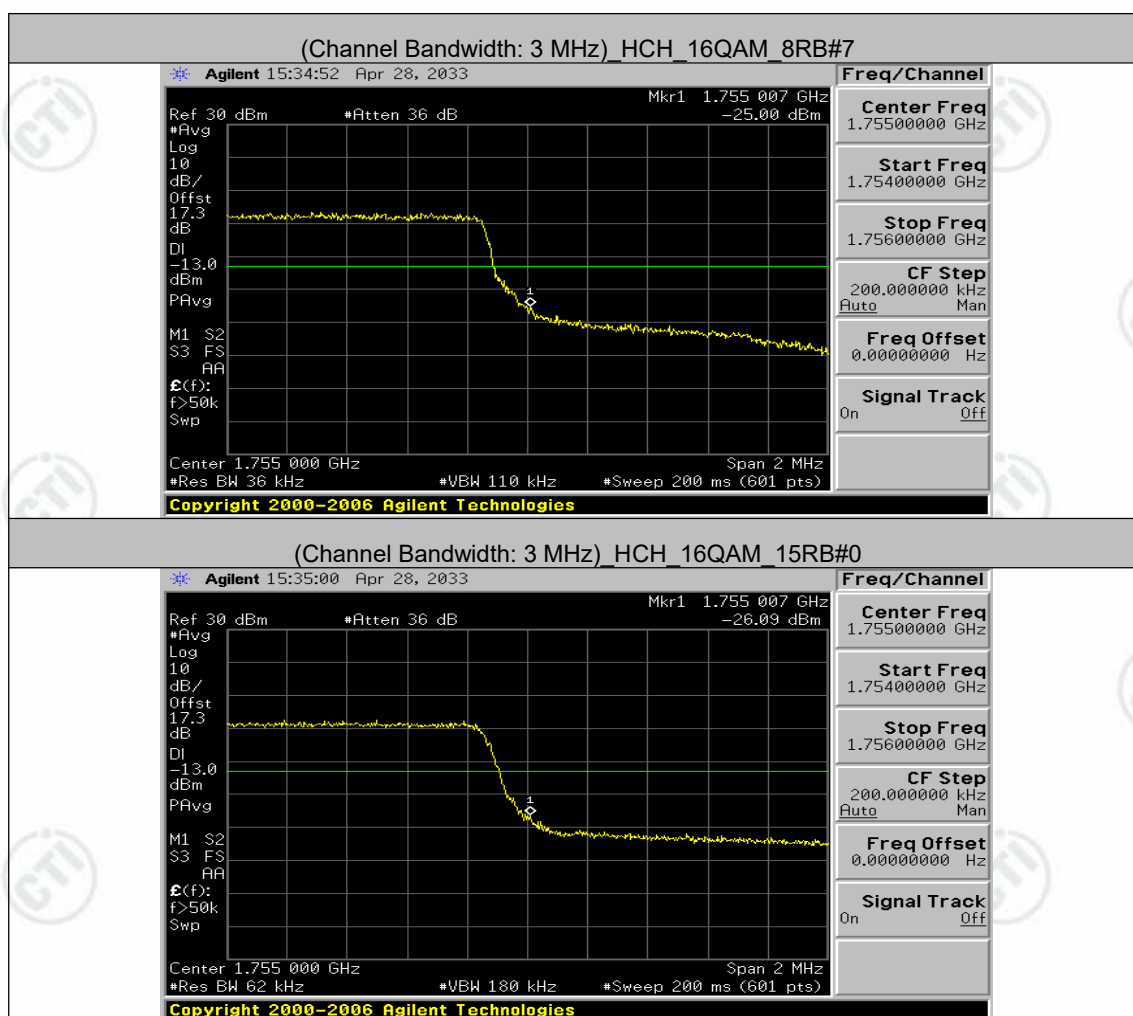




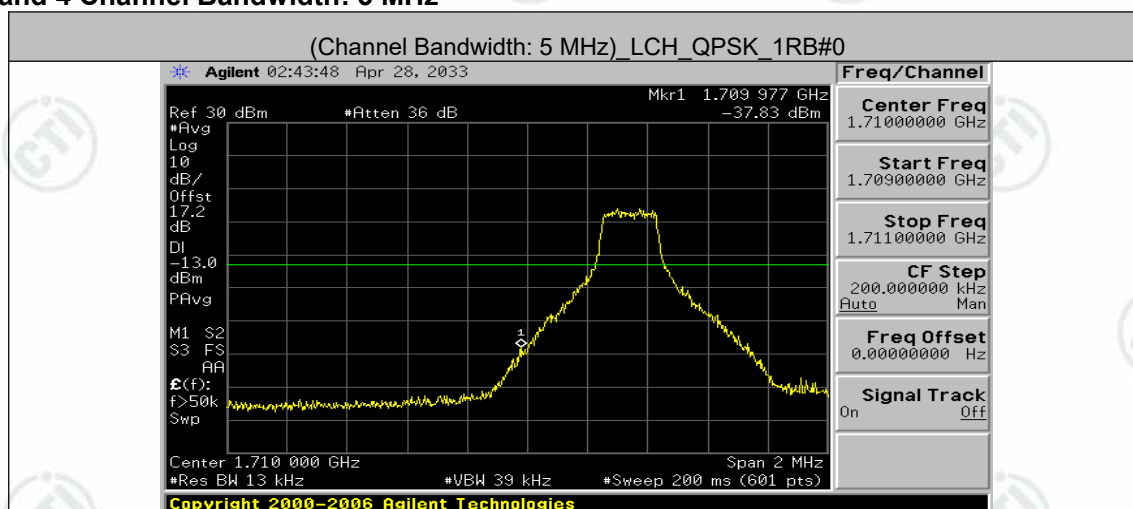


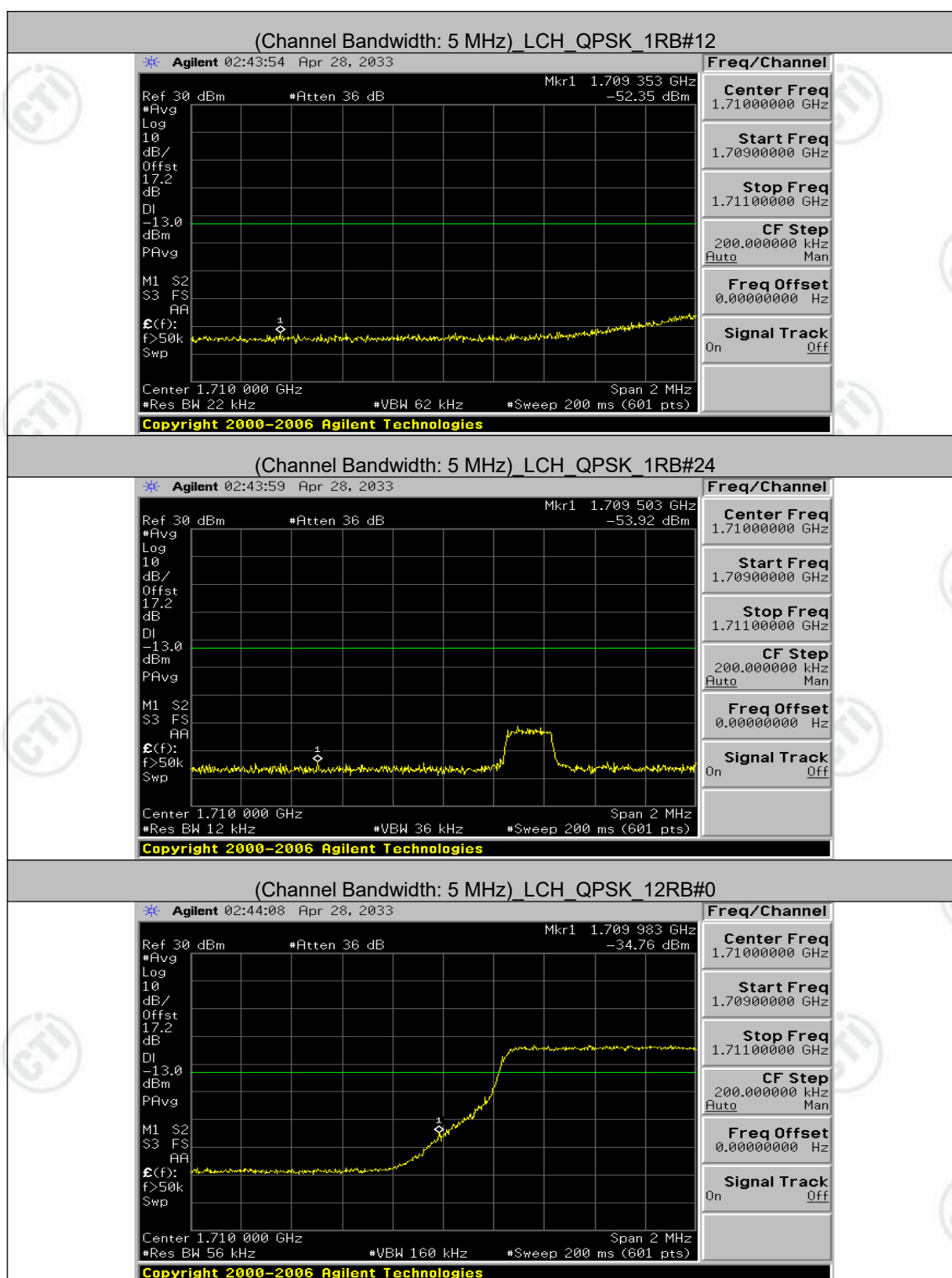


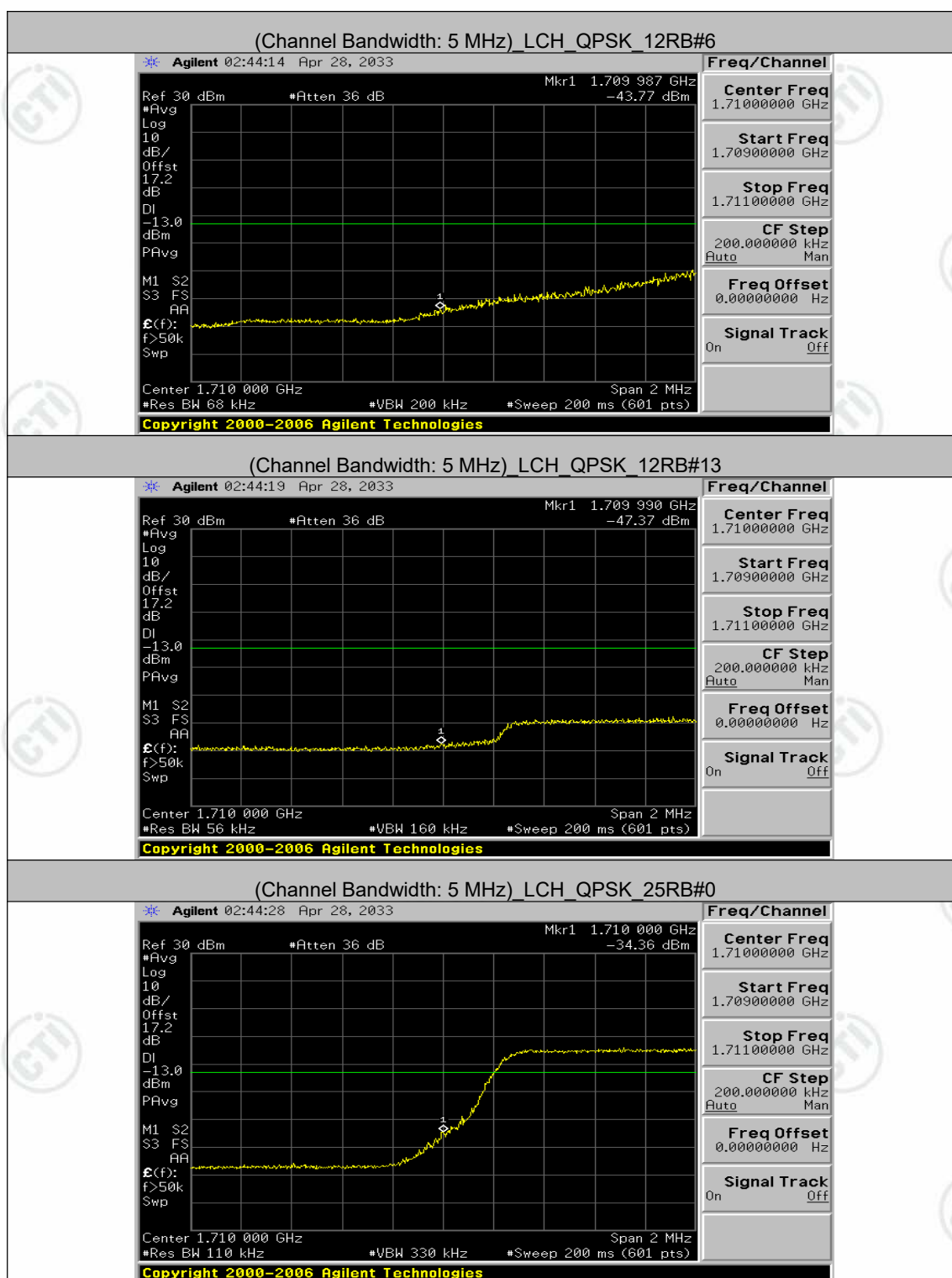


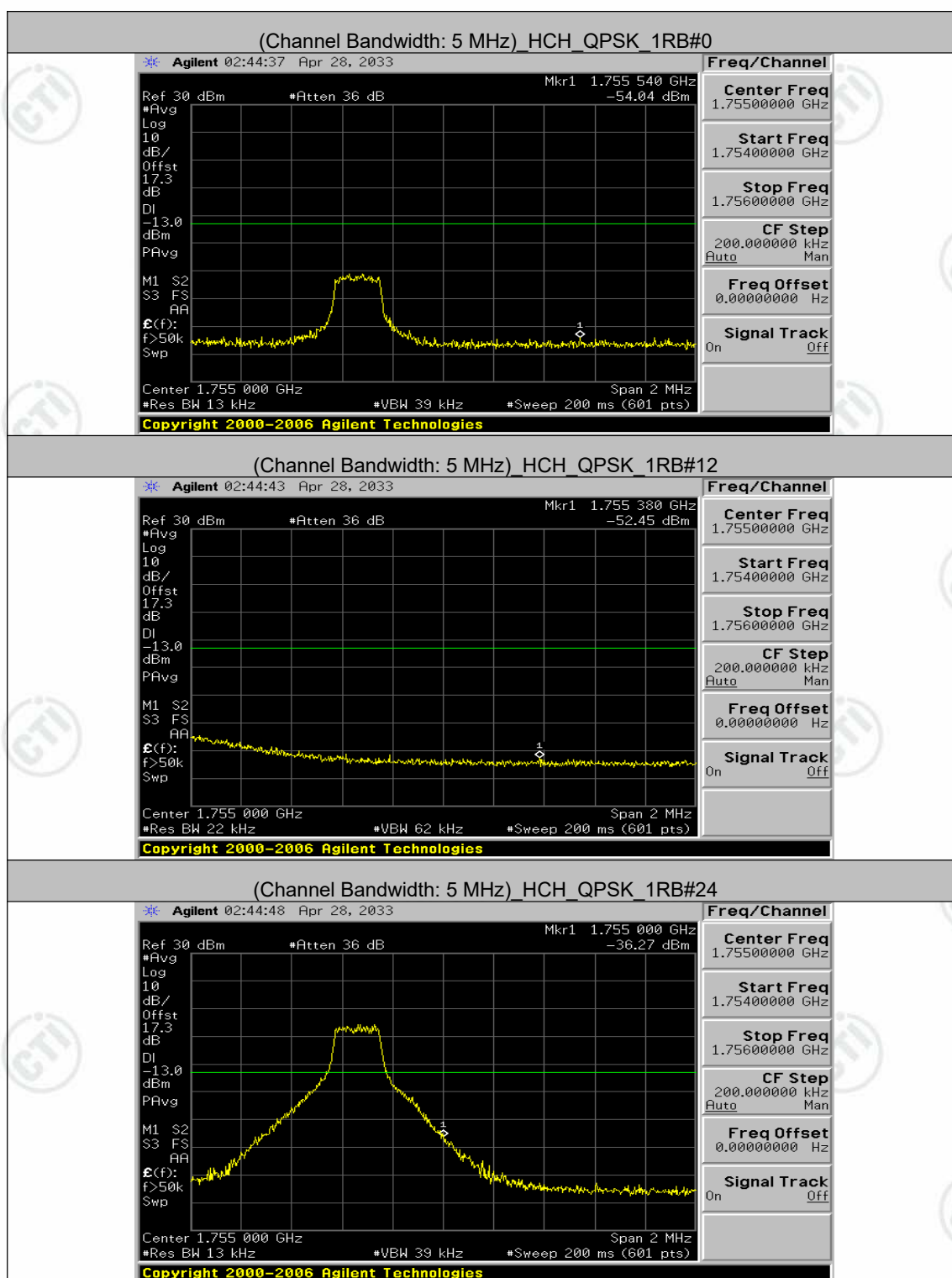


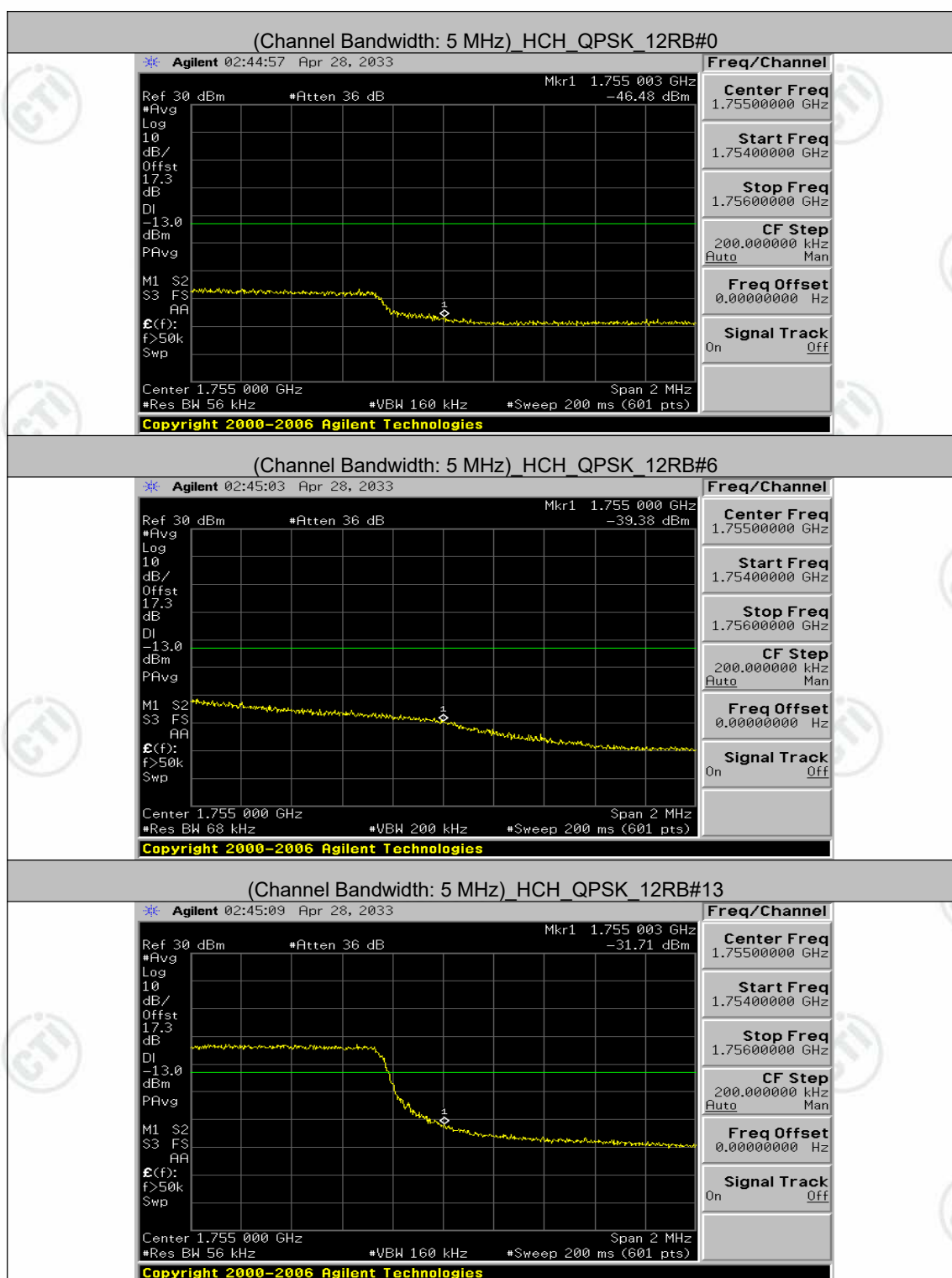
#### LTE Band 4 Channel Bandwidth: 5 MHz

