



# Permissive Class II Change FCC Test Report

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

FOR:

**Broadcom, Inc.**

**802.11abg Wireless LAN PCI-E Mini Card**

**Model Number: BCM94311MCAG**

**FCC ID: QDS-BRCM1019**

**IC UPN: 4324A-BRCM1019**

**TEST REPORT #:EMC\_BROAD\_051\_08001\_UNII\_WNC**

**DATE: March 14, 2008**



**Bluetooth™**  
Bluetooth Qualification  
Test Facility  
(BQTF)



FCC listed#  
A2LA Certified  
IC recognized #  
3462B

**CETECOM Inc.**

411 Dixon Landing Road • Milpitas, CA 95035 • U.S.A.

Phone: + 1 (408) 586 6200 • Fax: + 1 (408) 586 6299 • E-mail: [info@cetecomusa.com](mailto:info@cetecomusa.com) • <http://www.cetecom.com>

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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## **2 Administrative Data**

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

<b>Company Name:</b>	<b>CETECOM Inc.</b>
<b>Department:</b>	<b>EMC</b>
<b>Address:</b>	<b>411 Dixon Landing Road Milpitas, CA 95035 U.S.A.</b>
<b>Telephone:</b>	<b>+1 (408) 586 6200</b>
<b>Fax:</b>	<b>+1 (408) 586 6299</b>
<b>Project Leader:</b>	<b>Juan Martinez</b>
<b>Responsible Test Lab Manager:</b>	<b>Ivaylo Tankov</b>

### **2.2 Identification of the Client**

<b>Applicant's Name:</b>	<b>Broadcom, Inc.</b>
<b>Address:</b>	<b>190 Mathilda Place, Sunnyvale, CA 94086, USA</b>
<b>Contact Person:</b>	<b>Daniel Lawless</b>
<b>Phone No.</b>	<b>408 965-3346</b>
<b>Fax:</b>	<b>408 324-4840</b>
<b>e-mail:</b>	<b>dlawless@broadcom.com</b>

### **2.3 Identification of the Manufacturer**

<b>Manufacturer's Name:</b>	<b>Broadcom, Inc.</b>
<b>Manufacturer's Address:</b>	<b>190 Mathilda Place, Sunnyvale, CA 94086 USA</b>



### 3 Equipment under Test (EUT)

#### 3.1 Specification of the Equipment under Test

<b>Product Type</b>	<b>Wireless LAN PCI-E Mini Card</b>
<b>Marketing Name:</b>	<b>802.11abg Wireless LAN PCI-E Mini Card</b>
<b>Model No:</b>	<b>BCM94311MCAG</b>
<b>FCC-ID:</b>	<b>QDS-BRCM1019</b>
<b>IC UPN:</b>	<b>4324A-BRCM1019</b>
<b>Frequency Range:</b>	<b>5150 – 5350 MHz</b>
<b>Number of Channels</b>	<b>11</b>
<b>Type(s) of Modulation:</b>	<b>OFDM</b>
<b>Antenna Type:</b>	<b>WNC PIFA 5150 – 5350 MHz Main (.63dBi) &amp; Aux (1.9dBi)</b>
<b>Max Radiated Output Power:</b>	<b>25.3dBm (0.338W), 802.11a EIRP 20.4dBm (0.109W), 802.11a EIRP 26.0dBm (0.398W), 802.11a EIRP</b>

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

<b>EUT #</b>	<b>TYPE</b>	<b>MANF.</b>	<b>MODEL</b>	<b>SERIAL #</b>
1	Laptop	HP	HSTNN-I46C	N/A

#### 3.3 Identification of Accessory equipment

<b>TYPE</b>	<b>MANF.</b>	<b>MODEL</b>
AC ADAPTOR	HP	N/A



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

All testing were performed on the HP HSTNN-I46C 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	25.28	20.4	26
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.

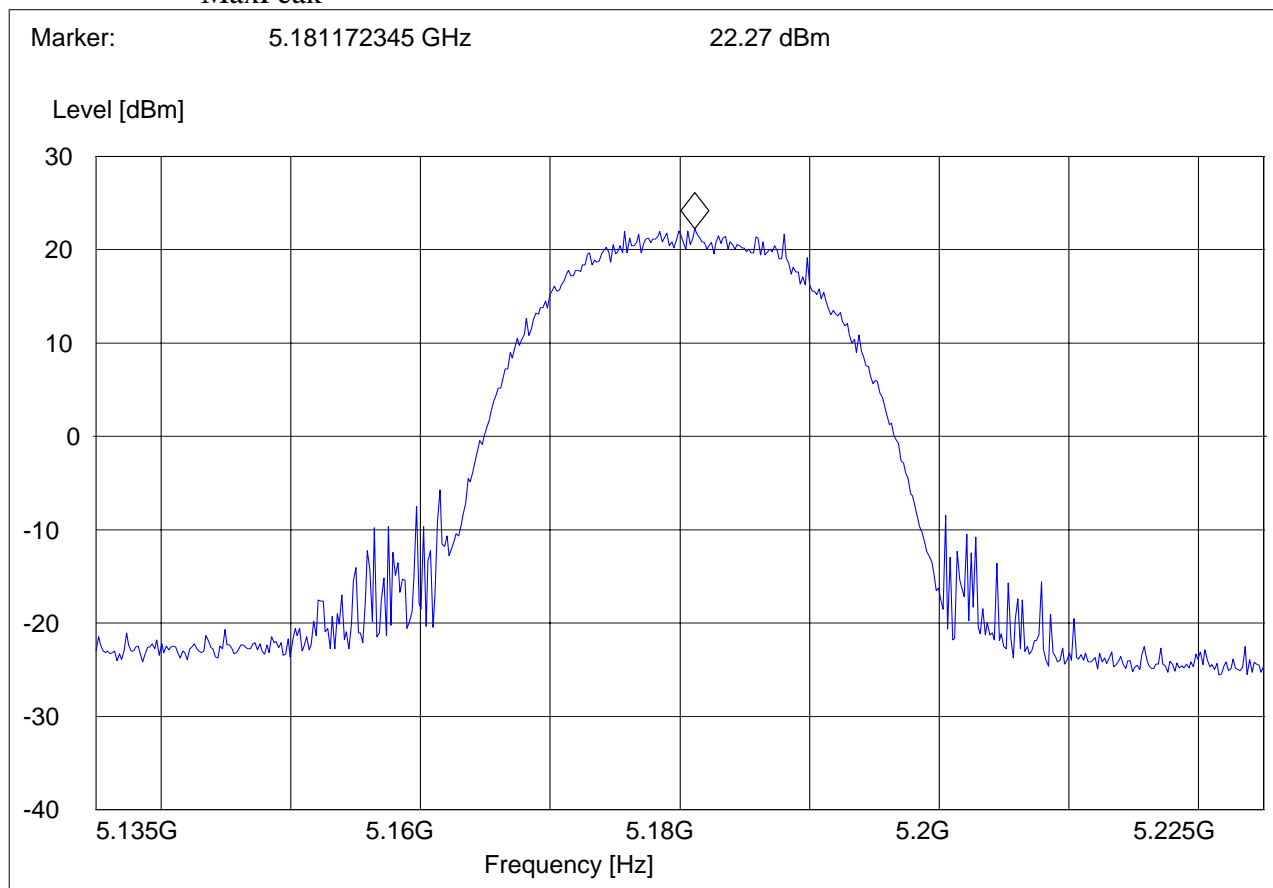


**EIRP 802.11 (a) Mode (5180)**

EUT: 94311MCAG  
Customer:: Broadcom  
Test Mode: 802.11a CH.36 Main  
**ANT Orientation: V**  
EUT Orientation: H  
Test Engineer: Chris  
Voltage: AC Adapter  
Comments:

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

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



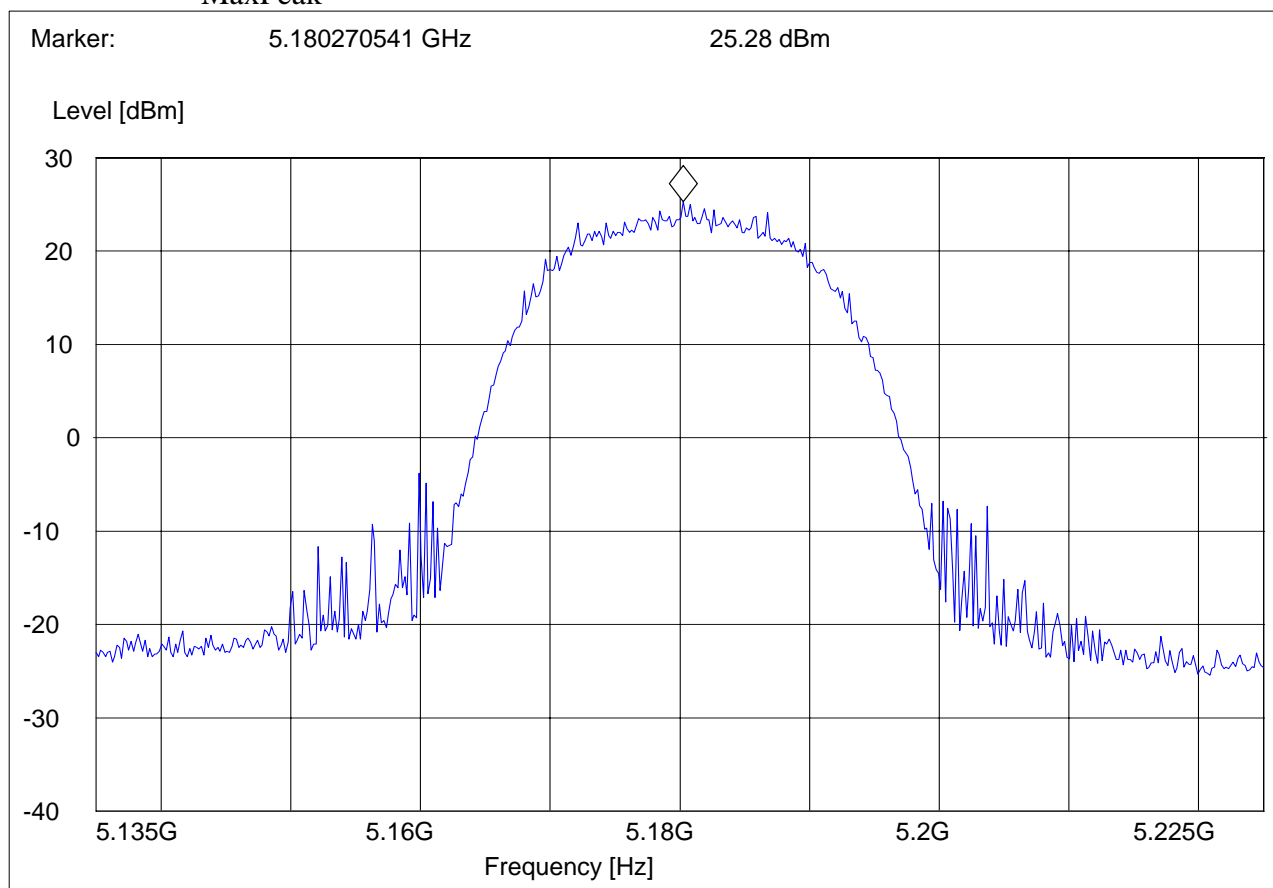




EUT: 94312MCAG  
Customer:: Broadcom  
Test Mode: 802.11a CH.36 Main  
**ANT Orientation: H**  
EUT Orientation: H  
Test Engineer: Chris  
Voltage: AC Adapter  
Comments:

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

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





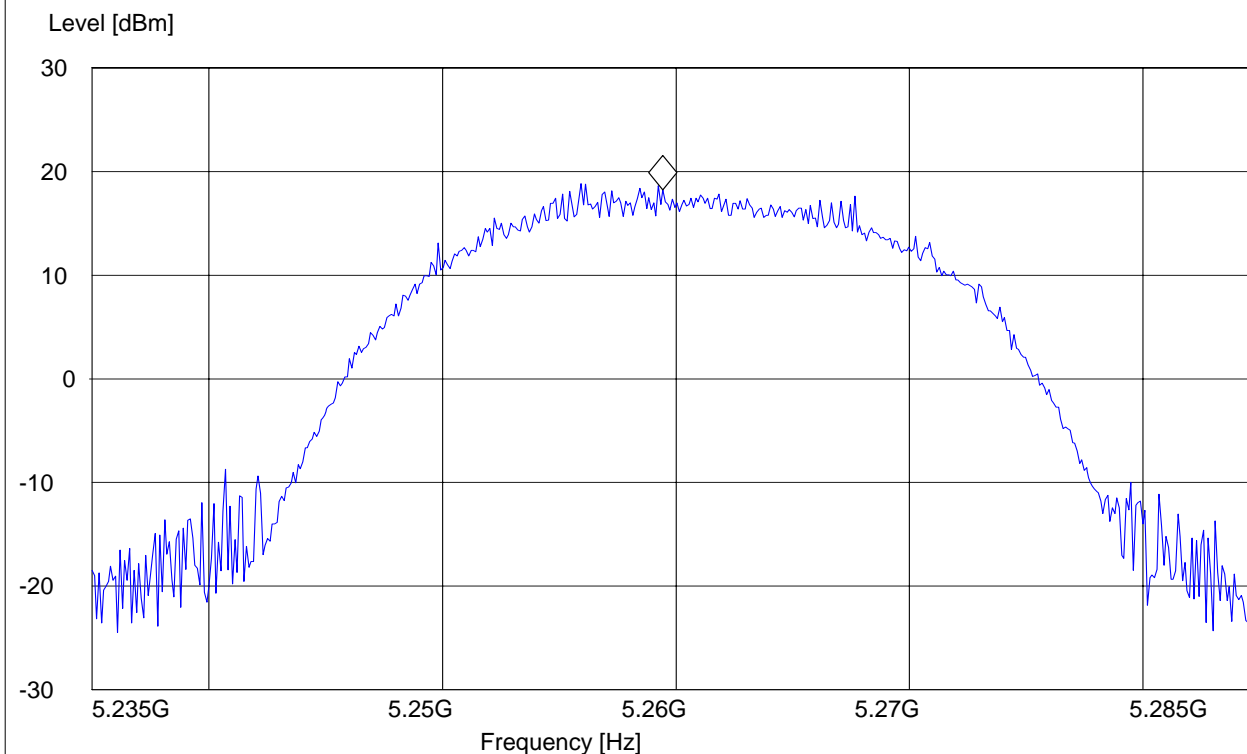
**EIRP 802.11 (a) Mode (5260MHz)**

EUT: 94311MCAG  
 Customer:: Broadcom  
 Test Mode: 802.11a Ch.52 main  
**ANT Orientation: V**  
 EUT Orientation: H  
 Test Engineer: Chris  
 Voltage: AC Adapter  
 Comments:

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

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

Marker: 5.259448898 GHz 18.24 dBm

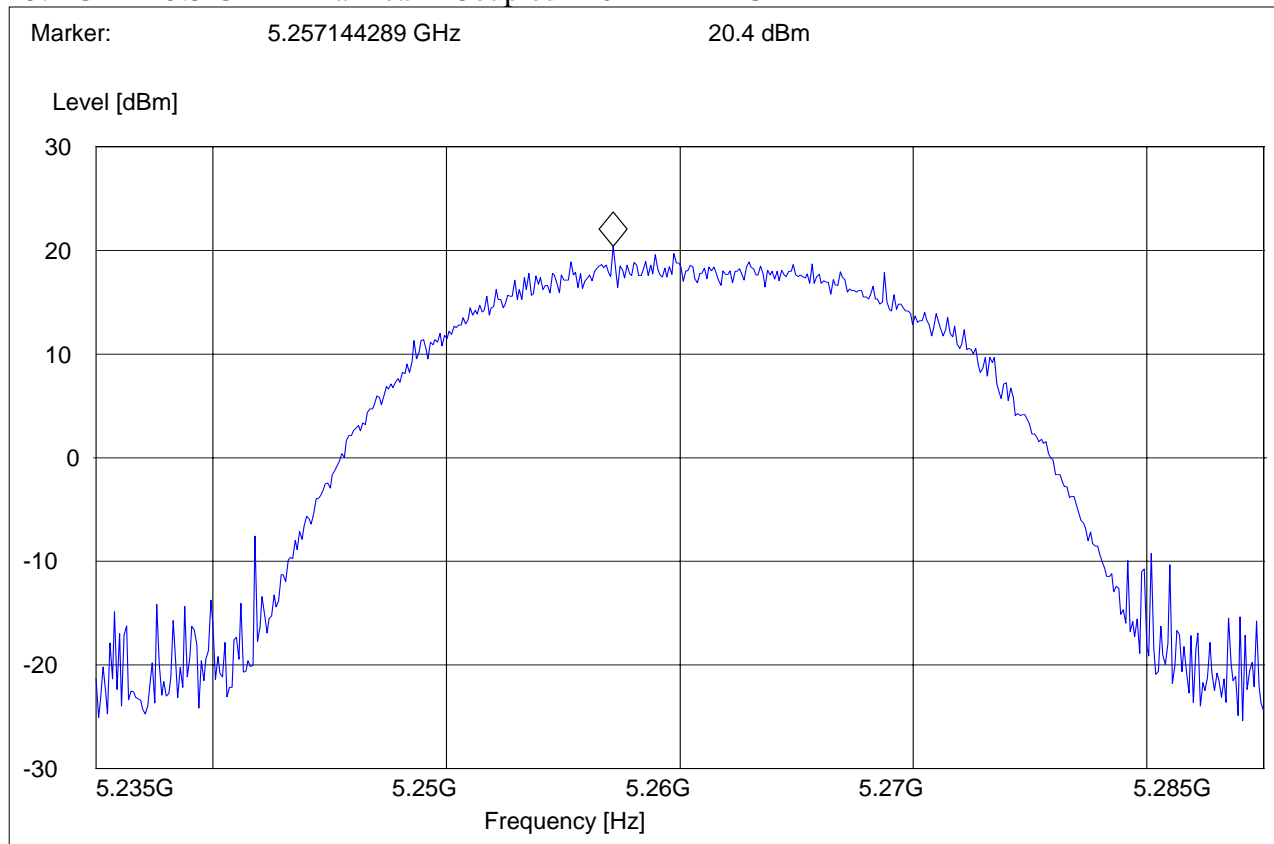




EUT: 94311MCAG  
Customer:: Broadcom  
Test Mode: 802.11a Ch.52 main  
**ANT Orientation: H**  
EUT Orientation: H  
Test Engineer: Chris  
Voltage: AC Adapter  
Comments:

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

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



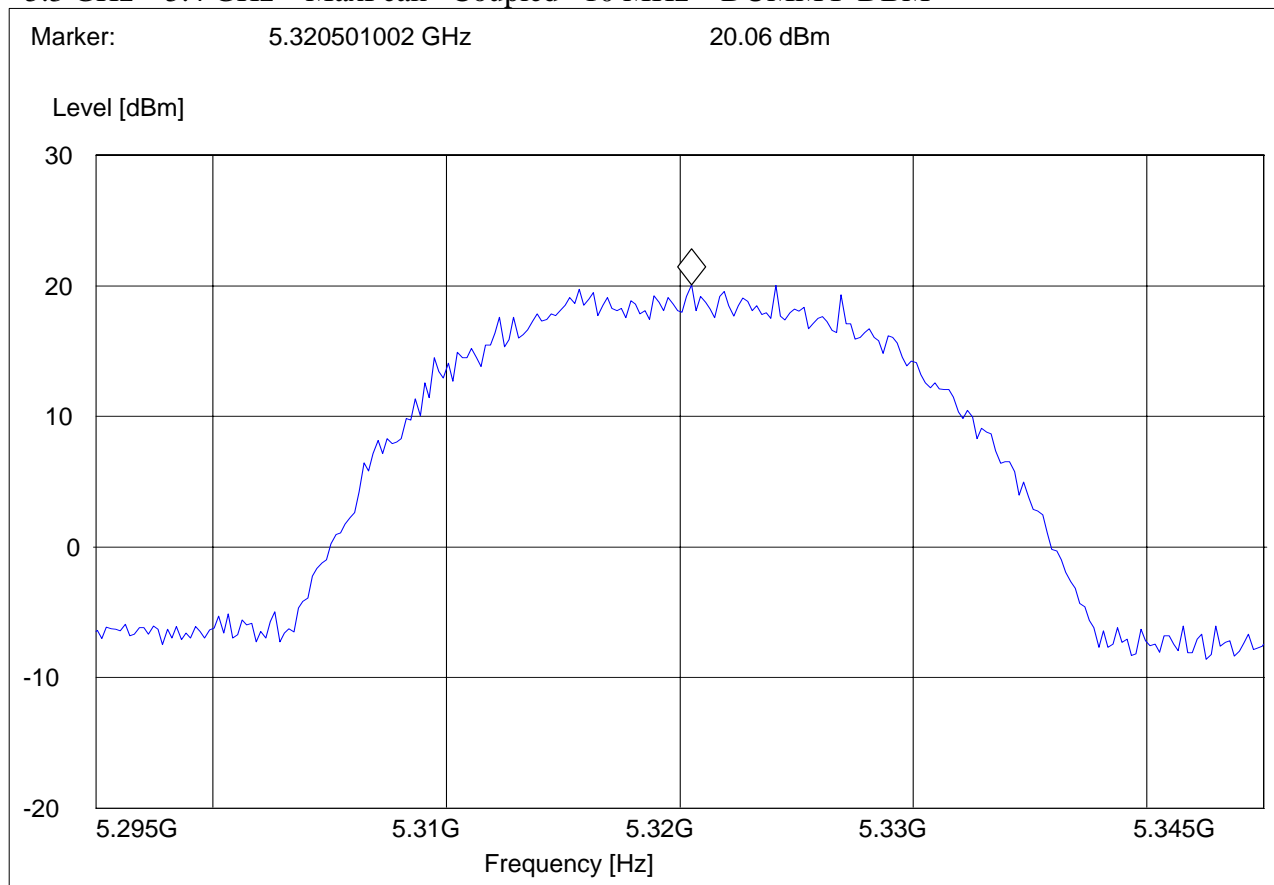


**EIRP 802.11 (a) Mode (5320MHz)**

EUT: 94311MCAG  
Customer:: Broadcom  
Test Mode: 802.11a CH.64 Main  
**ANT Orientation: V**  
EUT Orientation: H  
Test Engineer: Chris  
Voltage: AC Adapter  
Comments:

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

Short Description: EIRP channel-5320 MHz  
Start Stop Detector Meas. IF Transducer  
Frequency Frequency Time Bandw.  
5.3 GHz 5.4 GHz MaxPeak Coupled 10 MHz DUMMY-DBM

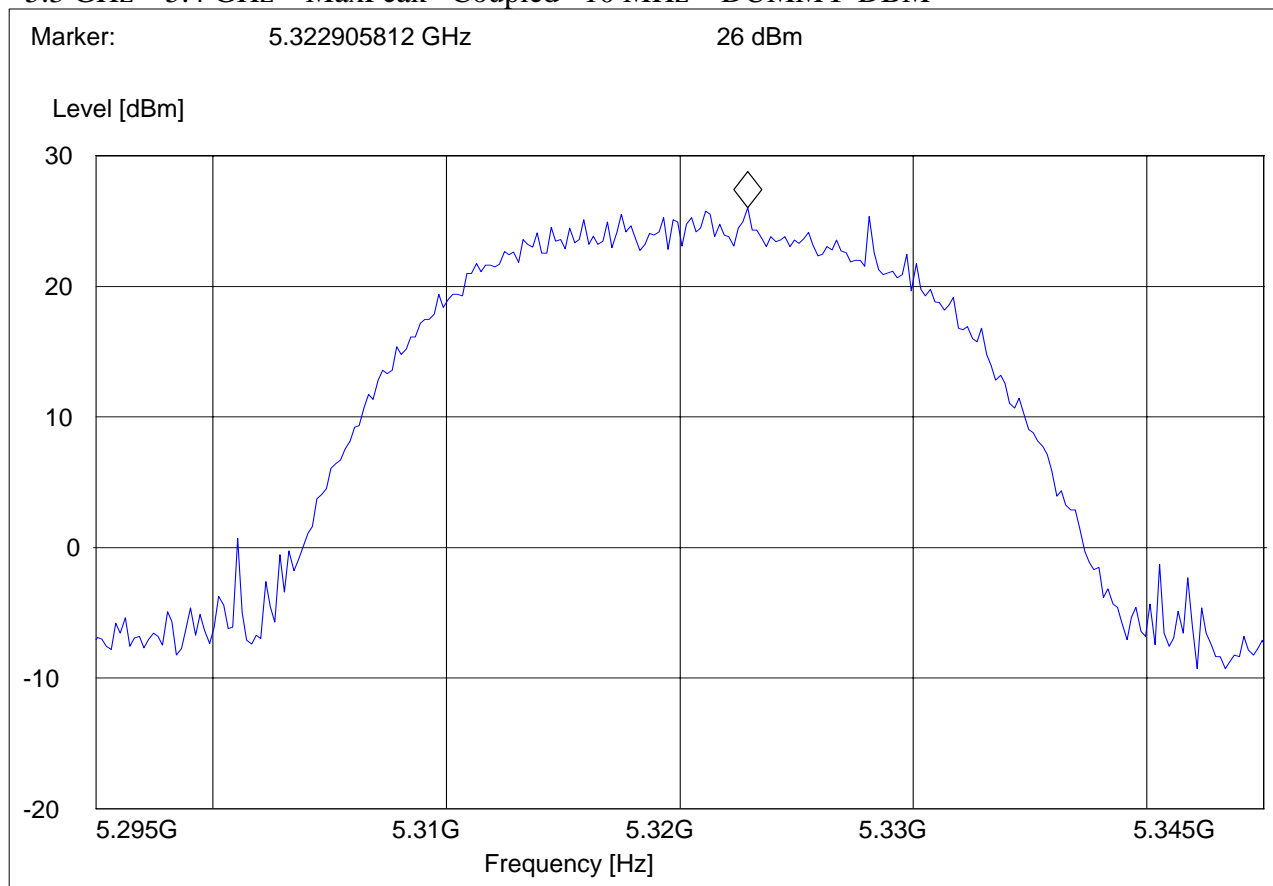




EUT: 94311MCAG  
Customer:: Broadcom  
Test Mode: 802.11a CH.64 Main  
**ANT Orientation: H**  
EUT Orientation: H  
Test Engineer: Chris  
Voltage: AC Adapter  
Comments:

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

Short Description: EIRP channel-5320 MHz  
Start Stop Detector Meas. IF Transducer  
Frequency Frequency Time Bandw.  
5.3 GHz 5.4 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**

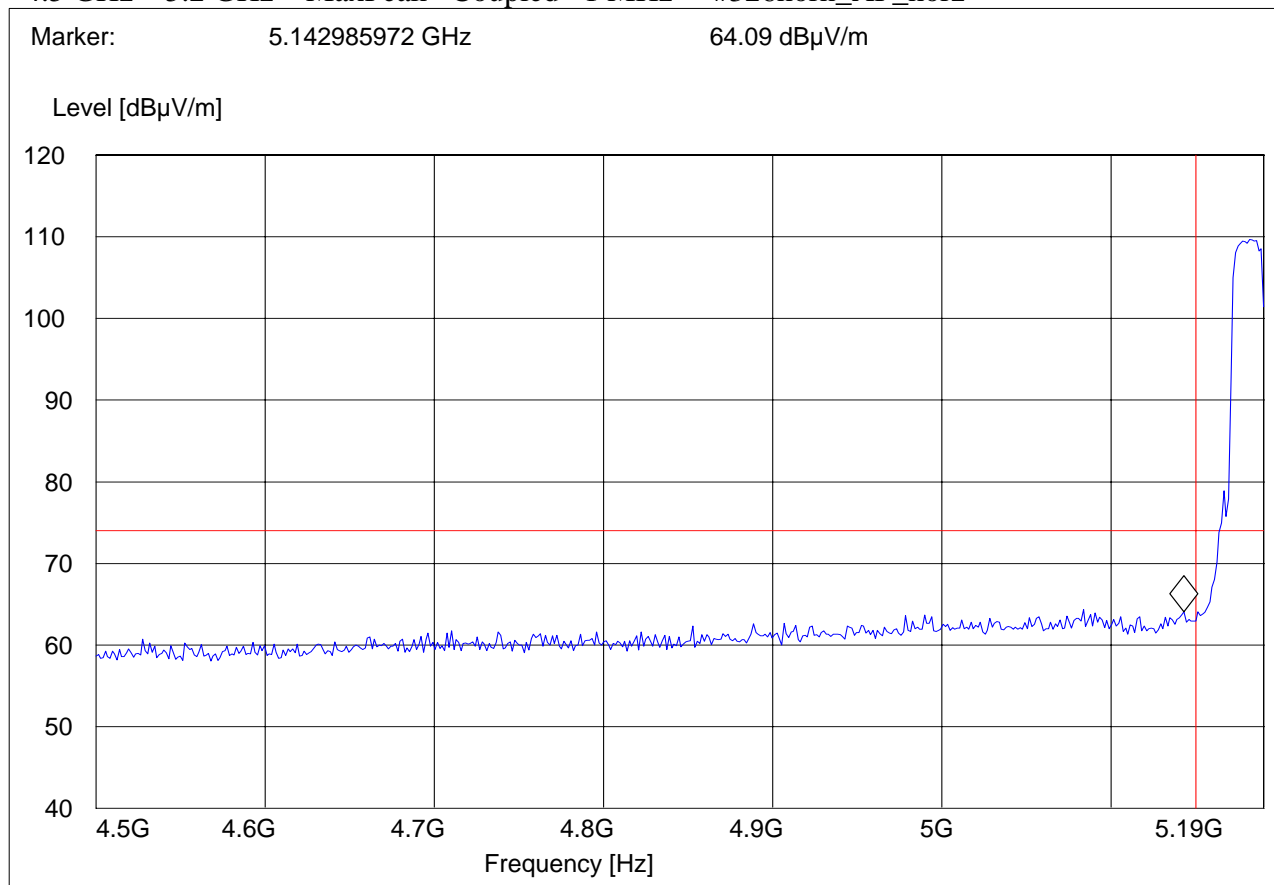


**5.2.2 802.11 (a) MODE (5180MHz)  
 PEAK**

EUT: 94311MCAG  
 Customer:: Broadcom  
 Test Mode: 802.11a CH.36 Main  
 ANT Orientation: H  
 EUT Orientation: H  
 Test Engineer: Chris  
 Voltage: AC Adapter  
 Comments:

***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



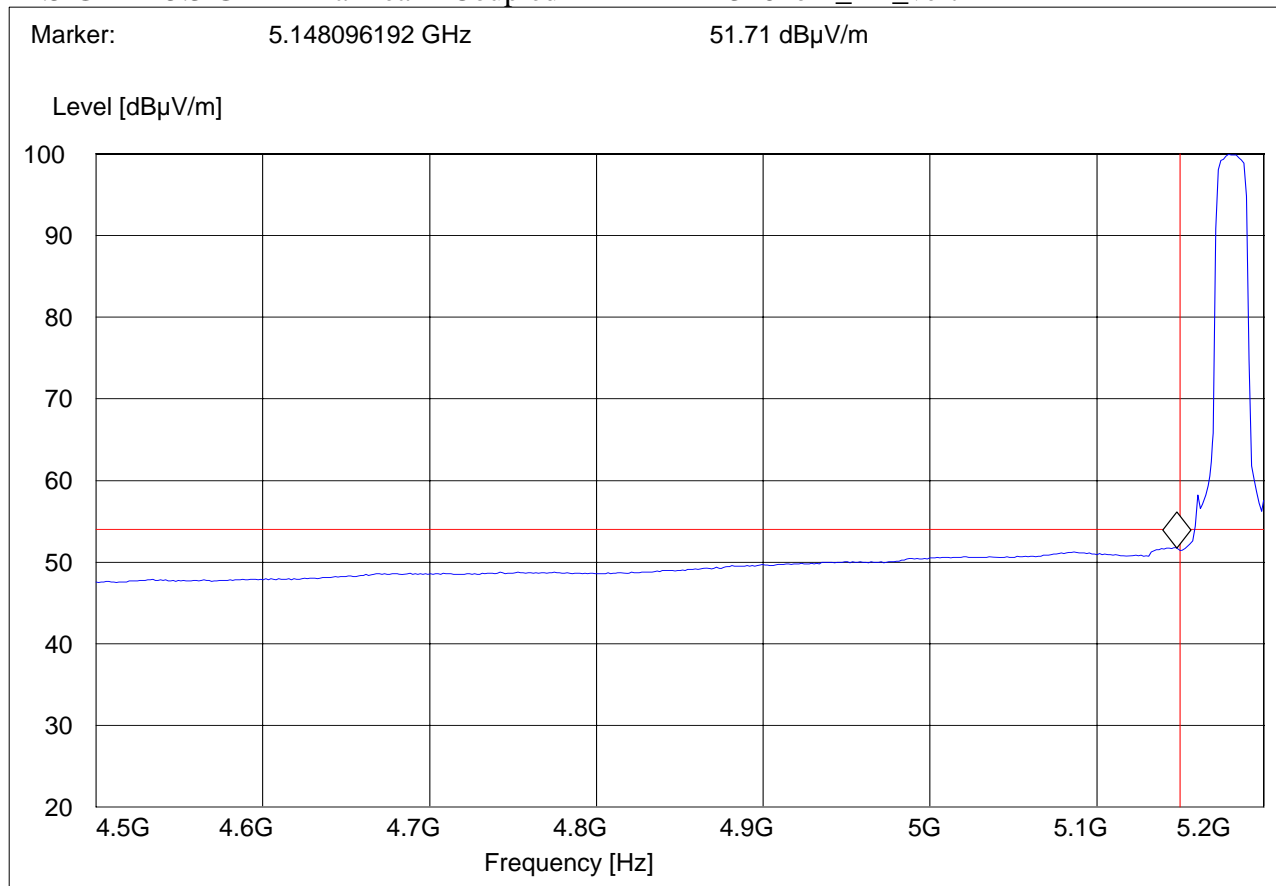


**AVG**

EUT: 94311MCAG  
Customer:: Broadcom  
Test Mode: 802.11a CH.36 Main  
ANT Orientation: H  
EUT Orientation: H  
Test Engineer: Chris  
Voltage: AC Adapter  
Comments:

***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





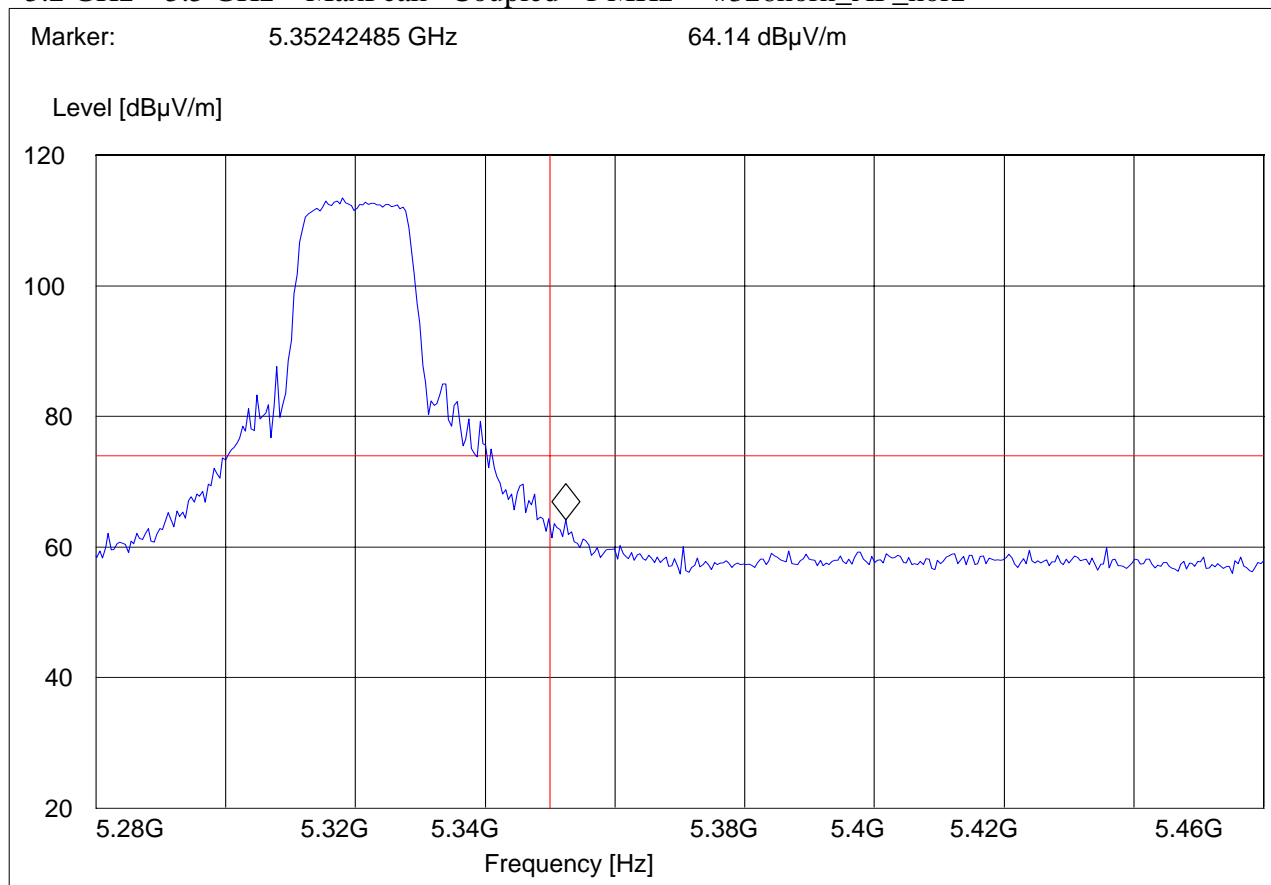


**5.2.3 802.11 (a) MODE (5320MHz)  
PEAK**

EUT: 94311MCAG  
Customer:: Broadcom  
Test Mode: 802.11a CH.64 Main  
ANT Orientation: H  
EUT Orientation: H  
Test Engineer: Chris  
Voltage: AC Adapter  
Comments:

***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



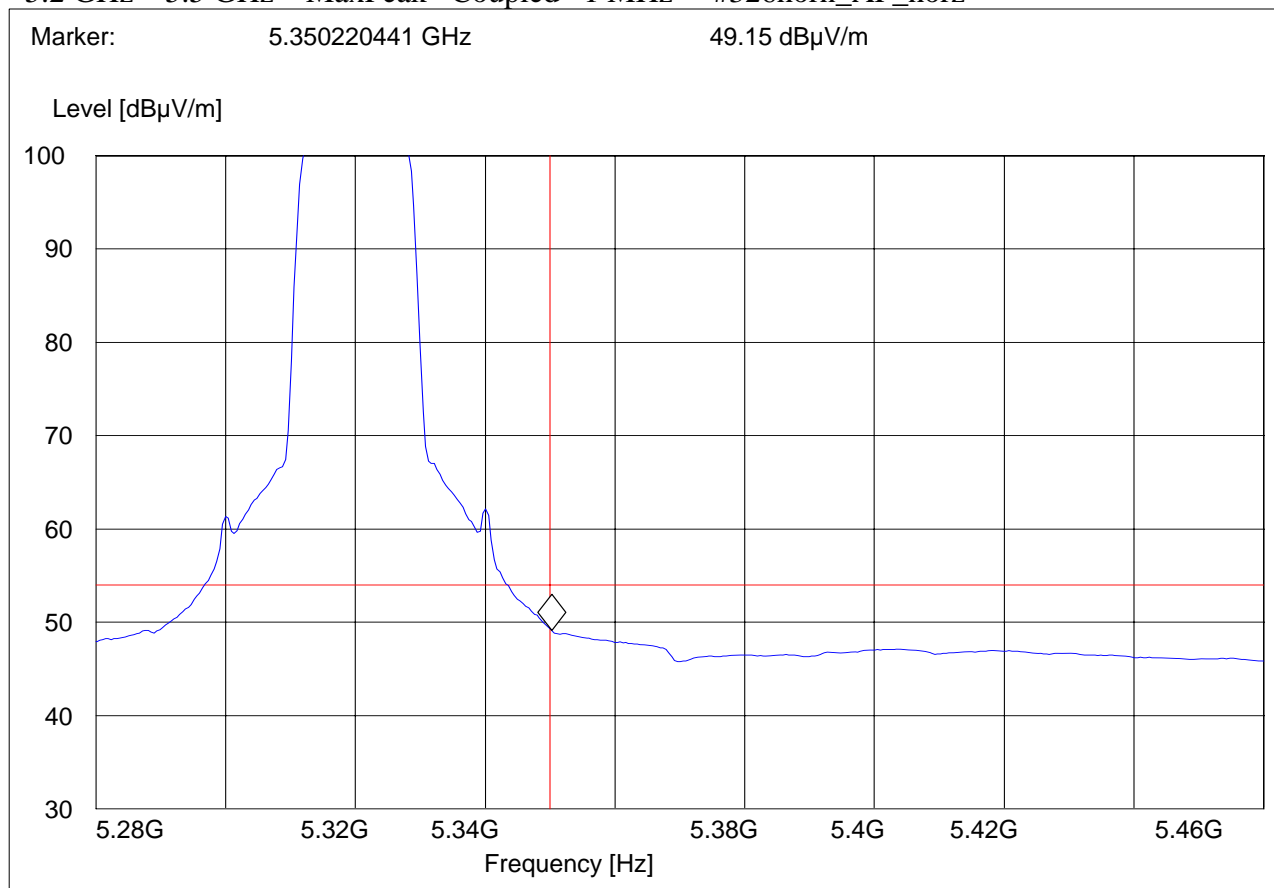


**AVG**

EUT: 94311MCAG  
Customer:: Broadcom  
Test Mode: 802.11a CH.64 Main  
ANT Orientation: H  
EUT Orientation: H  
Test Engineer: Chris  
Voltage: AC Adapter  
Comments:

***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

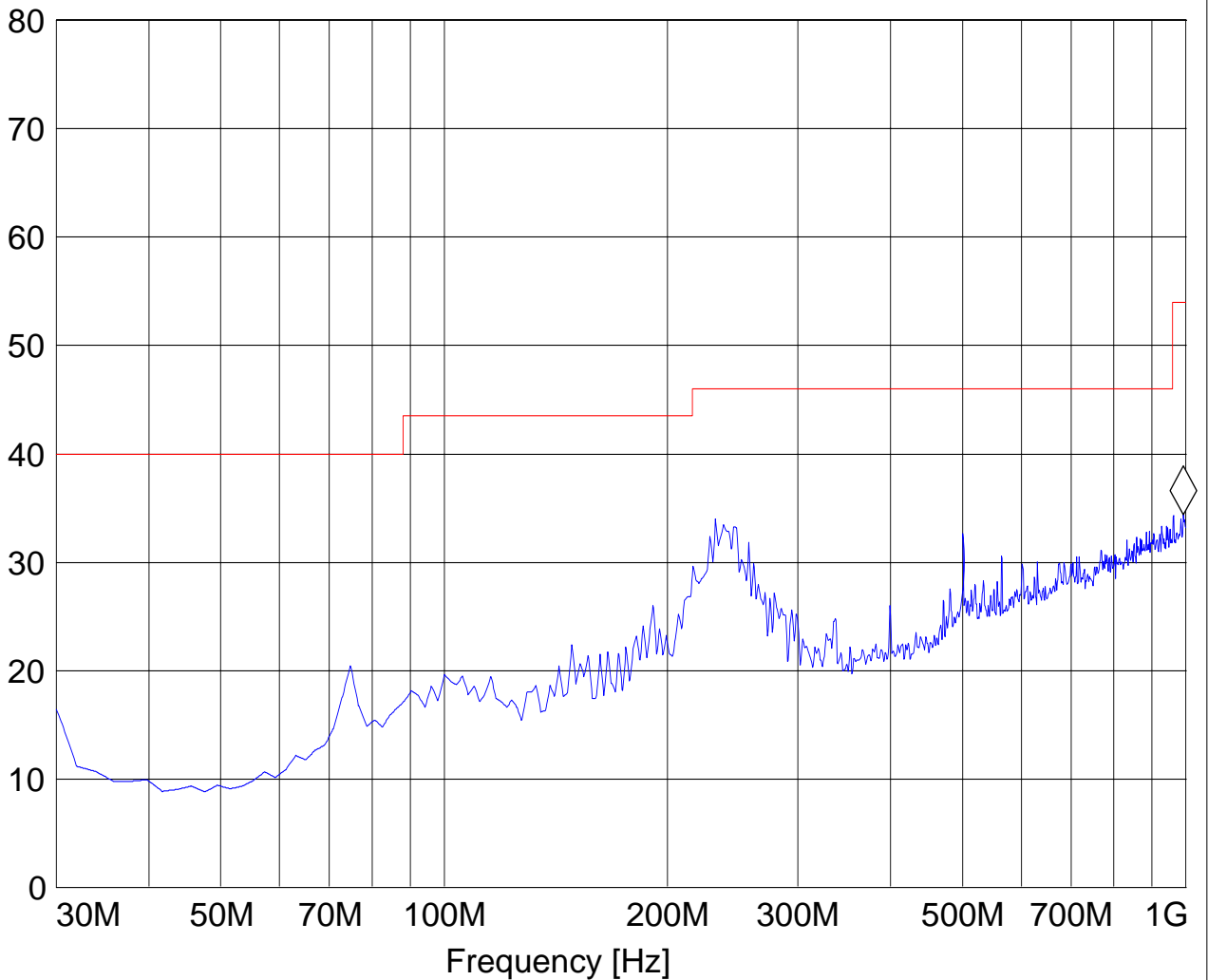
EUT / Description: BCM94311MCAG

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

Marker: 992.224449 MHz 34.4 dBµV/m

Level [dBµV/m]





