



# Permissive Class II Change FCC Test Report

FCC Part 15.407 for UNII Devices/  
IC RSS-210, Issue 7

FOR:

802.11a/g Wireless LAN PCI-E Mini Card

MODEL #: BCM94311MCAG

Broadcom Corporation  
190 Mathilda Place  
Sunnyvale, CA 94086  
U.S.A

FCC ID: QDS-BRCN1019

TEST REPORT #: EMC\_BROAD\_038\_07001\_AG\_15.407A



FCC listed#  
A2LA Certified  
IC recognized #  
3462B

**CETECOM Inc.**

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CETECOM Inc. is a Delaware Corporation with Corporation number: 2113686

Board of Directors: Dr. Harald Ansorge, Dr. Klaus Matkey, Hans Peter May



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**1 Assessment**

**The following is in compliance with the applicable criteria specified in FCC rules Part 15.407 of the Code of Federal Regulations and in compliance with the applicable criteria specified in Industry Canada rules RSS-210.**

| Company         | Description                                       | Model #             |
|-----------------|---|---------------------|
| <b>Broadcom</b> | <b>802.11a/g Wireless LAN<br/>PCI-E Mini Card</b> | <b>BCM94311MCAG</b> |

**Technical responsibility for area of testing:**

**Lothar Schmidt**  
(Test Lab Manager)

---

| Date | Section | Name | Signature |
|------|---------|------|-----------|
|------|---------|------|-----------|

**Responsible for test report and project leader:**

**Juan Martinez**  
(Project Engineer)

---

| Date | Section | Name | Signature |
|------|---------|------|-----------|
|------|---------|------|-----------|

The test results of this test report relate exclusively to the test item specified in Identification of the Equipment under Test. The CETECOM Inc. USA does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the CETECOM Inc USA.



## 2 Administrative Data

### 2.1 Identification of the Testing Laboratory Issuing the EMC Test Report

|                               |   |
|-------------------------------|---|
| Company Name:                 | <b>CETECOM Inc.</b>   |
| Department:                   | <b>EMC</b>  |
| Address:                      | <b>411 Dixon Landing Road<br/>Milpitas, CA 95035<br/>U.S.A.</b> |
| Telephone:                    | <b>+1 (408) 586 6200</b>  |
| Fax:                          | <b>+1 (408) 586 6299</b>  |
| Responsible Test Lab Manager: | <b>Lothar Schmidt</b>   |
| Test Report Prepared by:      | <b>Juan Martinez, EMC Project Engineer</b>                      |
| Dates of test:                | <b>2007-07-30 to 2007-08-01</b>                                 |

### 2.2 Identification of the Client

|                   |                                    |
|-------------------|------------------------------------|
| Applicant's Name: | <b>Broadcom Corporation</b>        |
| Street Address:   | <b>190 Mathilda Place</b>          |
| City/Zip Code     | <b>Sunnyvale, California 94086</b> |
| Country           | <b>USA</b>                         |
| Contact Person:   | <b>Daniel Lawless</b>              |
| Phone No.         | <b>408 922 5870</b>                |
| Fax:              | <b>408 543 3399</b>                |
| e-mail:           | <b>dlawless@broadcom.com</b>       |

### 2.3 Identification of the Manufacturer

|                        |                                    |
|------------------------|------------------------------------|
| Manufacturer's Name:   | <b>Broadcom Corporation</b>        |
| Manufacturers Address: | <b>190 Mathilda Place</b>          |
| City/Zip Code          | <b>Sunnyvale, California 94086</b> |
| Country                | <b>USA</b>                         |



### 3 Equipment under Test (EUT)

#### 3.1 Specification of the Equipment under Test

|                         |   |
|-------------------------|---|
| Marketing Name:         | 802.11a/g Wireless LAN PCI-E Mini Card  |
| Description:            | Wireless LAN PCI-E Mini Card  |
| Model No:               | BCM94311MCAG  |
| FCC ID:                 | QDS-BRCM1019  |
| Frequency Range:        | 5180 – 5320 MHz   |
| *Type(s) of Modulation: | OFDM  |
| Number of Channels:     | 8   |
| Antenna Type:           | Acon (Model: AMP6P-700000), Stamped metal sheet (0.7dBi)<br>Amphenol (Model: WT541-22-003), Stamped metal sheet (3.21 dBi)    |
| Output Power:           | 802.11 (a) mode: 0.066 W EIRP @ 5180MHz<br>802.11 (a) mode: 0.055 W EIRP @ 5260MHz<br>802.11 (a) mode: 0.041 W EIRP @ 5320MHz |
| Test standards:         | FCC Part 15 §15.407 & RSS-210, Issue 7  |

#### 3.2 Class II permissive change laptops to be added

| EUT # | TYPE   | MANF. | MODEL | SERIAL # |
|-------|--------|-------|-------|----------|
| 1     | Laptop | Dell  | PP12S | UNIT 1   |

#### 3.3 Identification of Accessory equipment

| TYPE       | MANF. | MODEL      |
|------------|-------|------------|
| AC ADAPTOR | Dell  | DA65NS0-00 |



#### **4 Subject Of Investigation**

All testing were performed on the PP12S (Parker) laptop with the BCM94311MCAG pre-approved module. Measurements were performed on the Amphenol antenna. This report is to also cover the Acon antenna which has a lower gain antenna, but same type of antenna. Data, presented in this report, was collected for a Class II permissive change to add the laptop to the BCM94311MCAG (FCC ID: QDS-BRCM1019) module application.

During the testing process the EUT was tested in “a” mode with 6Mbps data rate which yielded the worst case results. All testing was performed on main antenna which yielded the highest gain, all data in this report shows the worst case between horizontal and vertical polarization for above 1GHz.

The objective of the measurements done by Cetecom Inc. was to measure the performance of the EUT as specified by requirements listed in FCC rules Part 15.407 of Title 47 of the Code of Federal Regulations and Industry Canada rules RSS-210.



**5 Measurements**

**5.1 MAXIMUM PEAK OUTPUT POWER § 15.407 & RSS-210 (RADIATED)**

**5.1.1 LIMIT SUB CLAUSE § 15.407 (a) & RSS-210 (A9.2)(2)**

| Frequency range | RF power output limit |
|-----------------|-----------------------|
| 5180MHz         | 23dBm EIRP            |
| 5260MHz         | 30dBm EIRP            |
| 5320MHz         | 30dBm EIRP            |

**5.1.2 EIRP 802.11 (a) MODE:**

| TEST CONDITIONS         |                      | MAXIMUM PEAK OUTPUT POWER (dBm) |      |       |
|-------------------------|----------------------|---------------------------------|------|-------|
| Frequency (MHz)         |                      | 5180                            | 5260 | 5320  |
| T <sub>nom</sub> (23)°C | V <sub>nom</sub> VDC | 18.17                           | 17.4 | 16.09 |
| Measurement uncertainty |                      | ±0.5dBm                         |      |       |

Note 1: For 802.11a power were set to transmit at the specified conducted average output power  
 Note 2: EIRP measurements were performed on the Main and Auxiliary. Results showed that the Main antenna produced the highest EIRP level. All measurements were performed on the Main antenna.  
 Note 3: Both vertical and horizontal were measured. Worst case polarization was horizontal for all modes.



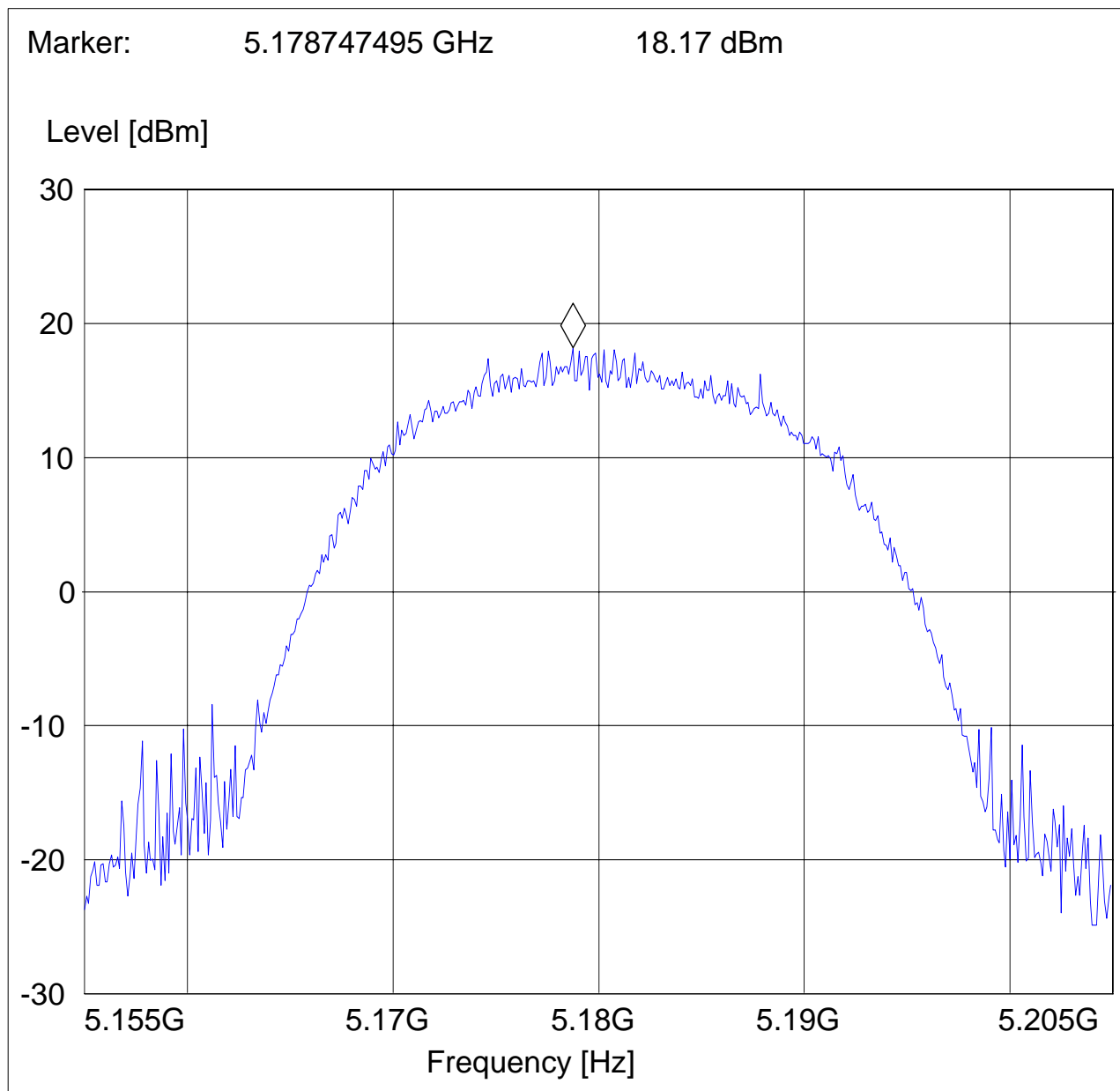
**EIRP 802.11 (a) Mode (5180)**

**CETECOM Inc., 411 Dixon Landing Road, Milpitas CA 95035, USA**

EUT / Description: Dell PP12S with BCM94311MCAG

**SWEEP TABLE: "EIRP 802.11a 36"**

| Short Description: |         | EIRP channel-5180 MHz |            |           |            |
|--------------------|---------|-----------------------|------------|-----------|------------|
| Start              | Stop    | Detector              | Meas. Time | IF Bandw. | Transducer |
| 5.2 GHz            | 5.2 GHz | MaxPeak               | Coupled    | 10 MHz    | DUMMY-DBM  |
|                    |         | MaxPeak               |            |           |            |