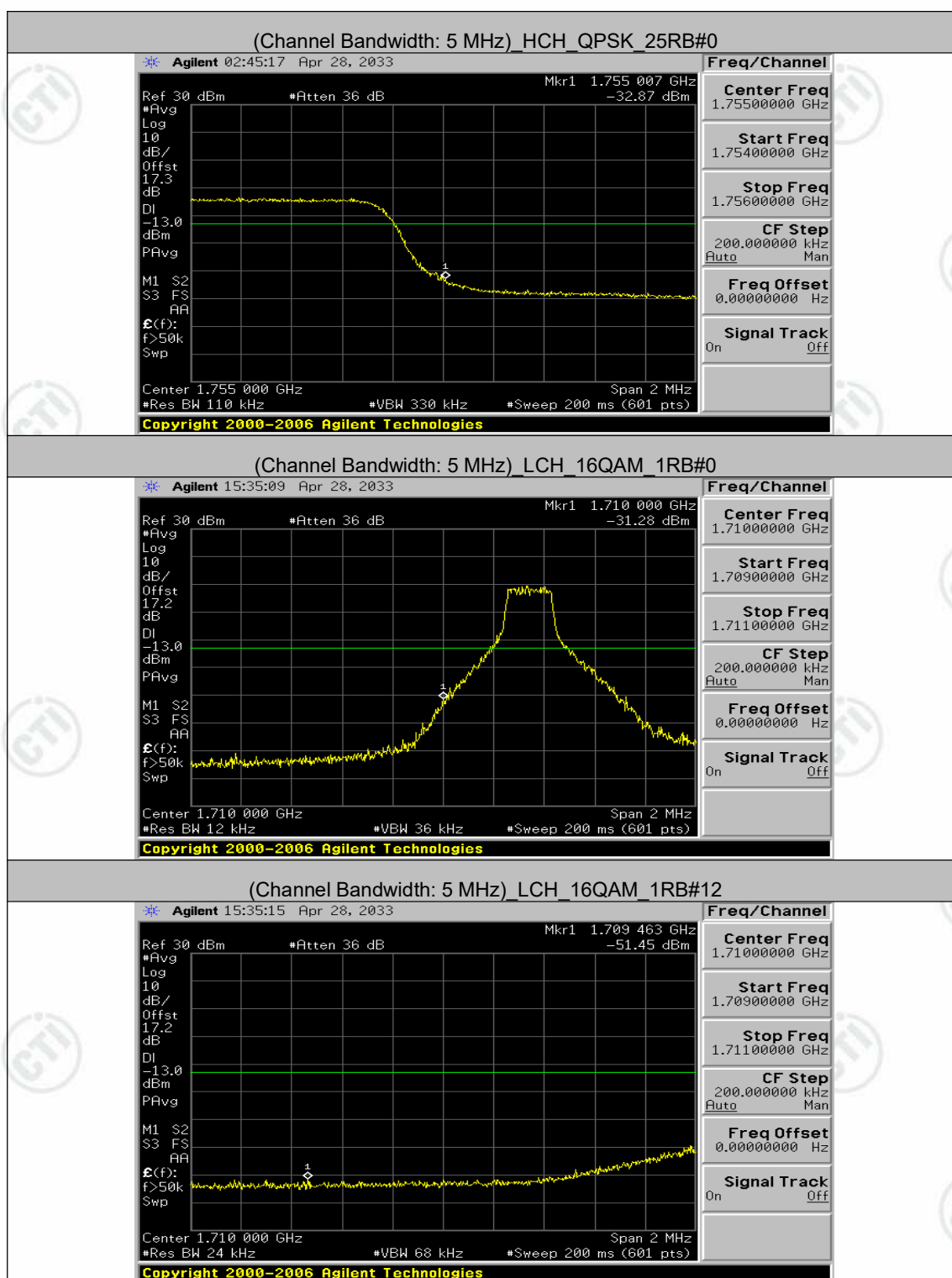


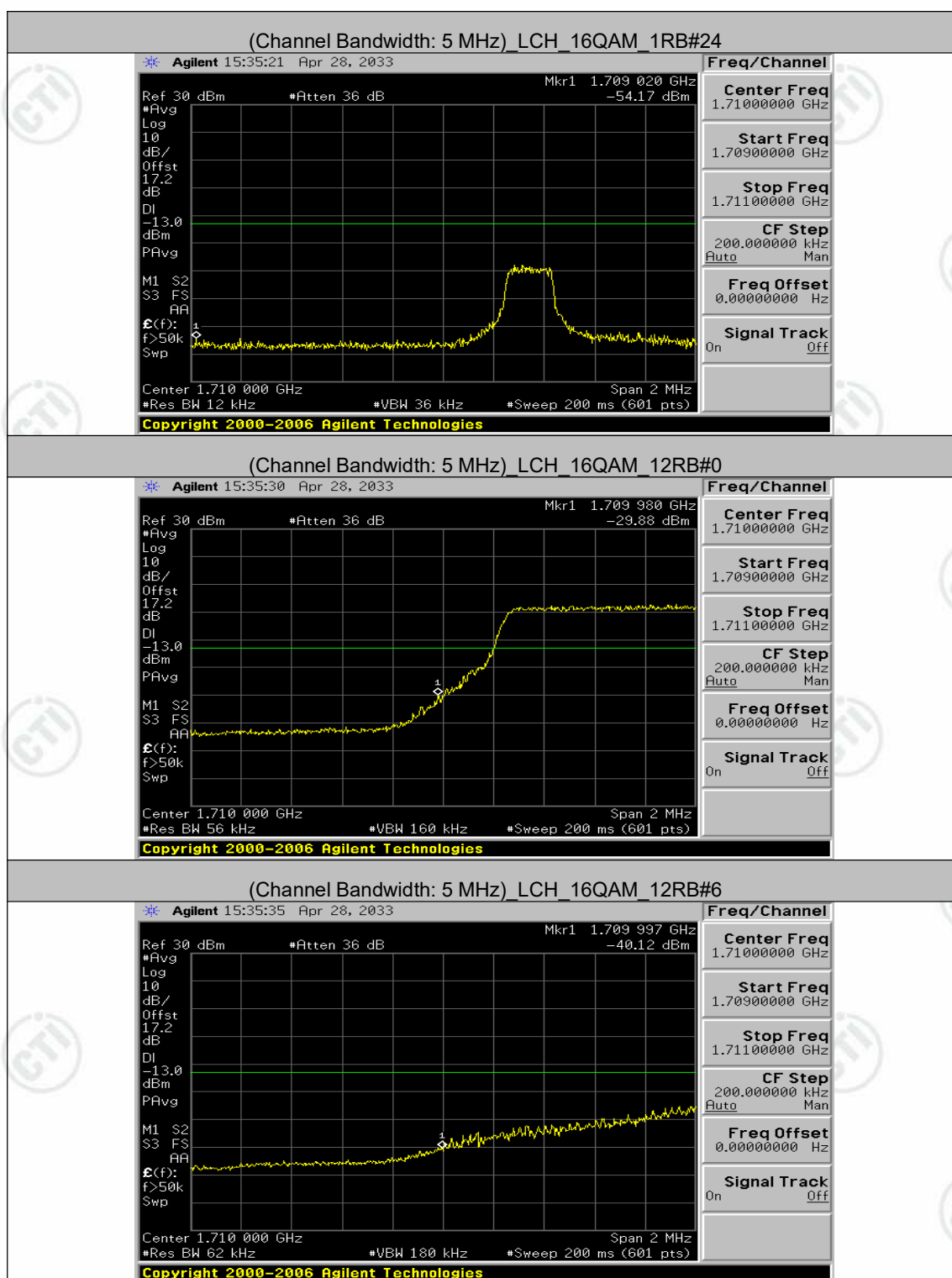


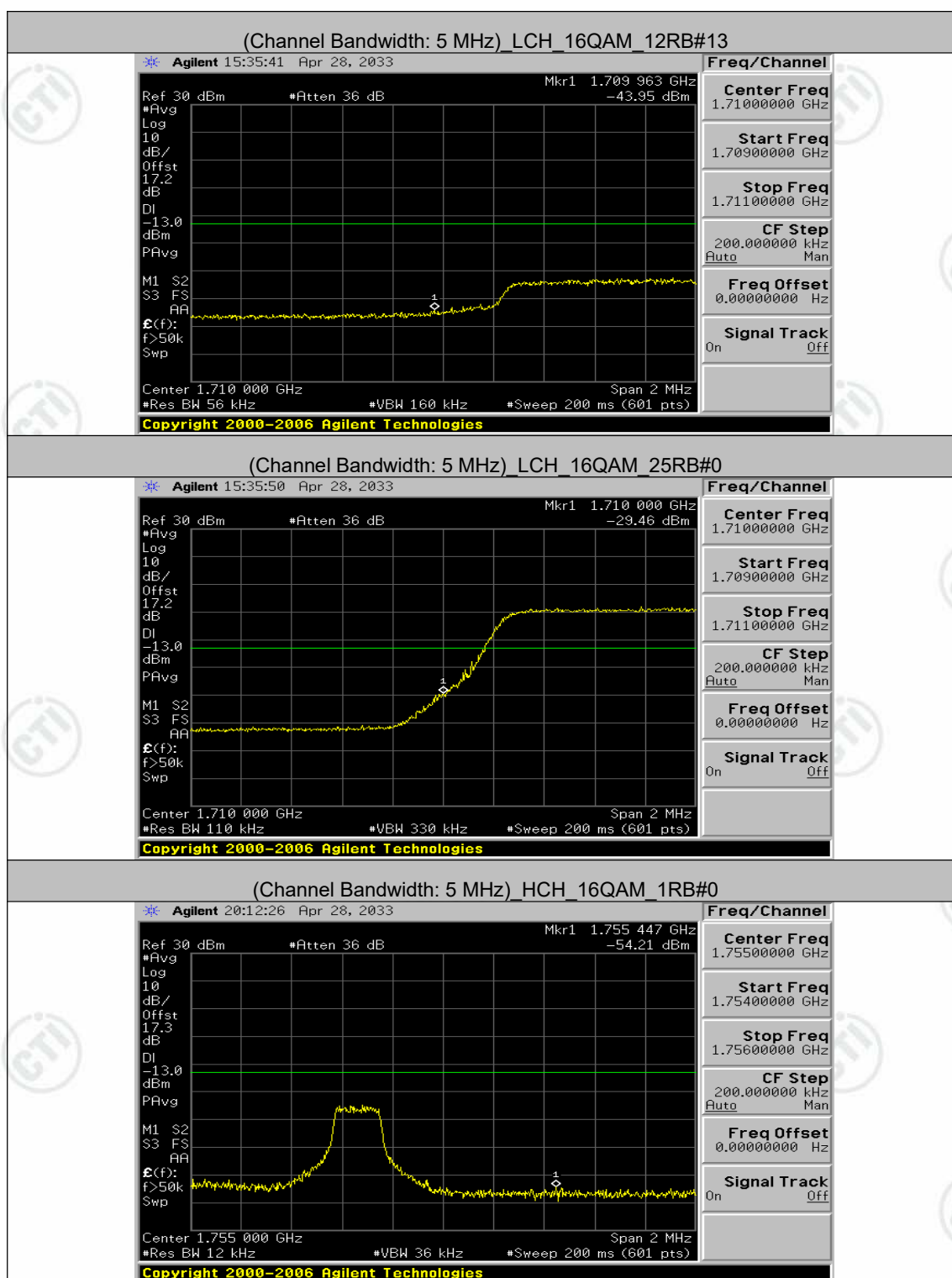


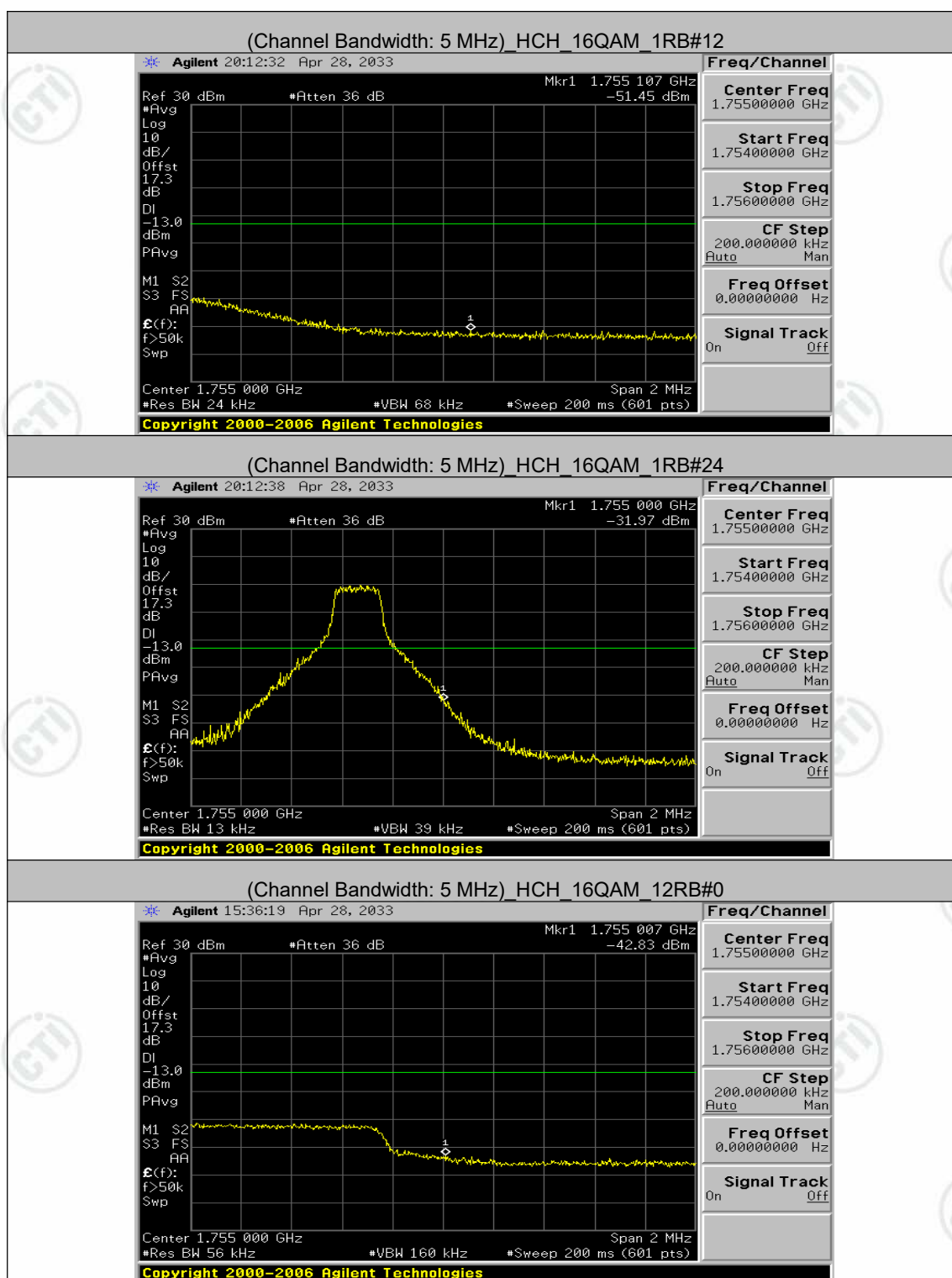


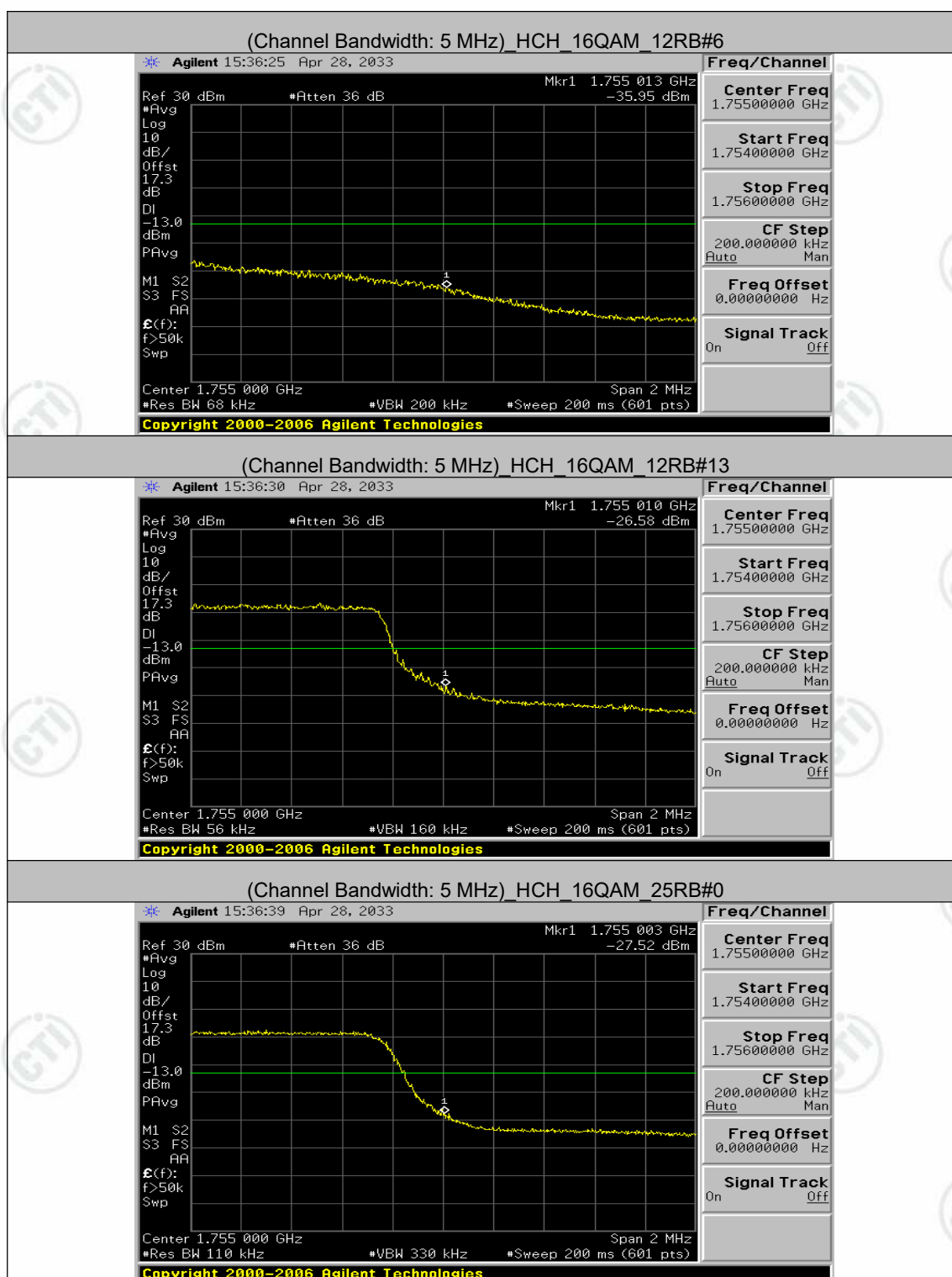




