

*Electromagnetic Emissions Test Report  
Application for Grant of Equipment Authorization  
Class II Permissive Change  
pursuant to  
Industry Canada RSS-Gen Issue 2 / RSS 210 Issue 7  
FCC Part 15 Subpart C  
on the  
Broadcom Corporation  
Transmitter  
Model: BCM94322HM8L*

UPN: 4324A-BRCM1031  
FCC ID: QDS-BRCM1031

GRANTEE: Broadcom Corporation  
190 Mathilda Avenue  
Sunnyvale, CA 94086

TEST SITE: Elliott Laboratories  
41039 Boyce Road  
Fremont, CA. 94538

REPORT DATE: July 31, 2008

FINAL TEST DATE: July 7, July 9, July 12, July 14, July 16,  
July 18, July 21, July 23 and July 28, 2008

AUTHORIZED SIGNATORY:



Mark E. Hill  
Staff Engineer



Testing Cert #2016-01

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**REVISION HISTORY**

Rev #	Date	Comments	Modified By
1	8/6/08	Initial Release	

**TABLE OF CONTENTS**

<b>COVER PAGE</b> .....	<b>1</b>
<b>REVISION HISTORY</b> .....	<b>2</b>
<b>TABLE OF CONTENTS</b> .....	<b>3</b>
<b>SCOPE</b> .....	<b>5</b>
<b>OBJECTIVE</b> .....	<b>5</b>
<b>STATEMENT OF COMPLIANCE</b> .....	<b>6</b>
<b>TEST RESULTS SUMMARY</b> .....	<b>7</b>
DIGITAL TRANSMISSION SYSTEMS (2400 – 2483.5MHZ) .....	7
DIGITAL TRANSMISSION SYSTEMS (5725 –5850 MHZ) .....	7
GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS .....	8
<b>MEASUREMENT UNCERTAINTIES</b> .....	<b>8</b>
<b>EQUIPMENT UNDER TEST (EUT) DETAILS</b> .....	<b>9</b>
GENERAL.....	9
ANTENNA SYSTEM .....	9
ENCLOSURE.....	9
MODIFICATIONS .....	9
SUPPORT EQUIPMENT.....	9
EUT INTERFACE PORTS .....	10
EUT OPERATION .....	10
<b>TEST SITE</b> .....	<b>11</b>
GENERAL INFORMATION.....	11
RADIATED EMISSIONS CONSIDERATIONS .....	11
<b>MEASUREMENT INSTRUMENTATION</b> .....	<b>12</b>
RECEIVER SYSTEM .....	12
INSTRUMENT CONTROL COMPUTER .....	12
LINE IMPEDANCE STABILIZATION NETWORK (LISN) .....	12
FILTERS/ATTENUATORS .....	13
ANTENNAS.....	13
ANTENNA MAST AND EQUIPMENT TURNTABLE.....	13
INSTRUMENT CALIBRATION.....	13
<b>TEST PROCEDURES</b> .....	<b>14</b>
EUT AND CABLE PLACEMENT .....	14
CONDUCTED EMISSIONS.....	14
RADIATED EMISSIONS .....	14
RADIATED EMISSIONS.....	15
SPECIFICATION LIMITS AND SAMPLE CALCULATIONS.....	18
GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS.....	19
RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS .....	19
OUTPUT POWER LIMITS – DIGITAL TRANSMISSION SYSTEMS.....	19
TRANSMIT MODE SPURIOUS RADIATED EMISSIONS LIMITS – FHSS AND DTS SYSTEMS.....	20
SAMPLE CALCULATIONS - CONDUCTED EMISSIONS .....	21
SAMPLE CALCULATIONS - RADIATED EMISSIONS .....	21
SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION .....	22

*TABLE OF CONTENTS (Continued)*

*EXHIBIT 1: Test Equipment Calibration Data..... 1*  
*EXHIBIT 2: Test Measurement Data..... 2*  
*EXHIBIT 3: Photographs of Test Configurations..... 3*  
*EXHIBIT 4: RF Exposure Information ..... 4*

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## SCOPE

An electromagnetic emissions test has been performed on the Broadcom Corporation model BCM94322HM8L pursuant to the following rules:

Industry Canada RSS-Gen Issue 2  
RSS 210 Issue 7 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment"  
FCC Part 15 Subpart C

Radiated emissions data has been collected, reduced, and analyzed within this report in accordance with measurement guidelines set forth in the following reference standards and as outlined in Elliott Laboratories test procedures:

ANSI C63.4:2003  
FCC DTS Measurement Procedure KDB558074, March 2005

The intentional radiator above has been tested in a simulated typical installation to demonstrate compliance with the relevant Industry Canada performance and procedural standards.

Final system data was gathered in a mode that tended to maximize emissions by varying orientation of EUT, orientation of power and I/O cabling, antenna search height, and antenna polarization.

Every practical effort was made to perform an impartial test using appropriate test equipment of known calibration. All pertinent factors have been applied to reach the determination of compliance.

The test results recorded herein are based on a single type test of the Broadcom Corporation model BCM94322HM8L and therefore apply only to the tested sample. The sample was selected and prepared by Anne Liang of Broadcom Corporation.

## OBJECTIVE

The primary objective of the manufacturer is compliance with the regulations outlined in the previous section.

Prior to marketing in the USA, all unlicensed transmitters and transceivers require certification. Receive-only devices operating between 30 MHz and 960 MHz are subject to either certification or a manufacturer's declaration of conformity, with all other receive-only devices exempt from the technical requirements.

Prior to marketing in Canada, Class I transmitters, receivers and transceivers require certification. Class II devices are required to meet the appropriate technical requirements but are exempt from certification requirements.

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Certification is a procedure where the manufacturer submits test data and technical information to a certification body and receives a certificate or grant of equipment authorization upon successful completion of the certification body's review of the submitted documents. Once the equipment authorization has been obtained, the label indicating compliance must be attached to all identical units, which are subsequently manufactured.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product which may result in increased emissions should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing or I/O cable changes, etc.).

### **STATEMENT OF COMPLIANCE**

The tested sample of Broadcom Corporation model BCM94322HM8L complied with the requirements of the following regulations:

- Industry Canada RSS-Gen Issue 2
- RSS 210 Issue 7 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment"
- FCC Part 15 Subpart C

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product which may result in increased emissions should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing or I/O cable changes, etc.).

**TEST RESULTS SUMMARY****DIGITAL TRANSMISSION SYSTEMS (2400 – 2483.5MHz)**

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.247(a)	RSS 210 A8.2	Digital Modulation	Systems uses OFDM/DSSS techniques	System must utilize a digital transmission technology	Complies
15.247 (a) (2)	RSS 210 A8.2 (1)	6dB Bandwidth	-	>500kHz	Note 1
	RSP100	99% Bandwidth	-	Information only	Note 1
15.247 (b) (3)	RSS 210 A8.2 (4)	Output Power (multipoint systems)	-	1Watt, EIRP limited to 4 Watts.	Note 1
15.247(d)	RSS 210 A8.2 (2)	Power Spectral Density	-	8dBm/3kHz	Note 1
15.247(c)	RSS 210 A8.5	Antenna Port Spurious Emissions 30MHz – 25 GHz	-	Refer to Standard	Note 1
15.247(c) / 15.209	RSS 210 A8.5	Radiated Spurious Emissions 30MHz – 25 GHz	53.8dB $\mu$ V/m @ 2484.5MHz	15.207 in restricted bands, all others <-30dBc <sup>Note 2</sup>	Complies (-0.2 dB)

**Note 1 - Change to include new antenna would not change previously reported results.**

**Note 2: Limit of -30dBc used because the power was measured using the UNII test procedure (maximum power averaged over a transmission burst).**

**DIGITAL TRANSMISSION SYSTEMS (5725 –5850 MHz)**

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.247(a)	RSS 210 A8.2	Digital Modulation	Systems uses OFDM/DSSS techniques	System must utilize a digital transmission technology	Complies
15.247 (a) (2)	RSS 210 A8.2 (1)	6dB Bandwidth	-	>500kHz	Note 1
	RSP100	99% Bandwidth	-	Information only	Note 1
15.247 (b)	RSS 210 A8.2 (4)	Output Power (multipoint systems)	-	1Watt, EIRP limited to 4 Watts.	Note 1
15.247(d)	RSS 210 A8.2 (2)	Power Spectral Density	-	Maximum permitted is 8dBm/3kHz	Note 1
15.247(c) / 15.209	RSS 210 A8.5 Table 2, 3	Radiated Spurious Emissions 30MHz – 40 GHz	67.1dB $\mu$ V/m @ 5581.7MHz	15.207 in restricted bands, all others <-30dBc <sup>Note 2</sup>	Complies (- 6.9 dB)

**Note 1 - Change to include new antenna would not change previously reported results.**

**Note 2: Limit of -30dBc used because the power was measured using the UNII test procedure (maximum power averaged over a transmission burst).**

**GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS**

FCC Rule Part	RSS Rule part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.203	-	RF Connector	Device uses a unique connector type		Complies
15.109	RSS GEN 7.2.3 Table 1	Receiver spurious emissions	48.3dB $\mu$ V/m @ 1500.2MHz		Complies (- 5.7 dB)
15.207	RSS GEN Table 2	AC Conducted Emissions	-	Refer to standard	Note 1
15.247 (b) (5) 15.407 (f)	RSS 102	RF Exposure Requirements	Refer to MPE calculations in Exhibit 11, RSS 102 declaration and User Manual statements.	Refer to OET 65, FCC Part 1 and RSS 102	Complies
	RSP 100 RSS GEN 7.1.5	User Manual	-	Statement required regarding non-interference	Note 1
	RSP 100 RSS GEN 7.1.5	User Manual	-	Statement required regarding detachable antenna	Note 1

**Note 1 - Change to include new antenna would not change previously reported results.**

**MEASUREMENT UNCERTAINTIES**

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level and were calculated in accordance with UKAS document LAB 34.

Measurement Type	Frequency Range (MHz)	Calculated Uncertainty (dB)
Conducted Emissions	0.15 to 30	$\pm 2.4$
Radiated Emissions	0.015 to 30	$\pm 3.0$
Radiated Emissions	30 to 1000	$\pm 3.6$
Radiated Emissions	1000 to 40000	$\pm 6.0$



**EQUIPMENT UNDER TEST (EUT) DETAILS****GENERAL**

The Broadcom Corporation model BCM94322HM8L is an 802.11ag/Draft 802.11n WLAN PCI-E Minicard that is designed to enable wireless data transmission in PCs. Since the EUT would be placed on a table top during operation, the EUT was treated as table-top equipment during testing to simulate the end-user environment. The electrical rating of the EUT is 3.3Vdc from the host.

The sample was received on July 7, 2008 and tested on July 7, July 9, July 12, July 14, July 16, July 18, July 21, July 23 and July 28, 2008. The EUT consisted of the following component(s):

Manufacturer	Model	Description	Serial Number	FCC ID
Broadcom	BCM94322HM8L	802.11ag/Draft 802.11n WLAN PCI-E Minicard	-	QDS- BRCM1031

**ANTENNA SYSTEM**

The EUT antenna is a dipole antenna. The antenna connects to the EUT via a Hirose connector, thereby meeting the requirements of FCC 15.203.

**ENCLOSURE**

The EUT does not have an enclosure as it is designed to be installed within the enclosure of a host computer or system.

**MODIFICATIONS**

The EUT did not require modifications during testing in order to comply with emissions specifications.

**SUPPORT EQUIPMENT**

The following equipment was used as local support equipment for emissions testing:

Manufacturer	Model	Description	Serial Number	FCC ID
HP	-	Laptop Computer	-	DoC
Dell*	Inspiron 0000	Laptop Computer	901014-70166- 57K-01JT	DoC
HP*	C6490A	Printer	MY3883K42P	DoC

\* - Dell laptop and printer used for conducted emissions testing only

**EUT INTERFACE PORTS**

The I/O cabling configuration during emissions testing was as follows:

Port	Connected To	Cable(s)		
		Description	Shielded or Unshielded	Length(m)
Main RF Port	Antenna	coax	shielded	0.15
Aux RF Port	Antenna	coax	shielded	0.15
PCMCIA Buss	Extender Card with EUT	Direct Connection	-	-
DC Power on Computer	AC/DC Adapter	multiconductor	shielded	1.5
AC/DC Adapter	AC Mains	3 wire	unshielded	1.5
USB on Computer	Printer	multiconductor	shielded	1.5

**EUT OPERATION**

During testing, the EUT was configured to either transmit continuously on the desired channel or set into a receive mode at the desired channel, as noted on the test data sheets.

All transmitter spurious emissions testing (radiated or conducted) was done at the highest power setting within the band. All band edge, power and other measurements were taken at the maximum power allowed by the EUT's power table for that particular channel.

## **TEST SITE**

### **GENERAL INFORMATION**

Final test measurements were taken on July 7, July 9, July 12, July 14, July 16, July 18, July 21, July 23 and July 28, 2008 at the Elliott Laboratories semi anechoic chambers 3, 4 and 5 located at 41039 Boyce Road, Fremont, California. Pursuant to section 2.948 of the FCC's Rules and section 3.3 of RSP-100, construction, calibration, and equipment data has been filed with the Commission.

ANSI C63.4:2003 recommends that ambient noise at the test site be at least 6 dB below the allowable limits. Ambient levels are below this requirement with the exception of predictable local TV, radio, and mobile communications traffic. The test site contains separate areas for radiated and conducted emissions testing. Considerable engineering effort has been expended to ensure that the facilities conform to all pertinent requirements of ANSI C63.4:2003.

### **RADIATED EMISSIONS CONSIDERATIONS**

The FCC has determined that radiation measurements made in a shielded enclosure are not suitable for determining levels of radiated emissions. Radiated measurements are performed in an open field environment or in a semi-anechoic chamber. The test sites are maintained free of conductive objects within the CISPR defined elliptical area incorporated in ANSI C63.4:2003 guidelines and meet the Normalized Site Attenuation (NSA) requirements of ANSI C63.4:2003.

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## MEASUREMENT INSTRUMENTATION

### RECEIVER SYSTEM

An EMI receiver as specified in CISPR 16-1 is used for emissions measurements. The receivers used can measure over the frequency range of 9 kHz up to 2000 MHz. These receivers allow both ease of measurement and high accuracy to be achieved. The receivers have Peak, Average, and CISPR (Quasi-peak) detectors built into their design so no external adapters are necessary. The receiver automatically sets the required bandwidth for the CISPR detector used during measurements. If the repetition frequency of the signal being measured is below 20Hz, peak measurements are made in lieu of Quasi-Peak measurements.

For measurements above the frequency range of the receivers, a spectrum analyzer is utilized because it provides visibility of the entire spectrum along with the precision and versatility required to support engineering analysis. Average measurements above 1000MHz are performed on the spectrum analyzer using the linear-average method with a resolution bandwidth of 1 MHz and a video bandwidth of 10 Hz, unless the signal is pulsed in which case the average (or video) bandwidth of the measuring instrument is reduced to onset of pulse desensitization and then increased.

### INSTRUMENT CONTROL COMPUTER

The receivers utilize either a Rohde & Schwarz EZM Spectrum Monitor/Controller or contain an internal Spectrum Monitor/Controller to view and convert the receiver measurements to the field strength at an antenna or voltage developed at the LISN measurement port, which is then compared directly with the appropriate specification limit. This provides faster, more accurate readings by performing the conversions described under Sample Calculations within the Test Procedures section of this report. Results are printed in a graphic and/or tabular format, as appropriate. A personal computer is used to record all measurements made with the receivers.

The Spectrum Monitor provides a visual display of the signal being measured. In addition, the controller or a personal computer run automated data collection programs which control the receivers. This provides added accuracy since all site correction factors, such as cable loss and antenna factors are added automatically.

### LINE IMPEDANCE STABILIZATION NETWORK (LISN)

Line conducted measurements utilize a fifty microhenry Line Impedance Stabilization Network as the monitoring point. The LISN used also contains a 250 uH CISPR adapter. This network provides for calibrated radio frequency noise measurements by the design of the internal low pass and high pass filters on the EUT and measurement ports, respectively.

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*FILTERS/ATTENUATORS*

External filters and precision attenuators are often connected between the receiving antenna or LISN and the receiver. This eliminates saturation effects and non-linear operation due to high amplitude transient events.