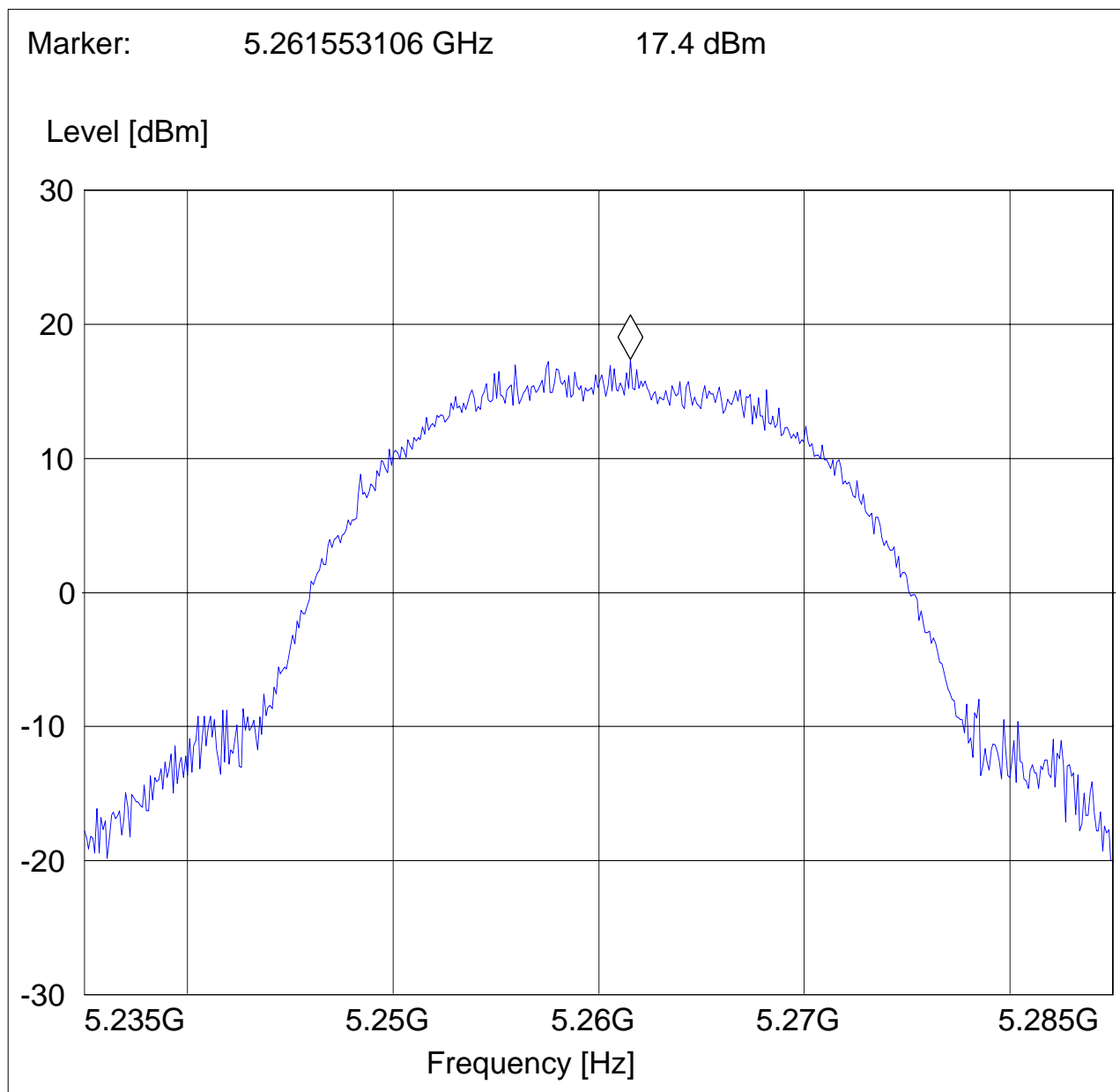
### EIRP 802.11 (a) Mode (5260MHz)

CETECOM Inc., 411 Dixon Landing Road, Milpitas CA 95035, USA

EUT / Description: Dell PP12S with BCM94311MCAG

**SWEEP TABLE: "EIRP 802.11a 52"**

| Short Description: |         | EIRP channel-5260 MHz |            |           |            |
|--------------------|---------|-----------------------|------------|-----------|------------|
| Start              | Stop    | Detector              | Meas. Time | IF Bandw. | Transducer |
| 5.2 GHz            | 5.3 GHz | MaxPeak               | Coupled    | 10 MHz    | DUMMY-DBM  |





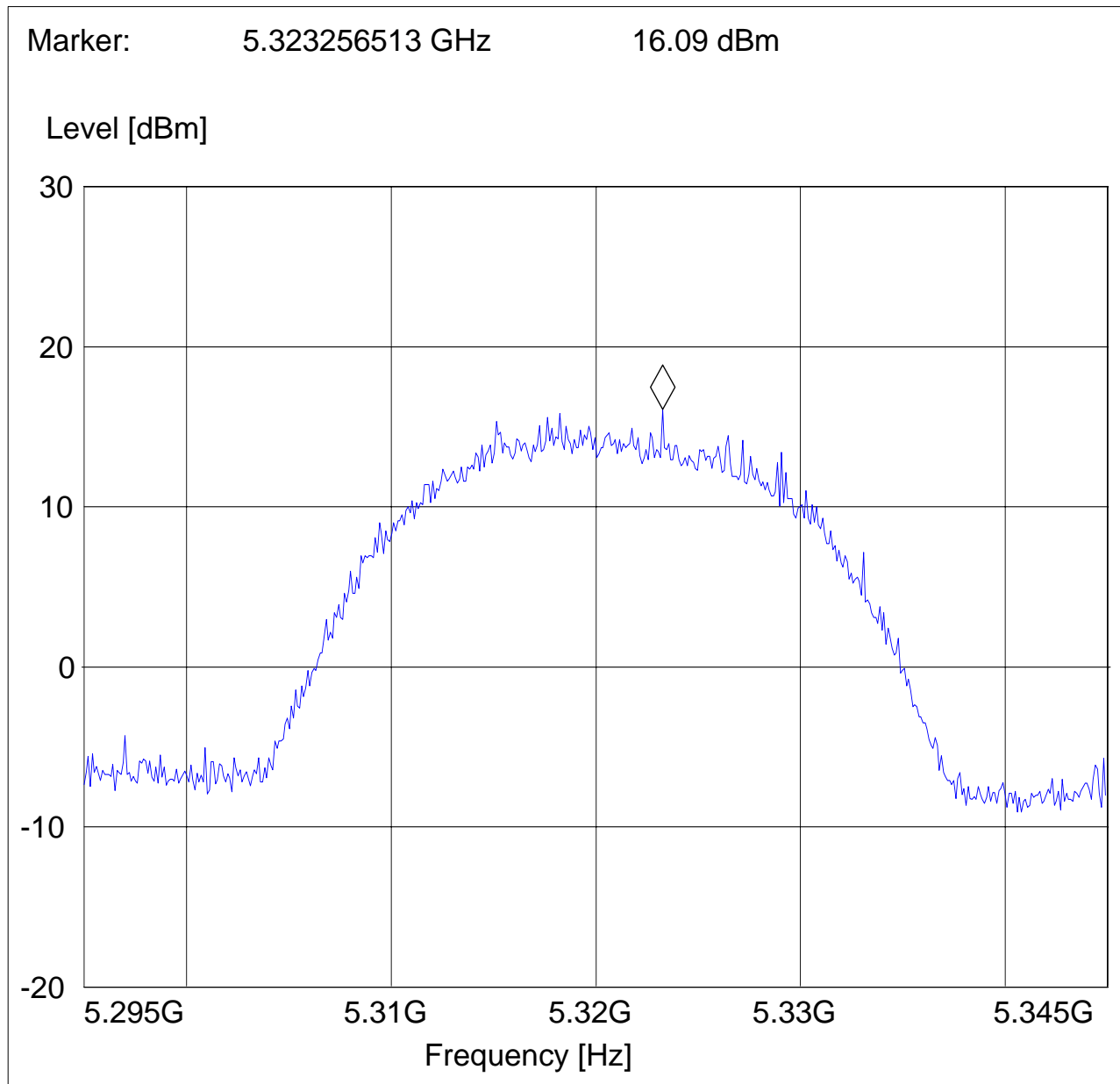
**EIRP 802.11 (a) Mode (5320MHz)**

**CETECOM Inc., 411 Dixon Landing Road, Milpitas CA 95035, USA**

EUT / Description: Dell PP12S with BCM94311MCAG

**SWEEP TABLE: "EIRP 802.11a 64"**

| Short Description: |                | EIRP channel-5320 MHz |            |           |            |
|--------------------|----------------|-----------------------|------------|-----------|------------|
| Start Frequency    | Stop Frequency | Detector              | Meas. Time | IF Bandw. | Transducer |
| 5.3 GHz            | 5.3 GHz        | MaxPeak               | Coupled    | 10 MHz    | DUMMY-DBM  |





**5.2 RESTRICTED BAND EDGE COMPLIANCE RADIATED §15.407(b)/15.205**

**5.2.1 LIMITS**

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

| MHz                        | MHz                   | MHz             | GHz              |
|----------------------------|-----------------------|-----------------|------------------|
| 0.090 - 0.110              | 16.42 - 16.423        | 399.9 - 410     | 4.5 - 5.15       |
| <sup>1</sup> 0.495 - 0.505 | 16.69475 - 16.69525   | 608 - 614       | 5.35 - 5.46      |
| 2.1735 - 2.1905            | 16.80425 - 16.80475   | 960 - 1240      | 7.25 - 7.75      |
| 4.125 - 4.128              | 25.5 - 25.67          | 1300 - 1427     | 8.025 - 8.5      |
| 4.17725 - 4.17775          | 37.5 - 38.25          | 1435 - 1626.5   | 9.0 - 9.2        |
| 4.20725 - 4.20775          | 73 - 74.6             | 1645.5 - 1646.5 | 9.3 - 9.5        |
| 6.215 - 6.218              | 74.8 - 75.2           | 1660 - 1710     | 10.6 - 12.7      |
| 6.26775 - 6.26825          | 108 - 121.94          | 1718.8 - 1722.2 | 13.25 - 13.4     |
| 6.31175 - 6.31225          | 123 - 138             | 2200 - 2300     | 14.47 - 14.5     |
| 8.291 - 8.294              | 149.9 - 150.05        | 2310 - 2390     | 15.35 - 16.2     |
| 8.362 - 8.366              | 156.52475 - 156.52525 | 2483.5 - 2500   | 17.7 - 21.4      |
| 8.37625 - 8.38675          | 156.7 - 156.9         | 2690 - 2900     | 22.01 - 23.12    |
| 8.41425 - 8.41475          | 162.0125 - 167.17     | 3260 - 3267     | 23.6 - 24.0      |
| 12.29 - 12.293             | 167.72 - 173.2        | 3332 - 3339     | 31.2 - 31.8      |
| 12.51975 - 12.52025        | 240 - 285             | 3345.8 - 3358   | 36.43 - 36.5     |
| 12.57675 - 12.57725        | 322 - 335.4           | 3600 - 4400     | ( <sup>2</sup> ) |
| 13.36 - 13.41              |                       |                 |                  |