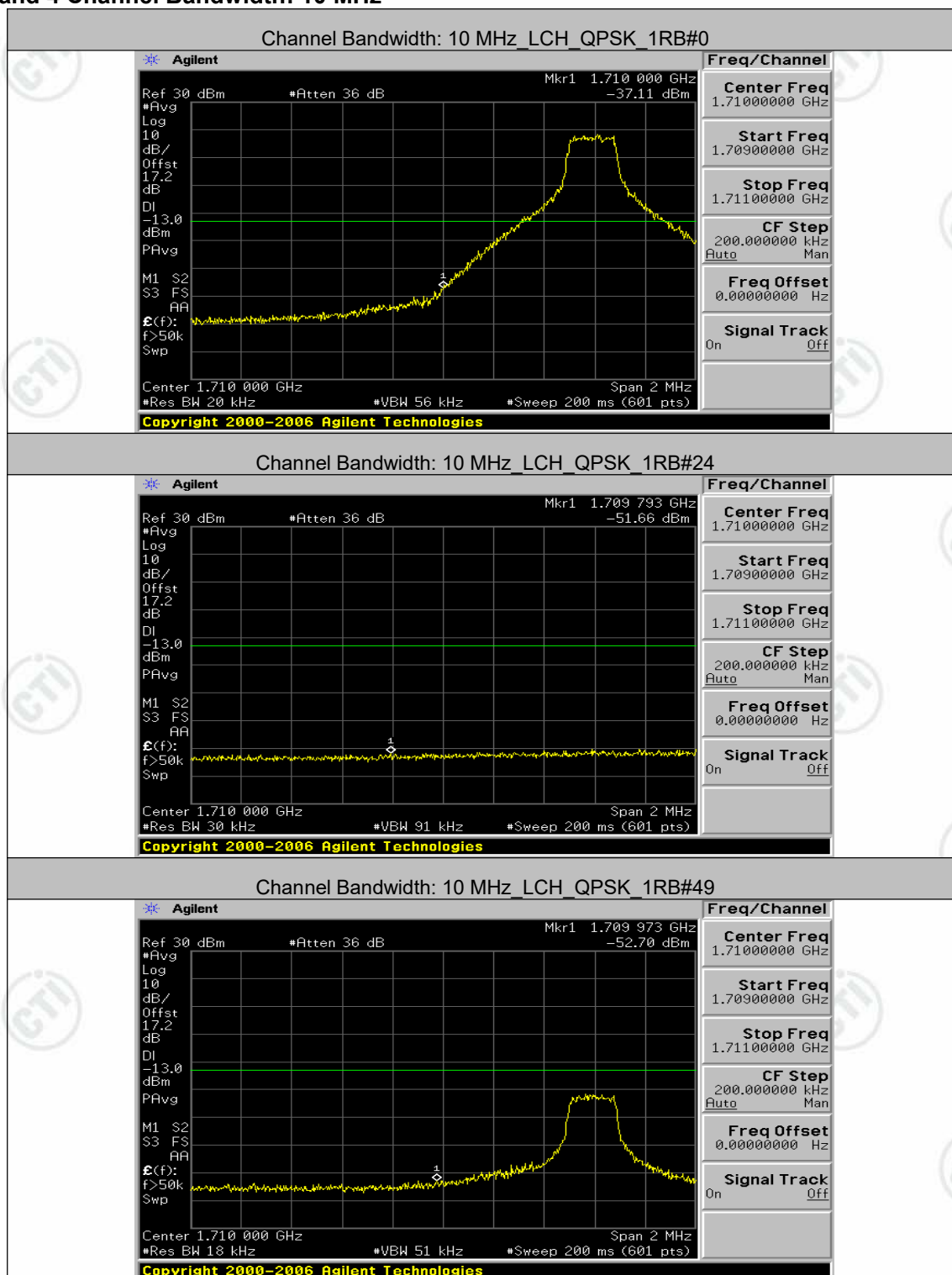


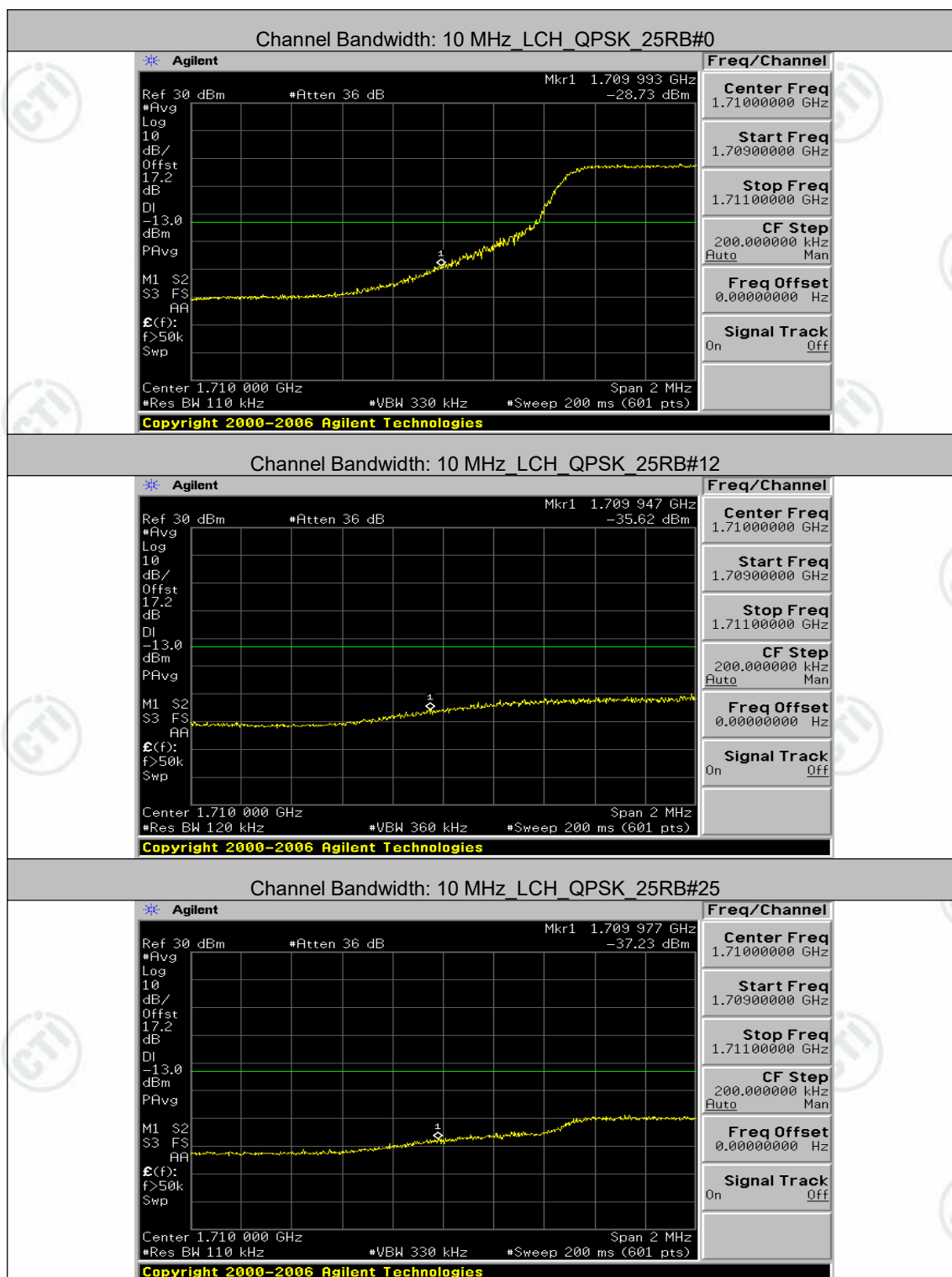


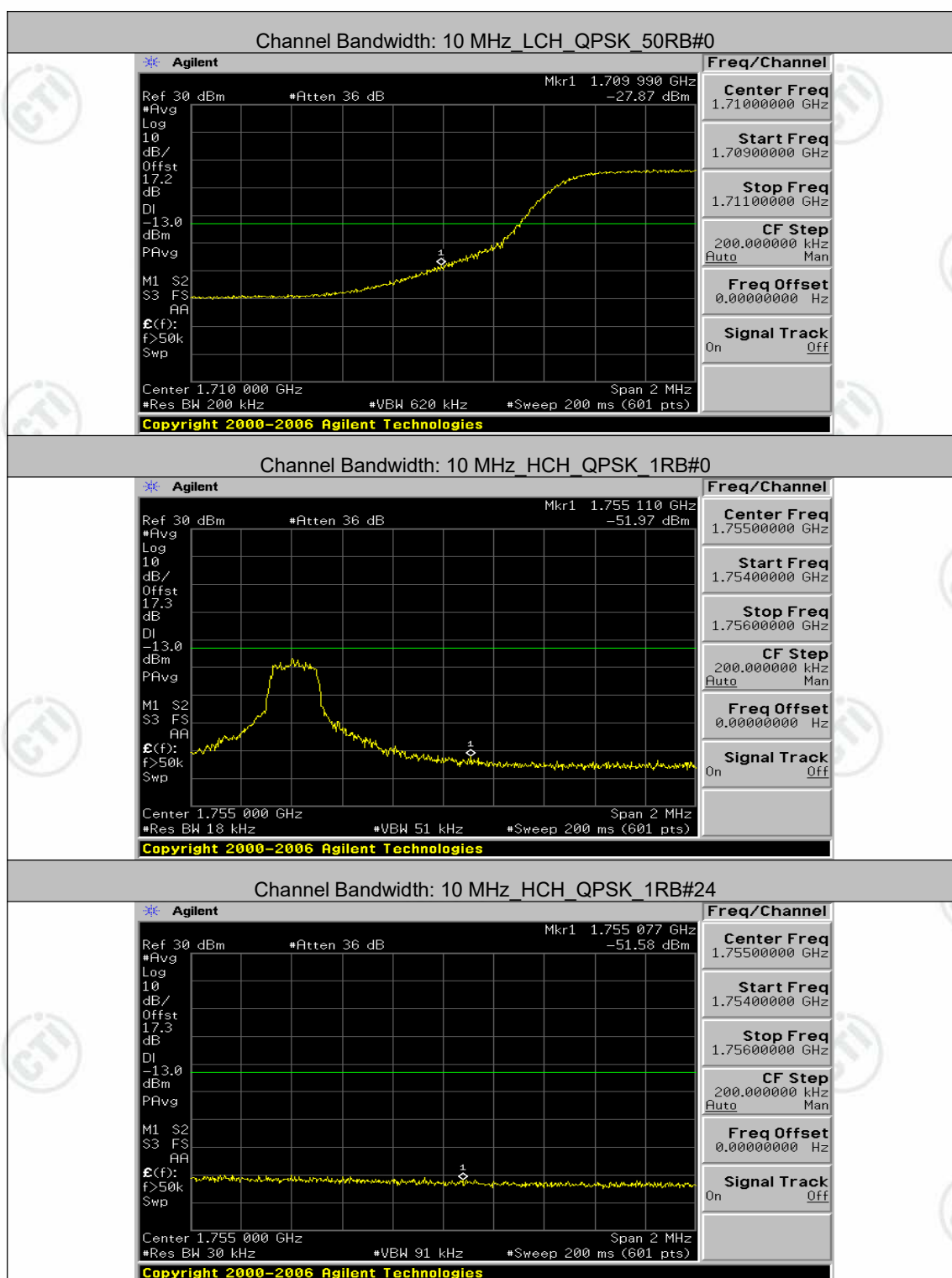


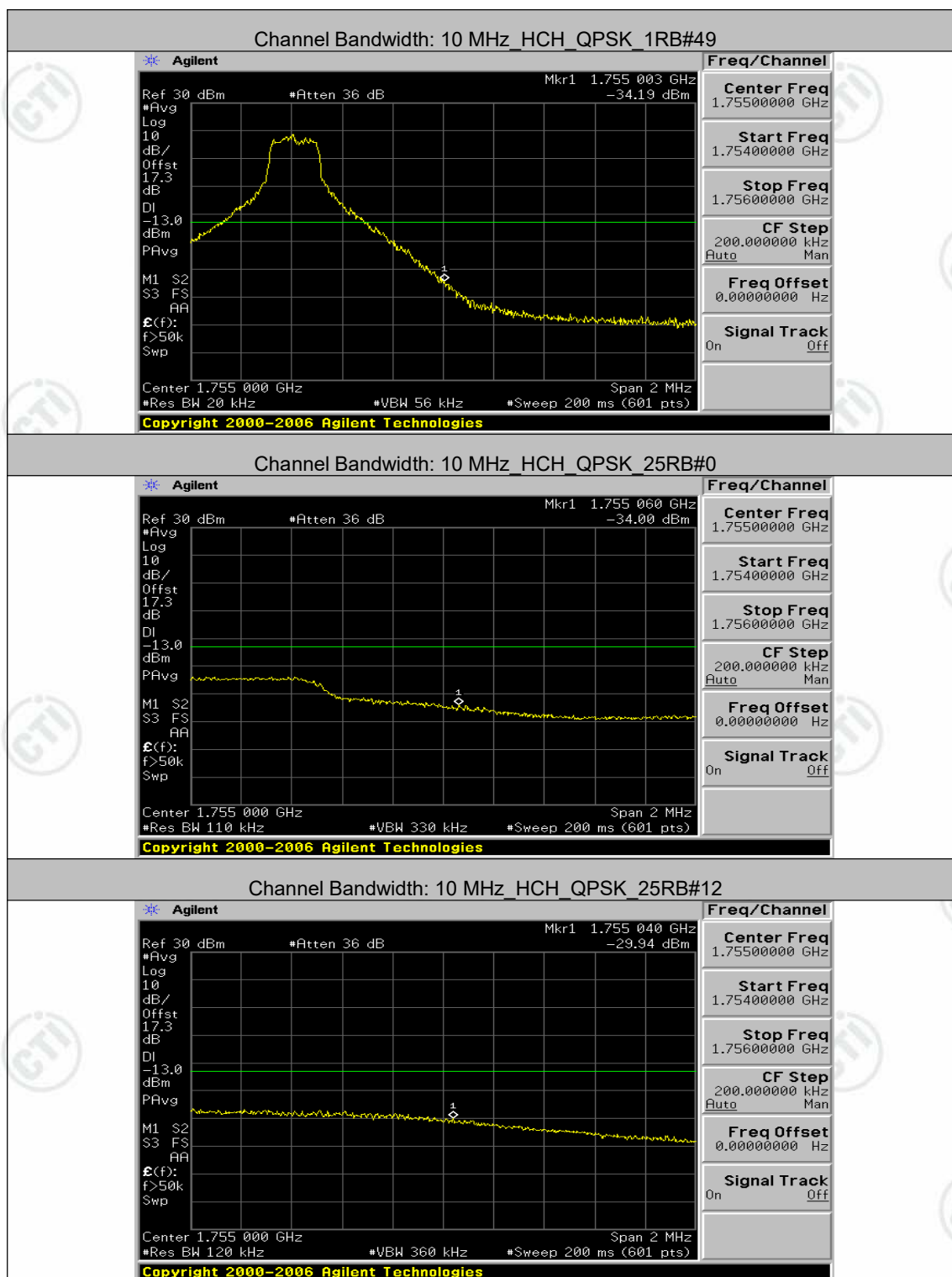


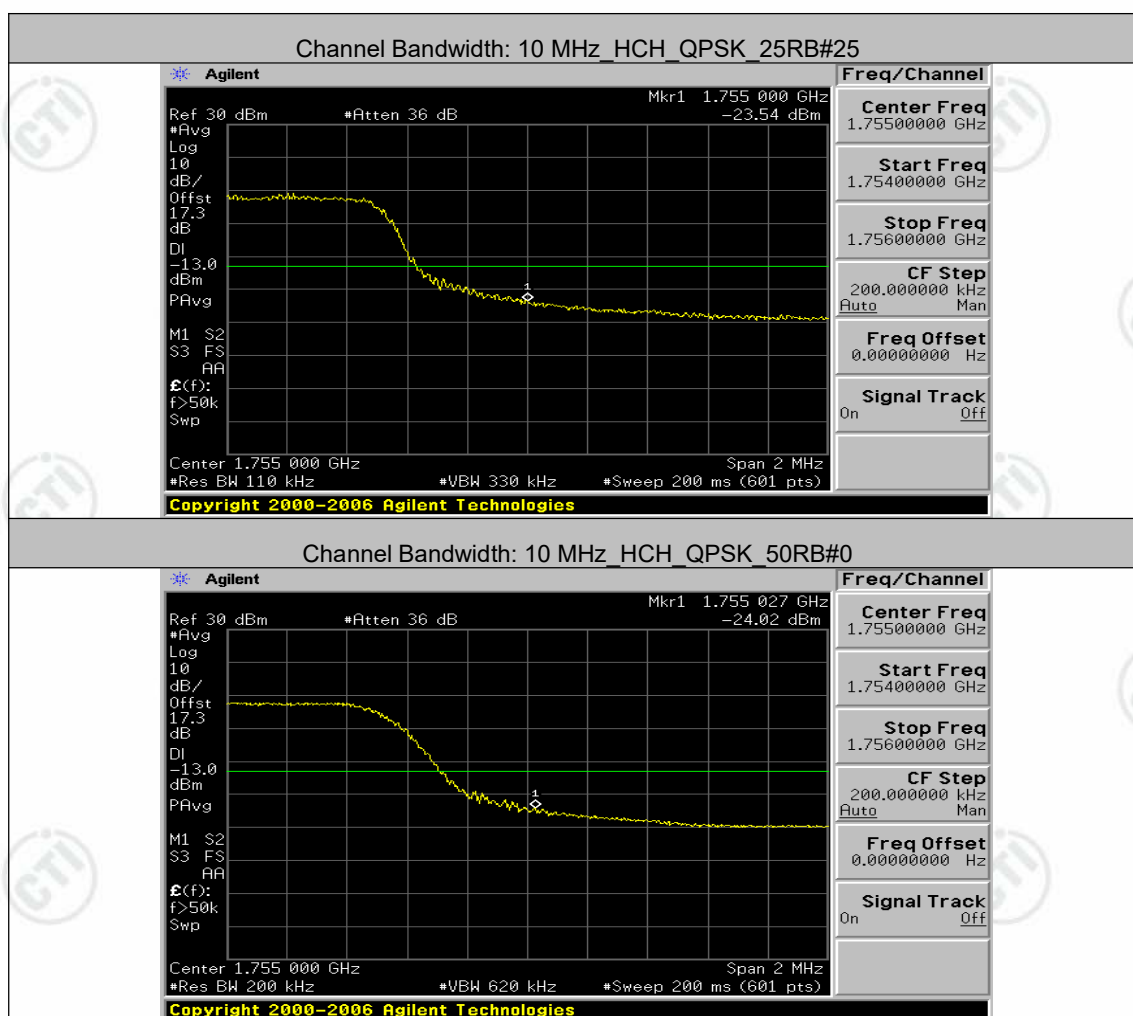
**LTE Band 4 Channel Bandwidth: 10 MHz**