*ANTENNAS*

A loop antenna is used below 30 MHz. For the measurement range 30 MHz to 1000 MHz either a combination of a biconical antenna and a log periodic or a bi-log antenna is used. Above 1000 MHz, horn antennas are used. The antenna calibration factors to convert the received voltage to an electric field strength are included with appropriate cable loss and amplifier gain factors to determine an overall site factor, which is then programmed into the test receivers or incorporated into the test software.

*ANTENNA MAST AND EQUIPMENT TURNTABLE*

The antennas used to measure the radiated electric field strength are mounted on a non-conductive antenna mast equipped with a motor-drive to vary the antenna height. Measurements below 30 MHz are made with the loop antenna at a fixed height of 1m above the ground plane.

ANSI C63.4:2003 specifies that the test height above ground for table mounted devices shall be 80 centimeters. Floor mounted equipment shall be placed on the ground plane if the device is normally used on a conductive floor or separated from the ground plane by insulating material from 3 to 12 mm if the device is normally used on a non-conductive floor. During radiated measurements, the EUT is positioned on a motorized turntable in conformance with this requirement.

*INSTRUMENT CALIBRATION*

All test equipment is regularly checked to ensure that performance is maintained in accordance with the manufacturer's specifications. All antennas are calibrated at regular intervals with respect to tuned half-wave dipoles. An exhibit of this report contains the list of test equipment used and calibration information.

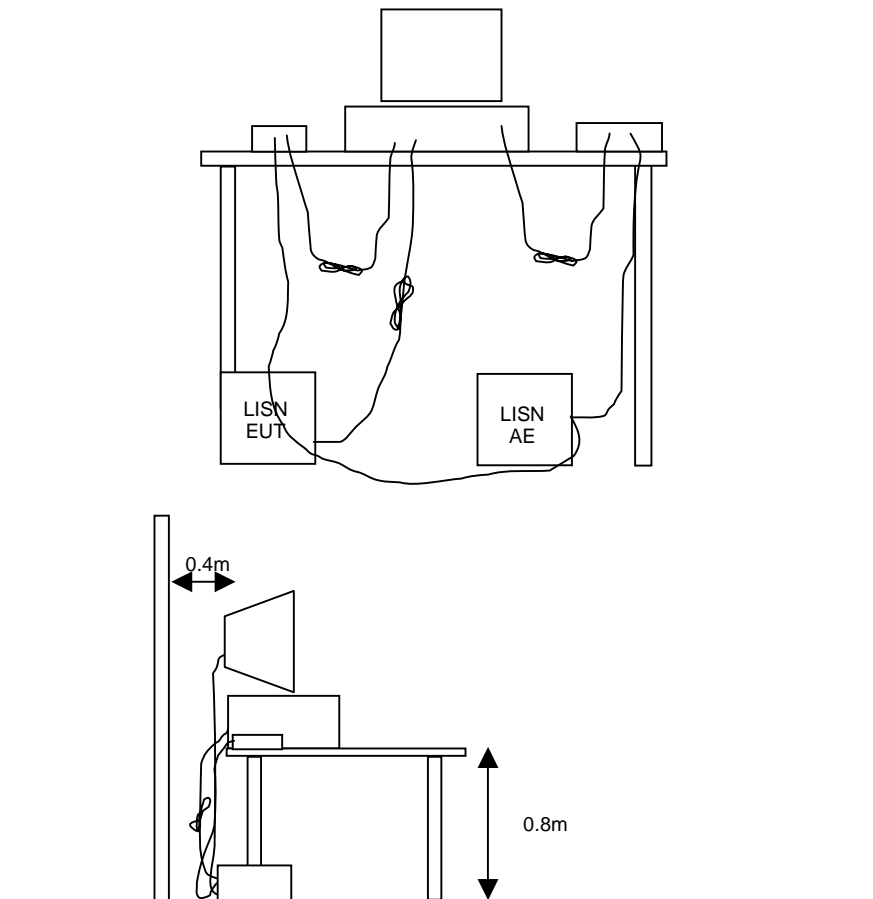
## TEST PROCEDURES

### EUT AND CABLE PLACEMENT

The regulations require that interconnecting cables be connected to the available ports of the unit and that the placement of the unit and the attached cables simulate the worst case orientation that can be expected from a typical installation, so far as practicable. To this end, the position of the unit and associated cabling is varied within the guidelines of ANSI C63.4:2003, and the worst-case orientation is used for final measurements.

### CONDUCTED EMISSIONS

Conducted emissions are measured at the plug end of the power cord supplied with the EUT. Excess power cord length is wrapped in a bundle between 30 and 40 centimeters in length near the center of the cord. Preliminary measurements are made to determine the highest amplitude emission relative to the specification limit for all the modes of operation. Placement of system components and varying of cable positions are performed in each mode. A final peak mode scan is then performed in the position and mode for which the highest emission was noted on all current carrying conductors of the power cord.



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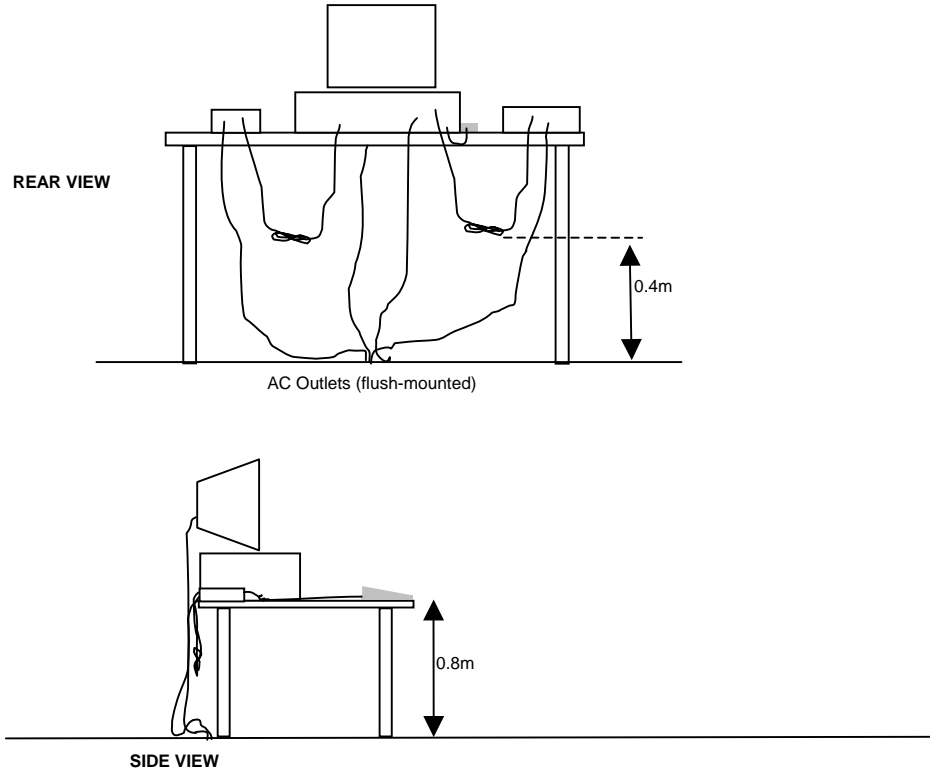
**RADIATED EMISSIONS**

A preliminary scan of the radiated emissions is performed in which all significant EUT frequencies are identified with the system in a nominal configuration. At least two scans are performed, one scan for each antenna polarization (horizontal and vertical; loop parallel and perpendicular to the EUT). During the preliminary scans, the EUT is rotated through 360°, the antenna height is varied (for measurements above 30 MHz) and cable positions are varied to determine the highest emission relative to the limit. Preliminary scans may be performed in a fully anechoic chamber for the purposes of identifying the frequencies of the highest emissions from the EUT.

A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

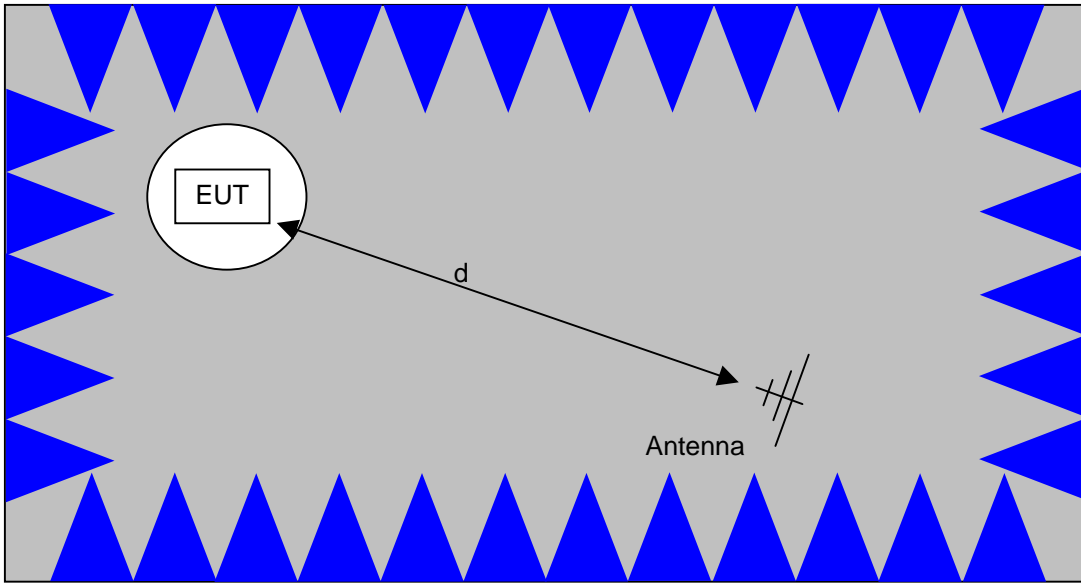
Final maximization is a phase in which the highest amplitude emissions identified in the spectral search are viewed while the EUT azimuth angle is varied from 0 to 360 degrees relative to the receiving antenna. The azimuth, which results in the highest emission is then maintained while varying the antenna height from one to four meters (for measurements above 30 MHz, measurements below 30 MHz are made with the loop antenna at a fixed height of 1m). The result is the identification of the highest amplitude for each of the highest peaks. Each recorded level is corrected in the receiver using appropriate factors for cables, connectors, antennas, and preamplifier gain.

When testing above 18 GHz, the receive antenna is located at 1 meter from the EUT and the antenna height is restricted to a maximum of 2.5 meters.



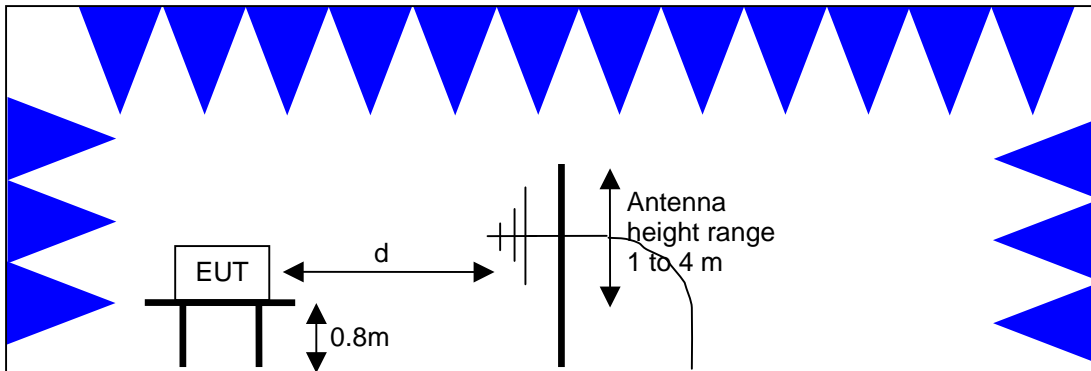
Typical Test Configuration for Radiated Field Strength Measurements





The anechoic materials on the walls and ceiling ensure compliance with the normalized site attenuation requirements of CISPR 16 / CISPR 22 / ANSI C63.4 for an alternate test site at the measurement distances used.

Floor-standing equipment is placed on the floor with insulating supports between the unit and the ground plane.



Test Configuration for Radiated Field Strength Measurements  
Semi-Anechoic Chamber, Plan and Side Views

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**SPECIFICATION LIMITS AND SAMPLE CALCULATIONS**

The limits for conducted emissions are given in units of microvolts, and the limits for radiated emissions are given in units of microvolts per meter at a specified test distance. Data is measured in the logarithmic form of decibels relative to one microvolt, or dB microvolts (dBuV). For radiated emissions, the measured data is converted to the field strength at the antenna in dB microvolts per meter (dBuV/m). The results are then converted to the linear forms of uV and uV/m for comparison to published specifications.

For reference, converting the specification limits from linear to decibel form is accomplished by taking the base ten logarithm, then multiplying by 20. These limits in both linear and logarithmic form are as follows:

**GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS**

The table below shows the limits for the spurious emissions from transmitters that fall in restricted bands<sup>1</sup> (with the exception of transmitters operating under FCC Part 15 Subpart D and RSS 210 Annex 9), the limits for all emissions from a low power device operating under the general rules of RSS 310 (tables 3 and 4), RSS 210 (table 2) and FCC Part 15 Subpart C section 15.209.

Frequency Range (MHz)	Limit (uV/m)	Limit (dBuV/m @ 3m)
0.009-0.490	2400/F <sub>KHz</sub> @ 300m	67.6-20*log <sub>10</sub> (F <sub>KHz</sub> ) @ 300m
0.490-1.705	24000/F <sub>KHz</sub> @ 30m	87.6-20*log <sub>10</sub> (F <sub>KHz</sub> ) @ 30m
1.705 to 30	30 @ 30m	29.5 @ 30m
30 to 88	100 @ 3m	40 @ 3m
88 to 216	150 @ 3m	43.5 @ 3m
216 to 960	200 @ 3m	46.0 @ 3m
Above 960	500 @ 3m	54.0 @ 3m

**RECEIVER RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS**

The table below shows the limits for the spurious emissions from receivers as detailed in FCC Part 15.109, RSS 210 Table 2, RSS GEN Table 1 and RSS 310 Table 3. Note that receivers operating outside of the frequency range 30 MHz – 960 MHz are exempt from the requirements of 15.109.

Frequency Range (MHz)	Limit (uV/m @ 3m)	Limit (dBuV/m @ 3m)
30 to 88	100	40
88 to 216	150	43.5
216 to 960	200	46.0
Above 960	500	54.0

**OUTPUT POWER LIMITS – DIGITAL TRANSMISSION SYSTEMS**

The table below shows the limits for output power and output power density. Where the signal bandwidth is less than 20 MHz the maximum output power is reduced to the power spectral density limit plus 10 times the log of the bandwidth (in MHz).

Operating Frequency (MHz)	Output Power	Power Spectral Density
902 – 928	1 Watt (30 dBm)	8 dBm/3kHz

<sup>1</sup> The restricted bands are detailed in FCC 15.203, RSS 210 Table 1 and RSS 310 Table 2

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2400 – 2483.5	1 Watt (30 dBm)	8 dBm/3kHz
5725 – 5850	1 Watt (30 dBm)	8 dBm/3kHz

The maximum permitted output power is reduced by 1dB for every dB the antenna gain exceeds 6dBi. Fixed point-to-point applications using the 5725 – 5850 MHz band are not subject to this restriction.

***TRANSMIT MODE SPURIOUS RADIATED EMISSIONS LIMITS – FHSS and DTS SYSTEMS***

The limits for unwanted (spurious) emissions from the transmitter falling in the restricted bands are those specified in the general limits sections of FCC Part 15 and RSS 210. All other unwanted (spurious) emissions shall be at least 20dB below the level of the highest in-band signal level (30dB if the power is measured using the sample detector/power averaging method).