**\*PEAK LIMIT= 74dBuV/m**

**\*AVG. LIMIT= 54dBuV/m**



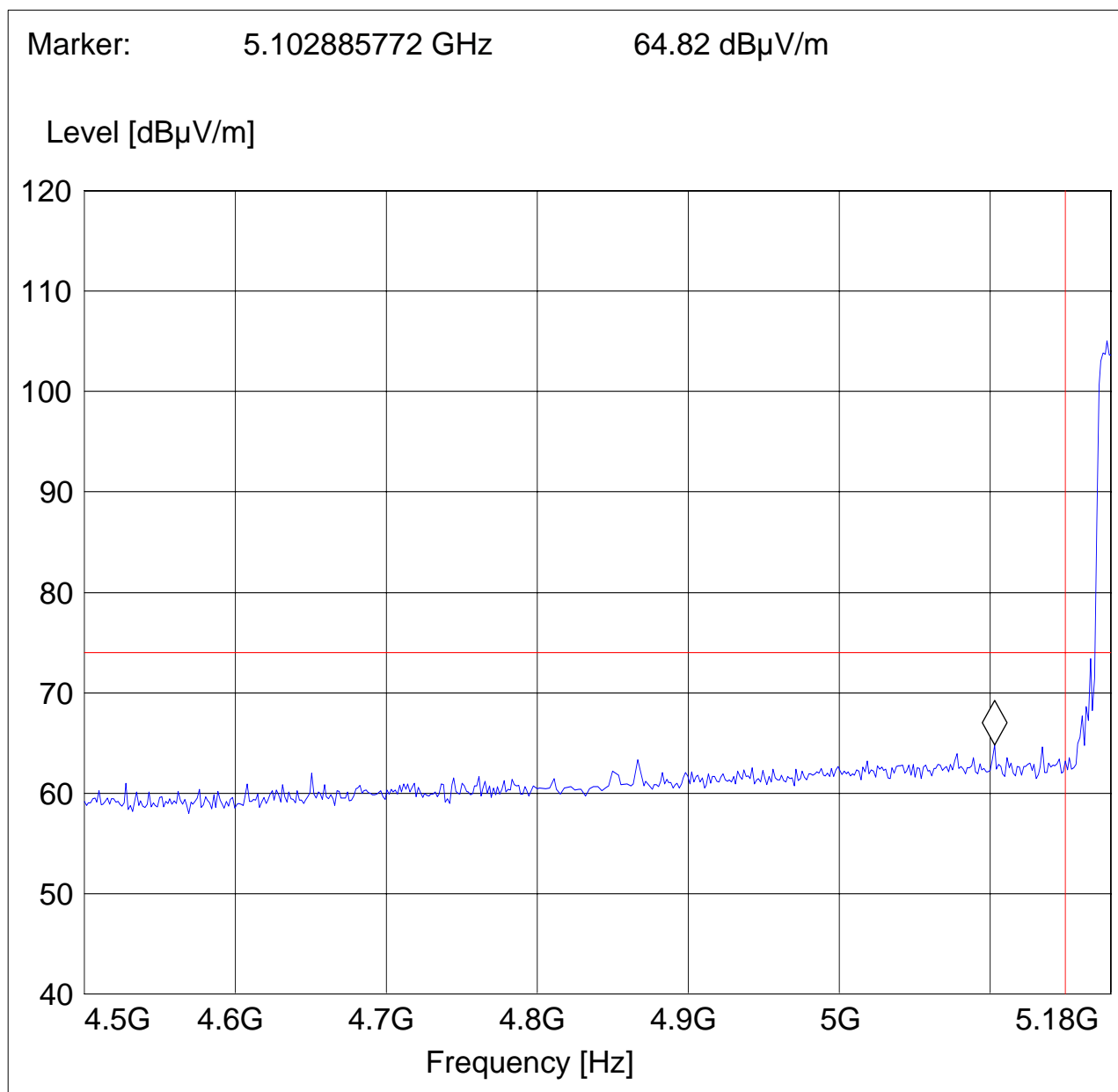
**5.2.2 802.11 (a) MODE (5180MHz)  
PEAK**

**CETECOM Inc., 411 Dixon Landing Road, Milpitas CA 95035, USA**

EUT / Description: Dell PP12S with BCM94311MCAG

**SWEEP TABLE: "FCC15.407 A\_LBE\_PK"**

| Start Frequency | Stop Frequency | Detector | Meas. Time | IF Bandw. | Transducer       |
|-----------------|----------------|----------|------------|-----------|------------------|
| 4.5 GHz         | 5.2 GHz        | MaxPeak  | Coupled    | 1 MHz     | #326horn_AF_horz |





**AVG**

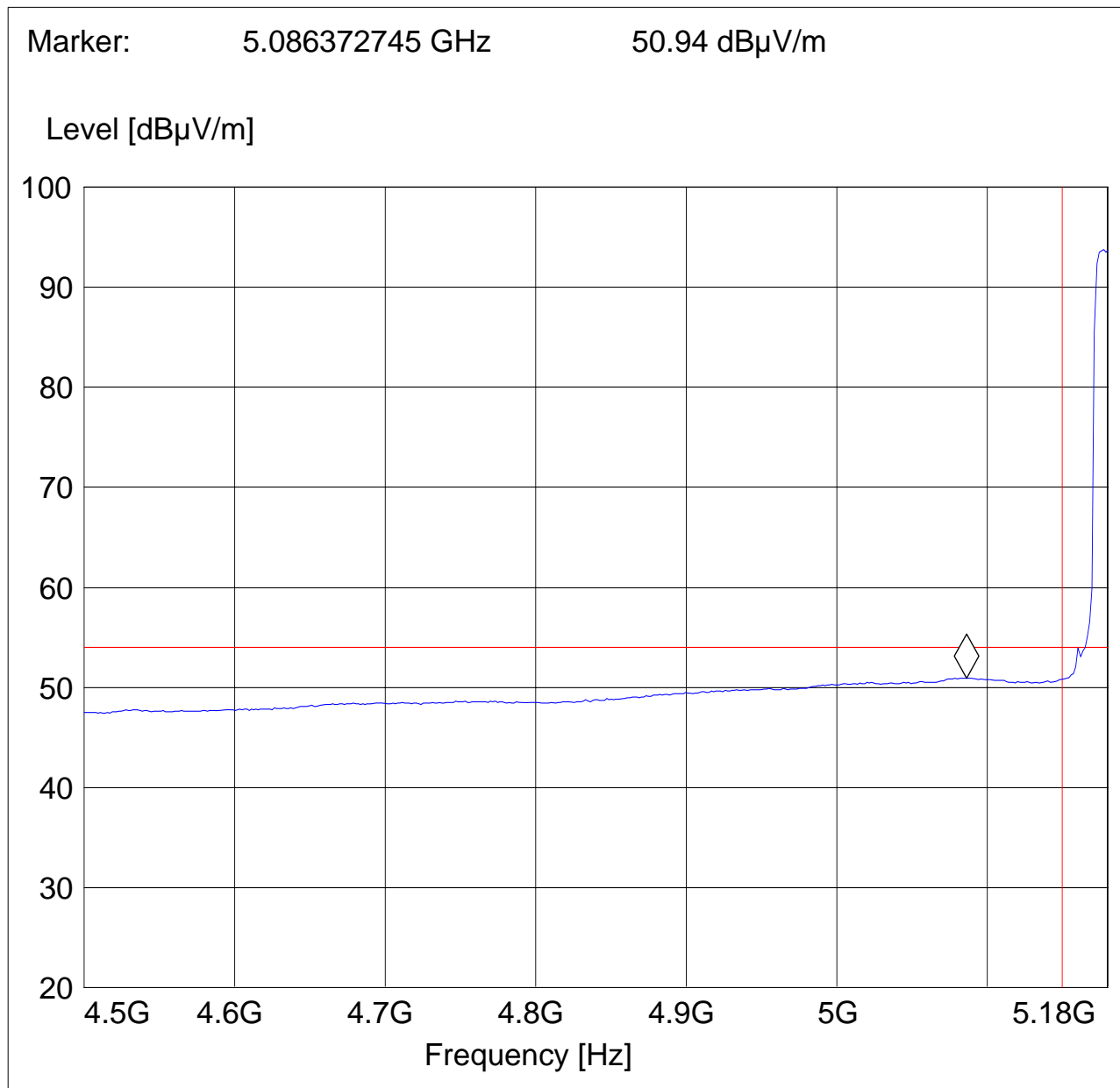
**CETECOM Inc.**

**CETECOM Inc., 411 Dixon Landing Road, Milpitas CA 95035, USA**

EUT / Description: Dell PP12S with BCM94311MCAG

**SWEEP TABLE: "FCC15.407 A\_LBE\_AVG"**

| Start Frequency | Stop Frequency | Detector | Meas. Time | IF Bandw. | Transducer       |
|-----------------|----------------|----------|------------|-----------|------------------|
| 4.5 GHz         | 5.3 GHz        | MaxPeak  | Coupled    | 1 MHz     | #326horn_AF_vert |