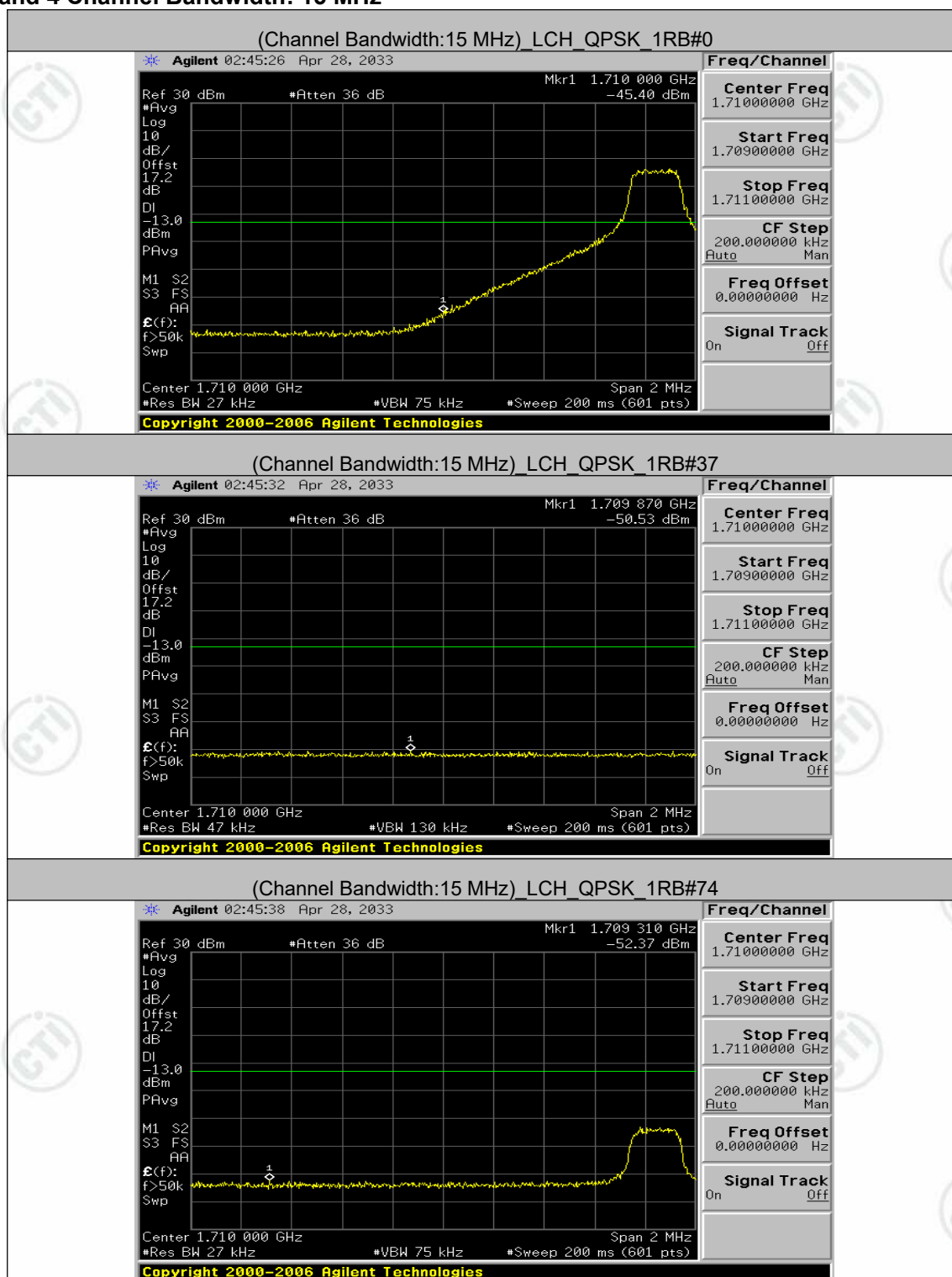


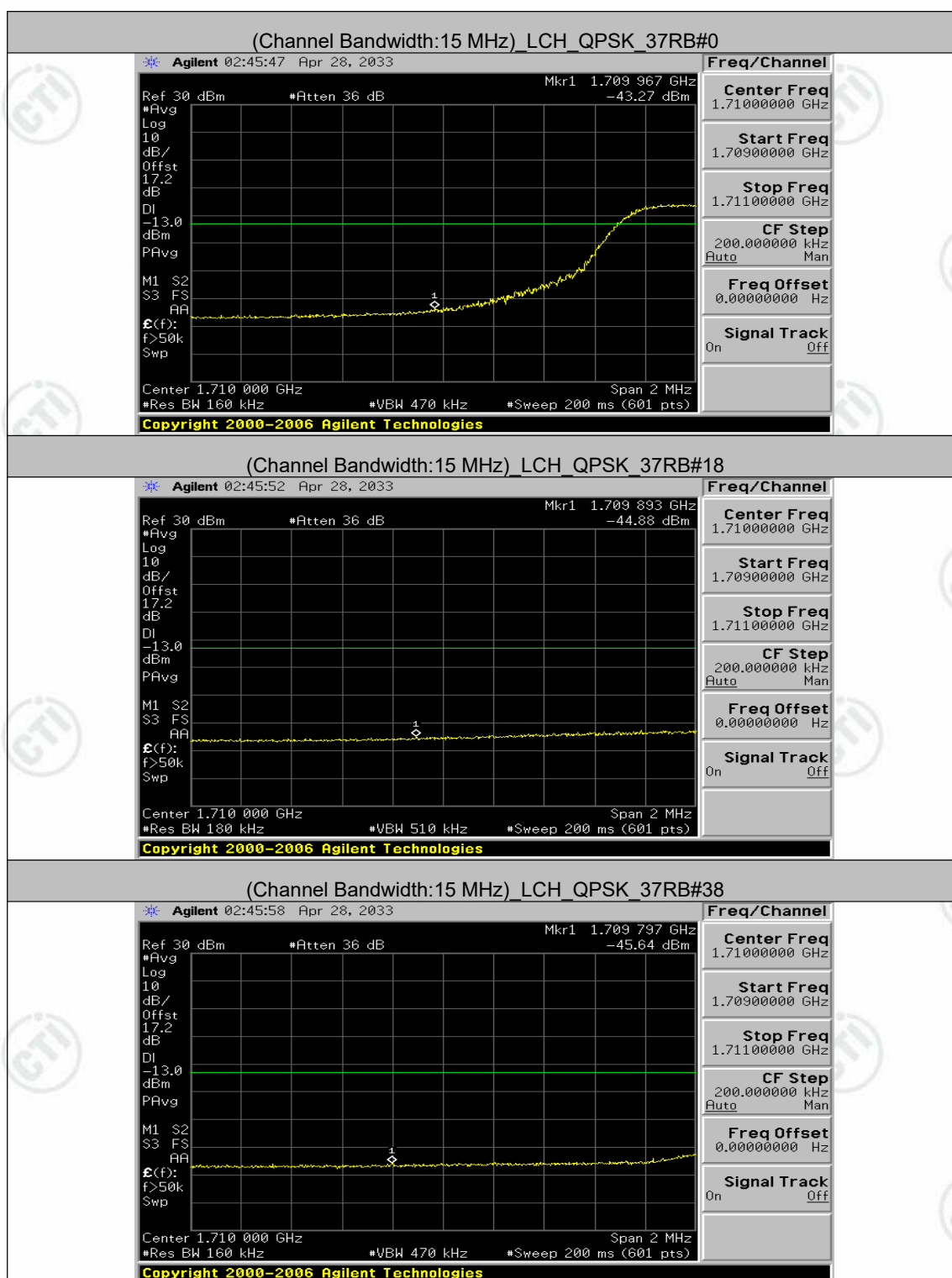


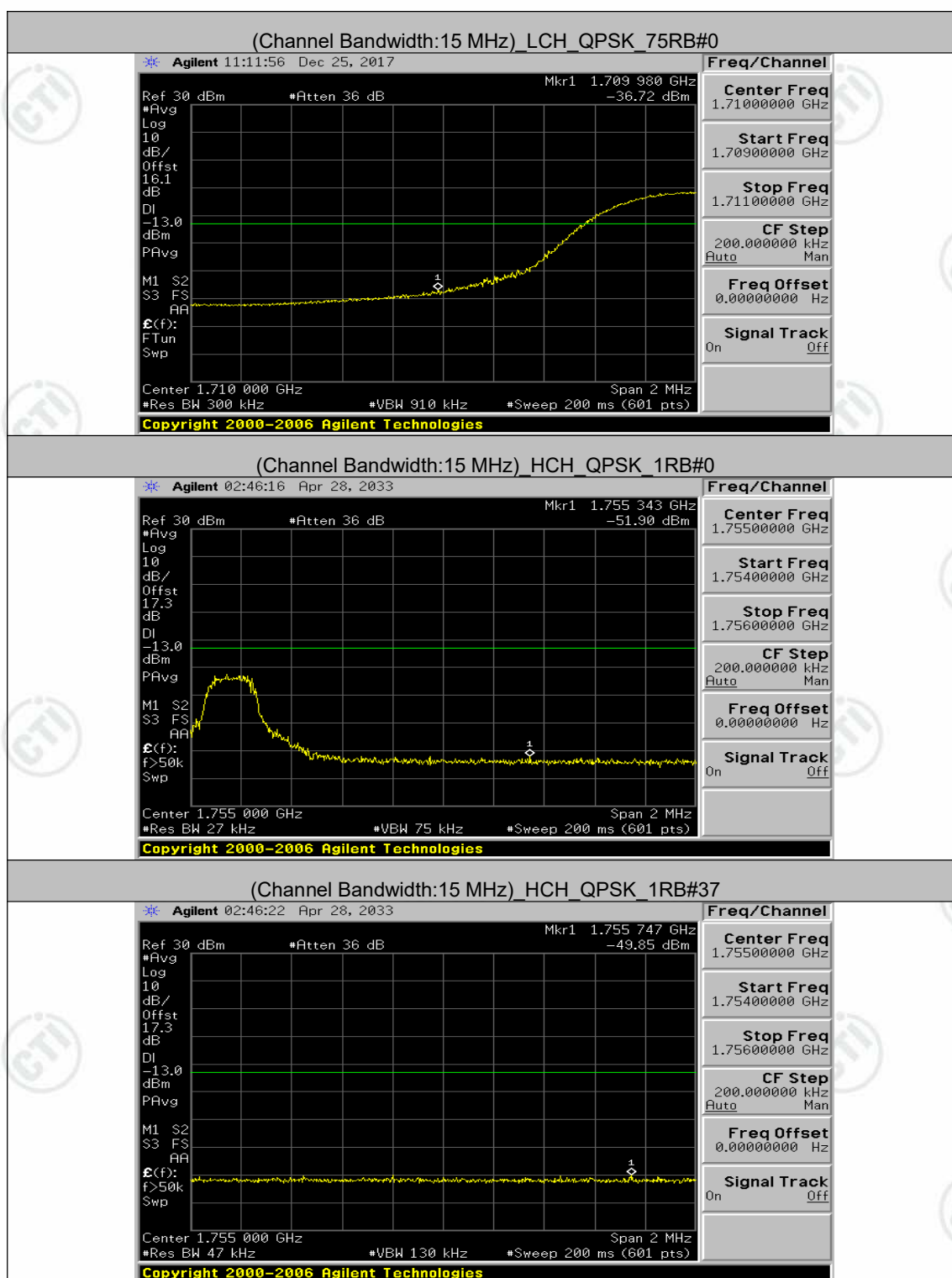


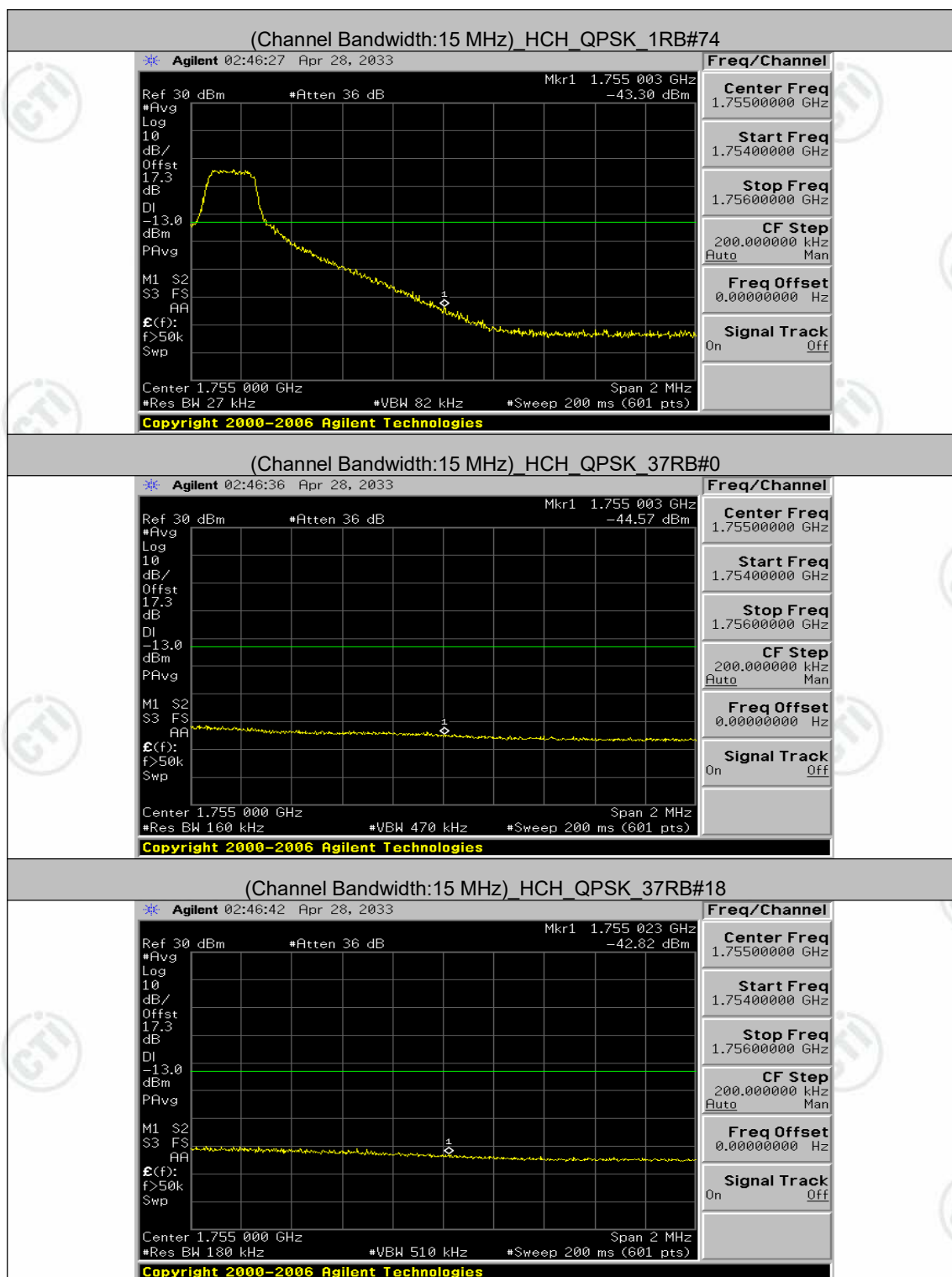


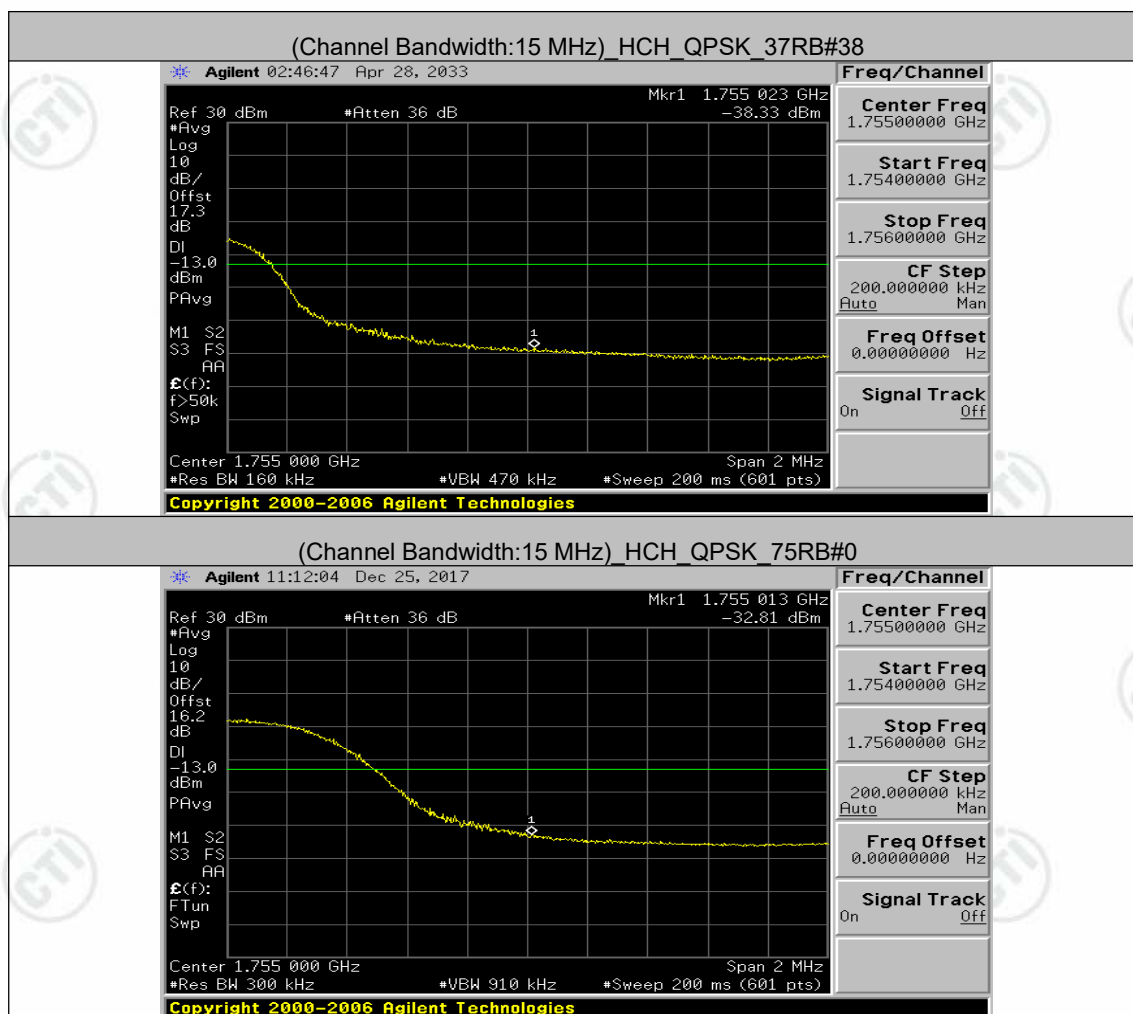
**LTE Band 4 Channel Bandwidth: 15 MHz**