**SAMPLE CALCULATIONS - CONDUCTED EMISSIONS**

Receiver readings are compared directly to the conducted emissions specification limit (decibel form) as follows:

$$R_r - S = M$$

where:

$R_r$  = Receiver Reading in dBuV

S = Specification Limit in dBuV

M = Margin to Specification in +/- dB

**SAMPLE CALCULATIONS - RADIATED EMISSIONS**

Receiver readings are compared directly to the specification limit (decibel form). The receiver internally corrects for cable loss, preamplifier gain, and antenna factor. The calculations are in the reverse direction of the actual signal flow, thus cable loss is added and the amplifier gain is subtracted. The Antenna Factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

A distance factor, when used for electric field measurements above 30MHz, is calculated by using the following formula:

$$F_d = 20 * \text{LOG}_{10} (D_m/D_s)$$

where:

$F_d$  = Distance Factor in dB

$D_m$  = Measurement Distance in meters

$D_s$  = Specification Distance in meters

For electric field measurements below 30MHz the extrapolation factor is either determined by making measurements at multiple distances or a theoretical value is calculated using the formula:

$$F_d = 40 * \text{LOG}_{10} (D_m/D_s)$$

Measurement Distance is the distance at which the measurements were taken and Specification Distance is the distance at which the specification limits are based. The antenna factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

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The margin of a given emission peak relative to the limit is calculated as follows:

$$R_c = R_r + F_d$$

and

$$M = R_c - L_s$$

where:

$$R_r = \text{Receiver Reading in dBuV/m}$$

$$F_d = \text{Distance Factor in dB}$$

$$R_c = \text{Corrected Reading in dBuV/m}$$

$$L_s = \text{Specification Limit in dBuV/m}$$

$$M = \text{Margin in dB Relative to Spec}$$

#### *SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION*

Where the radiated electric field strength is expressed in terms of the equivalent isotropic radiated power (eirp), or where a field strength measurement of output power is made in lieu of a direct measurement, the following formula is used to convert between eirp and field strength at a distance of 3m from the equipment under test:

$$E = \frac{1000000 \sqrt{30 P}}{3} \quad \text{microvolts per meter}$$

where P is the eirp (Watts)

***EXHIBIT 1: Test Equipment Calibration Data***

1 Page

**Radiated Emissions, 2.4 GHz, Bandedges, 07-May-08****Engineer: Conrad Chu**

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1630	22-Feb-09
EMCO	Antenna, Horn, 1-18 GHz (SA40-Purple)	3115	1779	19-Mar-10

**Radiated Emissions, 1-10 GHz, Spurious Emissions, 07-May-08****Engineer: Conrad Chu**

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263	16-May-08
Hewlett Packard	EMC Spectrum Analyzer, 9 KHz - 22 GHz	8593EM	1319	18-May-08
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	1731	17-Oct-08
EMCO	Antenna, Horn, 1-18 GHz (SA40-Purple)	3115	1779	19-Mar-10

**Radiated Emissions, UNII 802.11n-20 Band-edge test, 09-Jul-08****Engineer: Ben Jing**

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	SpecAn 9 KHz-26.5 GHz, Non-Program	8563E	284	21-Aug-08
Rohde & Schwarz	Power Meter, Single Channel	NRVS	1290	12-Jul-08
EMCO	Antenna, Horn, 1-18 GHz (SA40-Purple)	3115	1779	19-Mar-10
Rohde & Schwarz	Power Sensor, 1 uW-100 mW, DC-18 GHz, 50ohms	NRV-Z51	1797	21-Aug-08

**Radio Spurious Emissions, 09-Jul-08****Engineer: Suhaila Khushzad**

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	SpecAn 9 KHz-26.5 GHz, Non-Program	8563E	284	21-Aug-08
EMCO	Antenna, Horn, 1-18 GHz	3115	786	07-Dec-08

**Radio Spurious Emissions, 11-Jul-08****Engineer: Suhaila Khushzad**

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	SpecAn 9 KHz-26.5 GHz, Non-Program	8563E	284	21-Aug-08
EMCO	Antenna, Horn, 1-18 GHz	3115	786	07-Dec-08

**Radiated Emissions, 30 - 26,500 MHz, 12-Jul-08****Engineer: rvarelas**

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
EMCO	Antenna, Horn, 1-18GHz	3115	868	10-Jun-10
Hewlett Packard	Spectrum Analyzer 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	24-Aug-08
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	1731	17-Oct-08
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	1780	06-Nov-08

**Radio Spurious Emissions, 14-Jul-08****Engineer: Suhaila Khushzad**

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
EMCO	Antenna, Horn, 1-18GHz	3115	868	10-Jun-10
Hewlett Packard	Spectrum Analyzer 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	24-Aug-08

**Radiated Emissions, 30 - 26,500 MHz, 15-Jul-08****Engineer: rvarelas**

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
EMCO	Antenna, Horn, 1-18GHz	3115	868	10-Jun-10
Hewlett Packard	Spectrum Analyzer 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	24-Aug-08
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	1731	17-Oct-08
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	1780	06-Nov-08

**Radio Spurious Emissions), 15-Jul-08****Engineer: Suhaila Khushzad**

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
EMCO	Antenna, Horn, 1-18GHz	3115	868	10-Jun-10



Hewlett Packard                      Spectrum Analyzer 30 Hz -40 GHz, SV (SA40) Red    8564E (84125C)    1148    24-Aug-08

**Radiated Emissions, 1000 - 18,000 MHz, 16-Jul-08**

**Engineer: Joseph Cadigal**

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	SpecAn 9 KHz-26.5 GHz, Non-Program	8563E	284	21-Aug-08
EMCO	Antenna, Horn, 1-18 GHz	3115	786	07-Dec-08
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	1729	17-Oct-08
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	1730	17-Oct-08
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	1780	06-Nov-08

**Radiated Emissions, 1000 - 18,000 MHz, 17-Jul-08**

**Engineer: Ben Jing**

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
EMCO	Antenna, Horn, 1-18GHz	3115	868	10-Jun-10
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	24-Aug-08
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	1728	17-Oct-08
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	1729	17-Oct-08
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	1730	17-Oct-08
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	1780	06-Nov-08

**Radio Spurious Emissions, 17-Jul-08**

**Engineer: Suhaila Khushzad**

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	SpecAn 9 KHz-26.5 GHz, Non-Program	8563E	284	21-Aug-08
Miteq	Preamplifier, 1-18 GHz	AFS44	1346	13-Nov-08
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	1729	17-Oct-08
EMCO	Antenna, Horn, 1-18 GHz (SA40-Purple)	3115	1779	19-Mar-10

**Radio Spurious Emissions, 18-Jul-08**

**Engineer: Suhaila Khushzad**

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	SpecAn 9 KHz-26.5 GHz, Non-Program	8563E	284	21-Aug-08
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	1728	17-Oct-08
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	1730	17-Oct-08
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	1780	06-Nov-08
Fischer Custom Comm.	150-50 ohm adapter, 1/2, 0.15-80 MHz	FCC-801-150-50	1799	03-Jun-09

**Radiated Emissions, 1000 - 18,000 MHz, 19-Jul-08**

**Engineer: Ben Jing**

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
EMCO	Antenna, Horn, 1-18 GHz	3115	786	07-Dec-08
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	24-Aug-08
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	1729	17-Oct-08
Micro-Tronics	Band Reject Filter, 5470-5725 MHz	BRC50704-02	1730	17-Oct-08
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	1780	06-Nov-08

**Radiated Emissions, 1000 - 18,000 MHz, 21-Jul-08**

**Engineer: Ben Jing**

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	SpecAn 9 KHz-26.5 GHz, Non-Program	8563E	284	21-Aug-08
Miteq	Preamplifier, 1-18 GHz	AFS44	1346	13-Nov-08
EMCO	Antenna, Horn, 1-18 GHz (SA40-Purple)	3115	1779	19-Mar-10

**Radiated Emissions, 1000 - 12,000 MHz, 23-Jul-08**

**Engineer: Ben Jing**

<u>Manufacturer</u>	<u>Description</u>	<u>Model #</u>	<u>Asset #</u>	<u>Cal Due</u>
Hewlett Packard	SpecAn 9 KHz-26.5 GHz, Non-Program	8563E	284	21-Aug-08
EMCO	Antenna, Horn, 1-18 GHz	3115	786	07-Dec-08
Miteq	Preamplifier, 1-18 GHz	AFS44	1346	13-Nov-08
Micro-Tronics	Band Reject Filter, 2400-2500 MHz	BRM50702-02	1731	17-Oct-08

***EXHIBIT 2: Test Measurement Data***

67 Pages

Client:	Broadcom Corporation	Job Number:	J72137
Model:	BCM94322HM8L (Dipole C2PC)	T-Log Number:	T72240_DTS
		Account Manager:	Dean Eriksen
Contact:	Anna Liang		
Emissions Standard(s):	FCC	Class:	-
Immunity Standard(s):	-	Environment:	-

## EMC Test Data

For The

### Broadcom Corporation

Model

BCM94322HM8L (Dipole C2PC)

Date of Last Test: 7/28/2008



## EMC Test Data

Client:	Broadcom Corporation	Job Number:	J72137
Model:	BCM94322HM8L (Dipole C2PC)	T-Log Number:	T72240_DTS
Contact:	Anna Liang	Account Manger:	Dean Eriksen
Emissions Standard(s):	FCC	Class:	-
Immunity Standard(s):	-	Environment:	-

### EUT INFORMATION

#### General Description

The EUT is an 802.11ag/Draft 802.11n WLAN PCI-E Minicard that is designed to enable wireless data transmission in PCs. Since the EUT would be placed on a table top during operation, the EUT was treated as table-top equipment during testing to simulate the end-user environment. The electrical rating of the EUT is 3.3Vdc from the host.

#### Equipment Under Test

Manufacturer	Model	Description	Serial Number	FCC ID
Broadcom	BCM94322HM8L	802.11ag/Draft 802.11n WLAN PCI-E Minicard	-	QDS-BRCM1031

#### EUT Antenna (Intentional Radiators Only)

The EUT antenna is a dipole antenna. The antenna connects to the EUT via a Hirose connector, thereby meeting the requirements of FCC 15.203.

#### EUT Enclosure

The EUT does not have an enclosure as it is designed to be installed within the enclosure of a host computer or system.

#### Modification History

Mod. #	Test	Date	Modification
1			
2			
3			

Modifications applied are assumed to be used on subsequent tests unless otherwise stated as a further modification.

Client:	Broadcom Corporation	Job Number:	J72137
Model:	BCM94322HM8L (Dipole C2PC)	T-Log Number:	T72240_DTS
Contact:	Anna Liang	Account Manger:	Dean Eriksen
Emissions Standard(s):	FCC	Class:	-
Immunity Standard(s):	-	Environment:	-

### Test Configuration #1

#### Local Support Equipment

Manufacturer	Model	Description	Serial Number	FCC ID
HP	-	Laptop Computer	-	DoC

#### Remote Support Equipment

Manufacturer	Model	Description	Serial Number	FCC ID
None	-	-	-	-

#### Cabling and Ports

Port	Connected To	Cable(s)		
		Description	Shielded or Unshielded	Length(m)
Main RF Port	Antenna	coax	shielded	0.15
Aux RF Port	Antenna	coax	shielded	0.15
PCMCIA Buss	Extender Card with EUT	Direct Connection	-	-
DC Power on Computer	AC/DC Adapter	multiconductor	shielded	1.5
AC/DC Adapter	AC Mains	3 wire	unshielded	1.5

#### EUT Operation During Emissions Tests

During testing, the EUT was configured to either transmit continuously on the desired channel or set into a receive mode at the desired channel, as noted on the test data sheets.

All transmitter spurious emissions testing (radiated or conducted) was done at the highest power setting within the band. All band edge, power and other measurements were taken at the maximum power allowed by the EUT's power table for that particular channel.

Client:	Broadcom Corporation	Job Number:	J72137
Model:	BCM94322HM8L (Dipole C2PC)	T-Log Number:	T72240_DTS
		Account Manager:	Dean Eriksen
Contact:	Anna Liang		
Standard:	FCC	Class:	N/A

## RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: See runs  
Test Engineer: See runs  
Test Location: See runs

Config. Used: 1  
Config Change: None  
EUT Voltage: 120V/60Hz

### General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

**Ambient Conditions:** Temperature: 20.9 °C  
Rel. Humidity: 42 %

### Summary of Results - Device Operating in the 2400-2483.5 MHz Band

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
2b	802.11b	1	-		Restricted Band Edge (2390 MHz)	FCC Part 15.209 / 15.247(c)	52.0dBµV/m @ 2389.3MHz (-2.0dB)
2c	802.11b	11		-	Restricted Band Edge (2483.5 MHz)	FCC Part 15.209 / 15.247(c)	48.3dBµV/m @ 2483.6MHz (-5.7dB)

### Modifications Made During Testing

No modifications were made to the EUT during testing

### Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Broadcom Corporation	Job Number:	J72137
Model:	BCM94322HM8L (Dipole C2PC)	T-Log Number:	T72240_DTS
		Account Manager:	Dean Eriksen
Contact:	Anna Liang		
Standard:	FCC	Class:	N/A

**Run # 2: Radiated Spurious Emissions, 30 - 26,000 MHz. Operating Mode: 802.11b**

Date of Test: 7/14/2008	Config. Used: 1
Test Engineer: Suhaila Khushzad	Config Change: None
Test Location: Fremont Chamber #4	EUT Voltage: 120V/60Hz

**Run # 2b: Low Channel @ 2412 MHz**

**Fundamental Signal Field Strength:** Peak and average values measured in 1 MHz, and peak value measured in 100kHz

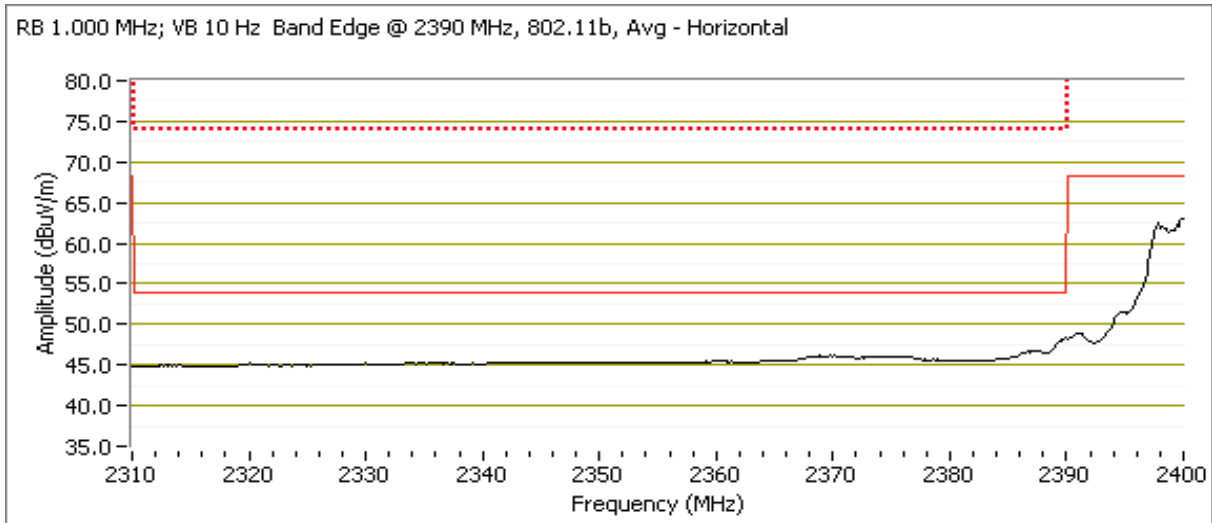
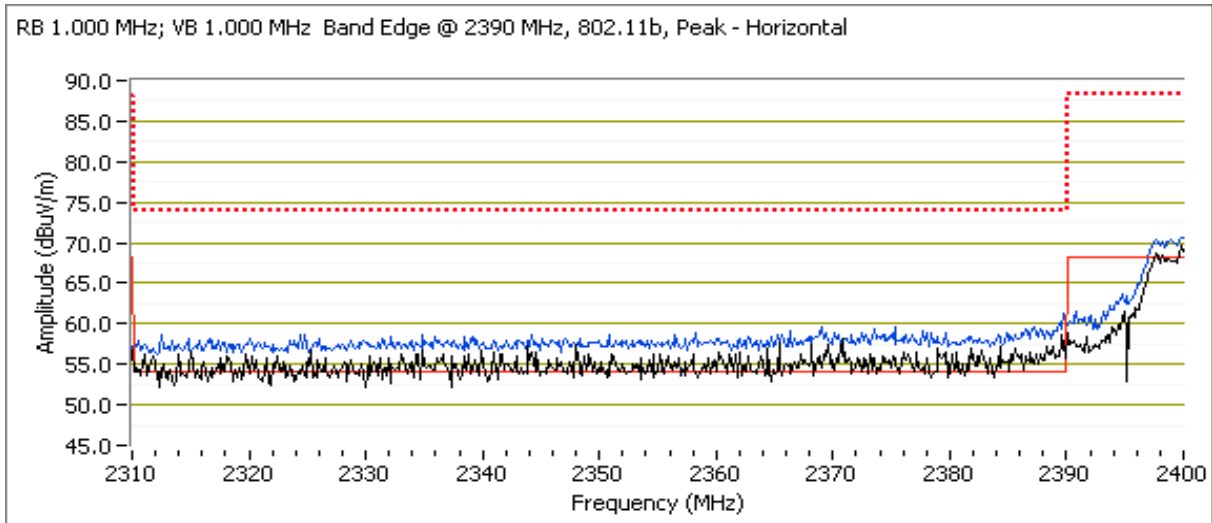
Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
2415.070	103.0	H	-	-	AVG	49	1.8	RB 1.000 MHz; VB: 10 Hz
2414.870	105.4	H	-	-	PK	49	1.8	RB 1.000 MHz; VB: 1.000 MHz
2415.130	107.5	V	-	-	AVG	99	1.5	RB 1.000 MHz; VB: 10 Hz
2414.870	109.9	V	-	-	PK	99	1.5	RB 1.000 MHz; VB: 1.000 MHz
2414.870	106.5	V	-	-	PK	99	1.5	RB 100 kHz; VB: 100 kHz
2414.870	102.1	H	-	-	PK	49	1.8	RB 100 kHz; VB: 100 kHz