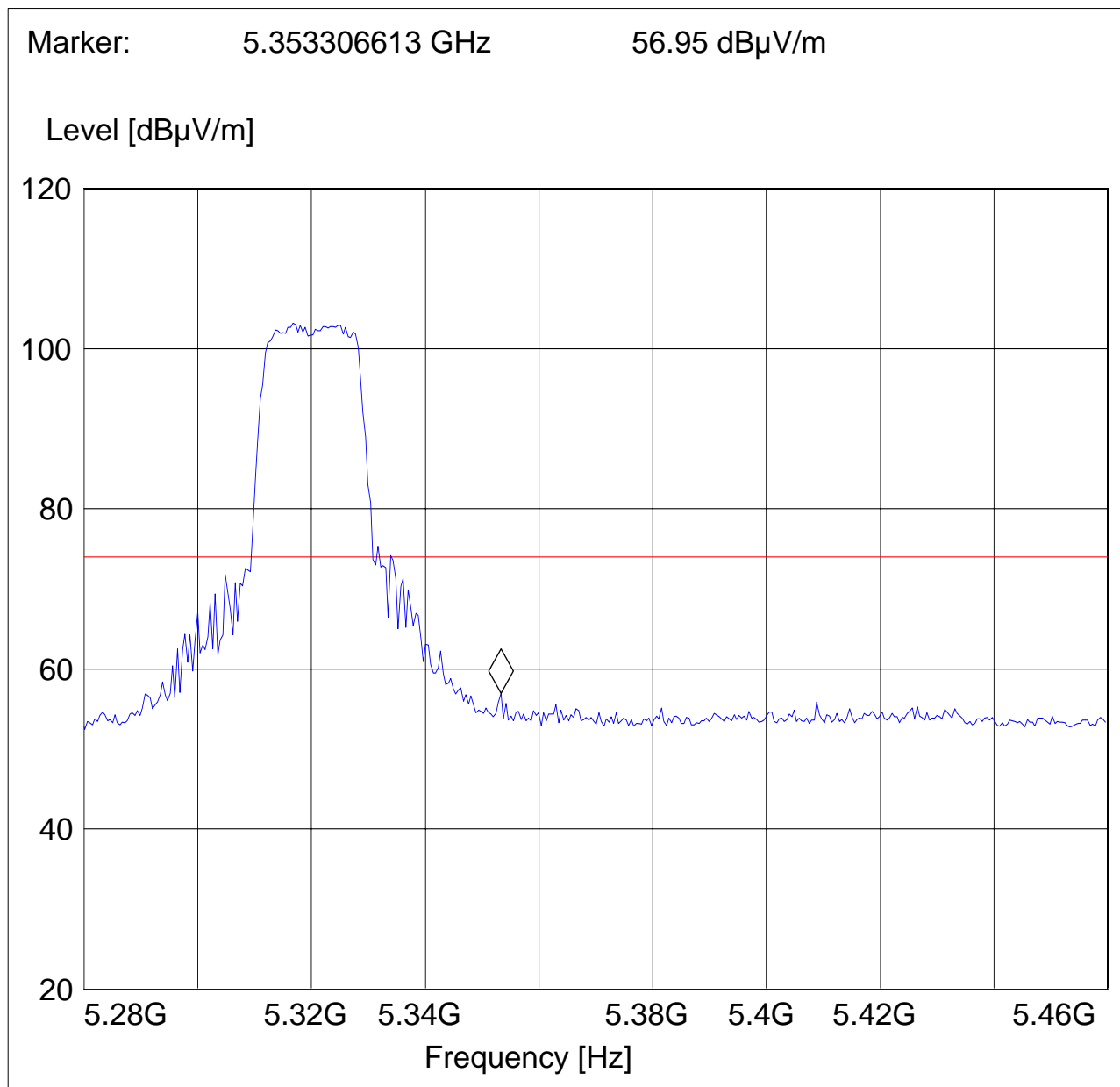
**5.2.3 802.11 (a) MODE (5320MHz)  
PEAK**

**CETECOM Inc., 411 Dixon Landing Road, Milpitas CA 95035, USA**

EUT / Description: Dell PP12S with BCM94311MCAG

**SWEEP TABLE: "FCC15.407 A\_HBE\_PK"**

| Start Frequency | Stop Frequency | Detector | Meas. Time | IF Bandw. | Transducer       |
|-----------------|----------------|----------|------------|-----------|------------------|
| 5.2 GHz         | 5.5 GHz        | MaxPeak  | Coupled    | 1 MHz     | #326horn_AF_horz |





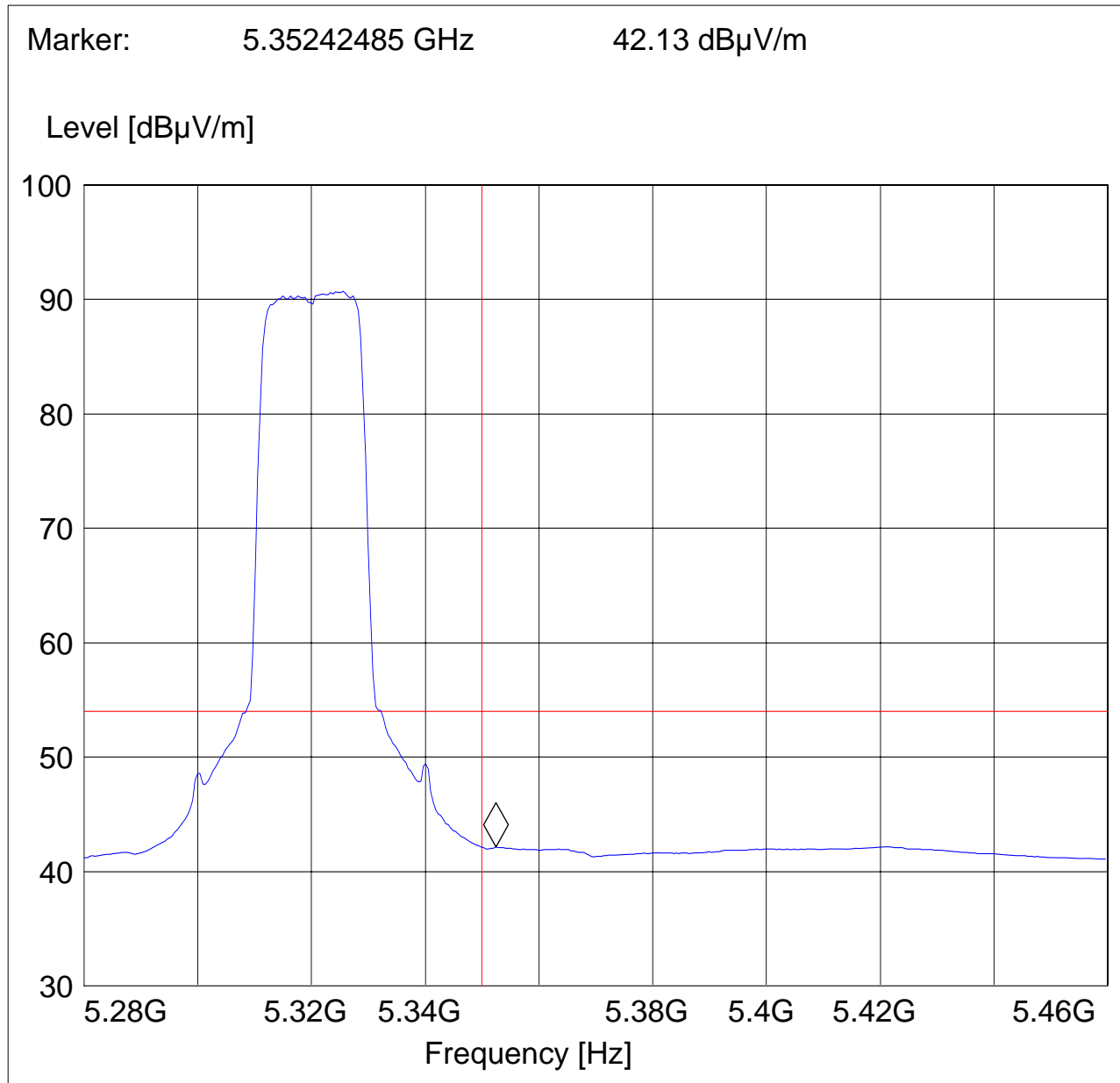
### AVG

CETECOM Inc., 411 Dixon Landing Road, Milpitas CA 95035, USA

EUT / Description: Dell PP12S with BCM94311MCAG

**SWEEP TABLE: "FCC15.407 A\_HBE\_AVG"**

| Start Frequency | Stop Frequency | Detector | Meas. Time | IF Bandw. | Transducer       |
|-----------------|----------------|----------|------------|-----------|------------------|
| 5.2 GHz         | 5.5 GHz        | MaxPeak  | Coupled    | 1 MHz     | #326horn_AF_horz |





**5.3 TRANSMITTER SPURIOUS EMISSIONS RADIATED § 15.407(b)/15.205/15.209 & RSS-210 (A9.3)**

**5.3.1 LIMITS**

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

| MHz                        | MHz                   | MHz             | GHz              |
|----------------------------|-----------------------|-----------------|------------------|
| 0.090 - 0.110              | 16.42 - 16.423        | 399.9 - 410     | 4.5 - 5.15       |
| <sup>1</sup> 0.495 - 0.505 | 16.69475 - 16.69525   | 608 - 614       | 5.35 - 5.46      |
| 2.1735 - 2.1905            | 16.80425 - 16.80475   | 960 - 1240      | 7.25 - 7.75      |
| 4.125 - 4.128              | 25.5 - 25.67          | 1300 - 1427     | 8.025 - 8.5      |
| 4.17725 - 4.17775          | 37.5 - 38.25          | 1435 - 1626.5   | 9.0 - 9.2        |
| 4.20725 - 4.20775          | 73 - 74.6             | 1645.5 - 1646.5 | 9.3 - 9.5        |
| 6.215 - 6.218              | 74.8 - 75.2           | 1660 - 1710     | 10.6 - 12.7      |
| 6.26775 - 6.26825          | 108 - 121.94          | 1718.8 - 1722.2 | 13.25 - 13.4     |
| 6.31175 - 6.31225          | 123 - 138             | 2200 - 2300     | 14.47 - 14.5     |
| 8.291 - 8.294              | 149.9 - 150.05        | 2310 - 2390     | 15.35 - 16.2     |
| 8.362 - 8.366              | 156.52475 - 156.52525 | 2483.5 - 2500   | 17.7 - 21.4      |
| 8.37625 - 8.38675          | 156.7 - 156.9         | 2690 - 2900     | 22.01 - 23.12    |
| 8.41425 - 8.41475          | 162.0125 - 167.17     | 3260 - 3267     | 23.6 - 24.0      |
| 12.29 - 12.293             | 167.72 - 173.2        | 3332 - 3339     | 31.2 - 31.8      |
| 12.51975 - 12.52025        | 240 - 285             | 3345.8 - 3358   | 36.43 - 36.5     |
| 12.57675 - 12.57725        | 322 - 335.4           | 3600 - 4400     | ( <sup>2</sup> ) |
| 13.36 - 13.41              |                       |                 |                  |

- \*PEAK LIMIT= 74dBuV/m for spurious in restricted bands
- \*AVG. LIMIT= 54dBuV/m for spurious in restricted bands
- \*AVG. LIMIT= 68.2dBuV/m for spurious NOT in restricted bands

**NOTE:**

1. The radiated emissions were done with different settings, using the relevant pre-amplifiers for the relevant frequency ranges. This is the reason that the graphs show different noise levels. In the range between 3 and 25 GHz very short cable connections to the antenna was used to minimize the noise level.
2. All measurements are done in peak mode using an average limit , unless specified with the plots.