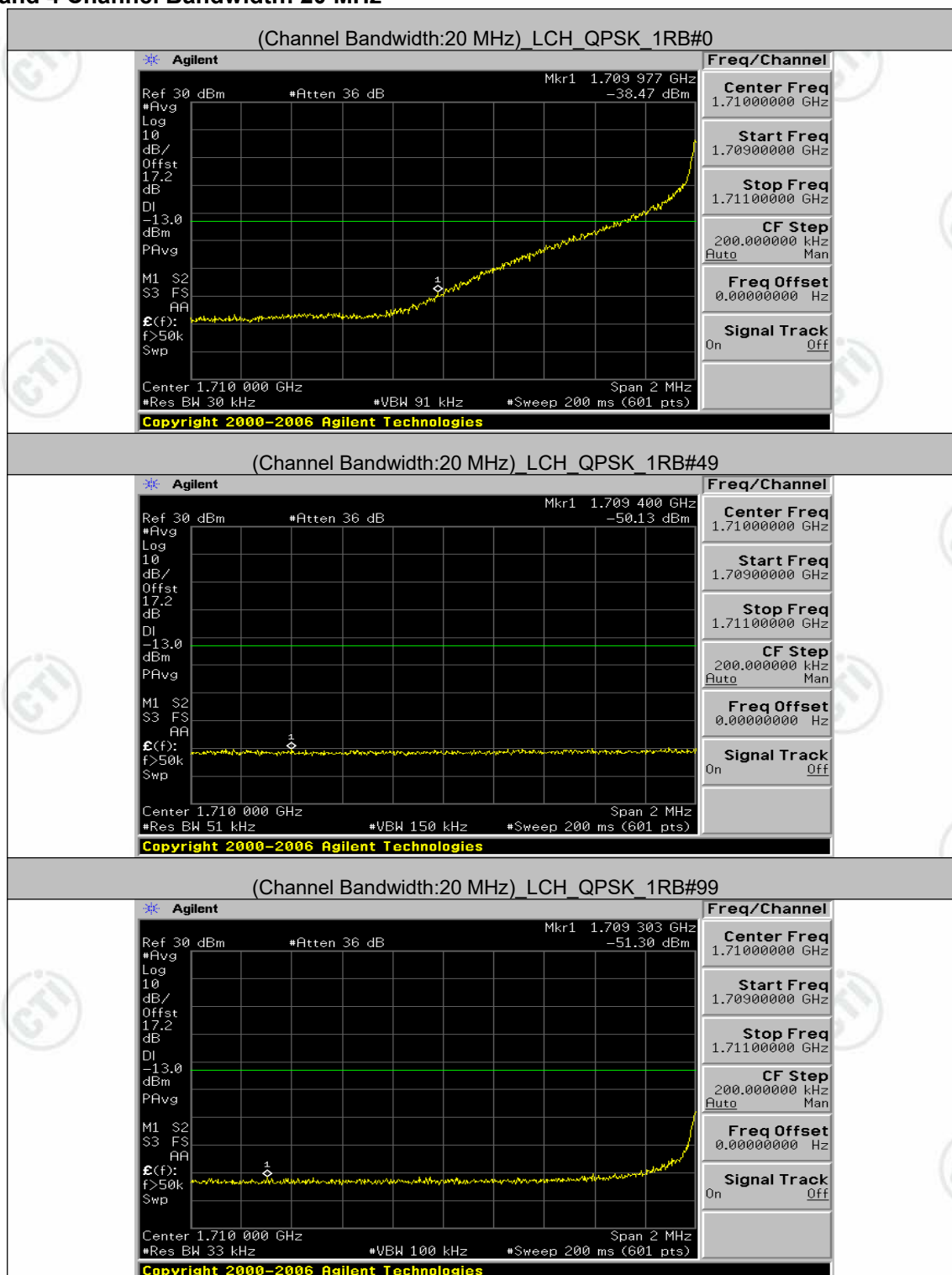


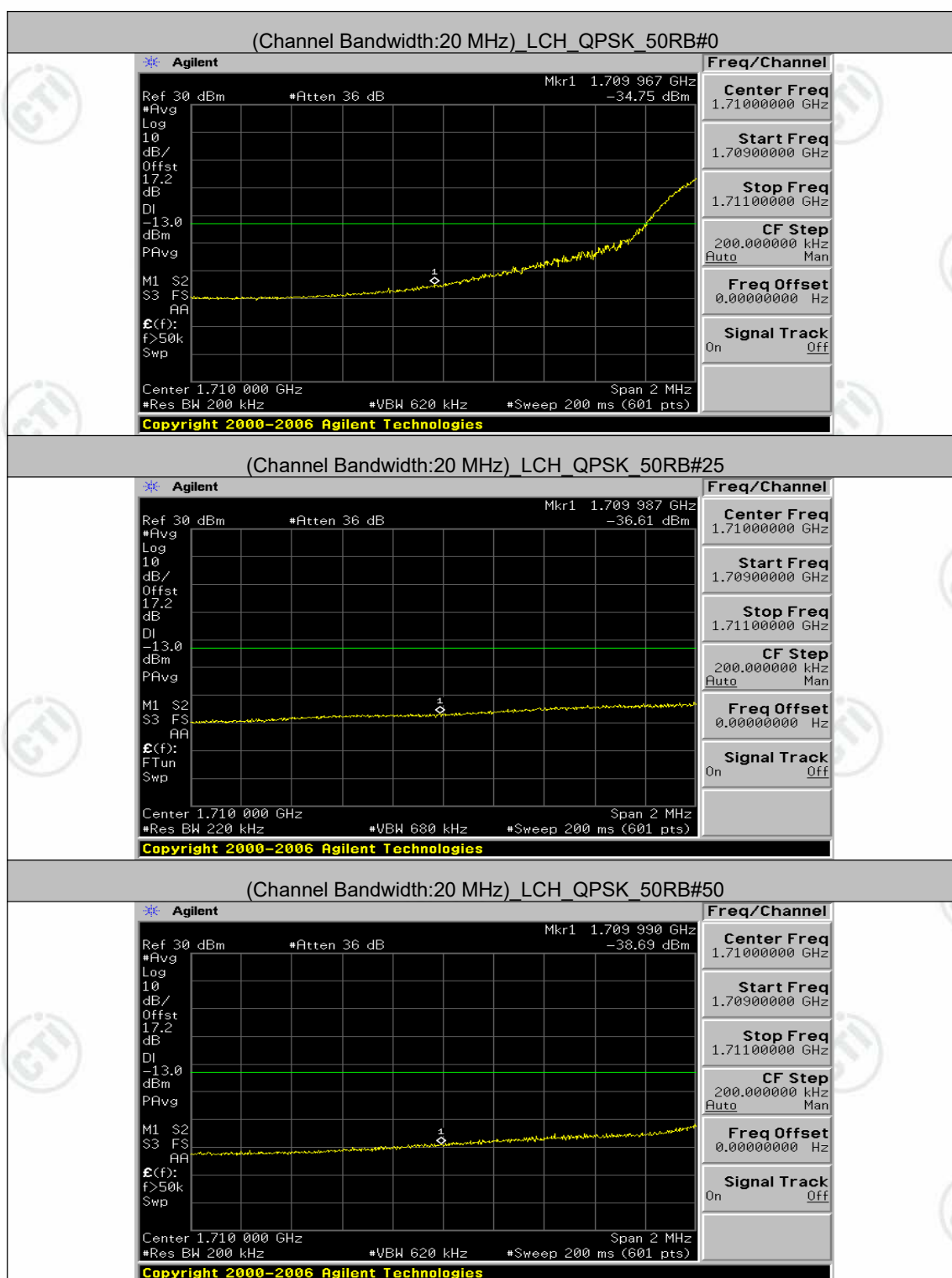


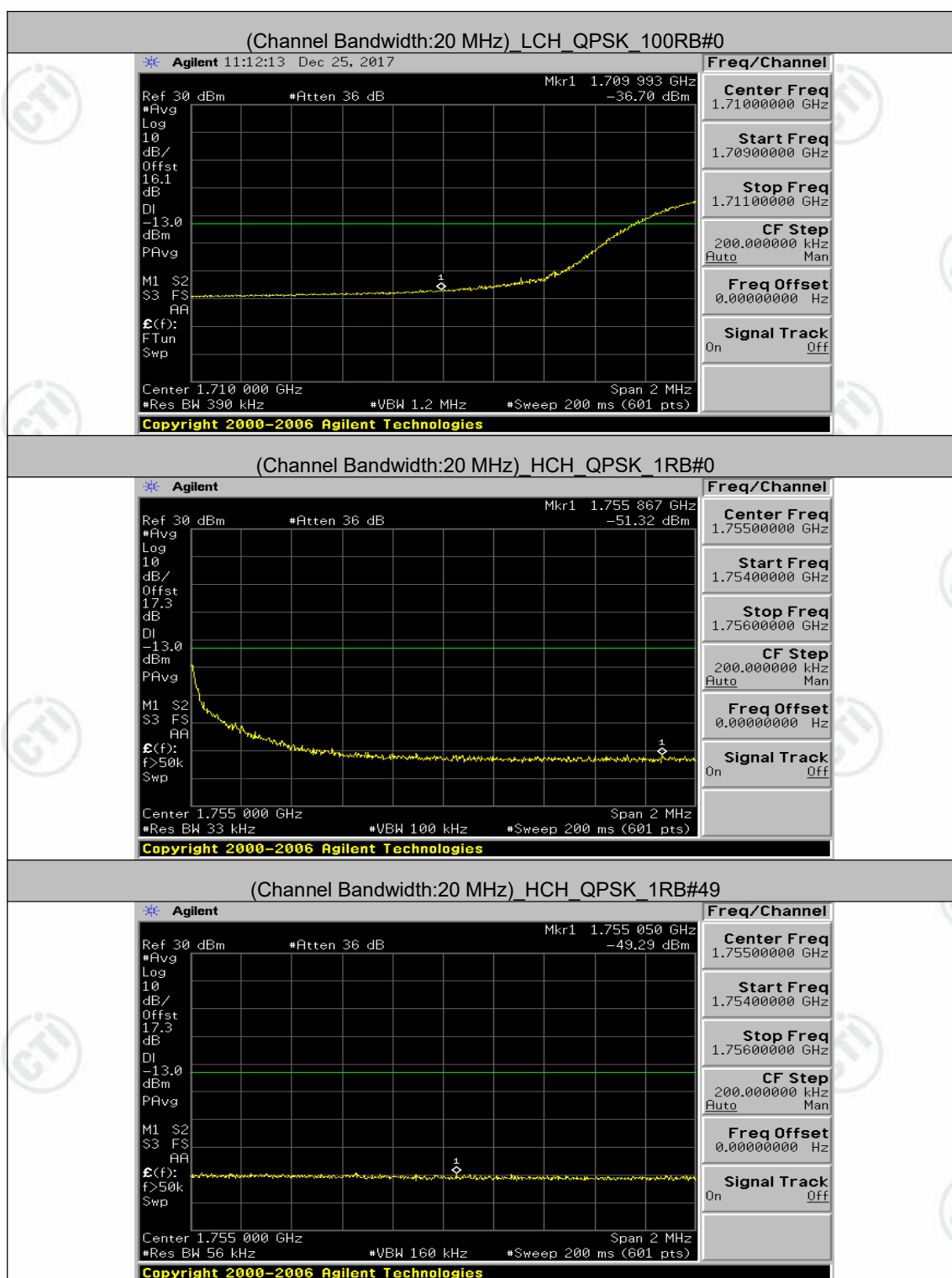


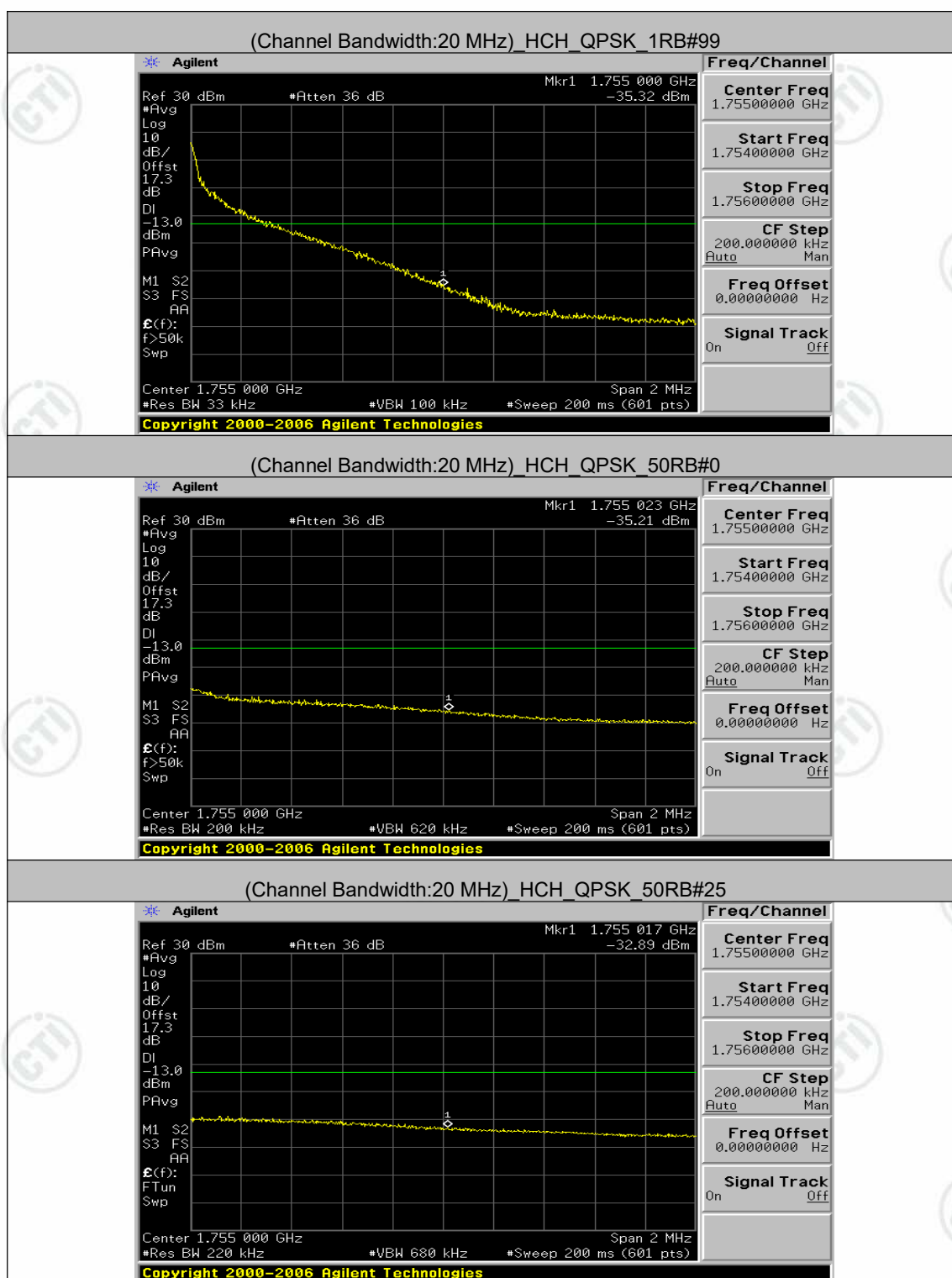


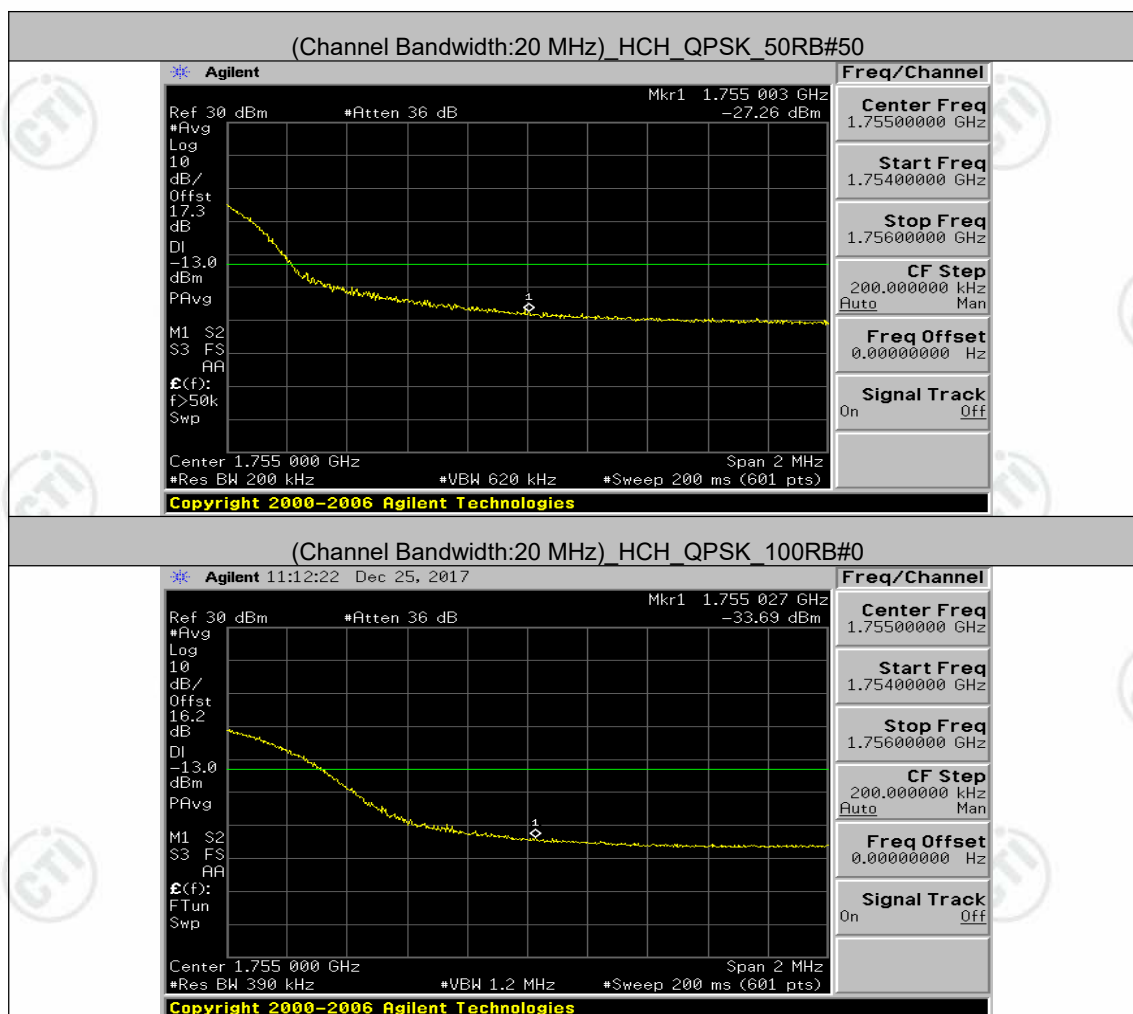
**LTE Band 4 Channel Bandwidth: 20 MHz**