**Band Edge Signal Field Strength**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
2389.320	52.0	V	54.0	-2.0	AVG	99	1.5	RB 1.000 MHz; VB: 10 Hz
2389.920	62.7	V	74.0	-11.3	PK	99	1.5	RB 1.000 MHz; VB: 1.000 MHz
2389.320	48.6	H	54.0	-5.4	AVG	49	1.8	RB 1.000 MHz; VB: 10 Hz
2389.810	60.4	H	74.0	-13.6	PK	49	1.8	RB 1.000 MHz; VB: 1.000 MHz

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

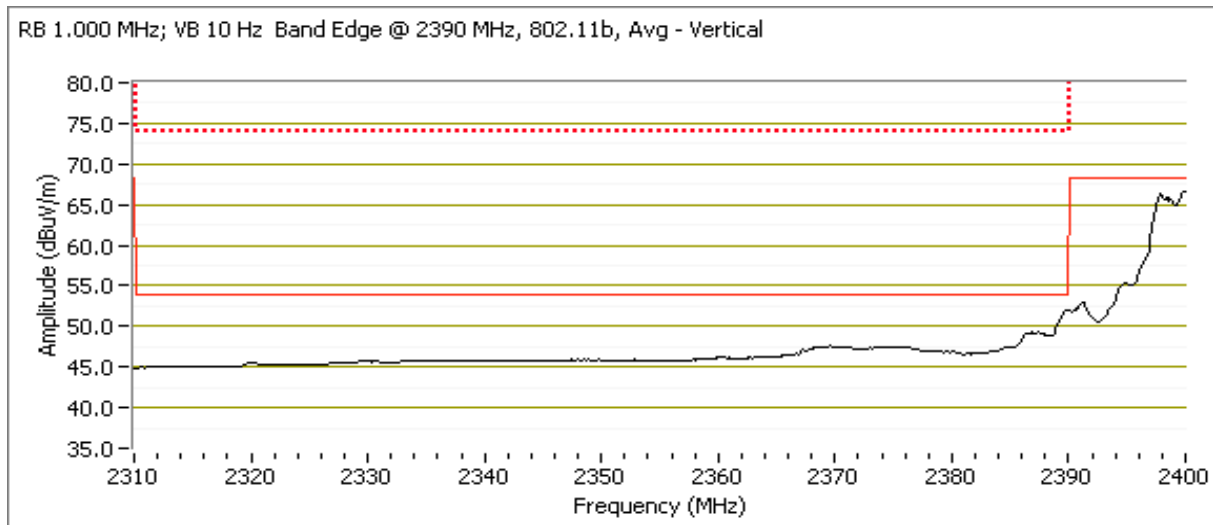
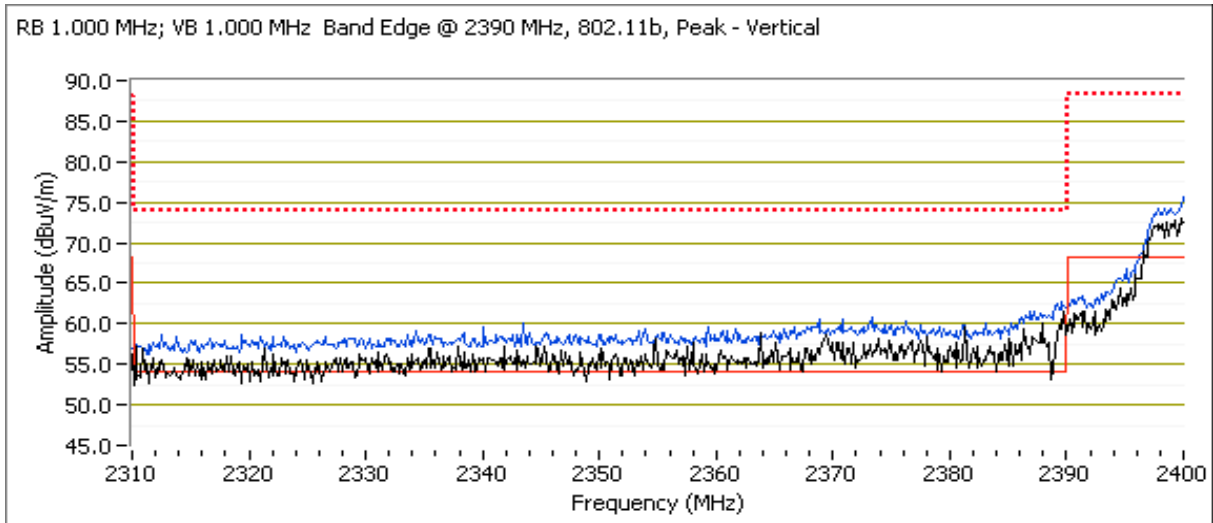
**Run # 2: Radiated Spurious Emissions, 30 - 26,000 MHz. Operating Mode: 802.11b**





Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

**Run # 2: Radiated Spurious Emissions, 30 - 26,000 MHz. Operating Mode: 802.11b**



Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

Run # 2: Radiated Spurious Emissions, 30 - 26,000 MHz. Operating Mode: 802.11b

Run # 2c: High Channel @ 2462 MHz

Date of Test: 7/23/2008

Config. Used: 1

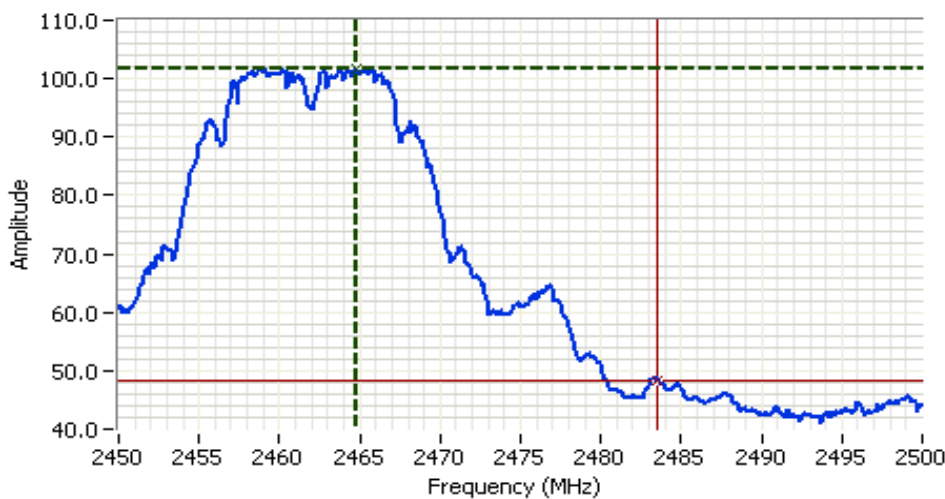
Test Engineer: Joseph Cadigal

Config Change: None

Test Location: Fremont Chamber #3

EUT Voltage: 120V/60Hz

### Band Edge Signal Field Strength



**Analyzer Settings**

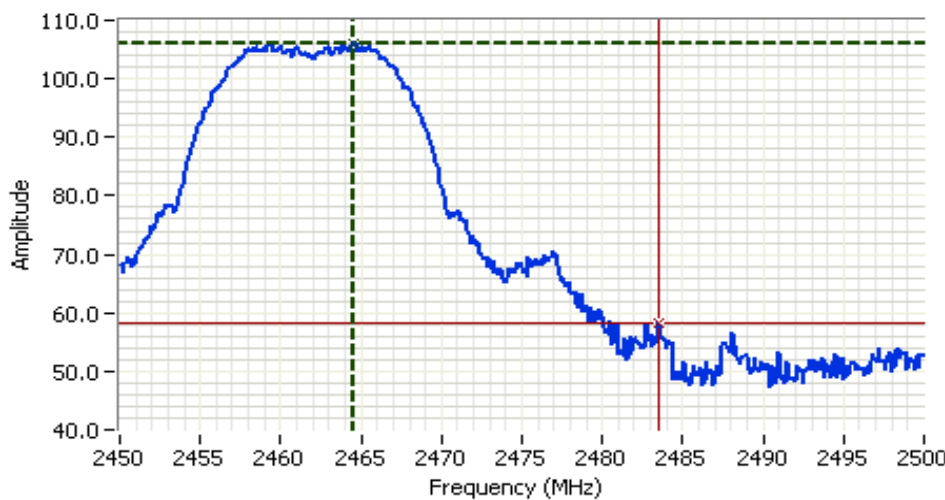
Rohde&Schwarz, ESI 7  
 CF: 2475.00 MHz  
 SPAN: 50.00 MHz  
 RB 1.000 MHz  
 VB 10 Hz  
 Detector AutoPeak  
 Att 10  
 RL Offset 32.50  
 Sweep Time 13.0s  
 Ref Lvl: 114.50 DBUV

**Comments**

2483.5MHz, B-mode,  
19 dBm

Cursor 1	2464.831	101.87	
Cursor 2	2483.561	48.33	

Delta Freq. 18.74  
Delta Amplitude 53.54



**Analyzer Settings**

Rohde&Schwarz, ESI 7  
 CF: 2475.00 MHz  
 SPAN: 50.00 MHz  
 RB 1.000 MHz  
 VB 1.000 MHz  
 Detector AutoPeak  
 Att 10  
 RL Offset 32.50  
 Sweep Time 5.0ms  
 Ref Lvl: 114.50 DBUV

**Comments**

2483.5MHz, B-mode,  
19 dBm

Cursor 1	2464.521	106.10	
Cursor 2	2483.561	58.18	

Delta Freq. 19.04  
Delta Amplitude 47.93



Client:	Broadcom Corporation	Job Number:	J72137
Model:	BCM94322HM8L (Dipole C2PC)	T-Log Number:	T72240_DTS
		Account Manager:	Dean Eriksen
Contact:	Anna Liang		
Standard:	FCC	Class:	N/A

**Run #2c: High Channel @ 2462 MHz**

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.600	48.3	V	54.0	-5.7	Avg	142	1.0	B-mode
2483.600	58.2	V	74.0	-15.8	Pk	142	1.0	B-mode

Client:	Broadcom Corporation	Job Number:	J72137
Model:	BCM94322HM8L (Dipole C2PC)	T-Log Number:	T72240_DTS
		Account Manager:	Dean Eriksen
Contact:	Anna Liang		
Standard:	FCC	Class:	N/A

## RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 7/23/2008	Config. Used: -
Test Engineer: Joseph Cadigal	Config Change: -
Test Location: Fremont Chamber #3	EUT Voltage: -

### General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

**Ambient Conditions:**

Temperature:	21.2 °C
Rel. Humidity:	41 %

### Summary of Results - Device Operating in the 2400-2483.5 MHz Band

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11g	1	-	-	Restricted Band Edge (2390 MHz)	FCC Part 15.209 / 15.247(c)	53.3dBµV/m @ 2390.1MHz (-0.7dB)
1b	802.11g	10	-	-	Restricted Band Edge (2483.5 MHz)	FCC Part 15.209 / 15.247(c)	53.3dBµV/m @ 2483.6MHz (-0.7dB)
1c	802.11g	11	-	-	Restricted Band Edge (2483.5 MHz)	FCC Part 15.209 / 15.247(c)	53.2dBµV/m @ 2483.7MHz (-0.8dB)

### Modifications Made During Testing

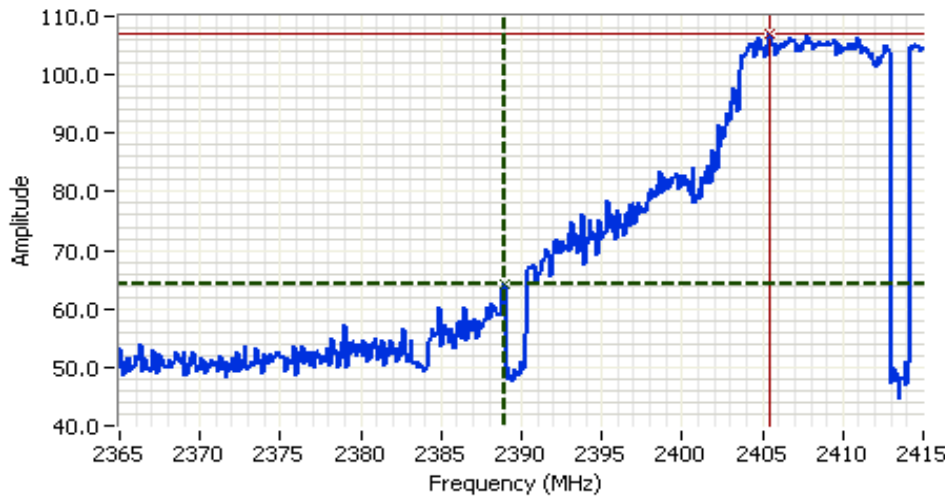
No modifications were made to the EUT during testing

### Deviations From The Standard

No deviations were made from the requirements of the standard.

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

Run #1a: Low Channel @ 2412 MHz

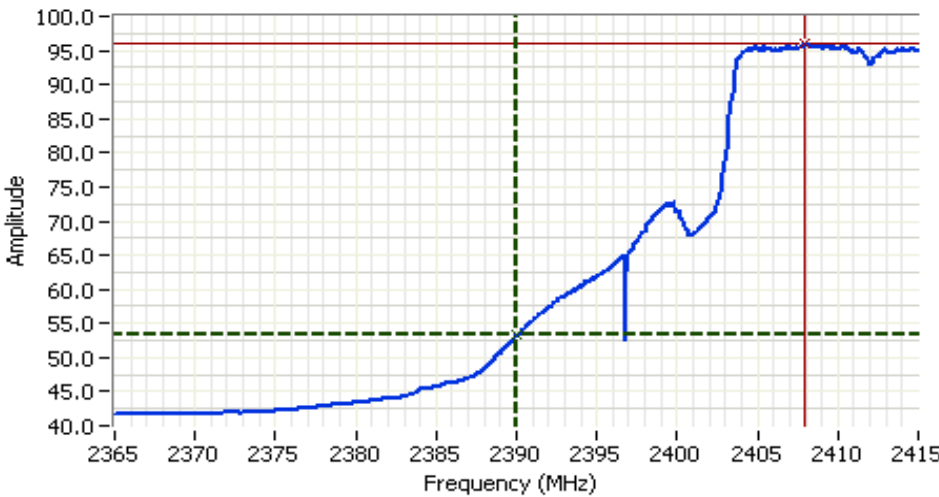


**Analyzer Settings**  
 Rohde&Schwarz,ESI 7  
 CF: 2390.00 MHz  
 SPAN:50.00 MHz  
 RB 1.000 MHz  
 VB 1.000 MHz  
 Detector AutoPeak  
 Att 10  
 RL Offset 32.50  
 Sweep Time 5.0ms  
 Ref Lvl:114.50DBUV

**Comments**  
 2390MHz, G-mode, 17 dBm

Cursor 1	2388.94	64.08	
Cursor 2	2405.48	106.94	

Delta Freq. 16.53  
 Delta Amplitude 42.86



**Analyzer Settings**  
 Rohde&Schwarz,ESI 7  
 CF: 2390.00 MHz  
 SPAN:50.00 MHz  
 RB 1.000 MHz  
 VB 10 Hz  
 Detector AutoPeak  
 Att 10  
 RL Offset 32.50  
 Sweep Time 13.0s  
 Ref Lvl:114.50DBUV