**Results for the radiated measurements below 30MHz according § 15.33**

| Frequency    | Measured values                       | Remarks                                   |
|--------------|---------------------------------------|---|
| 9KHz – 30MHz | No emissions found, caused by the EUT | This is valid for all the tested channels |





**5.3.2 RESULTS 802.11 (a) MODE**  
**30MHz – 1GHz**

**Antenna: Horizontal**

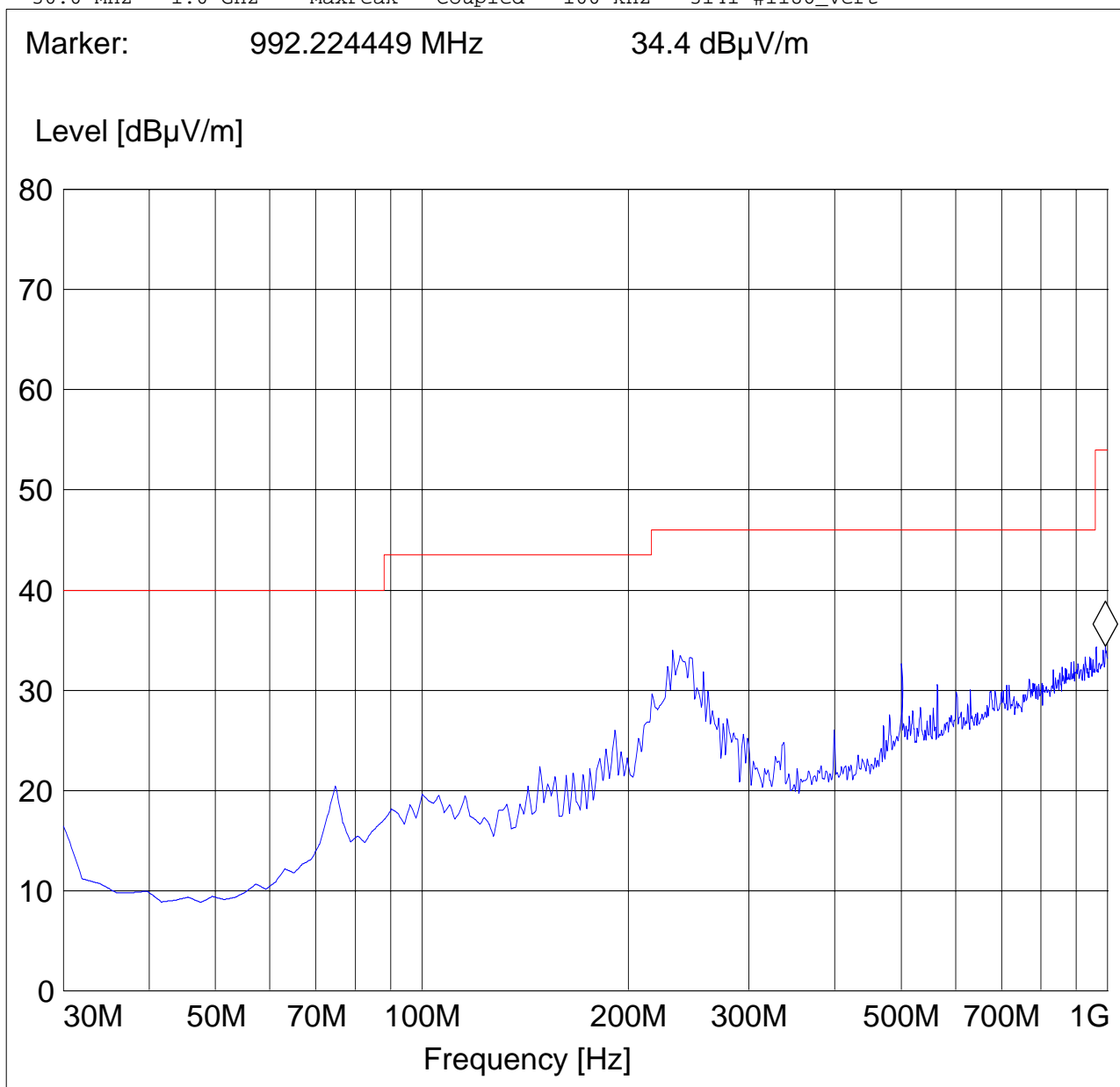
**Note: This plot is valid for low, mid, high channels horizontal and vertical polarities (worst-case plot).**

**CETECOM Inc., 411 Dixon Landing Road, Milpitas CA 95035, USA**

EUT / Description: Dell PP12S with BCM94311MCAG

**SWEEP TABLE: "FCC15.247\_30M-1G\_Ver"**

| Start Frequency | Stop Frequency | Detector | Meas. Time | IF Bandw. | Transducer      |
|-----------------|----------------|----------|------------|-----------|-----------------|
| 30.0 MHz        | 1.0 GHz        | MaxPeak  | Coupled    | 100 kHz   | 3141-#1186_Vert |



**1-18GHz (5180MHz)**



**Note: The peaks above the limit line is the carrier freq.**  
**Note: Peak Reading vs. Average limit (54 dBuV/m)**

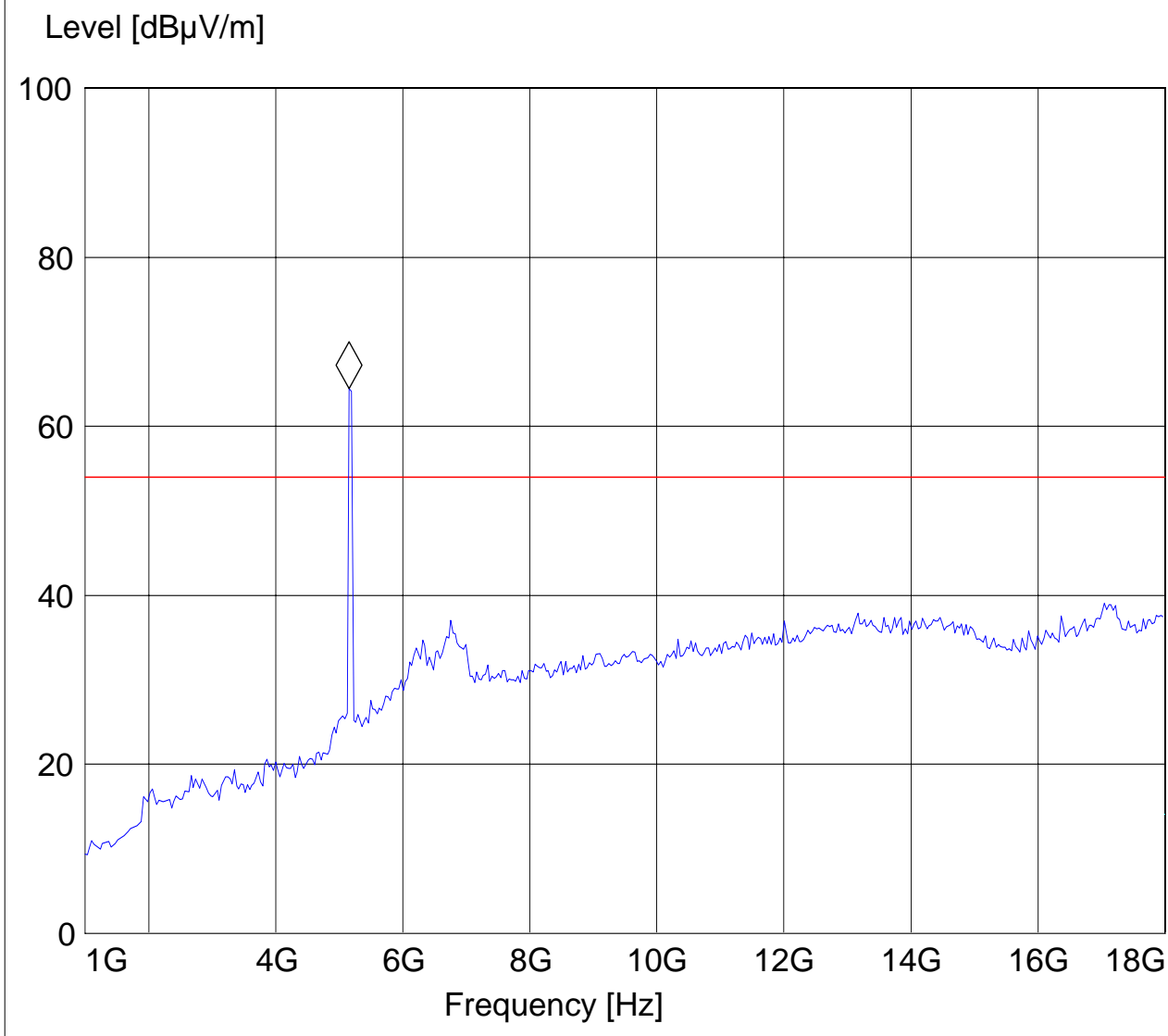
**CETECOM Inc., 411 Dixon Landing Road, Milpitas CA 95035, USA**

EUT / Description: Dell PP12S with BCM94311MCAG

**SWEEP TABLE: "FCC 15.407 1-18G"**

| Start Frequency | Stop Frequency | Detector | Meas. Time | IF Bandw. | Transducer       |
|-----------------|----------------|----------|------------|-----------|------------------|
| 1.0 GHz         | 18.0 GHz       | MaxPeak  | Coupled    | 1 MHz     | #326horn_AF_horz |