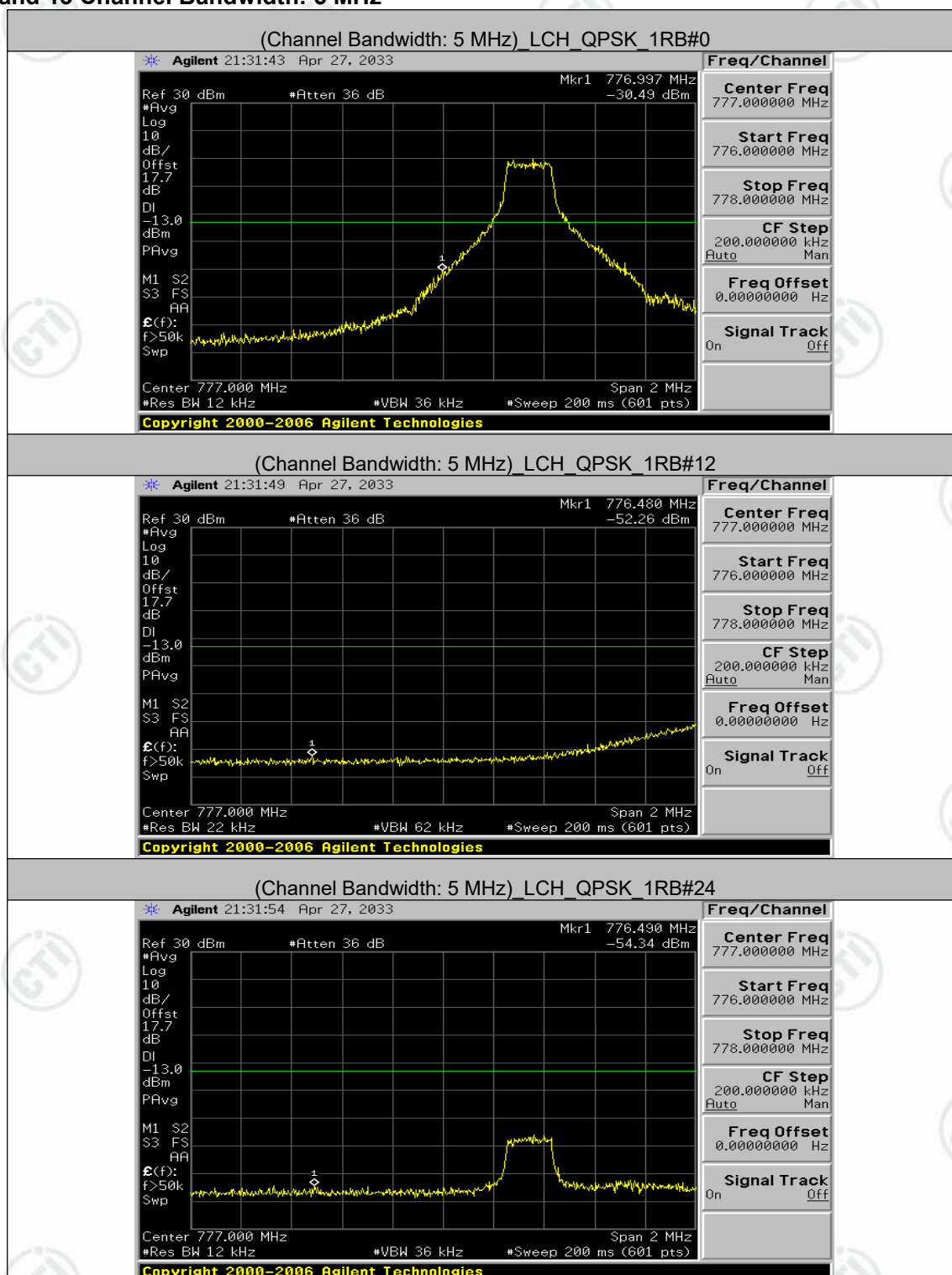


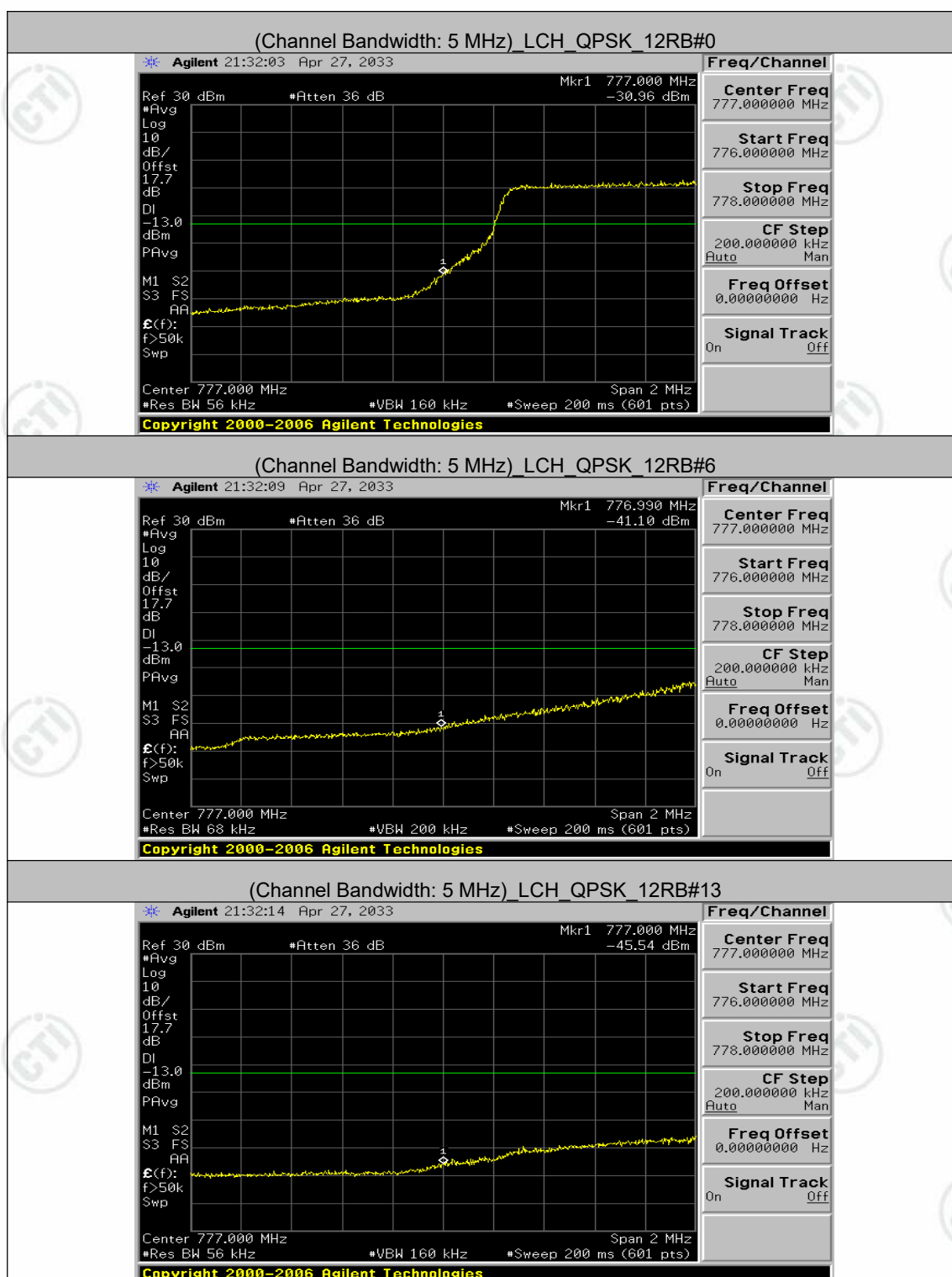


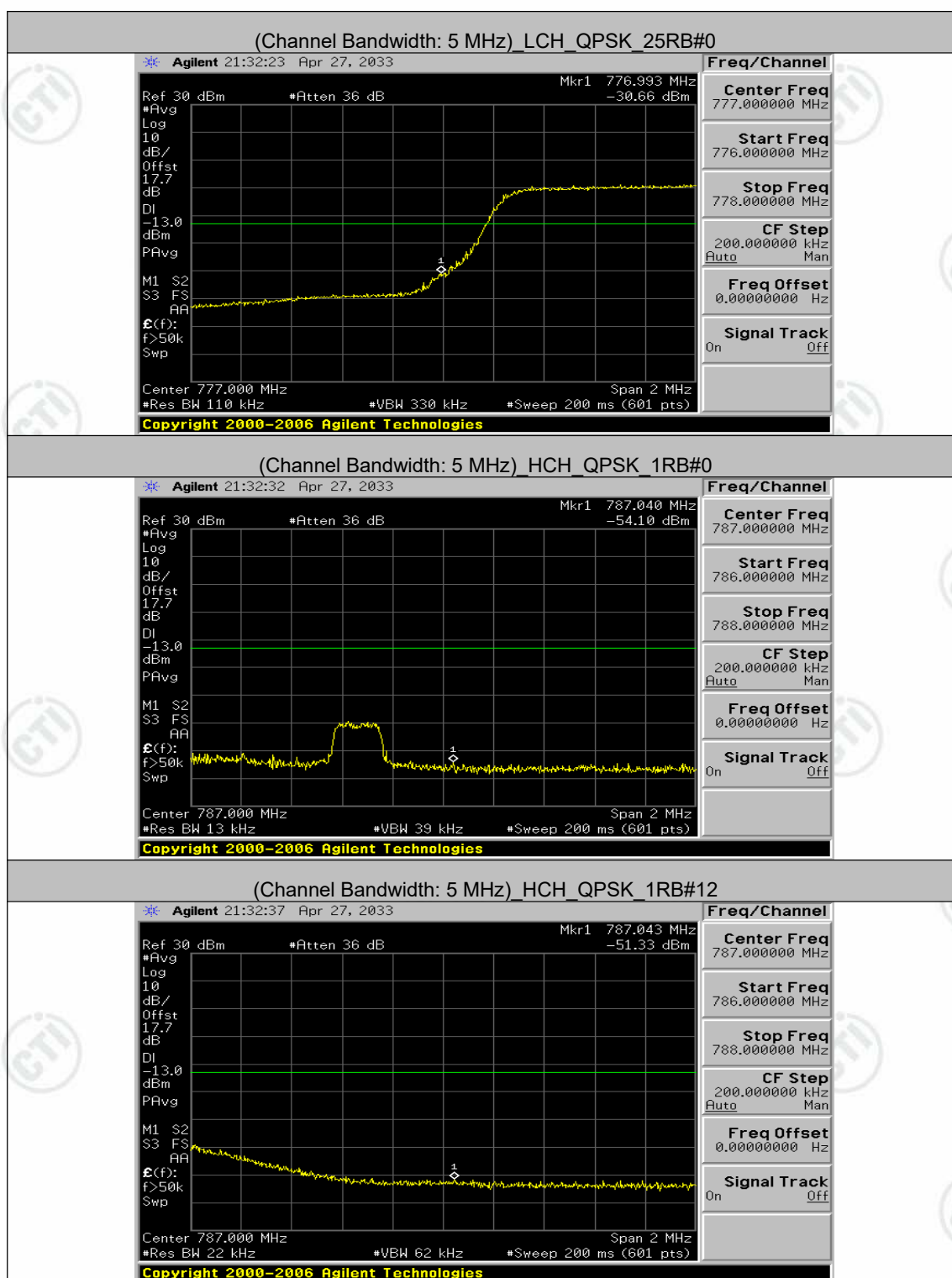
## Test Graphs

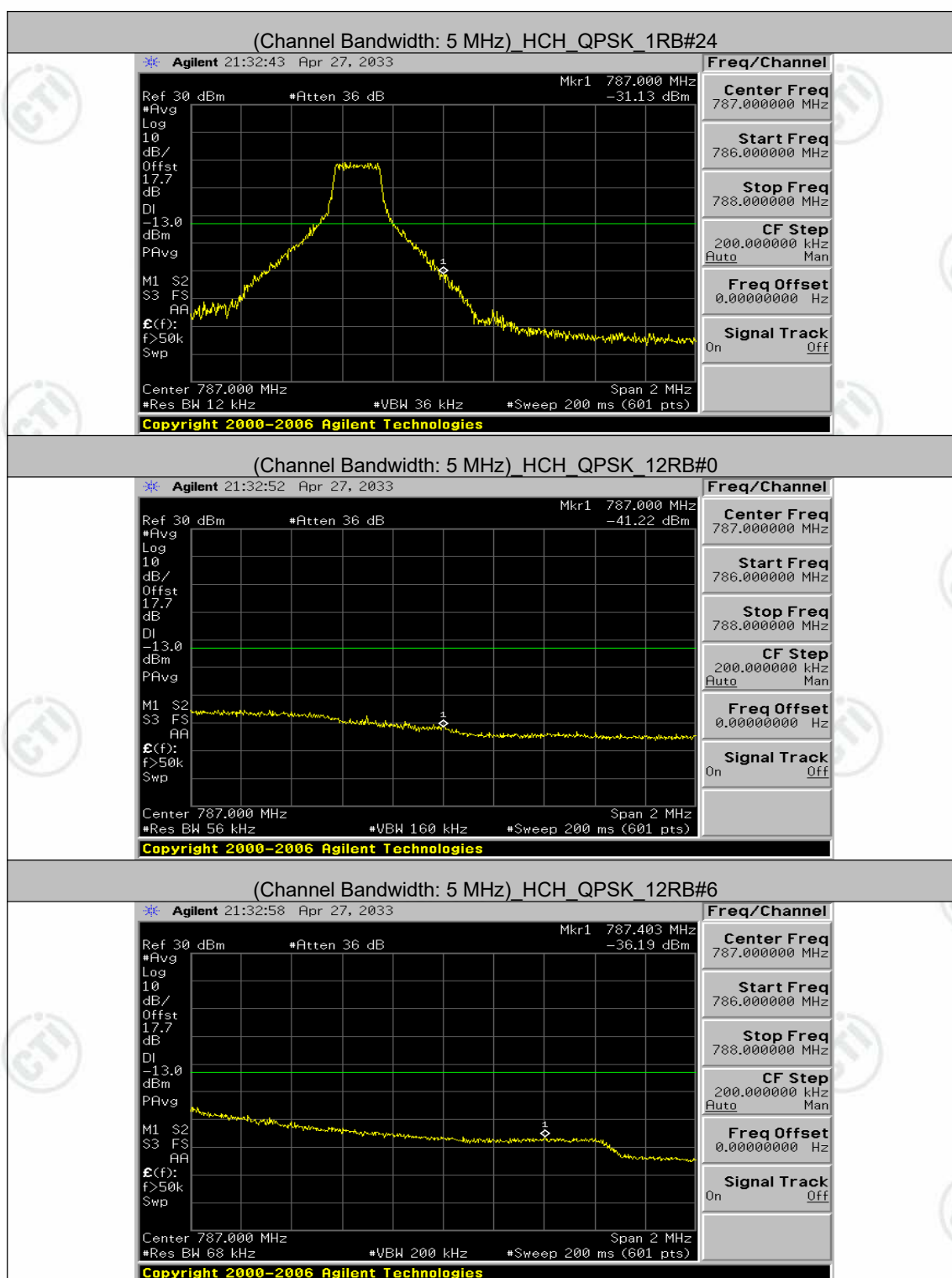
### LTE Band 13

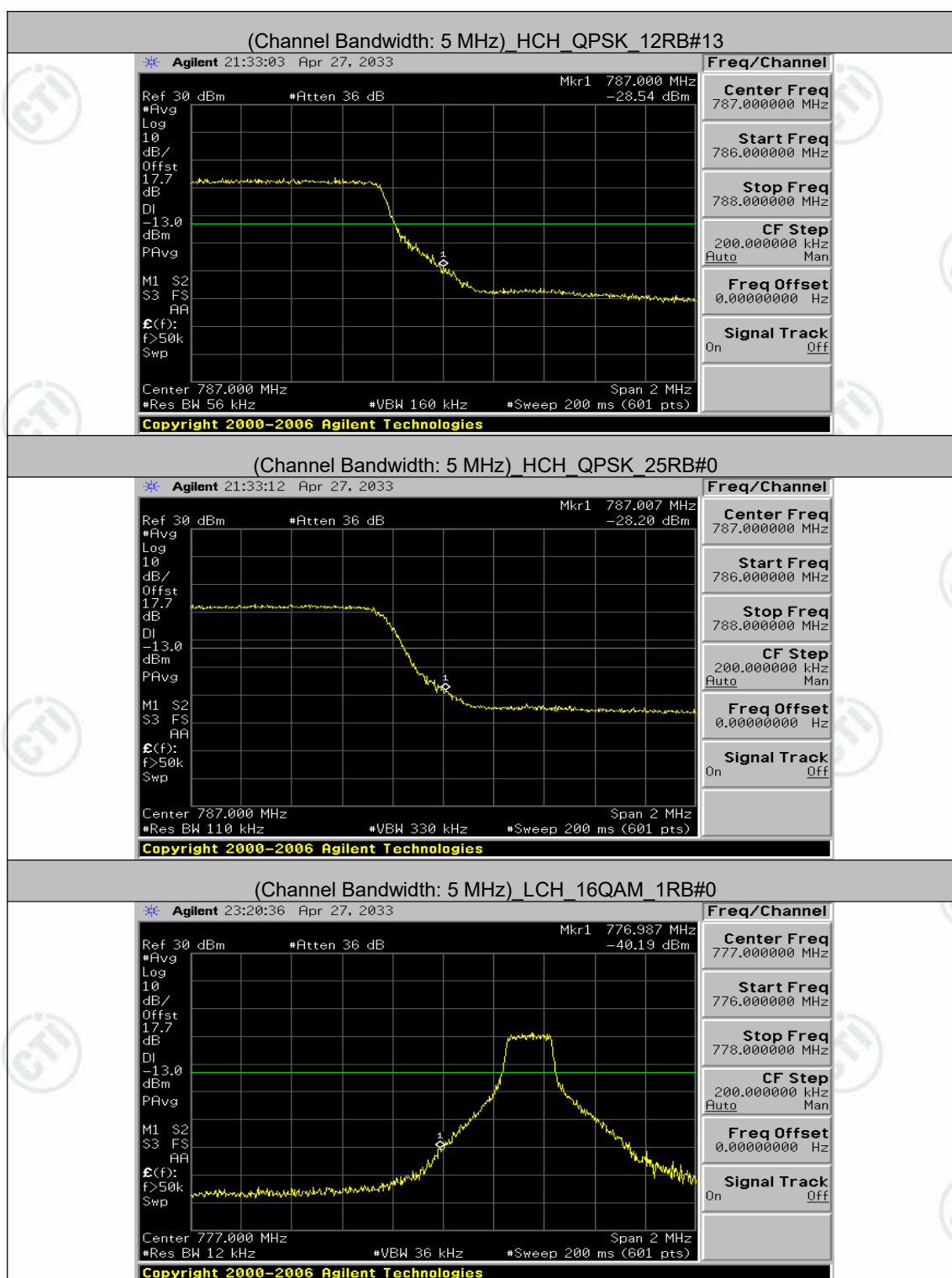
#### LTE Band 13 Channel Bandwidth: 5 MHz