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

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

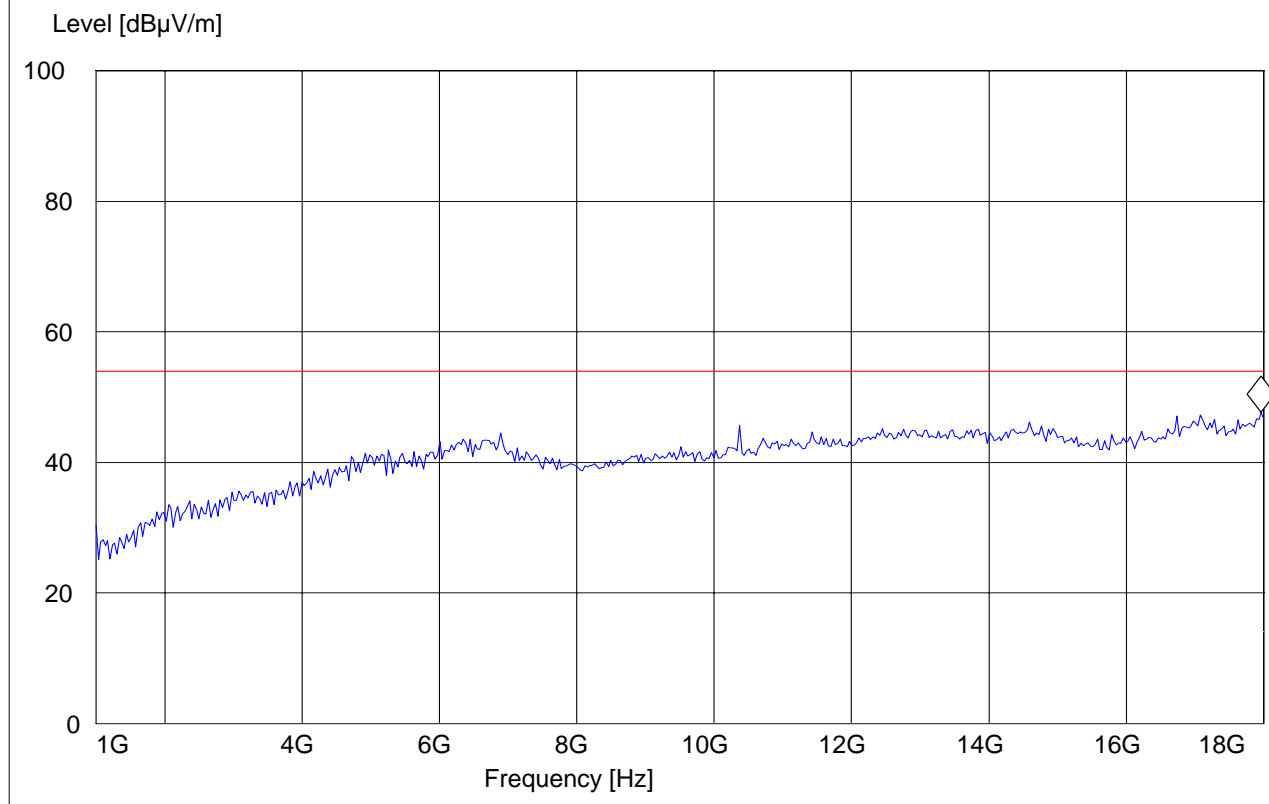
**Note: Peak Reading vs. Average limit (54 dBuV/m)**

EUT / Description: 94311MCAG  
 Manufacturer: Broadcom  
 Operation Mode: 802.11a CH.36 MAIN  
 ANT Orientation: : V  
 EUT Orientation:: H  
 Test Engineer: SAM  
 Voltage: AC Adapter  
 Comments::

***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: 17.965931864 GHz 47.65 dBuV/m

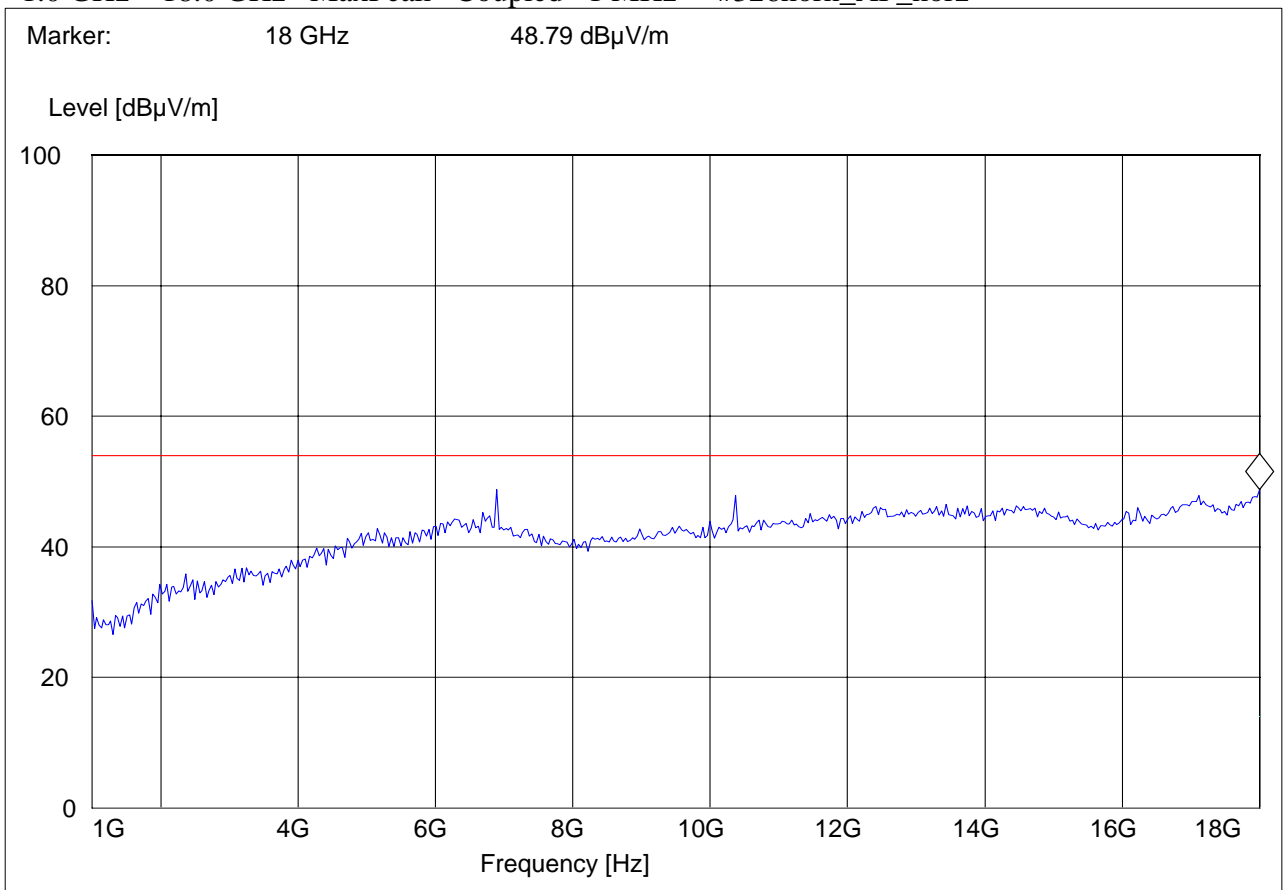




EUT / Description: 94311MCAG  
Manufacturer: Broadcom  
Operation Mode: 802.11a CH.36 MAIN  
ANT Orientation: : H  
EUT Orientation:: H  
Test Engineer: SAM  
Voltage: AC Adapter  
Comments::

**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 (5260MHz)**

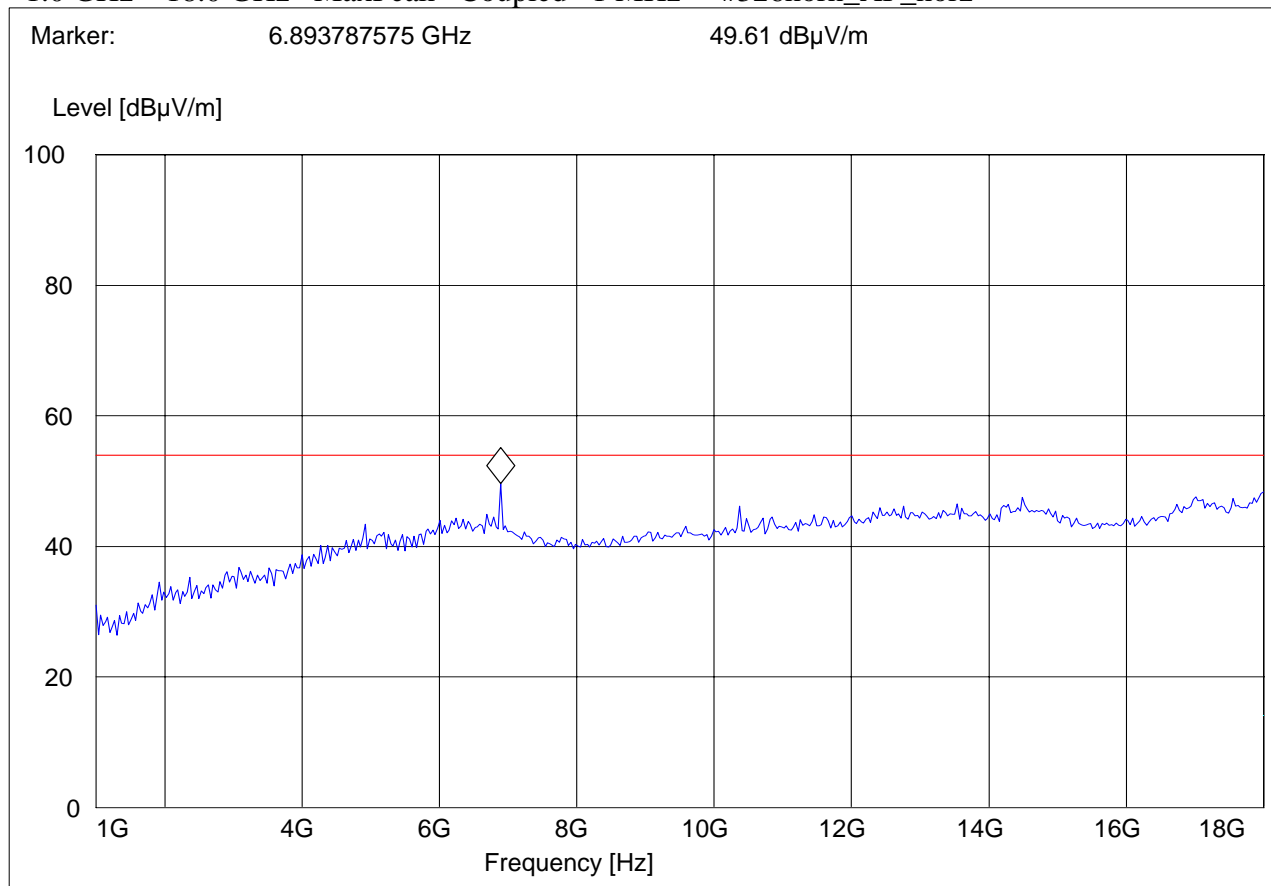
**Note: The peaks above the limit line is the carrier freq.**