Marker: 5.156312625 GHz 64.48 dBuV/m





**1-18GHz (5260MHz)**

**Note: The peaks above the limit line is the carrier freq.**

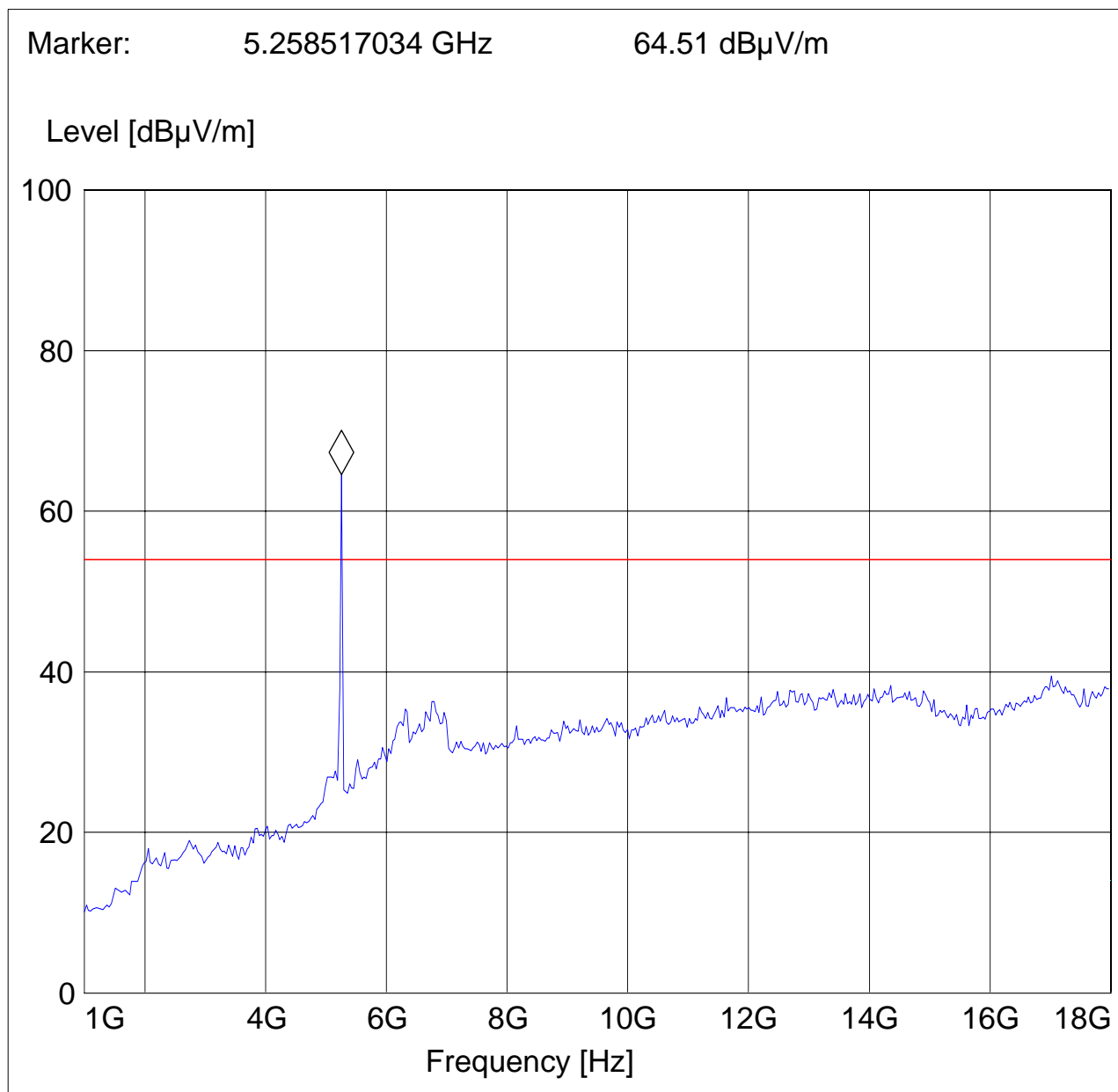
**Note: Peak Reading vs. Average limit (54 dBuV/m)**

**CETECOM Inc., 411 Dixon Landing Road, Milpitas CA 95035, USA**

EUT / Description: Dell PP12S with BCM94311MCAG

**SWEEP TABLE: "FCC 15.407 1-18G"**

| Start Frequency | Stop Frequency | Detector | Meas. Time | IF Bandw. | Transducer       |
|-----------------|----------------|----------|------------|-----------|------------------|
| 1.0 GHz         | 18.0 GHz       | MaxPeak  | Coupled    | 1 MHz     | #326horn_AF_horz |





1-18GHz (5320MHz)

Note: The peaks above the limit line is the carrier freq.

Note: Peak Reading vs. Average limit (54 dBuV/m)

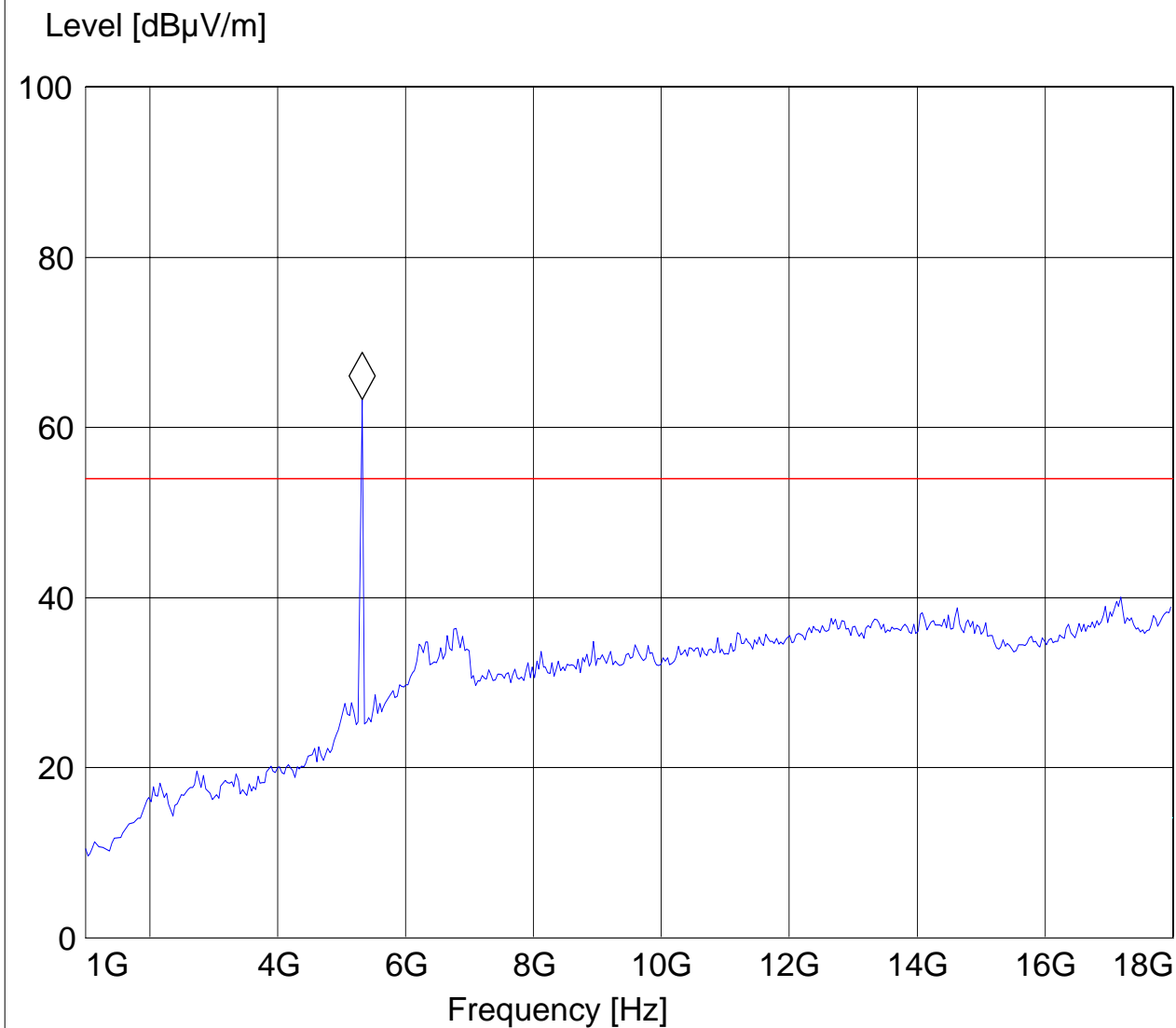
CETECOM Inc., 411 Dixon Landing Road, Milpitas CA 95035, USA

EUT / Description: Dell PP12S with BCM94311MCAG

SWEEP TABLE: "FCC 15.407 1-18G"

| Start Frequency | Stop Frequency | Detector | Meas. Time | IF Bandw. | Transducer       |
|-----------------|----------------|----------|------------|-----------|------------------|
| 1.0 GHz         | 18.0 GHz       | MaxPeak  | Coupled    | 1 MHz     | #326horn_AF_horz |

Marker: 5.326653307 GHz 63.3 dBuV/m





**18-26.5GHz (5180MHz)**

**Note: Peak Reading vs. Average limit (54 dBuV/m)**

**CETECOM Inc., 411 Dixon Landing Road, Milpitas CA 95035, USA**

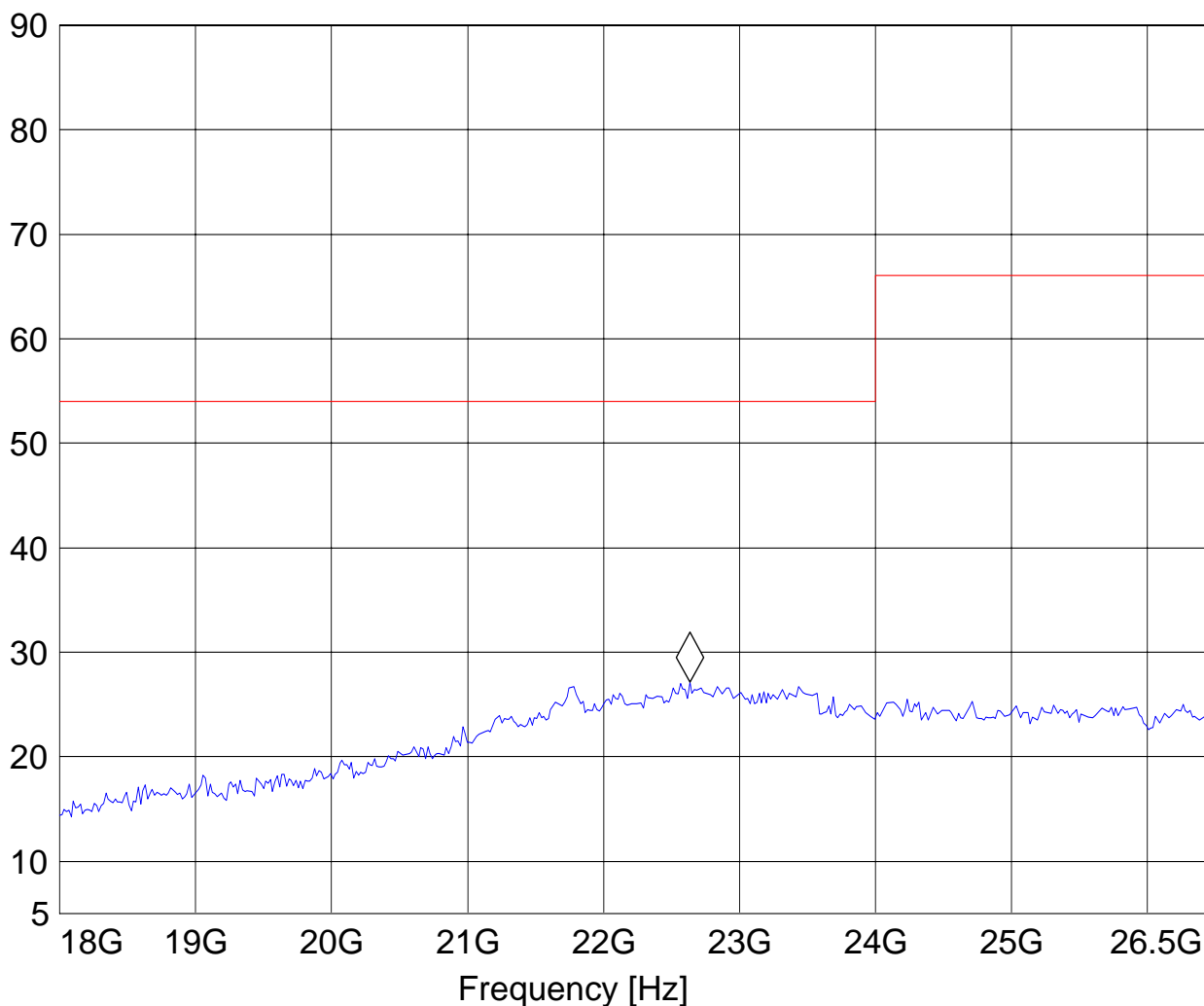
EUT / Description: Dell PP12S with BCM94311MCAG