**Comments**  
 2390MHz, G-mode, 17 dBm

Cursor 1	2390.05	53.29	
Cursor 2	2407.98	96.13	

Delta Freq. 17.94  
 Delta Amplitude 42.83



Client:	Broadcom Corporation	Job Number:	J72137
Model:	BCM94322HM8L (Dipole C2PC)	T-Log Number:	T72240_DTS
		Account Manager:	Dean Eriksen
Contact:	Anna Liang		
Standard:	FCC	Class:	N/A

Run #1a: Low Channel @ 2412 MHz

**Band Edge Signal Field Strength**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
2390.050	53.3	v	54.0	-0.7	Avg	146	1.1	G-mode
2388.948	64.1	v	74.0	-9.9	Pk	146	1.1	G-mode

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

### Run #1b: High Channel @ 2457 MHz

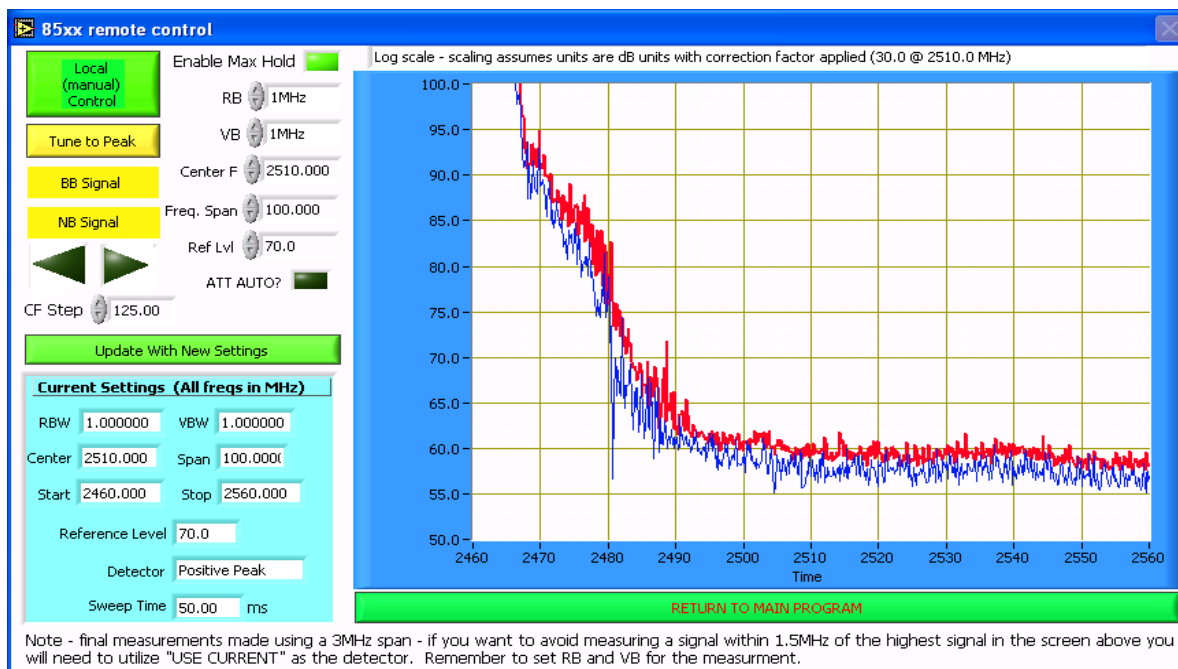
Date of Test: 7/7/2008  
 Test Engineer: rvarelas  
 Test Location: Fremont Chamber #4

Config. Used: 1  
 Config Change: None  
 EUT Voltage: 120V/60Hz

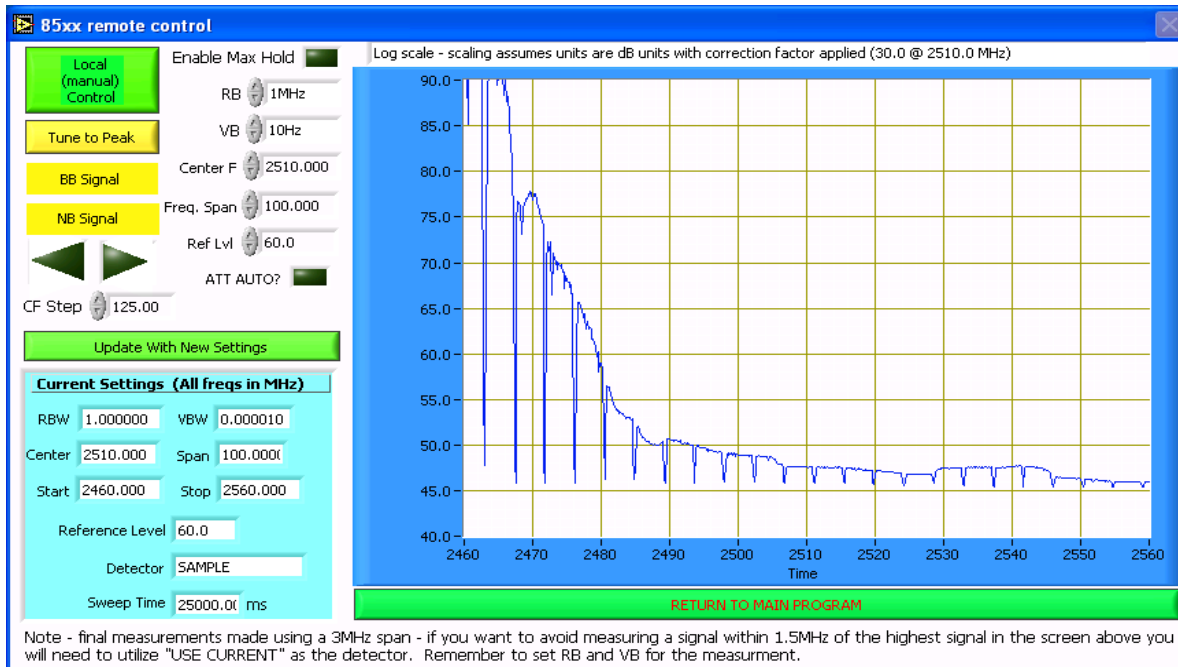
### Fundamental Signal Field Strength: Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
2453.400	106.5	V	-	-	AVG	332	1.3	RB = 1MHz, VB = 10Hz
2453.400	115.7	V	-	-	PK	332	1.3	RB = VB = 1MHz
2448.930	106.8	V	-	-	PK	332	1.3	RB = VB = 100kHz
2461.130	101.7	H	-	-	AVG	132	1.0	RB = 1MHz, VB = 10Hz
2461.130	110.7	H	-	-	PK	132	1.0	RB = VB = 1MHz
2466.330	101.0	H	-	-	PK	132	1.0	RB = VB = 100kHz

Fundamental emission level @ 3m in 100kHz RBW:	106.8	
Limit for emissions outside of restricted bands:	86.8 dB $\mu$ V/m	Limit is -20dBc (Peak power measurement)
Limit for emissions outside of restricted bands:	76.8 dB $\mu$ V/m	Limit is -30dBc (UNII power measurement)



Client:	Broadcom Corporation	Job Number:	J72137
Model:	BCM94322HM8L (Dipole C2PC)	T-Log Number:	T72240_DTS
Contact:	Anna Liang	Account Manager:	Dean Eriksen
Standard:	FCC	Class:	N/A



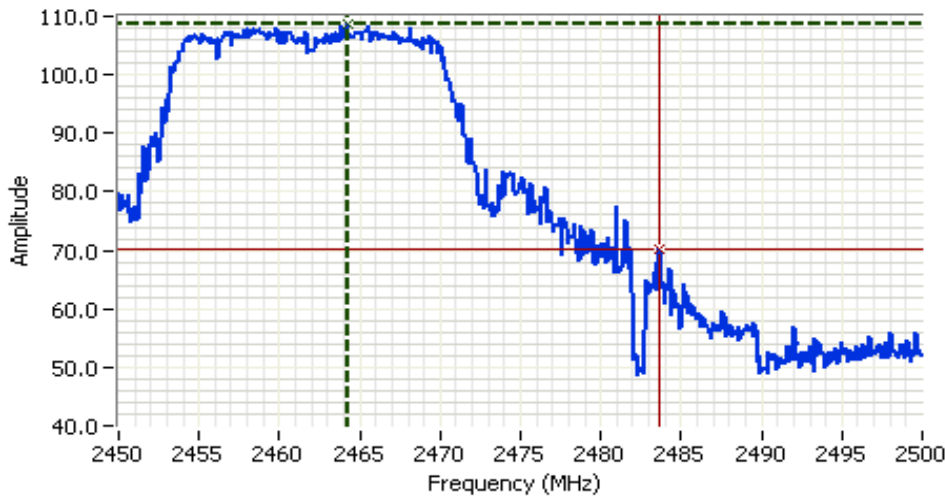
### Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.620	53.3	V	54.0	-0.7	Avg	332	1.3	
2484.430	73.5	V	74.0	-1.2	PK	332	1.3	
2483.500	47.5	V	54.0	-6.5	Avg	132	1.0	
2485.550	64.7	V	74.0	-9.3	PK	132	1.0	



Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
Contact: Anna Liang	Account Manager: Dean Eriksen
Standard: FCC	Class: N/A

### Run #1c: High Channel @ 2462 MHz



#### Analyzer Settings

Rohde&Schwarz, ESI 7  
CF: 2475.00 MHz  
SPAN: 50.00 MHz  
RB 1.000 MHz  
VB 1.000 MHz  
Detector AutoPeak  
Att 10  
RL Offset 32.50  
Sweep Time 5.0ms  
Ref Lvl: 114.50DBUW

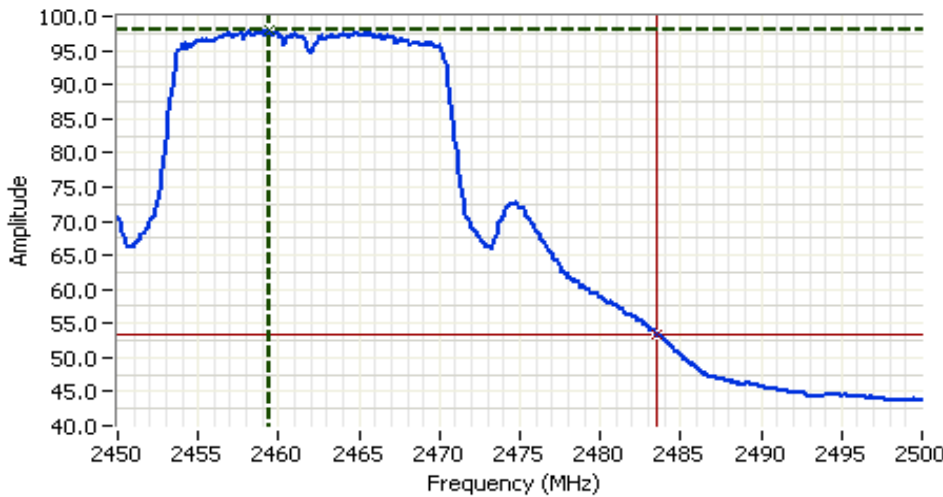
#### Comments

2483.5MHz, G-mode,  
17 dBm

Cursor 1	2464.22	108.55	
Cursor 2	2483.66	70.23	

Delta Freq. 19.44

Delta Amplitude 38.32



#### Analyzer Settings

Rohde&Schwarz, ESI 7  
CF: 2475.00 MHz  
SPAN: 50.00 MHz  
RB 1.000 MHz  
VB 10 Hz  
Detector AutoPeak  
Att 10  
RL Offset 32.50  
Sweep Time 13.0s  
Ref Lvl: 114.50DBUW

#### Comments

2483.5MHz, G-mode,  
17 dBm

Cursor 1	2459.41	98.03	
Cursor 2	2483.56	53.24	

Delta Freq. 24.15

Delta Amplitude 44.79



### Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBμV/m	v/h	Limit	Margin	PK/QP/Avg	degrees	meters	
2483.667	53.2	V	54.0	-0.8	Avg	138	1.2	
2483.667	70.2	V	74.0	-3.8	Pk	138	1.2	

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

## RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 7/9/2008 0:00  
 Test Engineer: Rafael Varelas  
 Test Location: Fremont Chamber #4

Config. Used: 1  
 Config Change: None  
 EUT Voltage: Powered From Host System

### General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

**Ambient Conditions:**                      Temperature:            20.7 °C  
    Rel. Humidity:            40 %

### Summary of Results

Run #1	TX Mode	Channel	Power Setting	Pass/Fail	Result / Margin
1a	802.11n 20 MHz	1	-	Pass	47.7dBµV/m @ 2389.0MHz (-6.3dB)
1b	802.11n 20 MHz	2	-	Pass	51.8dBµV/m @ 2389.7MHz (-2.2dB)
1c	802.11n 20 MHz	3	-	Pass	53.4dBµV/m @ 2389.7MHz (-0.6dB)
2a	802.11n 20 MHz	10	-	Pass	53.8dBµV/m @ 2484.5MHz (-0.2dB)
2b	802.11n 20 MHz	11	-	Pass	48.8dBµV/m @ 2483.8MHz (-5.2dB)
3a	802.11n 20 MHz	9	-	Pass	51.9dBµV/m @ 2484.4MHz (-2.1dB)

### Modifications Made During Testing

No modifications were made to the EUT during testing

### Deviations From The Standard

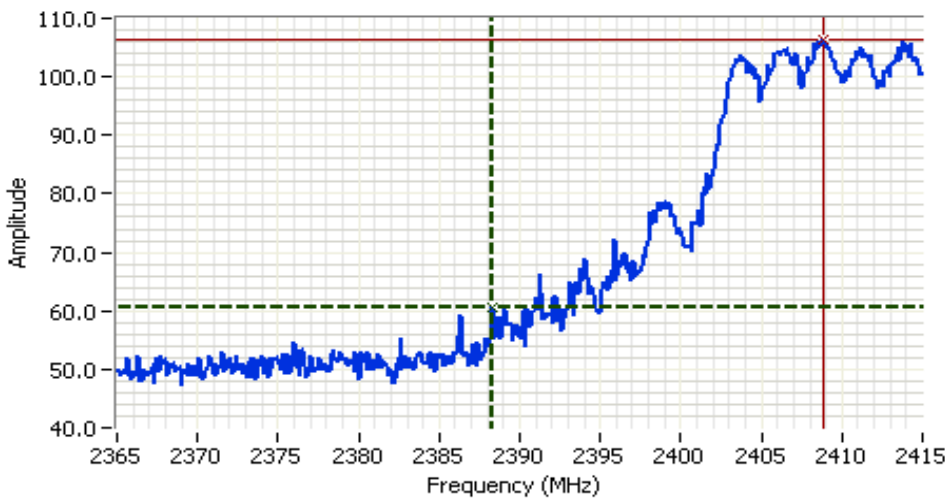
No deviations were made from the requirements of the standard.