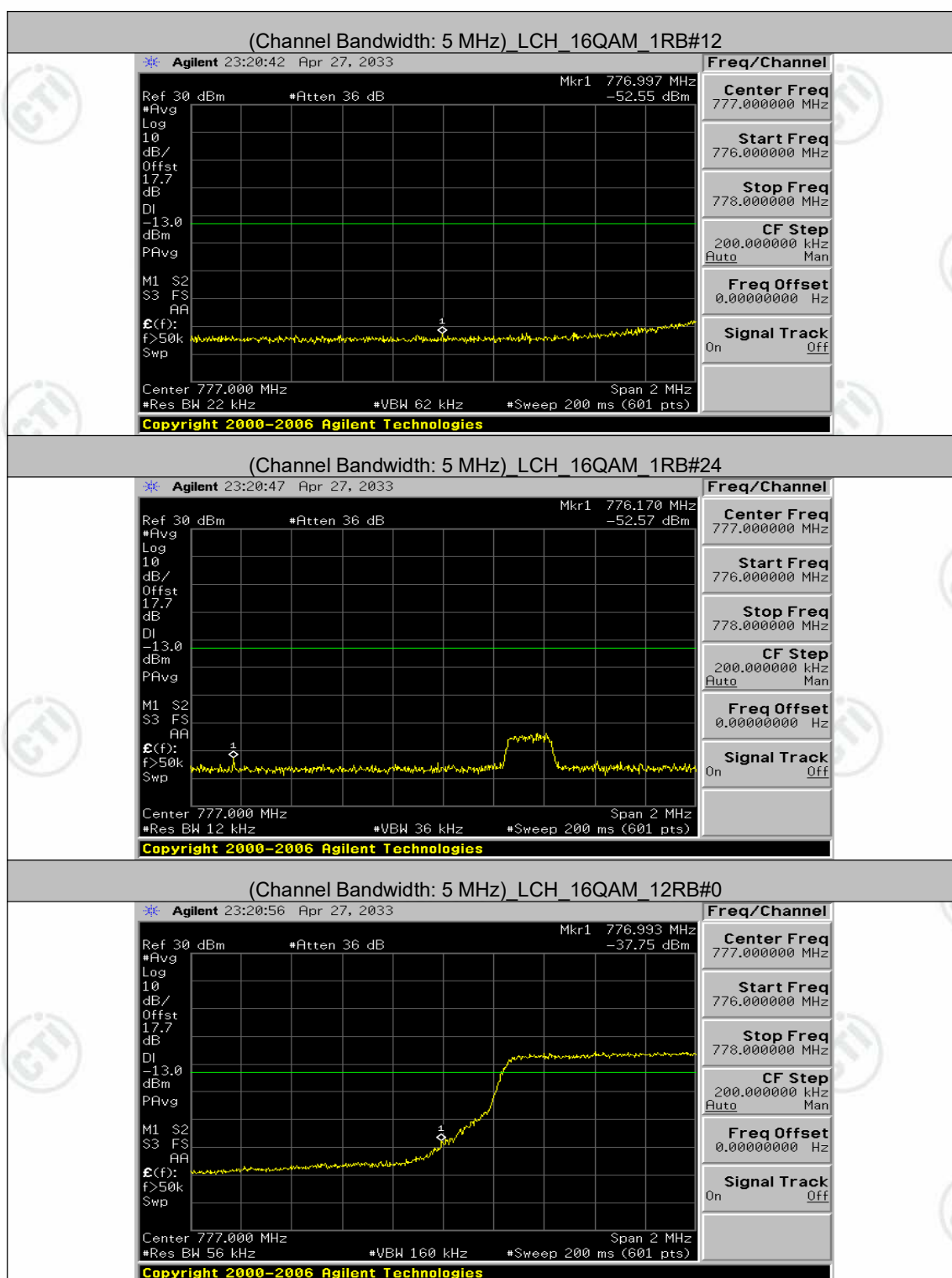


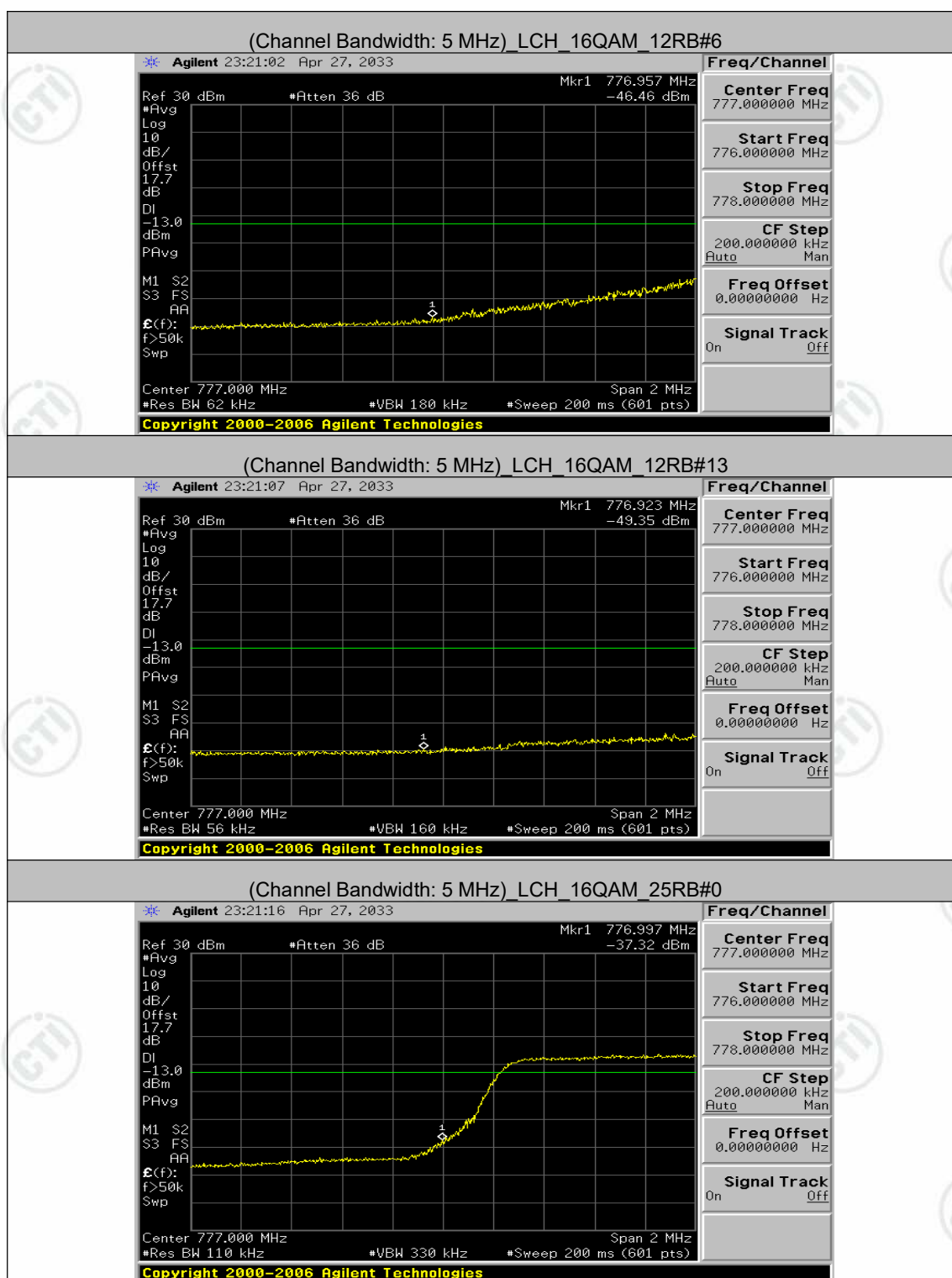


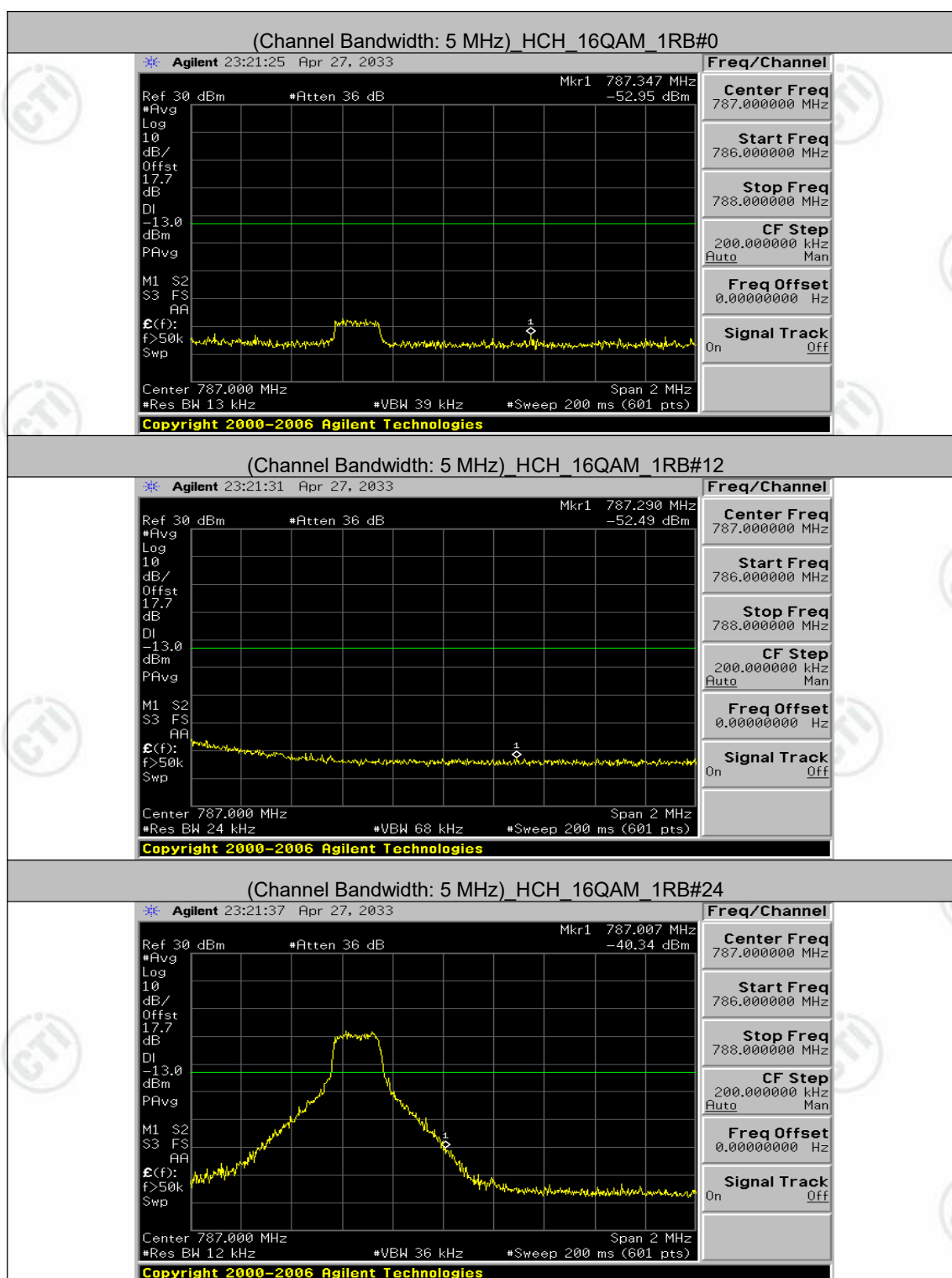


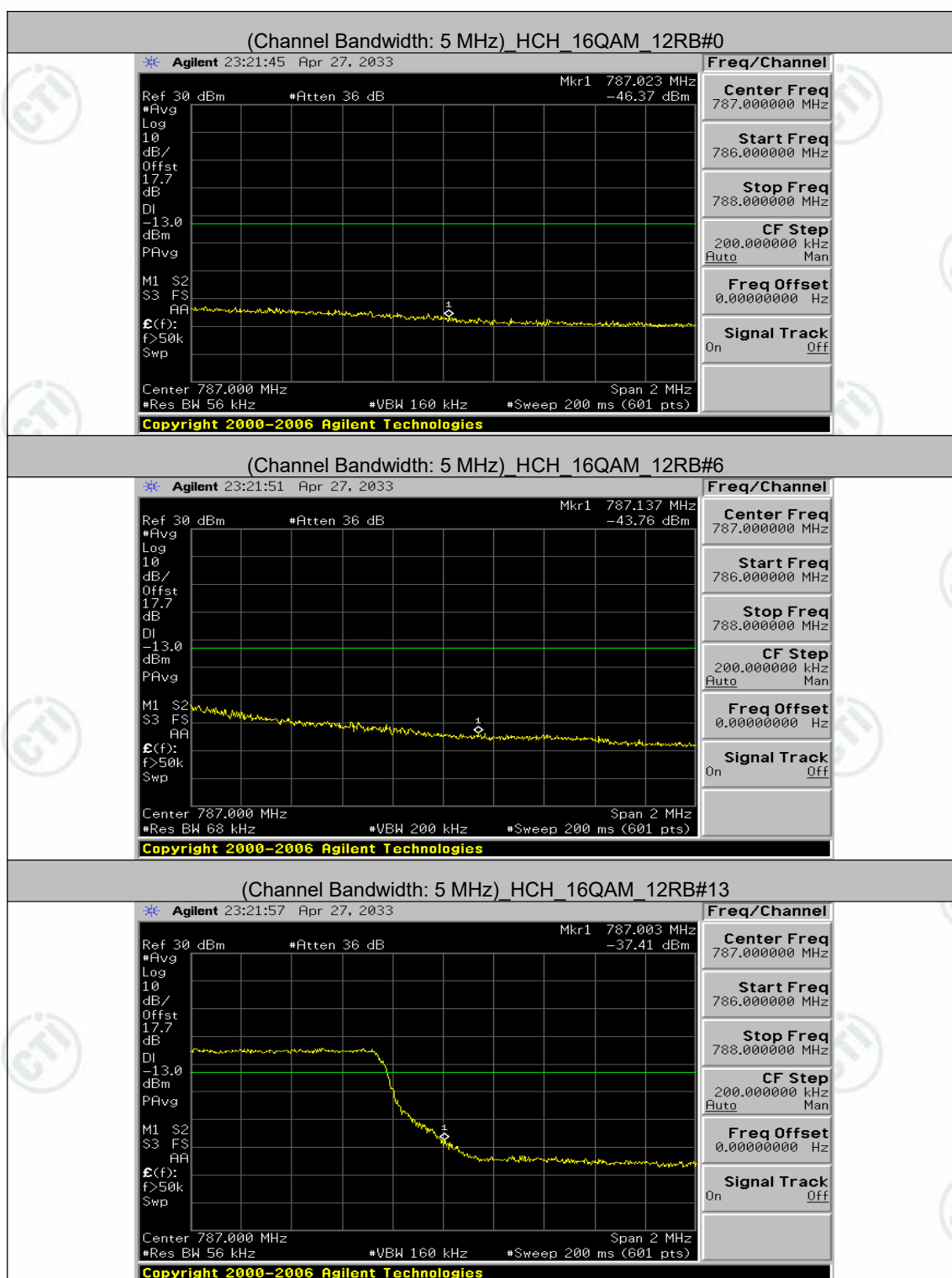


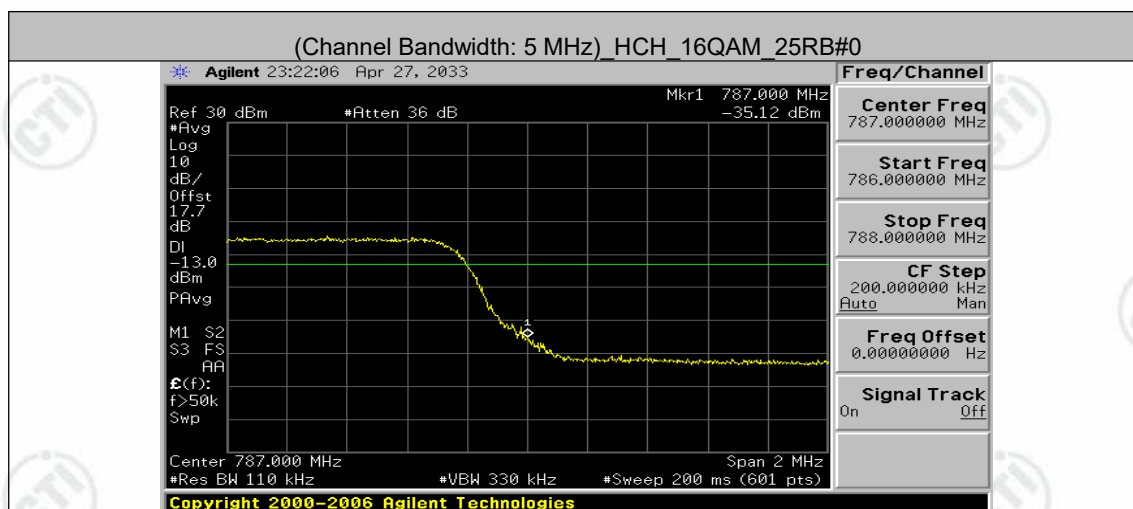




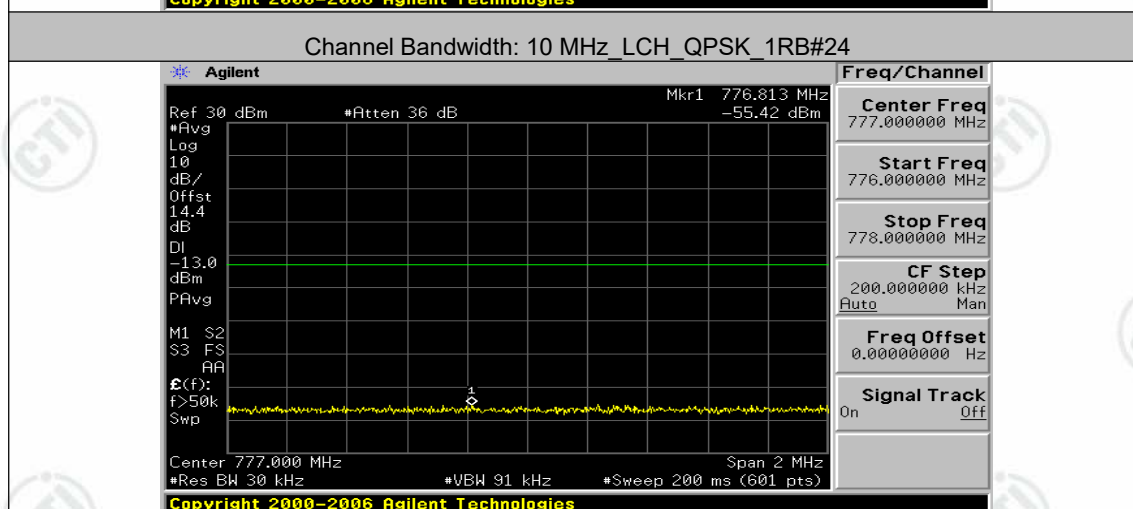
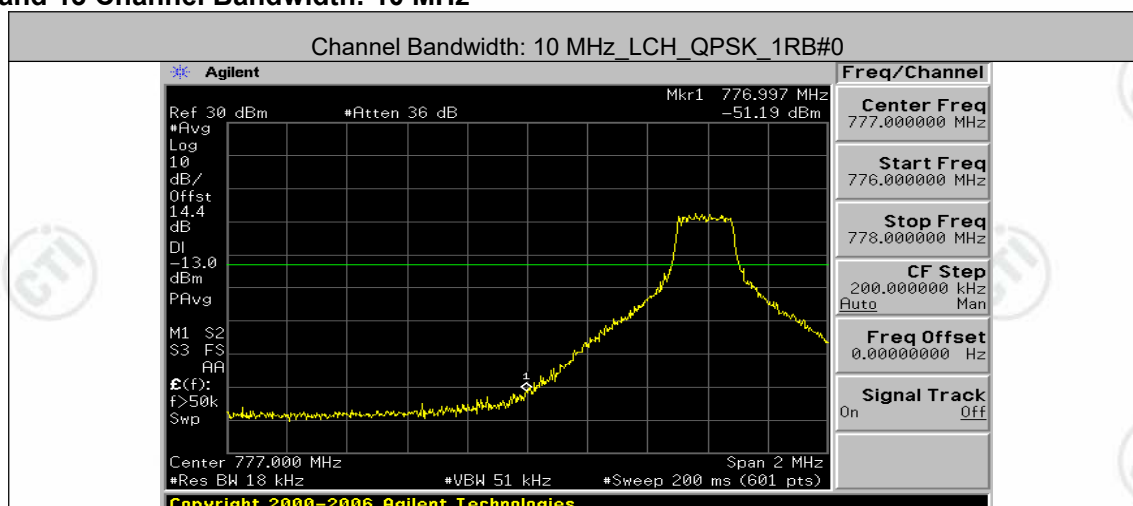


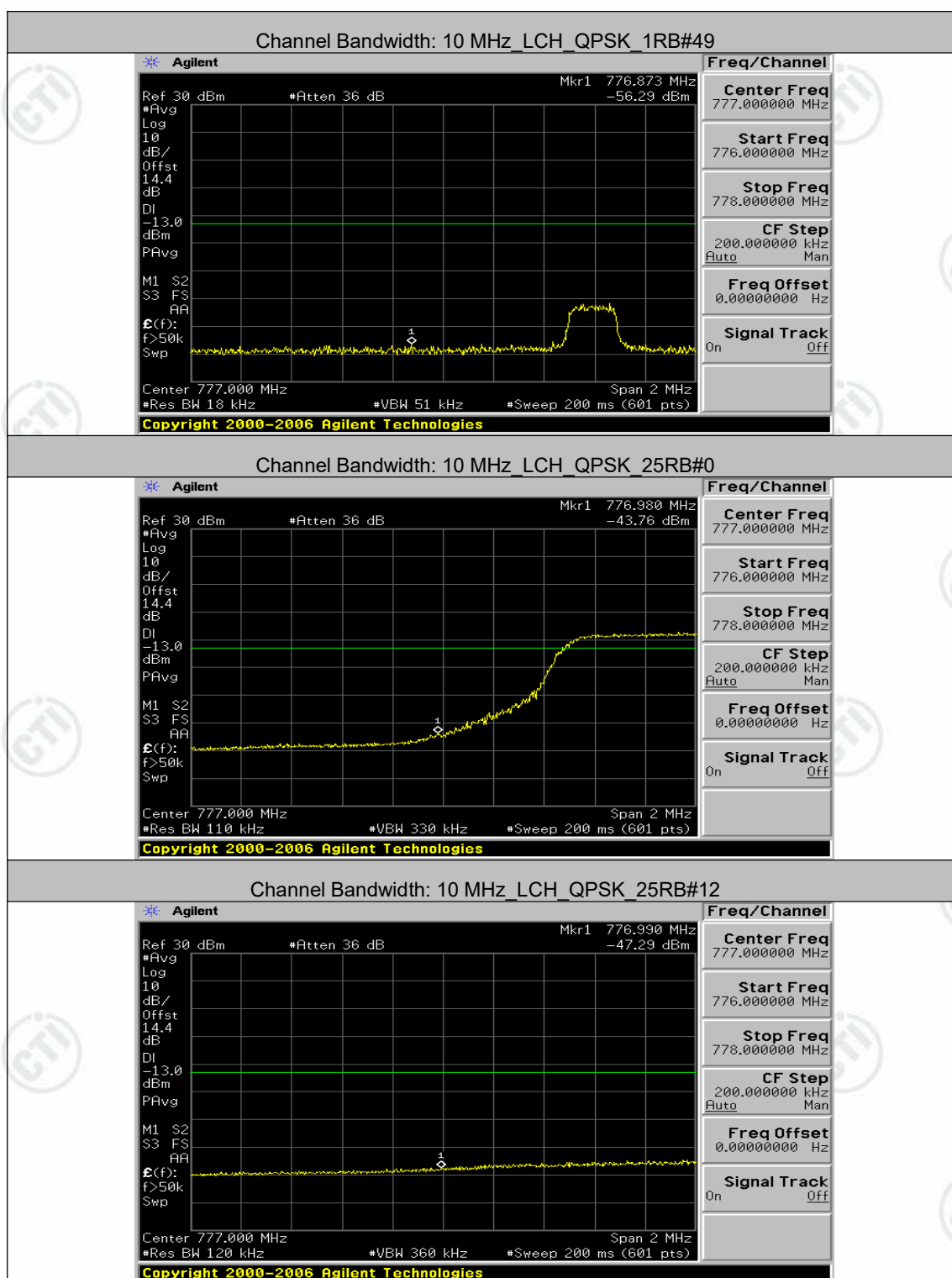