**SWEEP TABLE: "FCC15.247\_18-26.5G"**

| Start Frequency | Stop Frequency | Detector | Meas. Time | IF Bandw. | Transducer         |
|-----------------|----------------|----------|------------|-----------|--------------------|
| 18.0 GHz        | 25.0 GHz       | MaxPeak  | Coupled    | 1 MHz     | 3160 Horn 18-26.5G |

Marker: 22.633266533 GHz 27.15 dBuV/m

Level [dBuV/m]





**18-26.5GHz (5260MHz)**

**Note: Peak Reading vs. Average limit (54 dBuV/m)**

**CETECOM Inc., 411 Dixon Landing Road, Milpitas CA 95035, USA**

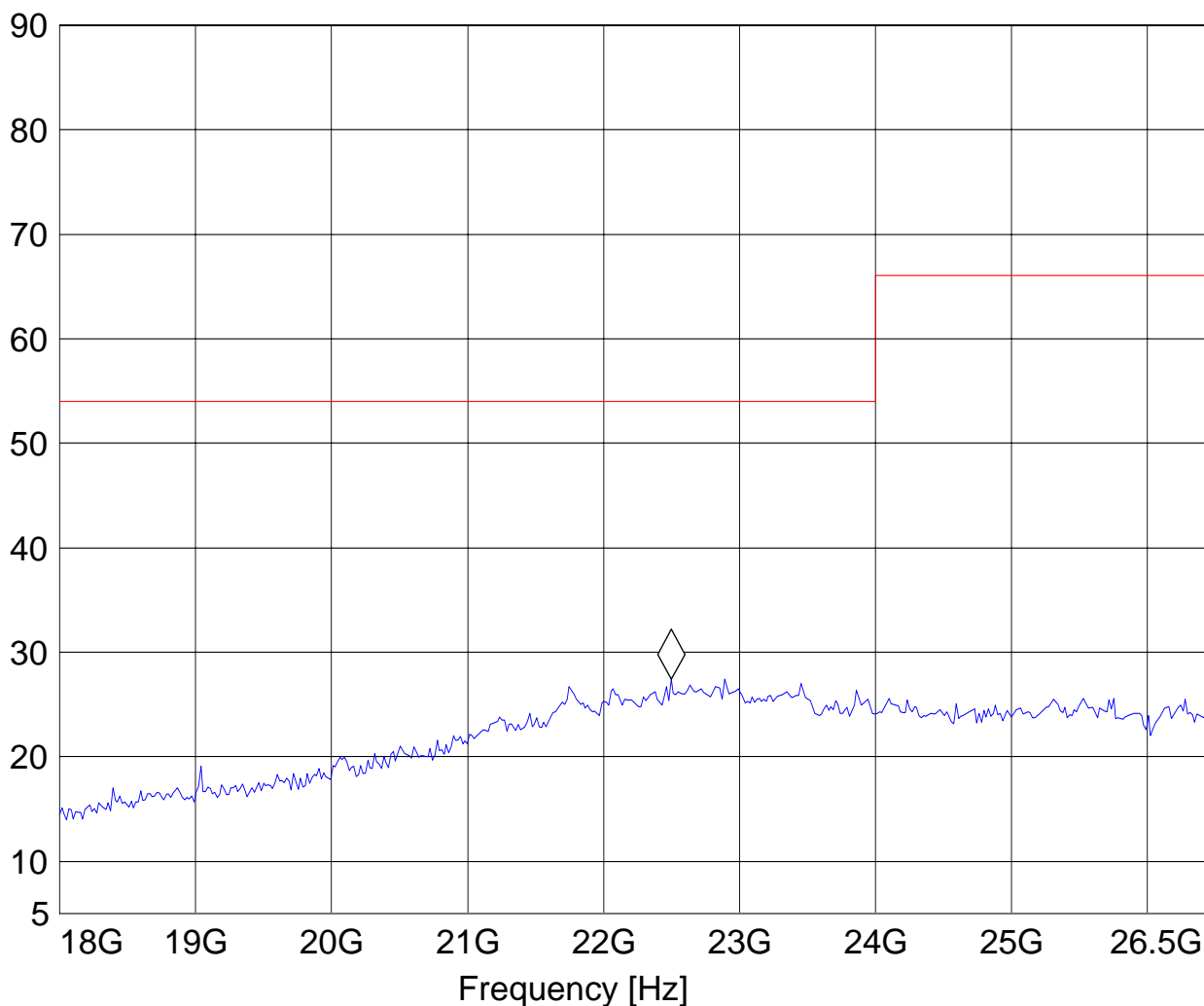
EUT / Description: Dell PP12S with BCM94311MCAG

**SWEEP TABLE: "FCC15.247\_18-26.5G"**

| Start Frequency | Stop Frequency | Detector | Meas. Time | IF Bandw. | Transducer         |
|-----------------|----------------|----------|------------|-----------|--------------------|
| 18.0 GHz        | 25.0 GHz       | MaxPeak  | Coupled    | 1 MHz     | 3160 Horn 18-26.5G |

Marker: 22.496993988 GHz 27.46 dBuV/m

Level [dBuV/m]





**18-26.5GHz (5320MHz)**

**Note: Peak Reading vs. Average limit (54 dBuV/m)**

**CETECOM Inc., 411 Dixon Landing Road, Milpitas CA 95035, USA**

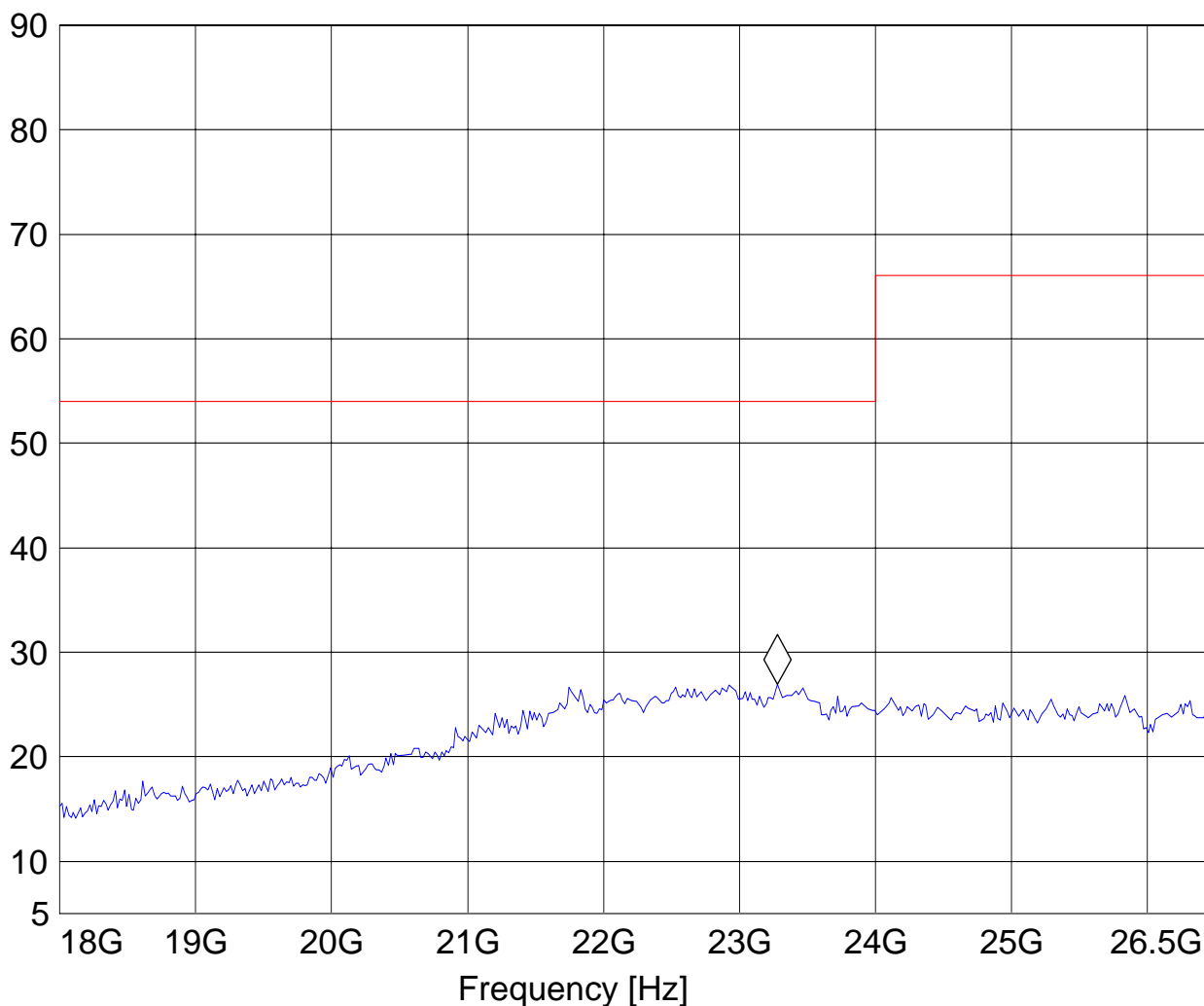
EUT / Description: Dell PP12S with BCM94311MCAG

**SWEEP TABLE: "FCC15.247\_18-26.5G"**

| Start Frequency | Stop Frequency | Detector | Meas. Time | IF Bandw. | Transducer         |
|-----------------|----------------|----------|------------|-----------|--------------------|
| 18.0 GHz        | 25.0 GHz       | MaxPeak  | Coupled    | 1 MHz     | 3160 Horn 18-26.5G |

Marker: 23.280561122 GHz 26.92 dBuV/m

Level [dBuV/m]





## **26-40GHz**

**Note: Since no harmonic emissions were detected 20-dB of the limit for scans 18 – 26GHz it was determine that no emissions will be detected from 26 – 40 GHz, so no scans were captured.**





#### **5.4 RECEIVER SPURIOUS RADIATION § 15.109/RSS-GEN (4.10)**

**Note: Receiver emissions are exempt from testing per FCC 15.101(b) if it operated below 30 MHz and/or above 960 MHz. But, testing is required for Industry Canada approval for all receivers, which only needs to be tested on the middle channel of the radios operating band.**

**The radio being tested receives at 2.4GHz therefore exempting it from testing to the FCC part 15 rules.**



**5.5 AC POWER LINE CONDUCTED EMISSIONS § 15.207 & RSS-GEN (7.2.2)**

**5.5.1 LIMITS**

**Technical specification: 15.207 (Revised as of August 20, 2002)**

**Limit**

| Frequency of Emission (MHz) | Conducted Limit (dBµV) |           |
|-----------------------------|------------------------|-----------|
|                             | Quasi-Peak             | Average   |
| 0.15 – 0.5                  | 66 to 56*              | 56 to 46* |
| 0.5 – 5                     | 56                     | 46        |
| 5 – 30                      | 60                     | 50        |

\* Decreases with logarithm of the frequency

**ANALYZER SETTINGS: RBW = 10KHz VBW = 10KHz**

**OPERATING MODE**

Conducted AC emissions testing were performed with 110 VAC @ 60 Hz with the EUT in mode that produce the highest power.