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

**Run #1a: Radiated Spurious Emissions, Channel 1 @ 2412 MHz**

Date of Test: 7/23/2008  
 Test Engineer: Joseph Cadigal  
 Test Location: Fremont Chamber #3

Config. Used: -  
 Config Change: -  
 EUT Voltage: -



**Analyzer Settings**  
 Rohde&Schwarz, ESI 7  
 CF: 2390.00 MHz  
 SPAN: 50.00 MHz  
 RB 1.000 MHz  
 VB 1.000 MHz  
 Detector AutoPeak  
 Att 10  
 RL Offset 32.50  
 Sweep Time 5.0ms  
 Ref Lvl: 114.50DBUV

**Comments**  
 2390MHz, M-20MHz, 14 dBm

Cursor 1 2388.34: 60.54    Delta Freq. 20.44  
 Cursor 2 2408.78: 106.40    Delta Amplitude 45.86



**Band Edge Signal Field Strength**

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBμV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.000	47.7	V	54.0	-6.3	Avg	169	1.1	
2389.000	60.5	V	74.0	-13.5	Pk	169	1.1	

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

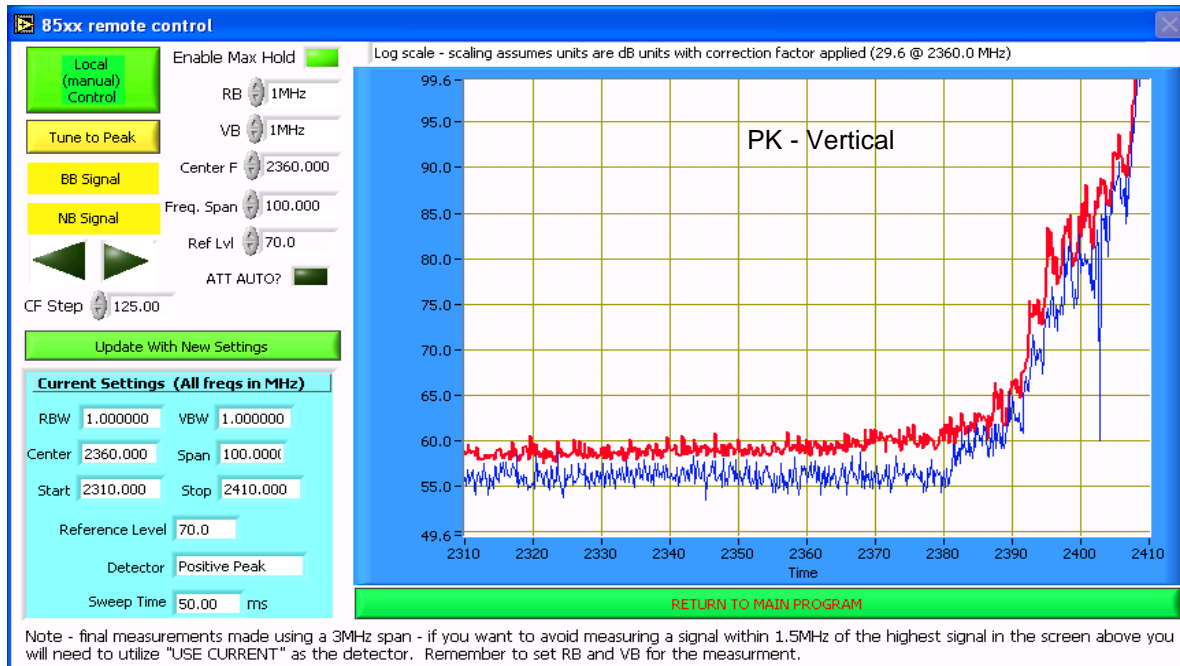
**Run #1b: Radiated Spurious Emissions, Channel 2 @ 2417 MHz**

**Fundamental Signal Field Strength:** Peak and average values measured in 1 MHz, and peak value measured in 100kHz

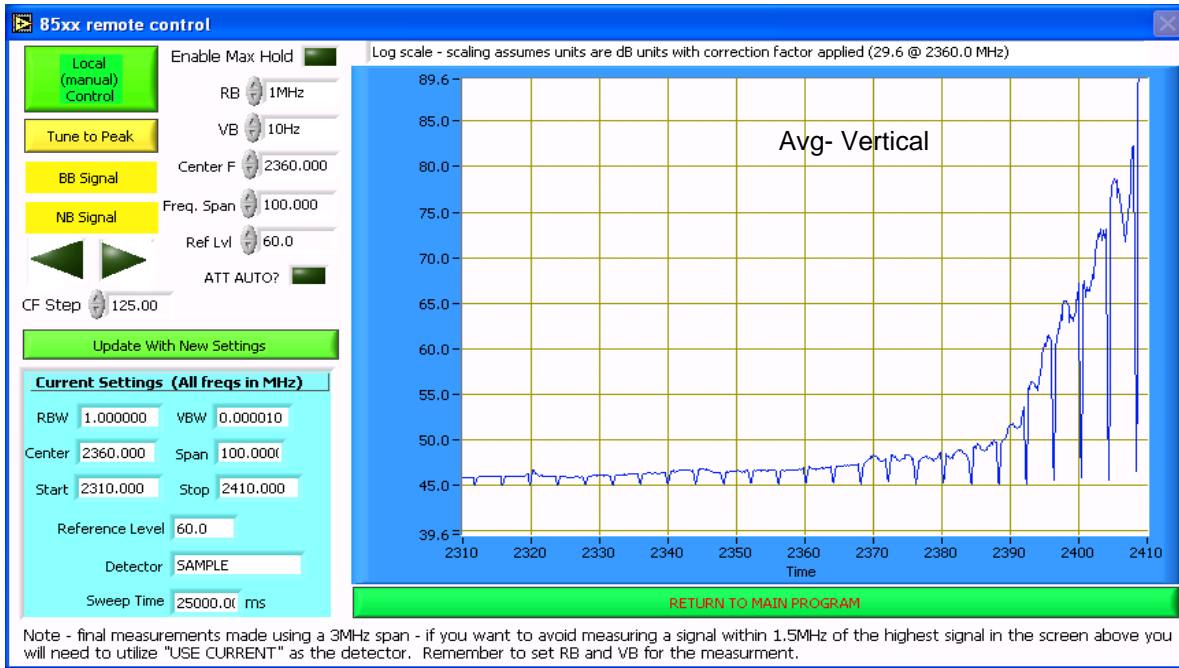
Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
2419.900	107.9	V	-	-	AVG	346	1.3	
2419.900	116.2	V	-	-	PK	346	1.3	
2420.070	97.0	H	-	-	AVG	234	1.0	
2420.070	105.4	H	-	-	PK	234	1.0	

**Band Edge Signal Radiated Field Strength at 2390 MHz**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
2389.670	51.8	V	54.0	-2.2	Avg	346	1.3	
2389.710	68.5	V	74.0	-5.5	PK	346	1.3	
2389.410	46.3	H	54.0	-7.7	Avg	234	1.0	
2389.960	60.6	H	74.0	-13.4	PK	234	1.0	



Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A



### Run #1c: Radiated Spurious Emissions, Channel 3 @ 2422 MHz

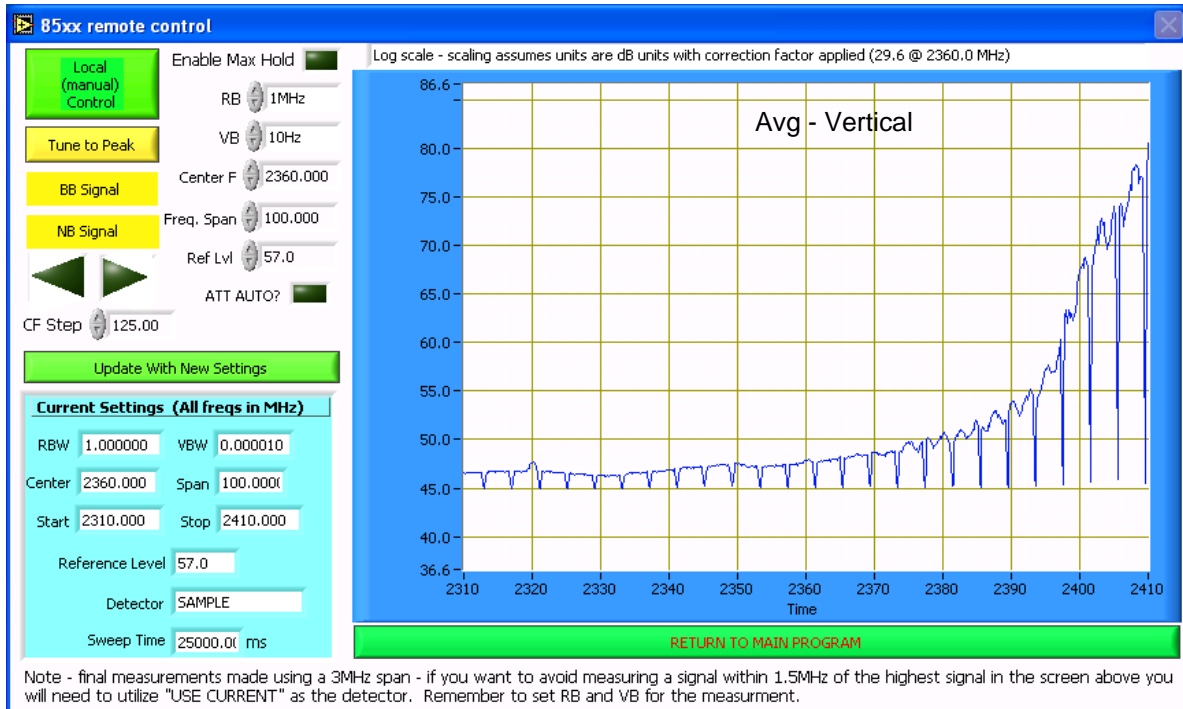
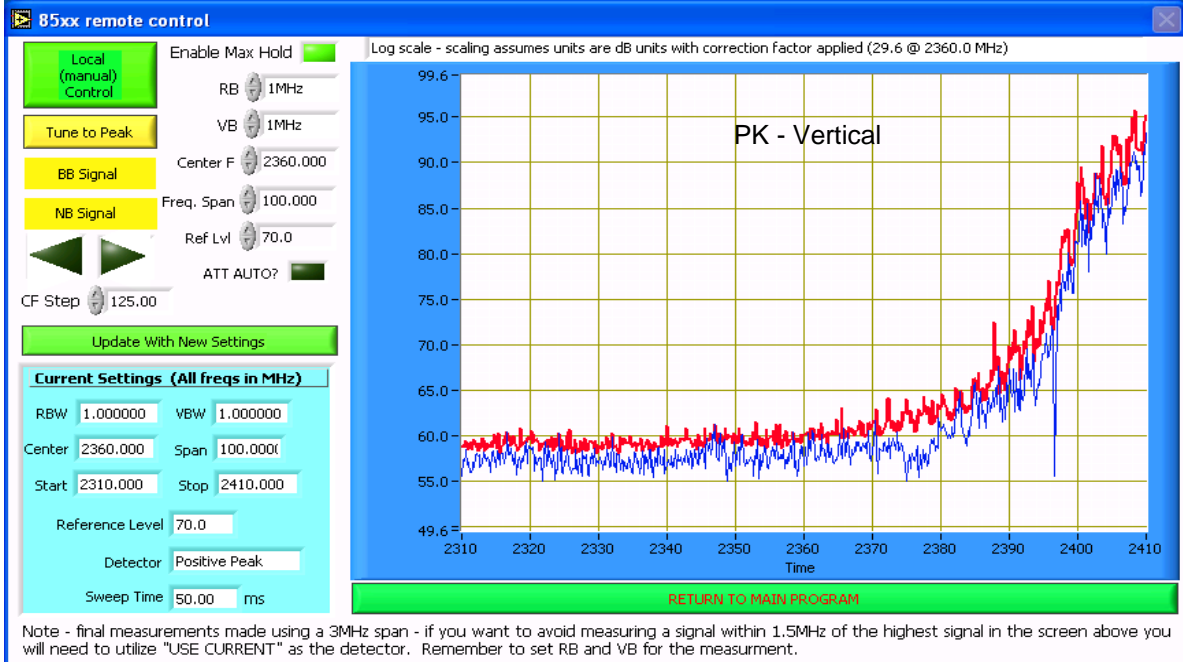
**Fundamental Signal Field Strength:** Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247	Detector	Azimuth	Height	Comments
MHz	dBμV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters
2425.230	110.7	V	-	-	AVG	347	1.3
2425.230	119.3	V	-	-	PK	347	1.3
2427.070	100.5	H	-	-	AVG	214	1.0
2427.070	109.1	H	-	-	PK	214	1.0

### Band Edge Signal Radiated Field Strength at 2390 MHz

Frequency	Level	Pol	15.209 / 15.247	Detector	Azimuth	Height	Comments
MHz	dBμV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters
2389.680	53.4	V	54.0	-0.6	Avg	347	1.3
2388.040	72.7	V	74.0	-1.3	PK	347	1.3
2389.980	50.1	V	54.0	-3.9	Avg	214	1.0
2388.970	66.5	V	74.0	-7.5	PK	214	1.0

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A



Client:	Broadcom Corporation	Job Number:	J72137
Model:	BCM94322HM8L (Dipole C2PC)	T-Log Number:	T72240_DTS
Contact:	Anna Liang	Account Manager:	Dean Eriksen
Standard:	FCC	Class:	N/A

Run # 2a: Radiated Spurious Emissions, Channel 10 @ 2457 MHz, Passing Power: 16 dBm

**Fundamental Signal Field Strength:** Peak and average values measured in 1 MHz, and peak value measured in 100kHz

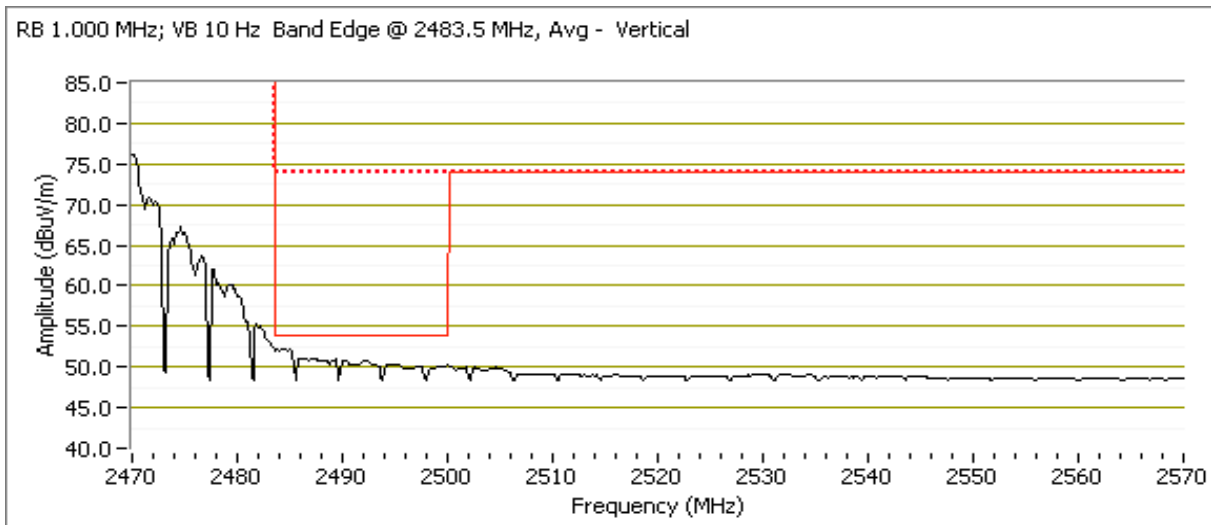
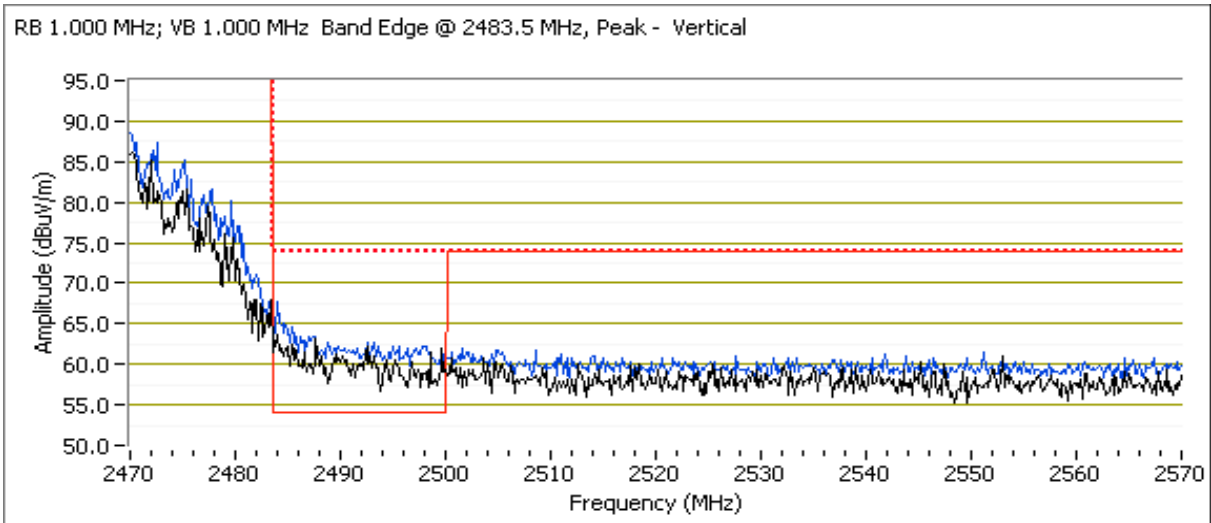
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2454.500	109.7	V	-	-	AVG	342	1.0	RB 1.000 MHz; VB: 10 Hz
2452.200	117.4	V	-	-	PK	342	1.0	RB 1.000 MHz; VB: 1.000 MHz
2460.900	100.7	H	-	-	AVG	129	1.0	RB 1.000 MHz; VB: 10 Hz
2455.000	108.5	H	-	-	PK	129	1.0	RB 1.000 MHz; VB: 1.000 MHz
2459.700	106.0	V	-	-	PK	290	1.0	RB 100 kHz; VB: 100 kHz
2453.500	99.7	H	-	-	PK	129	1.0	RB 100 kHz; VB: 100 kHz