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

EUT / Description: 94311MCAG  
 Manufacturer: Broadcom  
 Operation Mode: 802.11a CH.52 MAIN  
 ANT Orientation: : V  
 EUT Orientation:: H  
 Test Engineer: SAM  
 Voltage: AC Adapter  
 Comments::

***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

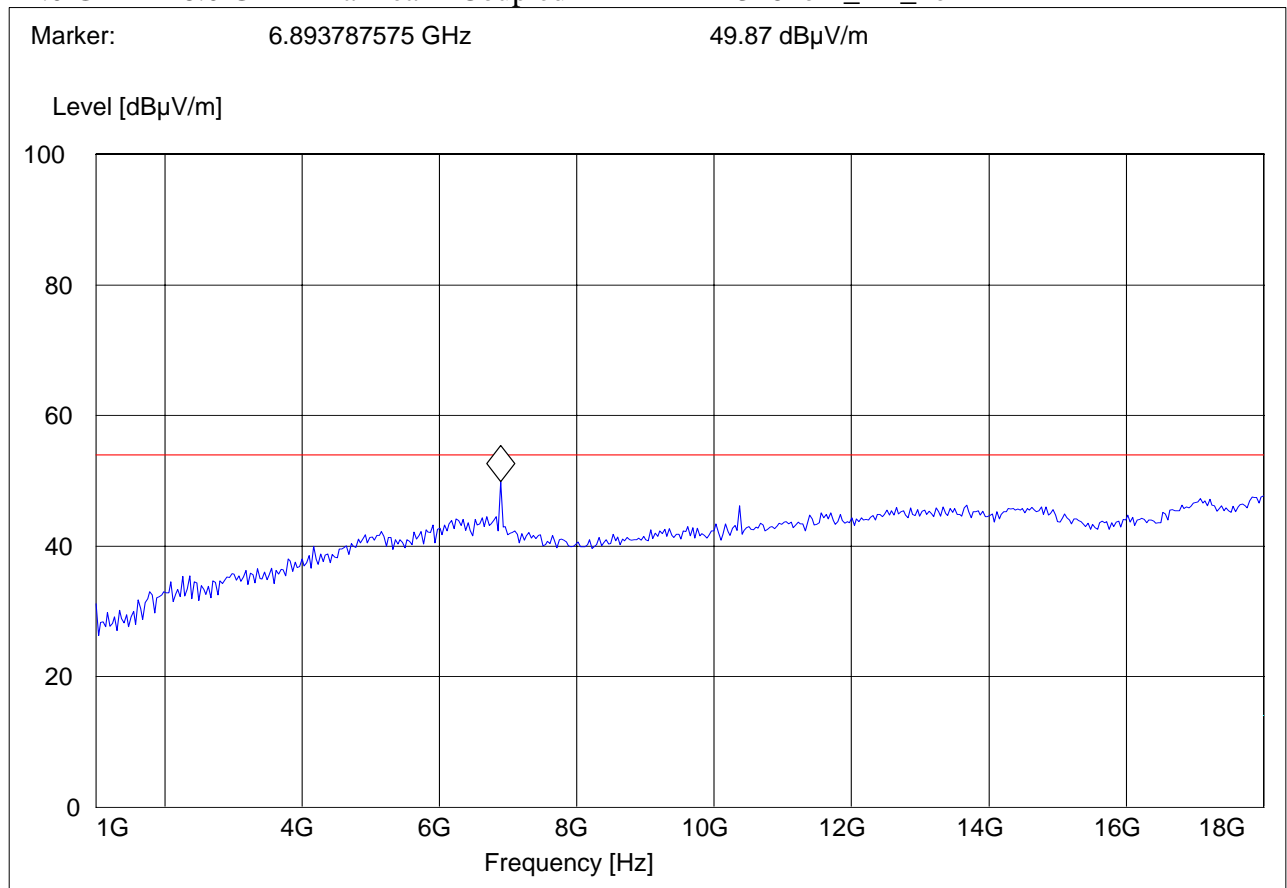




EUT / Description: 94311MCAG  
Manufacturer: Broadcom  
Operation Mode: 802.11a CH.52 MAIN  
ANT Orientation: : H  
EUT Orientation:: H  
Test Engineer: SAM  
Voltage: AC Adapter  
Comments::

***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)**

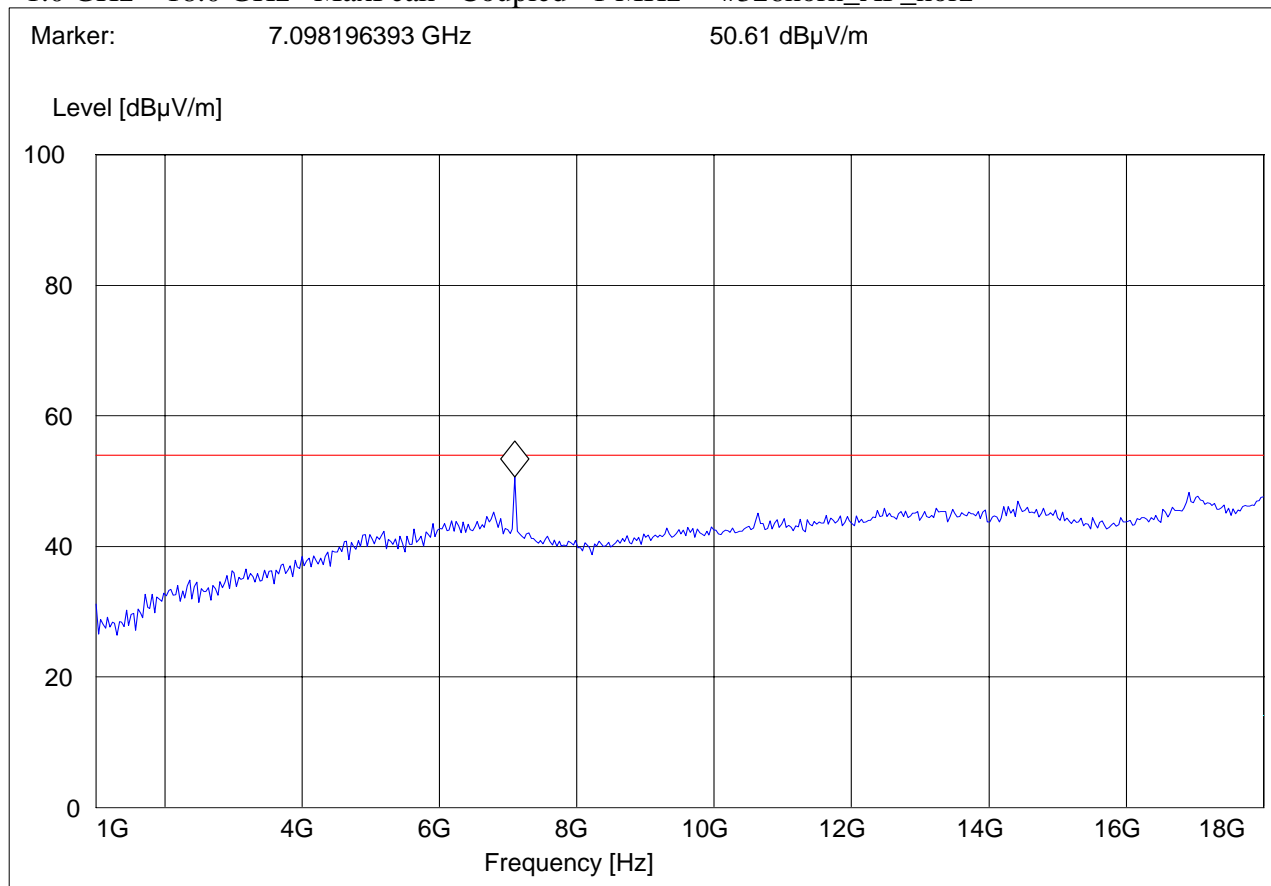
**Note: The peaks above the limit line is the carrier freq.**

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

EUT / Description: 94311MCAG  
 Manufacturer: Broadcom  
 Operation Mode: 802.11a CH.64 MAIN  
 ANT Orientation: : V  
 EUT Orientation:: H  
 Test Engineer: SAM  
 Voltage: AC Adapter  
 Comments::