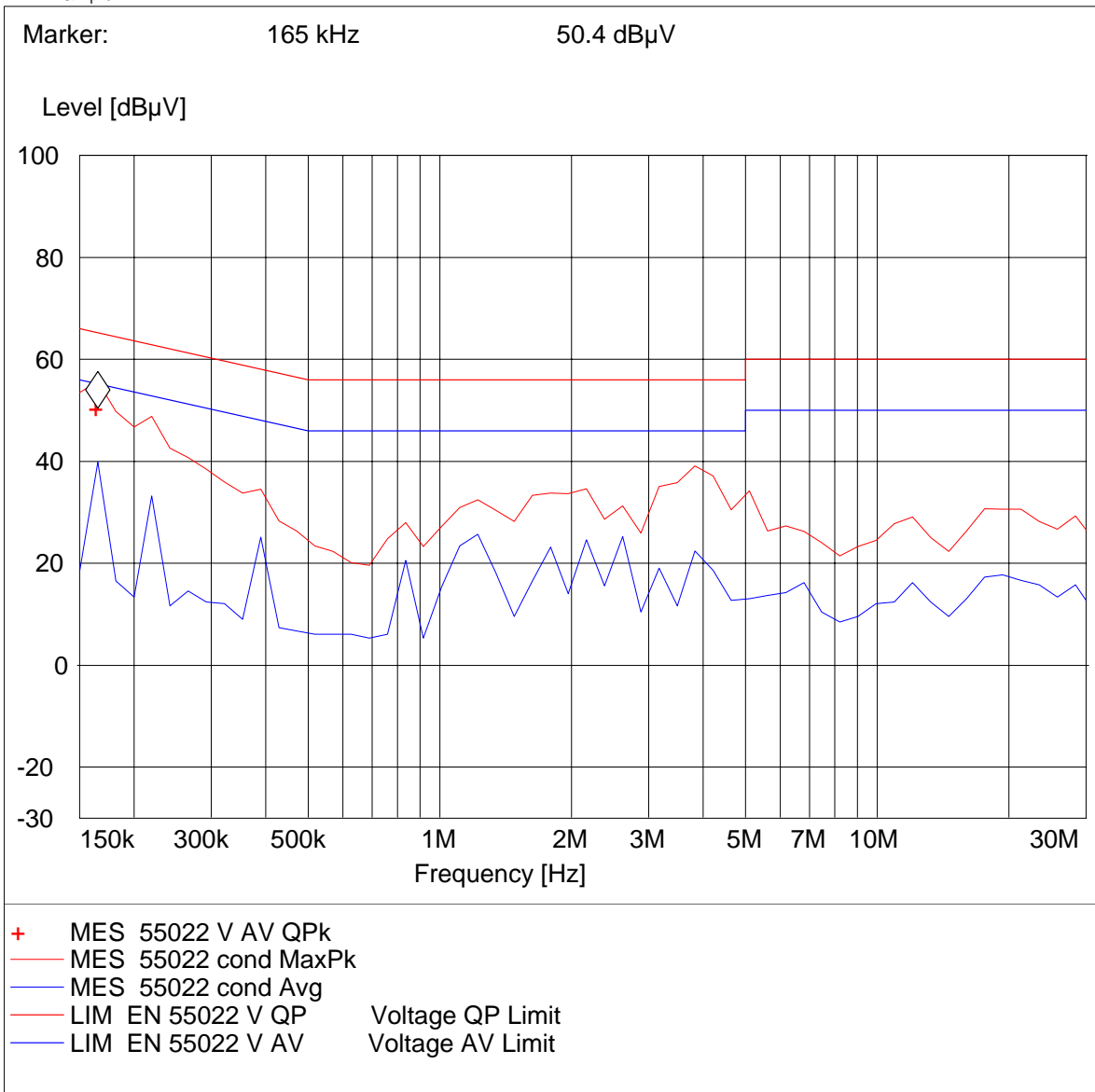
**Voltage Mains Test (Line)**

CETECOM Inc. Milpitas, USA

EUT: Dell PPI2S with BCM94311MCG  
 Manufacturer: Broadcom  
 Operating Condition: Tx Mode  
 ANT Orientation:: CONDUCTED  
 EUT Orientation:: H  
 Test Engineer: Juan M.  
 Power Supply: AC Adaptor  
 Comments: 120V,60Hz (Line)

**SWEEP TABLE: "55022 cond"**

Short Description: EN 55022 for 150kHz-30MHz  
 Unit: dBµV



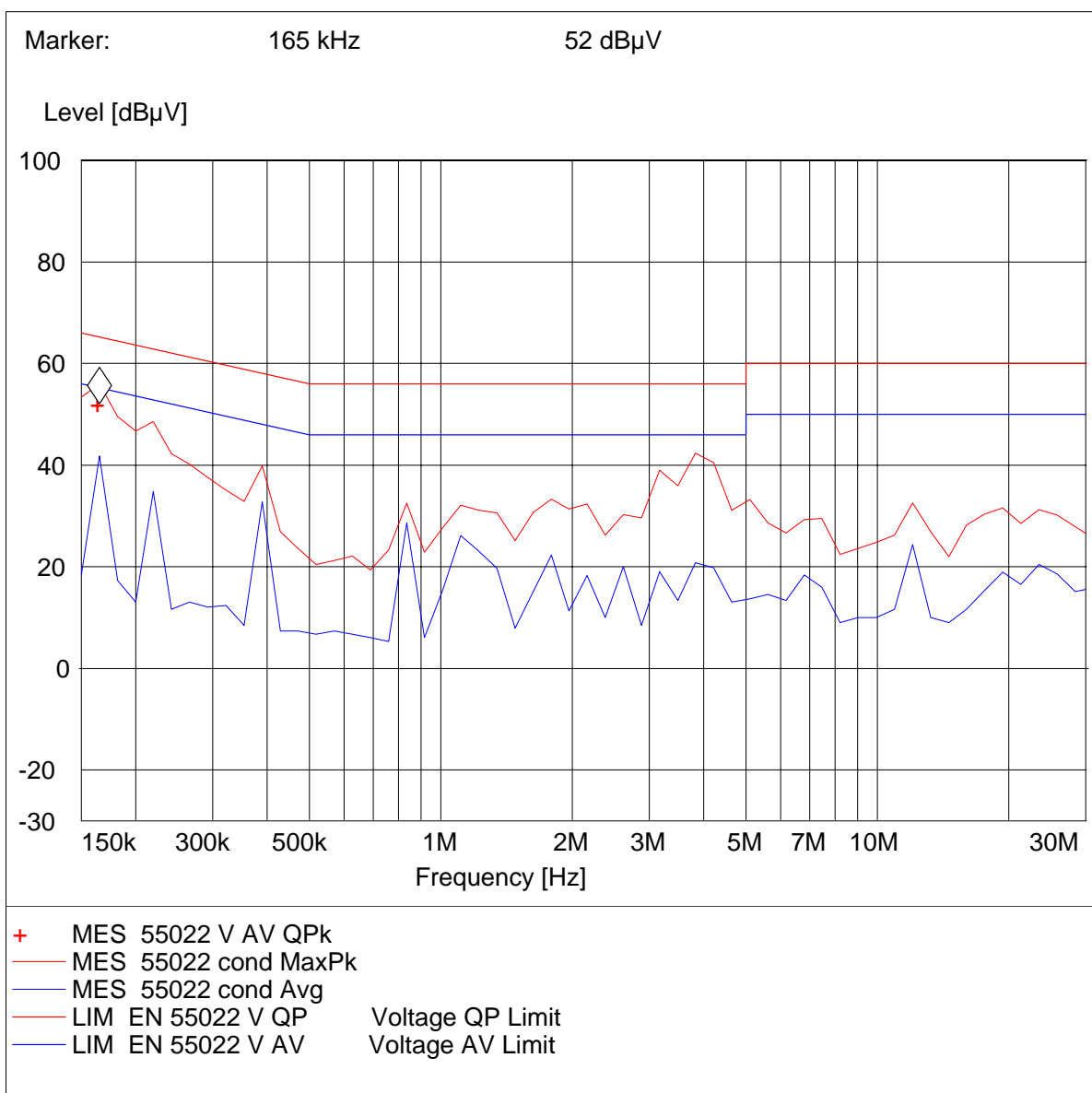


**Voltage Mains Test (Neutral)**

EUT: Dell PP12S with BCM94311MCG  
 Manufacturer: Broadcom  
 Operating Condition: Tx Mode  
 ANT Orientation:: CONDUCTED  
 EUT Orientation:: H  
 Test Engineer:: Juan M.  
 Power Supply: : AC Adaptor  
 Comments: : 120V,60Hz (Neutral)

**SWEEP TABLE: "55022 cond"**

Short Description: EN 55022 for 150KHz-30MHz  
 Unit: dBµV





**6 TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS**

| No | Instrument/Ancillary      | Type        | Manufacturer    | Serial No. | Cal Due   | Interval |
|----|---------------------------|-------------|-----------------|------------|-----------|----------|
| 01 | Spectrum Analyzer         | ESIB 40     | Rohde & Schwarz | 100107     | May 2008  | 1 year   |
| 05 | Biconilog Antenna         | 3141        | EMCO            | 0005-1186  | June 2008 | 1 year   |
| 06 | Horn Antenna (1-18GHz)    | SAS-200/571 | AH Systems      | 325        | June 2008 | 1 year   |
| 07 | Horn Antenna (18-26.5GHz) | 3160-09     | EMCO            | 1240       | June 2008 | 1 year   |
| 10 | High Pass Filter          | 5HC2700     | Trilithic Inc.  | 9926013    | n/a       | n/a      |
| 11 | High Pass Filter          | 4HC1600     | Trilithic Inc.  | 9922307    | n/a       | n/a      |
| 16 | LISN                      | ESH3-Z5     | Rohde & Schwarz | 836679/003 | May 2008  | 1 year   |

### Radiated Testing

#### ANECHOIC CHAMBER