**Band Edge Signal Radiated Field Strength at 2483.5 MHz**

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2484.480	53.8	V	54.0	-0.2	Avg	290	1.0	00 MHz; VB: 10 Hz
2484.520	69.5	V	74.0	-4.5	PK	290	1.0	MHz; VB: 1.000 MHz
2483.660	63.0	H	74.0	-11.0	Avg	129	1.0	MHz; VB: 1.000 MHz
2483.500	50.0	H	54.0	-4.0	PK	129	1.0	00 MHz; VB: 10 Hz

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

Run # 2a: Radiated Spurious Emissions, Channel 10 @ 2457 MHz, Passing Power: 16 dBm

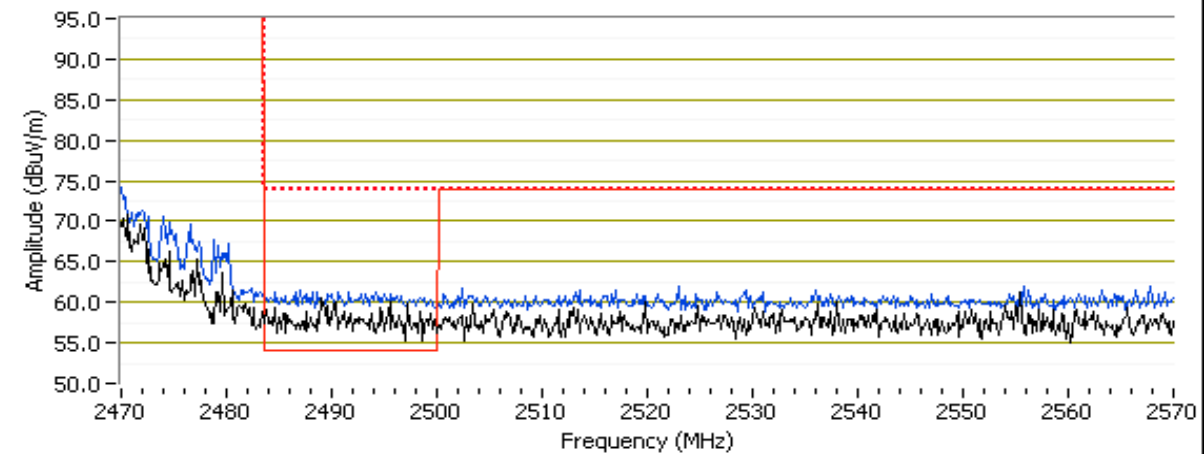




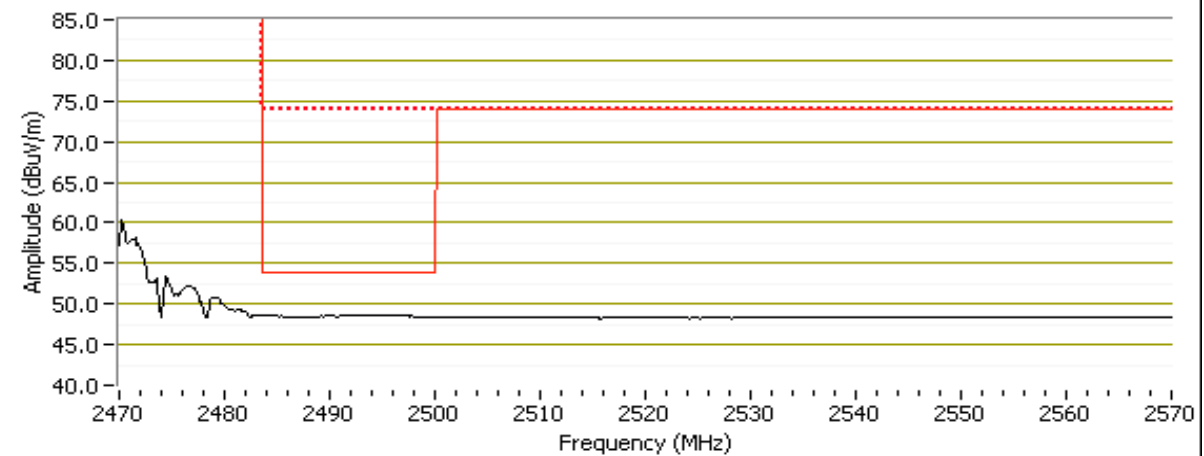
Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

Run # 2a: Radiated Spurious Emissions, Channel 10 @ 2457 MHz, Passing Power: 16 dBm

RB 1.000 MHz; VB 1.000 MHz Band Edge @ 2483.5 MHz, Peak - Horizontal



RB 1.000 MHz; VB 10 Hz Band Edge @ 2483.5 MHz, Peak - Horizontal

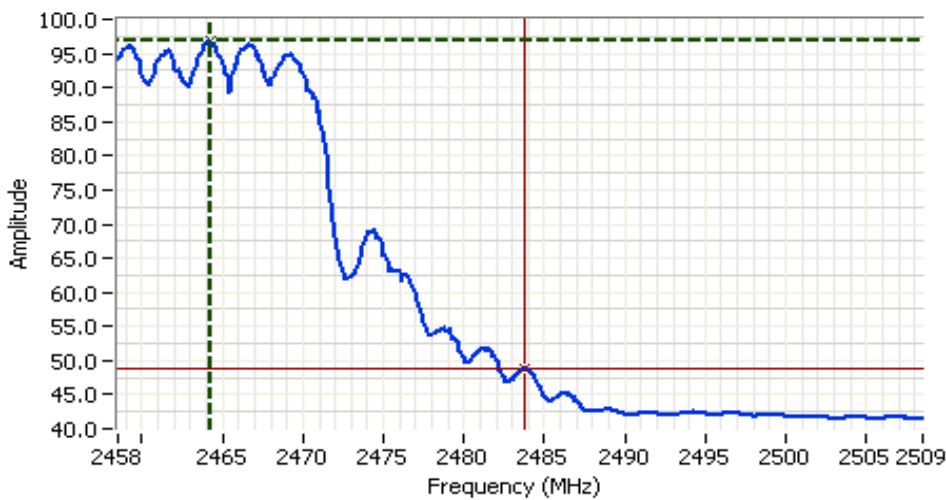


Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

**Run # 2b: Radiated Spurious Emissions, Channel 11 @ 2462 MHz**

Date of Test: 7/23/2008  
 Test Engineer: Joseph Cadigal  
 Test Location: Fremont Chamber #3  
 Config. Used: -  
 Config Change: -  
 EUT Voltage: -

**Band Edge Signal Field Strength**

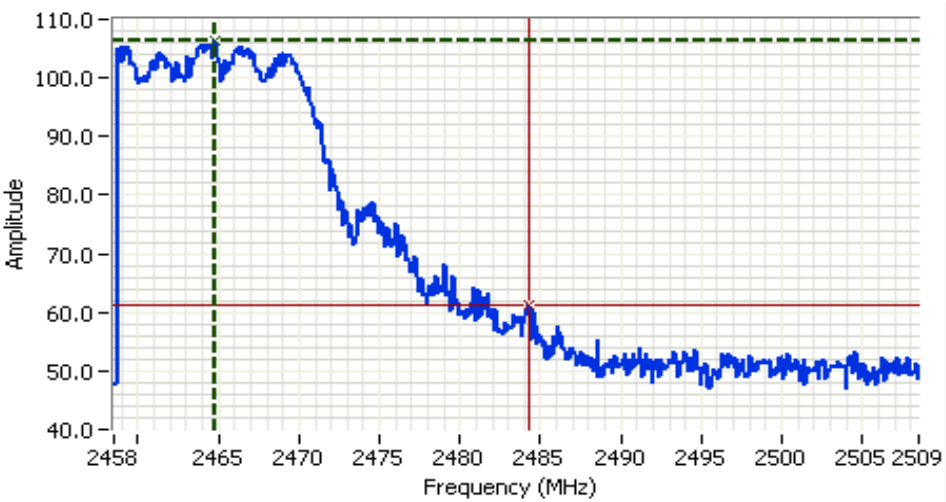


**Analyzer Settings**  
 Rohde&Schwarz,ESI 7  
 CF: 2483.50 MHz  
 SPAN:50.00 MHz  
 RB 1.000 MHz  
 VB 10 Hz  
 Detector AutoPeak  
 Att 10  
 RL Offset 32.50  
 Sweep Time 13.0s  
 Ref Lvl:114.50DBUV

**Comments**  
 2462MHz, M-20MHz, 14 dBm

Cursor 1	2464.21	96.76	
Cursor 2	2483.75	48.78	

Delta Freq. 19.54  
 Delta Amplitude 47.98



**Analyzer Settings**  
 Rohde&Schwarz,ESI 7  
 CF: 2483.50 MHz  
 SPAN:50.00 MHz  
 RB 1.000 MHz  
 VB 1.000 MHz  
 Detector AutoPeak  
 Att 10  
 RL Offset 32.50  
 Sweep Time 5.0ms  
 Ref Lvl:114.50DBUV

**Comments**  
 2462MHz, M-20MHz, 14 dBm

Cursor 1	2464.81	106.38	
Cursor 2	2484.25	61.37	

Delta Freq. 19.44  
 Delta Amplitude 45.01



Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

**Run #2b: High Channel @ 2462 MHz**  
**Band Edge Signal Field Strength**

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2483.750	48.8	V	54.0	-5.2	Avg	173	1.1	
2484.250	61.4	V	74.0	-12.6	Pk	173	1.1	

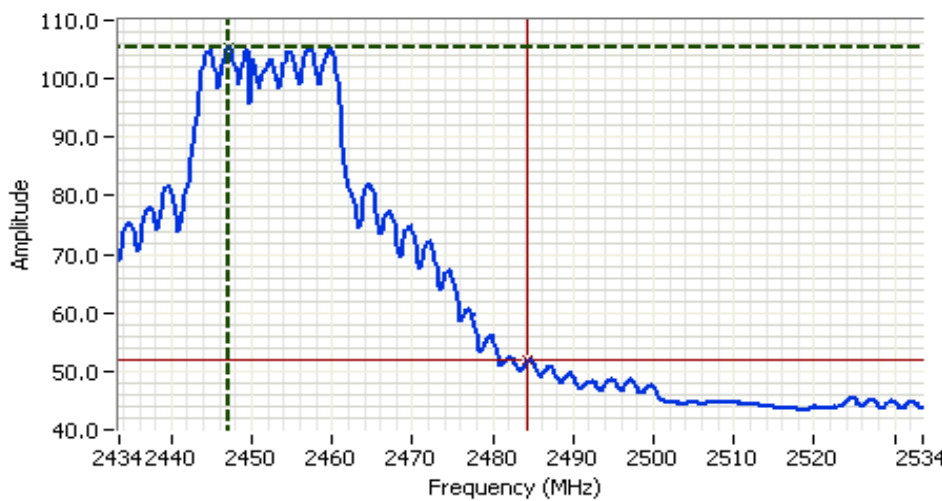
**Run # 3a: Radiated Spurious Emissions, Channel 9 @ 2452 MHz, Power: 19 dBm**

**Fundamental Signal Field Strength:** Peak and average values measured in 1 MHz, and peak value measured in 100kHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2447.127	105.5	V	-	-	AVG	231	1.0	RB 1.000 MHz; VB: 10 Hz
2454.340	117.1	V	-	-	PK	231	1.0	RB 1.000 MHz; VB: 1.000 MHz
2458.750	94.2	H	-	-	AVG	181	1.0	RB 1.000 MHz; VB: 10 Hz
2446.526	104.8	H	-	-	PK	181	1.0	RB 1.000 MHz; VB: 1.000 MHz

**Band Edge Signal Radiated Field Strength at 2483.5 MHz**

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2484.400	51.9	V	54.0	-2.1	Avg	231	1.0	RB 1.000 MHz; VB: 10 Hz
2485.200	71.5	V	74.0	-2.5	PK	231	1.0	RB 1.000 MHz; VB: 1.000 MHz
2483.660	44.1	H	54.0	-9.9	Avg	181	1.0	RB 1.000 MHz; VB: 1.000 MHz
2483.500	60.3	H	74.0	-13.7	PK	181	1.0	RB 1.000 MHz; VB: 10 Hz



**Analyzer Settings**  
 Rohde&Schwarz, ESI 7  
 CF: 2483.500 MHz  
 SPAN: 100.000 MHz  
 RB 1.000 MHz  
 VB 10 Hz  
 Detector POS  
 Att 10  
 RL Offset 32.20  
 Sweep Time 25.0s  
 Ref Lvl: 111.20DBUV

**Comments**  
 BE @ 2452MHz  
 802.11n 20MHz  
 Vertical - Avg

Cursor 1	2447.1272	105.51		Delta Freq.	37.275
Cursor 2	2484.4019	51.92		Delta Amplitude	53.59

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A



**Analyzer Settings**  
 Rohde&Schwarz, ESI 7  
 CF: 2483.500 MHz  
 SPAN: 100.000 MHz  
 RB 1.000 MHz  
 VB 1.000 MHz  
 Detector POS  
 Att 20  
 RL Offset 32.20  
 Sweep Time 5.0ms  
 Ref Lvl: 118.20DBUV

**Comments**  
 BE @ 2452MHz  
 802.11n 20MHz  
 Vertical - PK

Cursor 1	2454.3418	117.00	Delta Freq.	30.862
Cursor 2	2485.2034	71.46	Delta Amplitude	45.63



Client:	Broadcom Corporation	Job Number:	J72137
Model:	BCM94322HM8L (Dipole C2PC)	T-Log Number:	T72240_DTS
		Account Manager:	Dean Eriksen
Contact:	Anna Liang		
Standard:	FCC	Class:	N/A

## RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: See Run  
 Test Engineer: See Run  
 Test Location: See Run

Config. Used: 1  
 Config Change: None  
 EUT Voltage: Powered From Host System

### General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

**Ambient Conditions:**                      Temperature:            21.8 °C  
    Rel. Humidity:            43 %

### Summary of Results - Device Operating in the 2400-2483.5 MHz Band

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11n 40MHz	3 @ 2422 MHz		-	Restricted Band Edge (2390 MHz)	FCC Part 15.209 / 15.247(c)	53.4dB $\mu$ V/m @ 2389.4MHz (-0.6dB)
1b	802.11n 40MHz	4 @ 2427 MHz		-	Restricted Band Edge (2390 MHz)	FCC Part 15.209 / 15.247(c)	53.1dB $\mu$ V/m @ 2389.3MHz (-0.9dB)
1c	802.11n 40MHz	7 @ 2442 MHz		-	Restricted Band Edge (2483.5 MHz)	FCC Part 15.209 / 15.247(c)	51.4dB $\mu$ V/m @ 2484.6MHz (-2.6dB)
1d	802.11n 40MHz	8 @ 2447 MHz		-	Restricted Band Edge (2483.5 MHz)	FCC Part 15.209 / 15.247(c)	53.2dB $\mu$ V/m @ 2484.4MHz (-0.8dB)
1e	802.11n 40MHz	9 @ 2452 MHz		-	Restricted Band Edge (2483.5 MHz)	FCC Part 15.209 / 15.247(c)	53.5dB $\mu$ V/m @ 2484.4MHz (-0.5dB)

### Modifications Made During Testing

No modifications were made to the EUT during testing

### Deviations From The Standard

No deviations were made from the requirements of the standard.