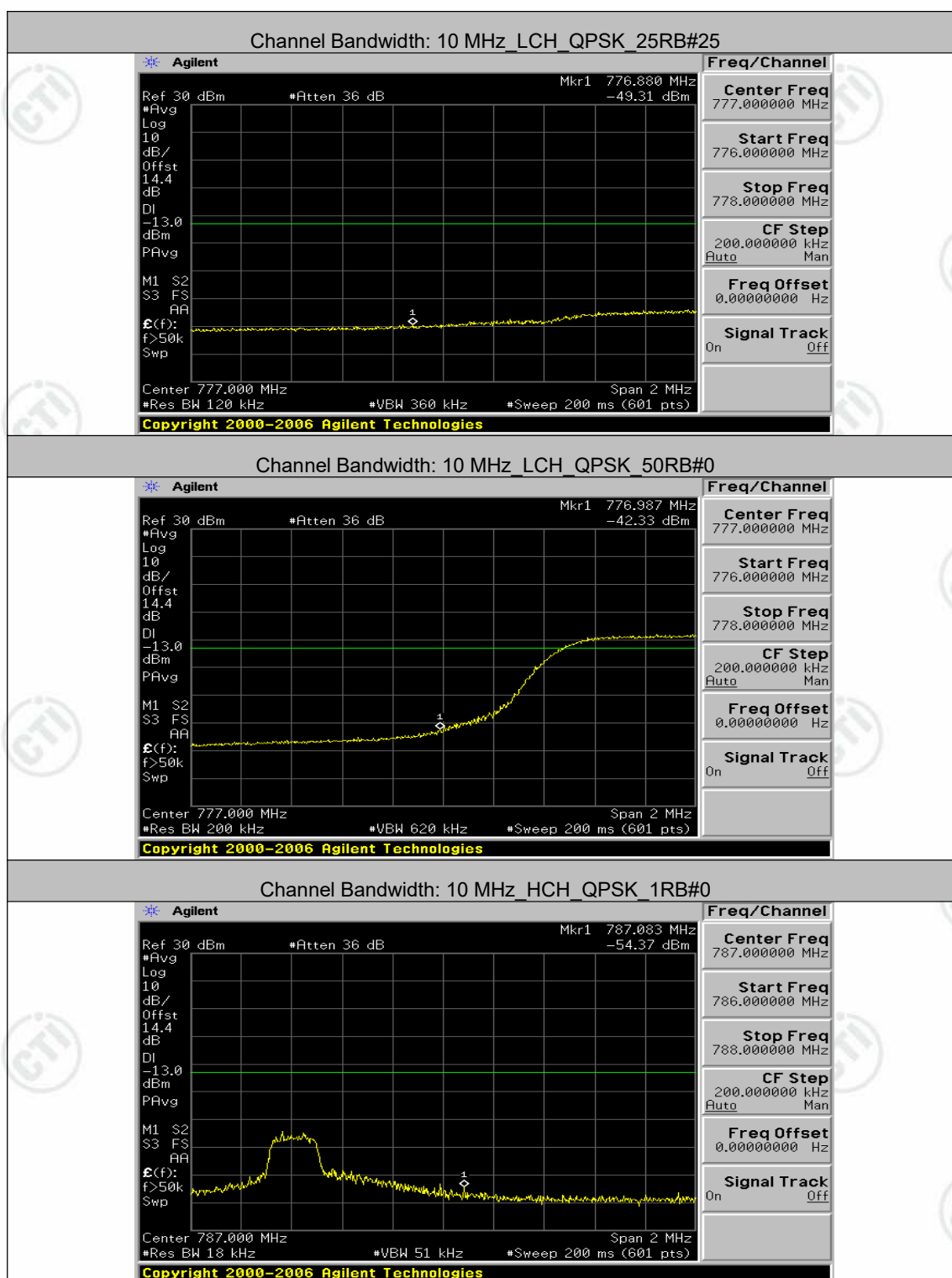


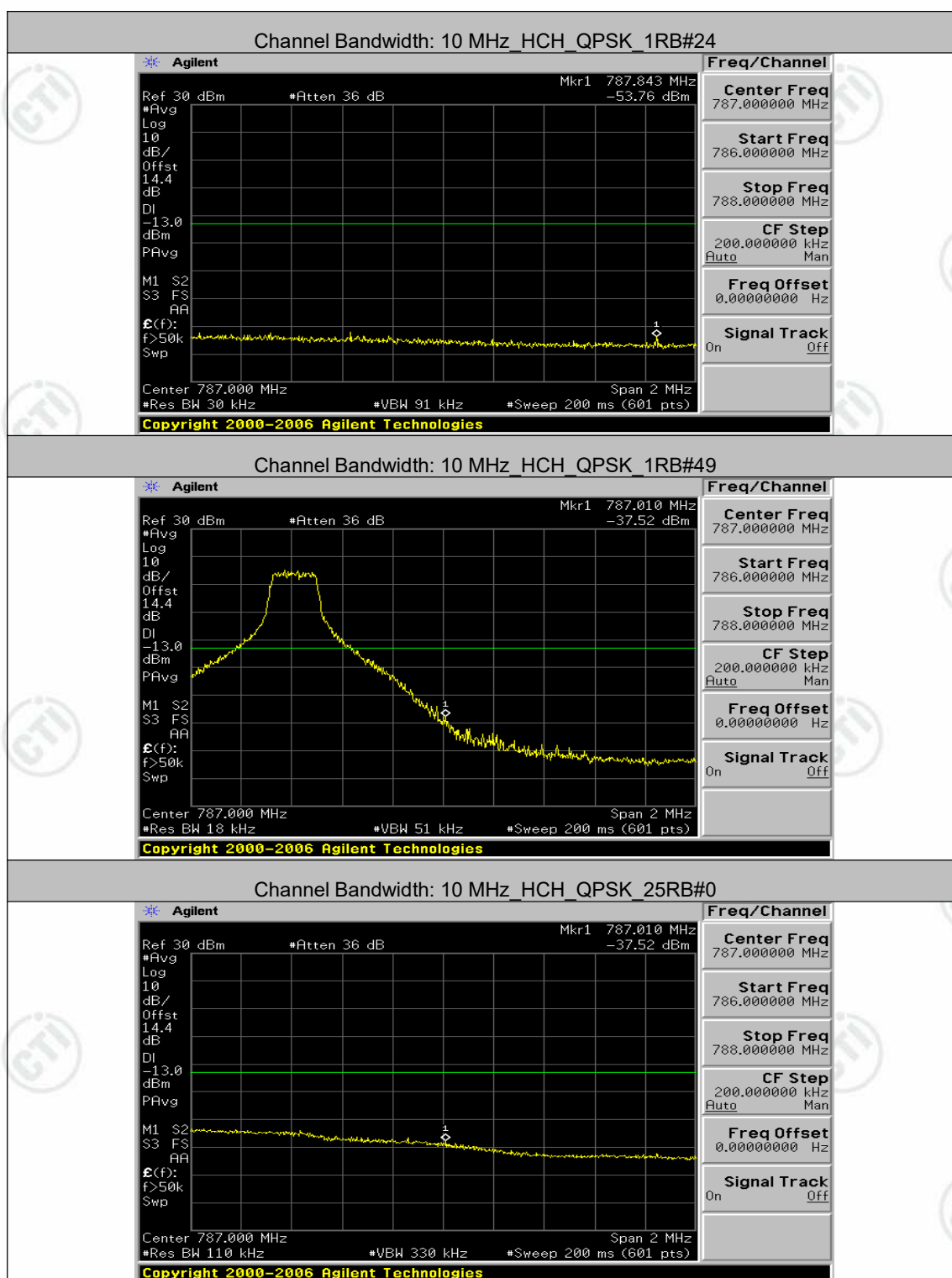


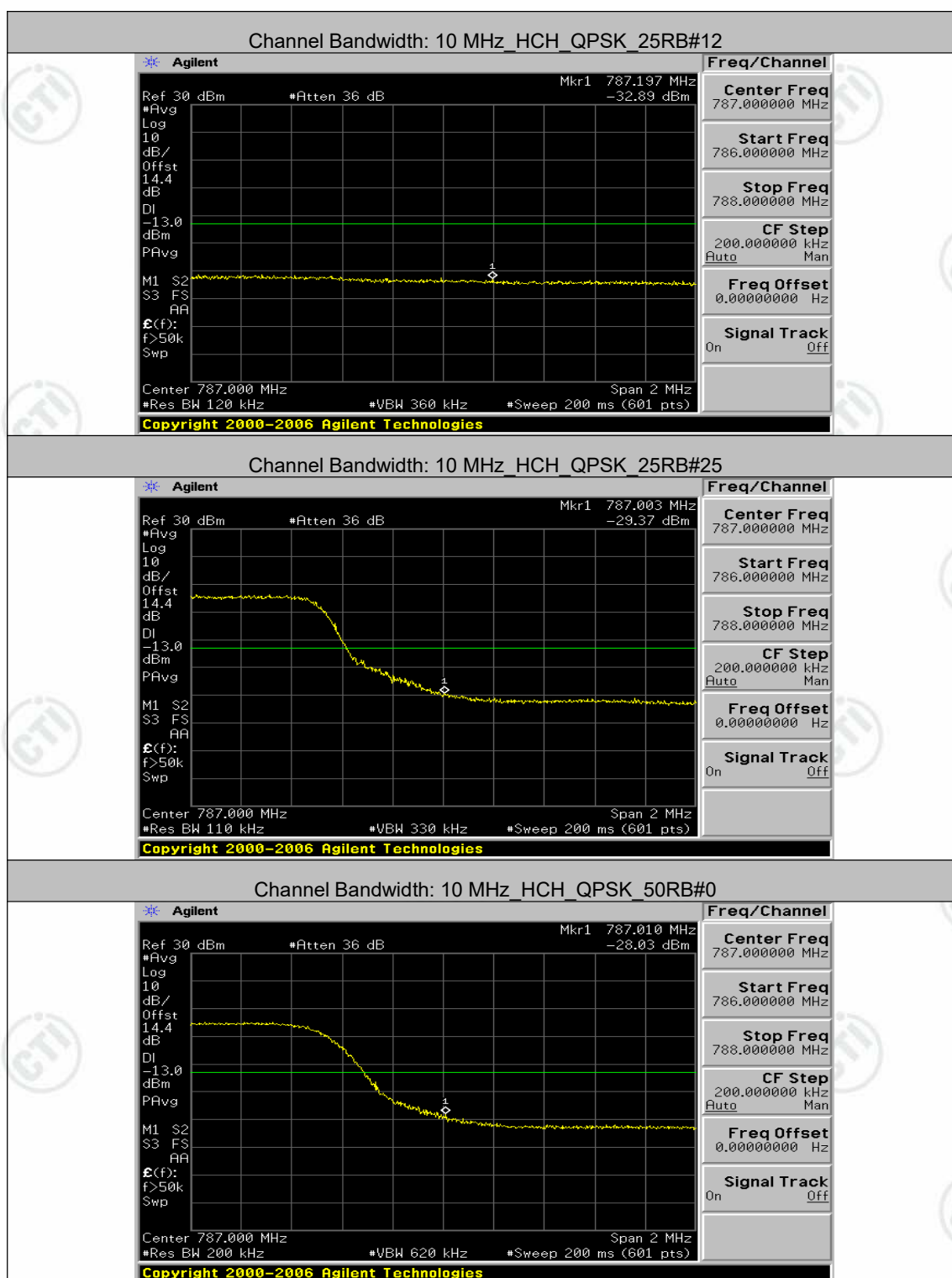
### LTE Band 13 Channel Bandwidth: 10 MHz











## Appendix E: Conducted Spurious Emission

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

## Test Graphs

### LTE Band 4

#### LTE Band 4 Channel Bandwidth: 1.4 MHz