***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

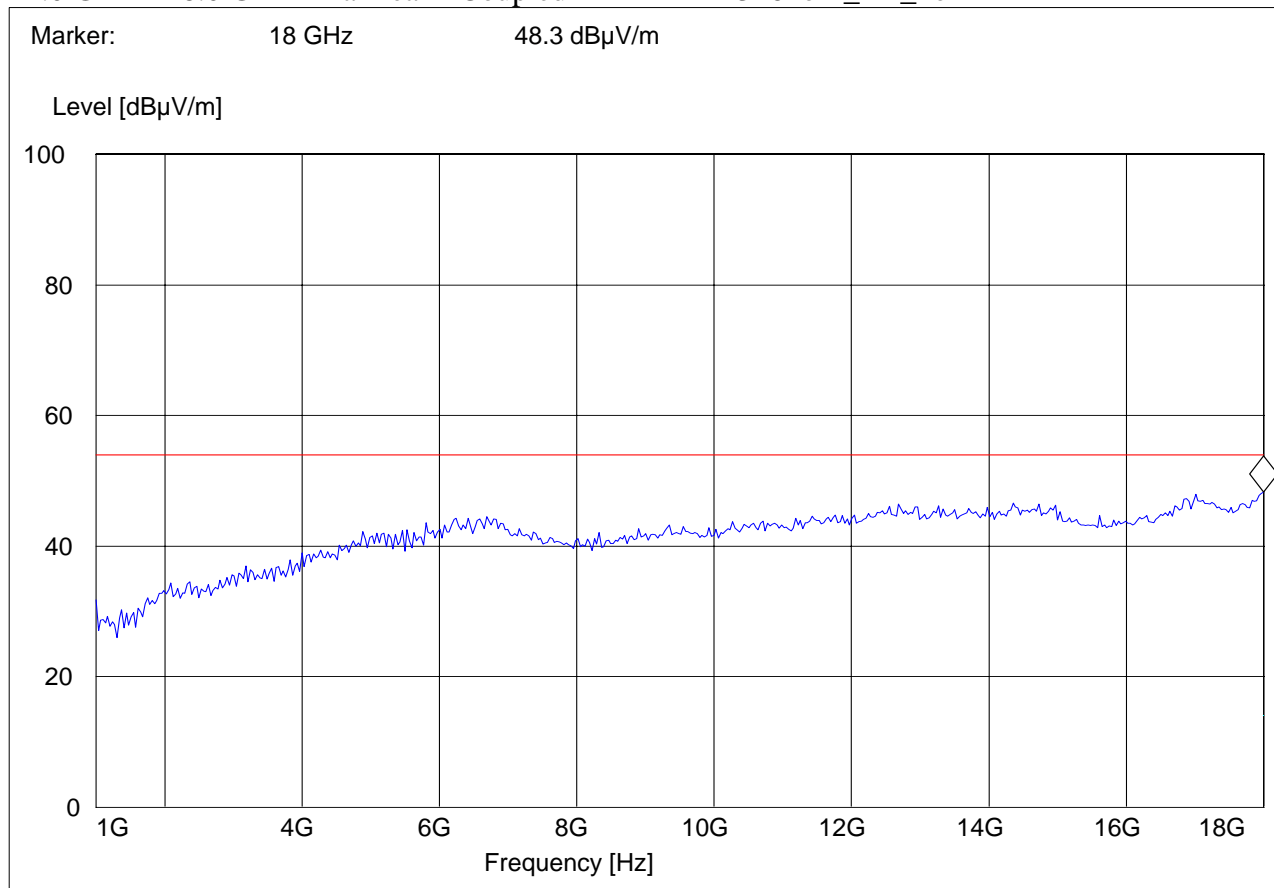




EUT / Description: 94311MCAG  
Manufacturer: Broadcom  
Operation Mode: 802.11a CH.64 MAIN  
ANT Orientation: : H  
EUT Orientation:: H  
Test Engineer: SAM  
Voltage: AC Adapter  
Comments::

**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





18-26.5GHz (5180MHz)

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

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

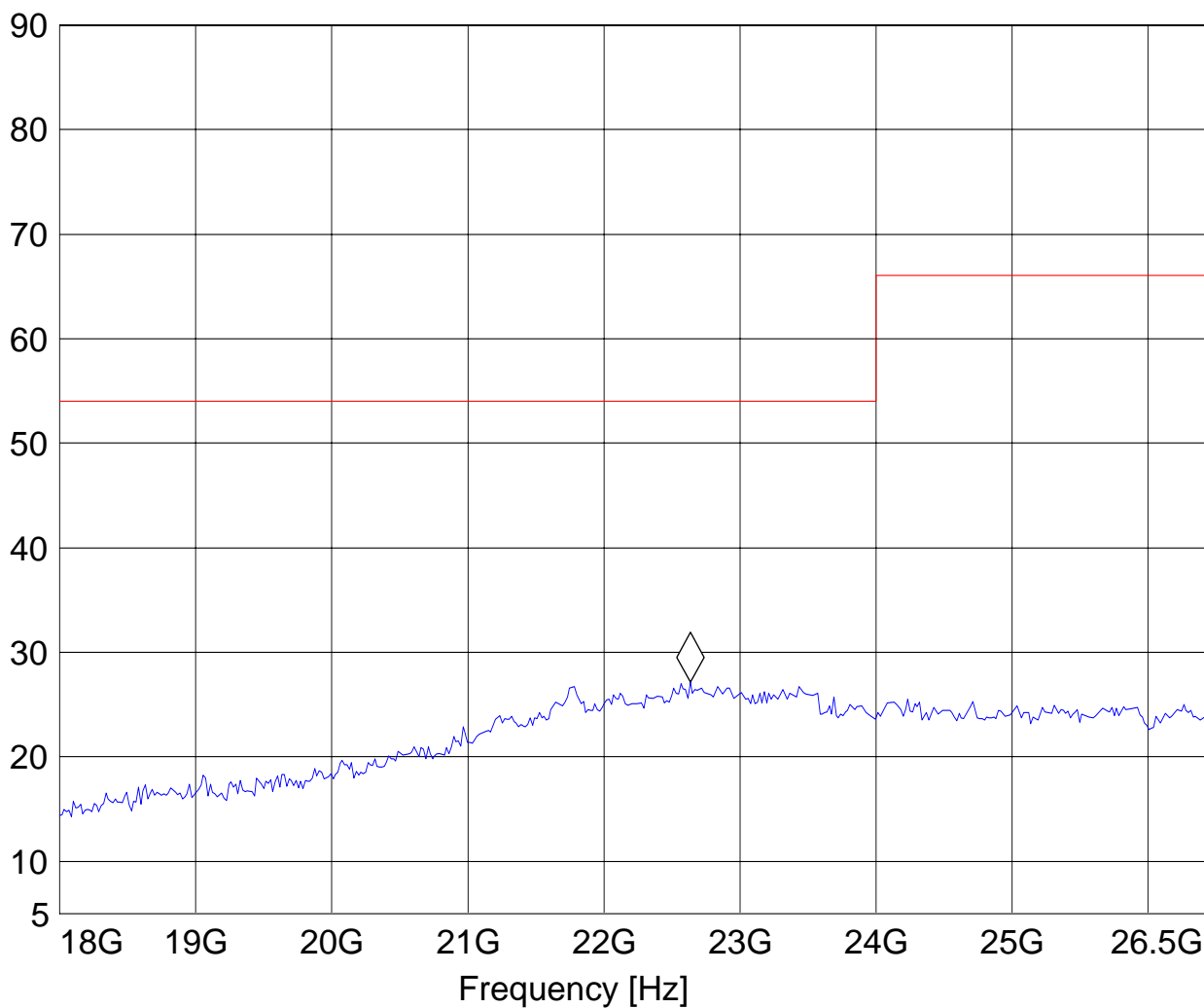
EUT / Description: BCM94311MCAG

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**

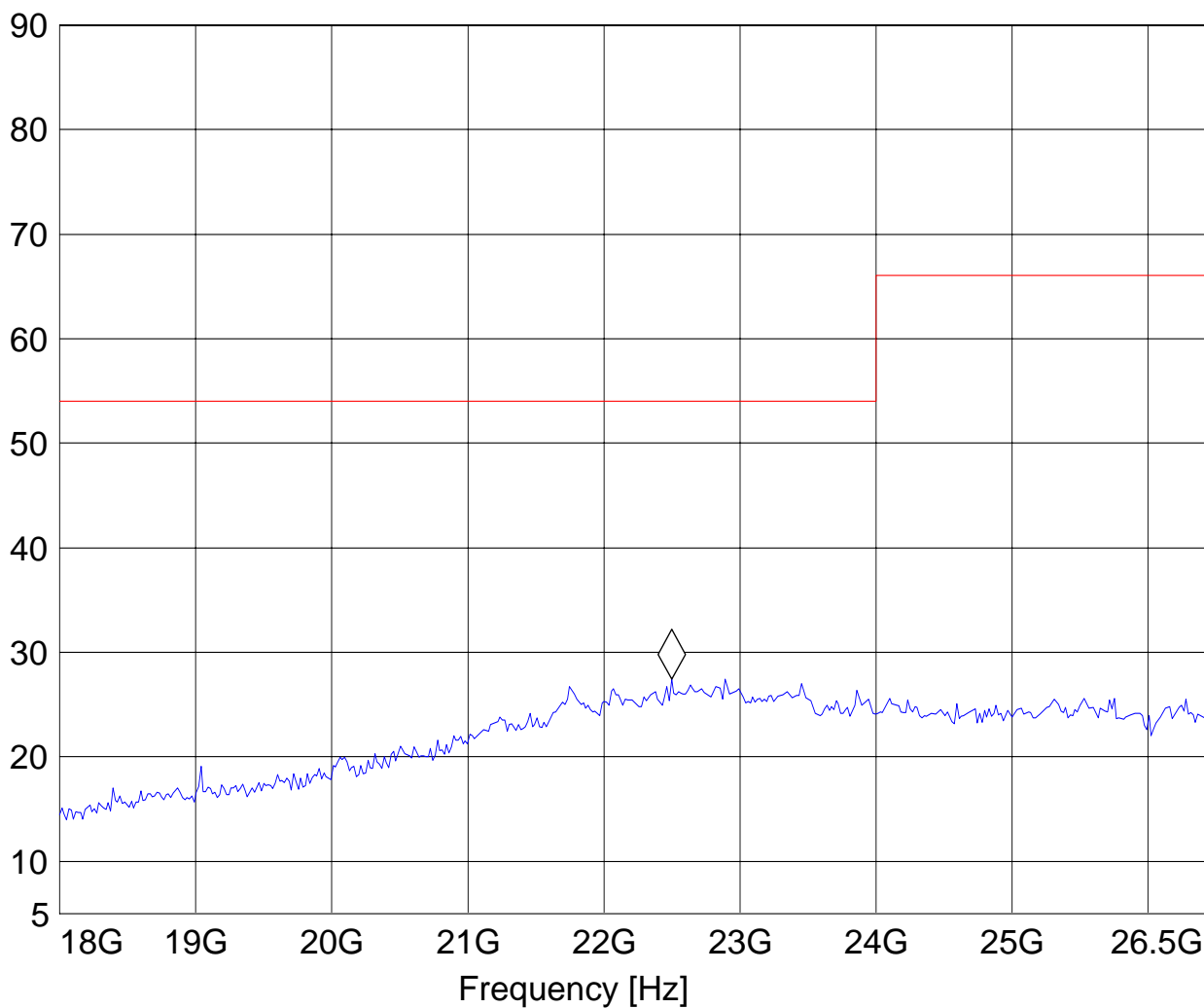
EUT / Description: BCM94311MCAG

**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

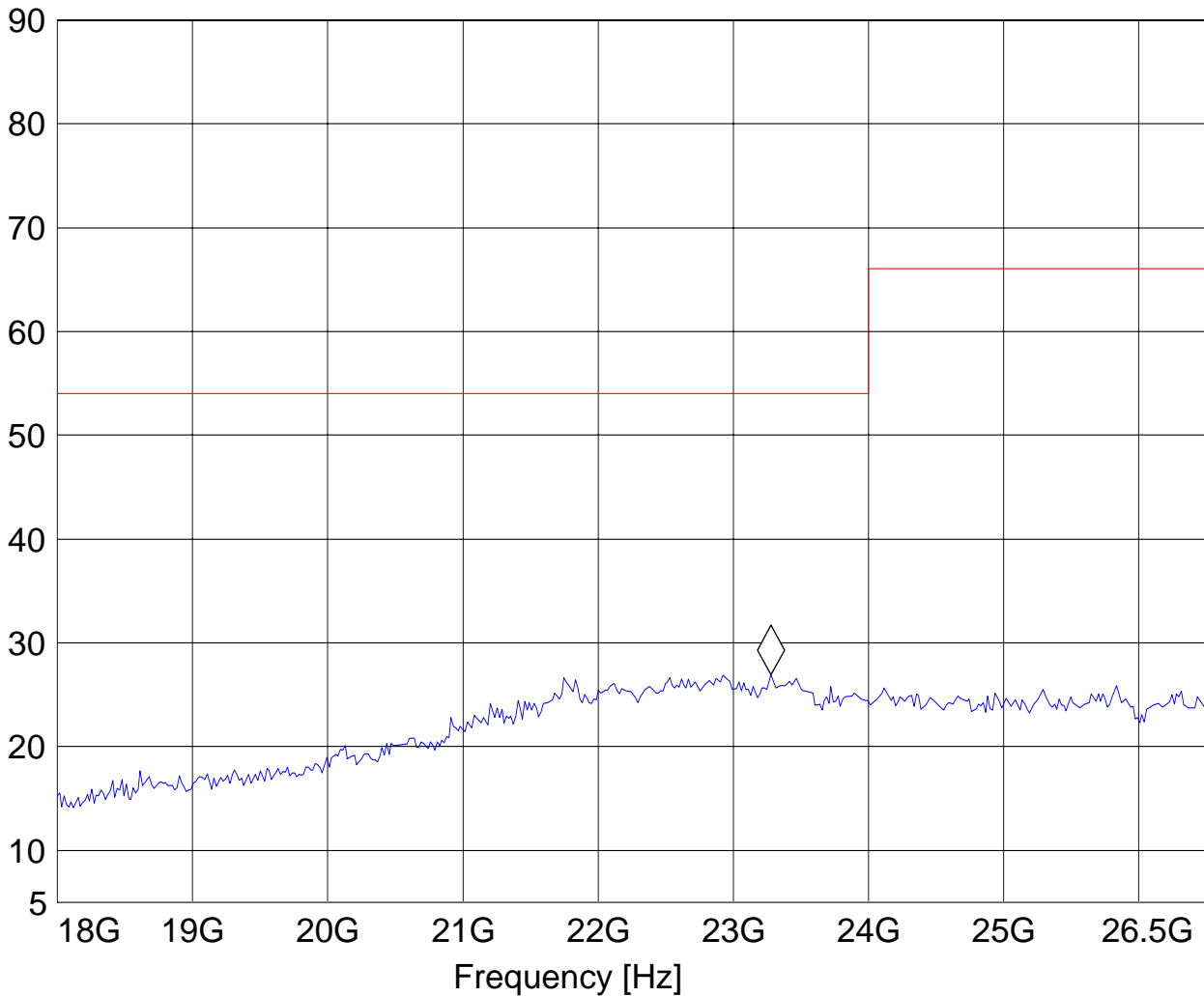
EUT / Description: BCM94311MCAG

**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.





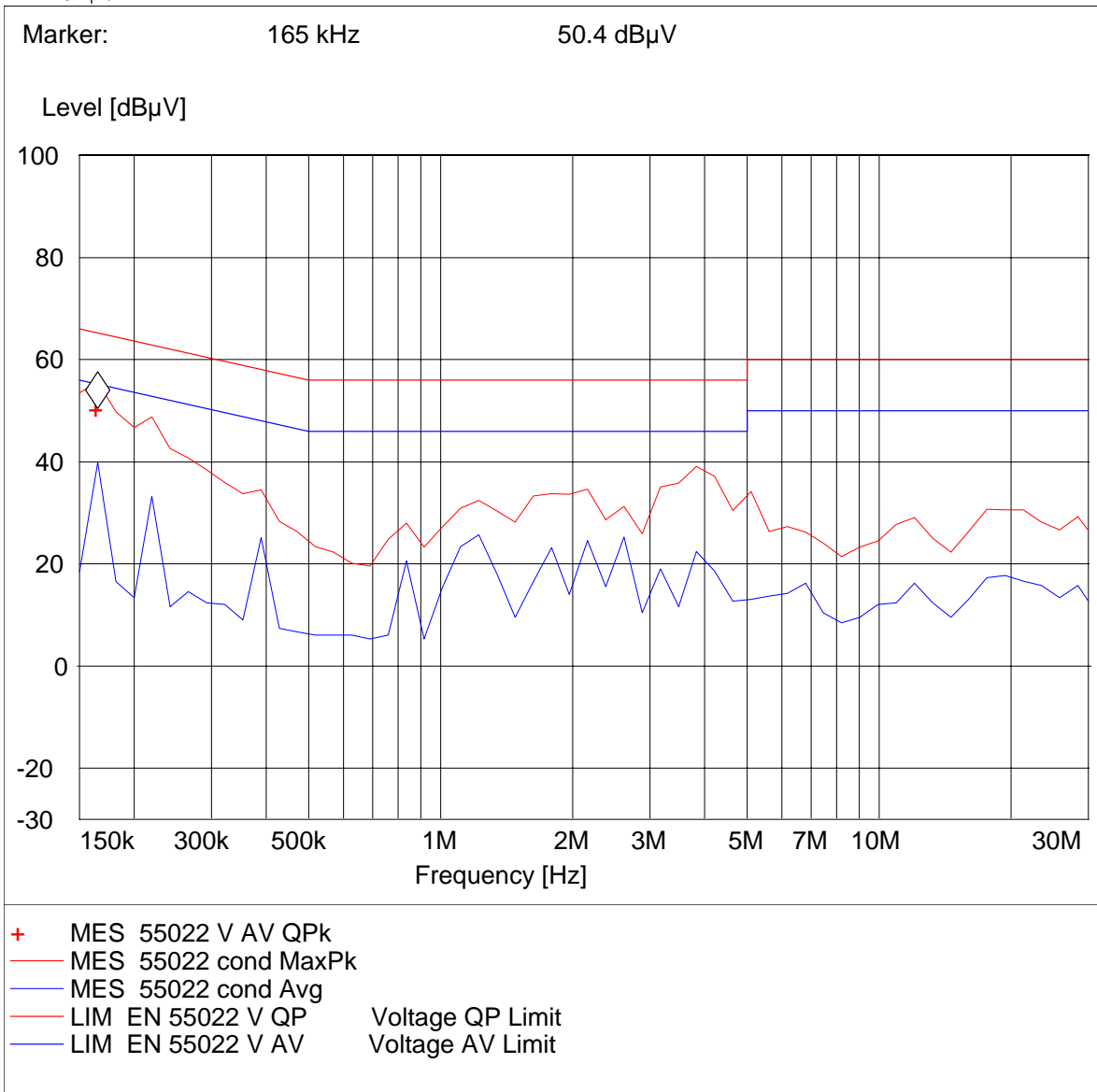
**Voltage Mains Test (Line)**

**CETECOM Inc. Milpitas, USA**

EUT: BCM94311MCAG  
 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



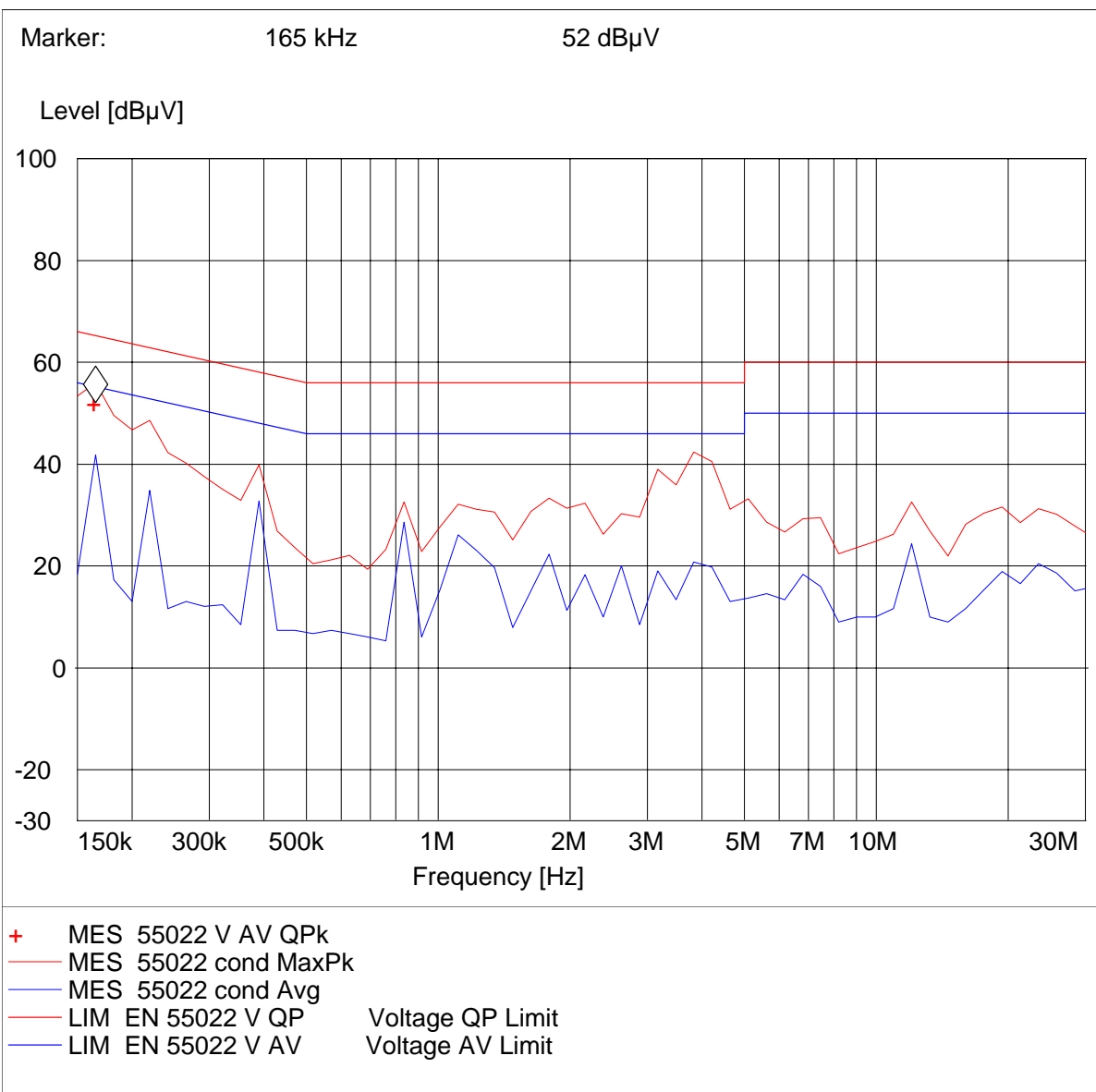


**Voltage Mains Test (Neutral)**

EUT: BCM94311MCAG  
 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**

<b>No</b>	<b>Instrument/Ancillary</b>	<b>Type</b>	<b>Manufacturer</b>	<b>Serial No.</b>	<b>Cal Due</b>	<b>Interval</b>
<b>01</b>	Spectrum Analyzer	ESIB 40	Rohde & Schwarz	100107	May 2008	1 year
<b>05</b>	Biconilog Antenna	3141	EMCO	0005-1186	June 2008	1 year
<b>06</b>	Horn Antenna (1-18GHz)	SAS-200/571	AH Systems	325	June 2008	1 year
<b>07</b>	Horn Antenna (18-26.5GHz)	3116	EMCO	n/a	June 2008	1 year
<b>10</b>	High Pass Filter	5HC2700	Trilithic Inc.	9926013	n/a	n/a
<b>11</b>	High Pass Filter	4HC1600	Trilithic Inc.	9922307	n/a	n/a
<b>16</b>	LISN	ESH3-Z5	Rohde & Schwarz	836679/003	May 2008	1 year

### Radiated Testing

#### ANECHOIC CHAMBER