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

Run #1: Radiated Spurious Emissions, 30 - 26,00 MHz. Operating Mode: 802.11n 40MHz

Run #1a: Low Channel @ 2422 MHz

Date of Test: 7/23/2008

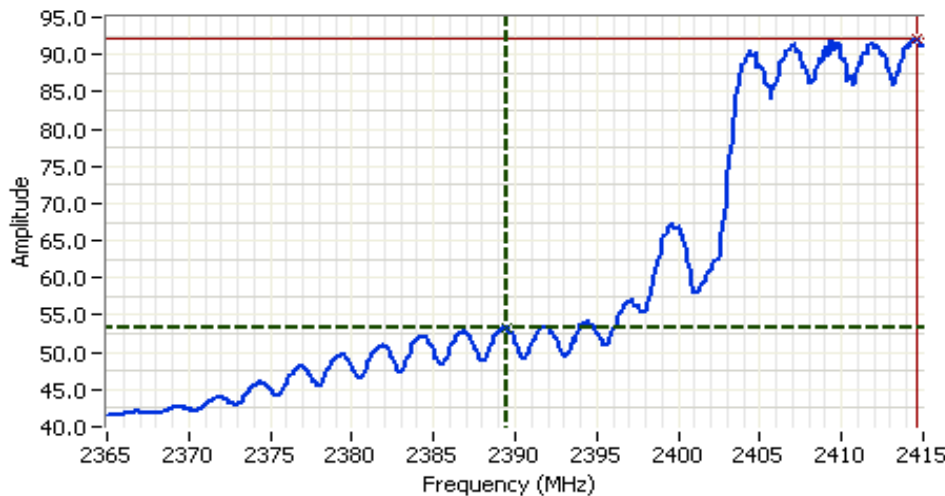
Config. Used: -

Test Engineer: Joseph Cadigal

Config Change: -

Test Location: Fremont Chamber #3

EUT Voltage: -

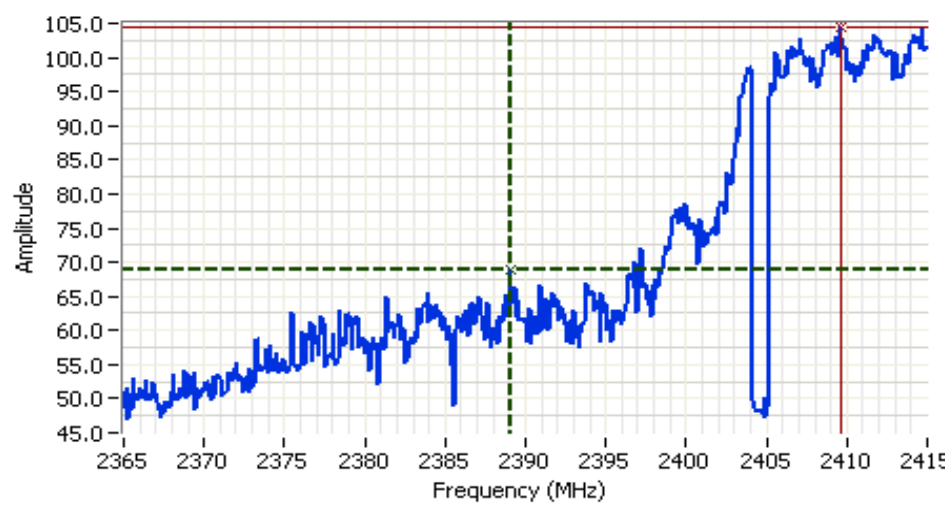


**Analyzer Settings**  
 Rohde&Schwarz, ESI 7  
 CF: 2390.00 MHz  
 SPAN: 50.00 MHz  
 RB 1.000 MHz  
 VB 10 Hz  
 Detector AutoPeak  
 Att 10  
 RL Offset 32.50  
 Sweep Time 13.0s  
 Ref Lvl: 114.50DBUV

**Comments**  
 2412MHz, M-40MHz, 13 dBm

Cursor 1	2389.44	53.35	
Cursor 2	2414.59	92.18	

Delta Freq. 25.15  
 Delta Amplitude 38.83



**Analyzer Settings**  
 Rohde&Schwarz, ESI 7  
 CF: 2390.00 MHz  
 SPAN: 50.00 MHz  
 RB 1.000 MHz  
 VB 1.000 MHz  
 Detector AutoPeak  
 Att 10  
 RL Offset 32.50  
 Sweep Time 5.0ms  
 Ref Lvl: 114.50DBUV

**Comments**  
 2412MHz, M-40MHz, 13 dBm

Cursor 1	2389.04	68.83	
Cursor 2	2409.58	104.45	

Delta Freq. 20.54  
 Delta Amplitude 35.62



Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

**Run #1a: Low Channel @ 2422 MHz**

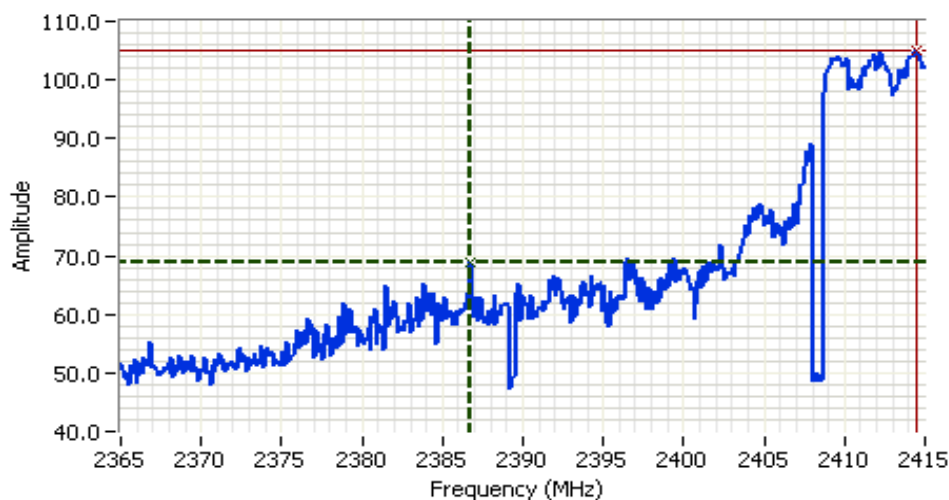
**Band Edge Signal Field Strength**

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.449	53.4	V	54.0	-0.6	Avg	95	1.1	
2389.040	68.8	V	74.0	-5.2	Pk	95	1.1	

**Run #1b: Low Channel @ 2427MHz**

Date of Test: 7/23/2008  
 Test Engineer: Joseph Cadigal  
 Test Location: Fremont Chamber #3

Config. Used: -  
 Config Change: -  
 EUT Voltage: -



**Analyzer Settings**

Rohde&Schwarz, ESI 7  
 CF: 2390.00 MHz  
 SPAN: 50.00 MHz  
 RB 1.000 MHz  
 VB 1.000 MHz  
 Detector AutoPeak  
 Att 10  
 RL Offset 32.50  
 Sweep Time 5.0ms  
 Ref Lvl: 114.50DBUV

**Comments**

2427MHz, M-40MHz, 14 dBm

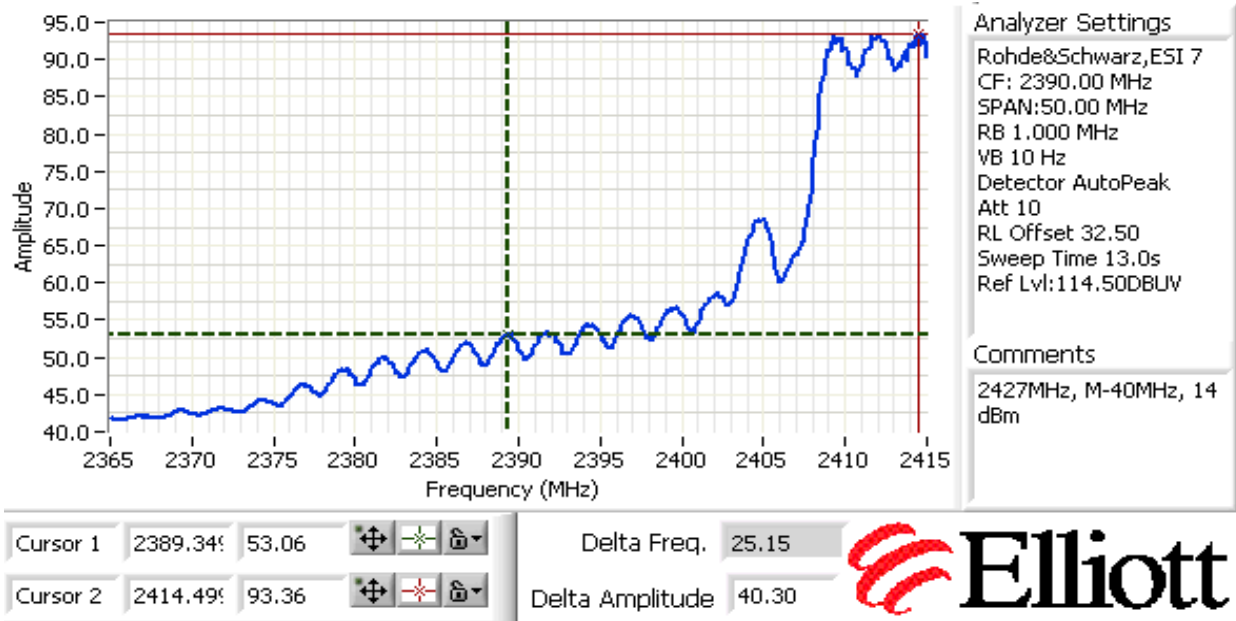
Cursor 1	2386.74	69.01	
Cursor 2	2414.49	104.91	

Delta Freq. 27.76  
 Delta Amplitude 35.90



Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

Run #1b: Low Channel @ 2427MHz



Band Edge Signal Field Strength

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBμV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2389.349	53.1	V	54.0	-0.9	Avg	100	1.0	
2386.740	69.0	V	74.0	-5.0	Pk	100	1.0	

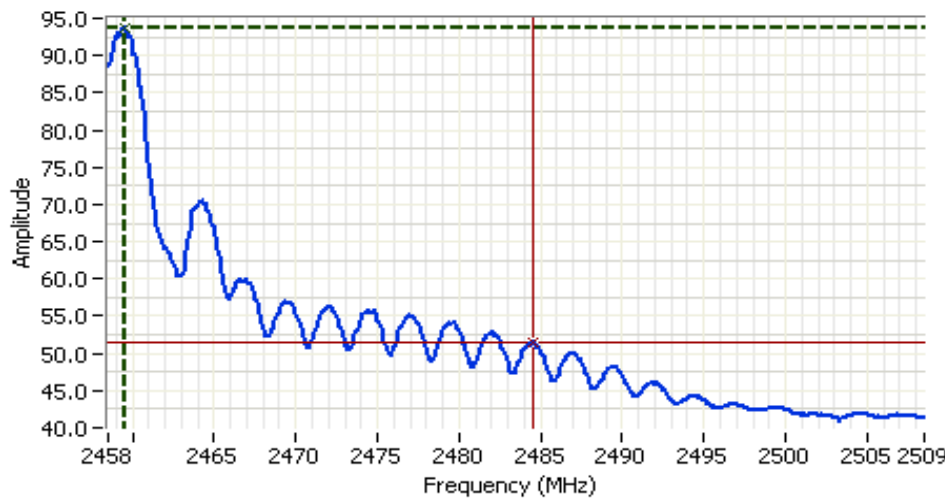


Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

**Run #1c: High Channel @ 2442MHz**

Date of Test: 7/23/2008  
 Test Engineer: Joseph Cadigal  
 Test Location: Fremont Chamber #3

Config. Used: -  
 Config Change: -  
 EUT Voltage: -



**Analyzer Settings**  
 Rohde&Schwarz, ESI 7  
 CF: 2483.50 MHz  
 SPAN: 50.00 MHz  
 RB 1.000 MHz  
 VB 10 Hz  
 Detector AutoPeak  
 Att 10  
 RL Offset 32.50  
 Sweep Time 13.0s  
 Ref Lvl: 114.50DBUV

**Comments**  
 2442MHz, M-40MHz,  
 14dBm

Cursor 1	2459.50	93.65	
Cursor 2	2484.55	51.42	

Delta Freq. 25.05  
 Delta Amplitude 42.23



Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

Run #1c: High Channel @ 2442MHz



**Analyzer Settings**

Rohde&Schwarz, ESI 7  
 CF: 2483.50 MHz  
 SPAN: 50.00 MHz  
 RB 1.000 MHz  
 VB 1.000 MHz  
 Detector AutoPeak  
 Att 10  
 RL Offset 32.50  
 Sweep Time 5.0ms  
 Ref Lvl: 114.50dBμV

**Comments**

2442MHz, M-40MHz,  
14dBm

Cursor 1	2459.10:	104.55		Delta Freq.	27.86
Cursor 2	2486.95:	66.98		Delta Amplitude	37.57



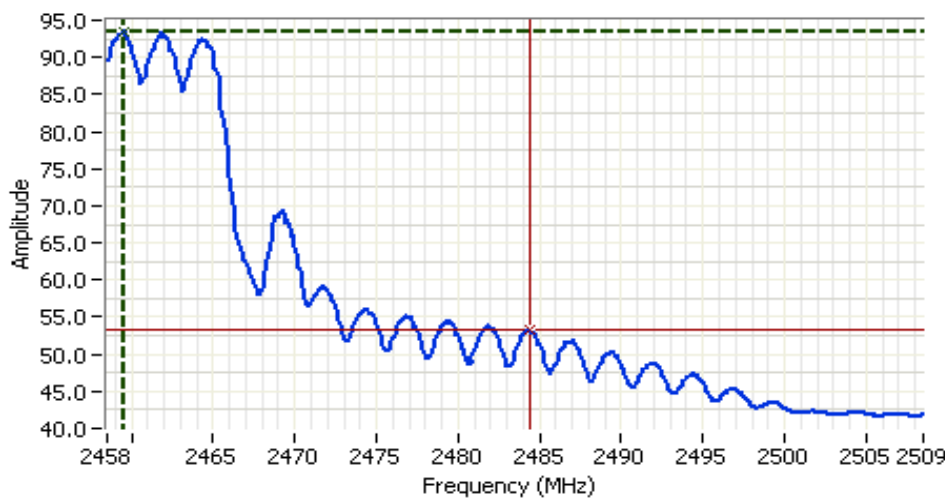
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBμV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2484.552	51.4	V	54.0	-2.6	Avg	360	1.3	
2486.950	67.0	V	74.0	-7.0	Pk	360	1.3	

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

### Run #1d: Channel 8 @ 2447 MHz

Date of Test: 7/23/2008  
 Test Engineer: Joseph Cadigal  
 Test Location: Fremont Chamber #3

Config. Used: -  
 Config Change: -  
 EUT Voltage: -



**Analyzer Settings**  
 Rohde&Schwarz, ESI 7  
 CF: 2483.50 MHz  
 SPAN: 50.00 MHz  
 RB 1.000 MHz  
 VB 10 Hz  
 Detector AutoPeak  
 Att 10  
 RL Offset 32.50  
 Sweep Time 13.0s  
 Ref Lvl: 114.50DBUV

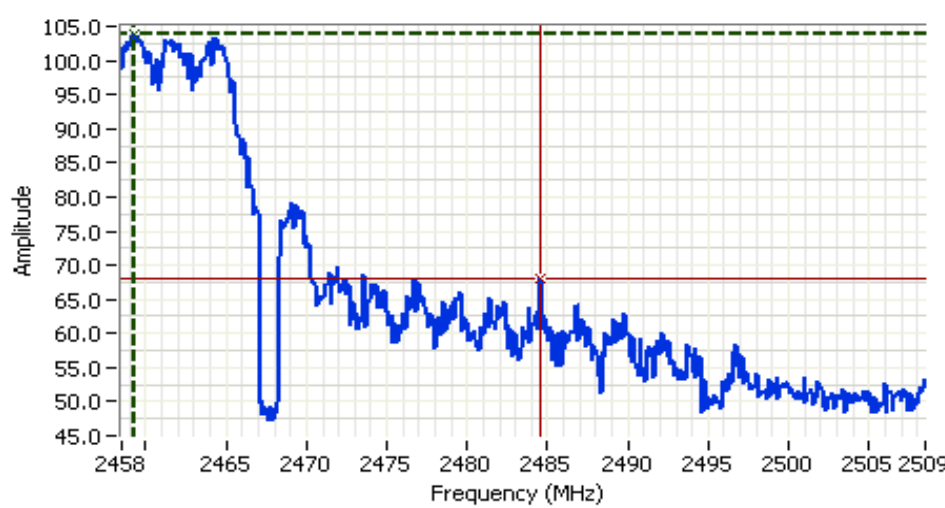
**Comments**  
 2447MHz, M-40MHz, 12 .5dBm

Cursor 1 2459.50: 93.51

Cursor 2 2484.35: 53.23

Delta Freq. 24.85

Delta Amplitude 40.28



**Analyzer Settings**  
 Rohde&Schwarz, ESI 7  
 CF: 2483.50 MHz  
 SPAN: 50.00 MHz  
 RB 1.000 MHz  
 VB 1.000 MHz  
 Detector AutoPeak  
 Att 10  
 RL Offset 32.50  
 Sweep Time 5.0ms  
 Ref Lvl: 114.50DBUV

**Comments**  
 2447MHz, M-40MHz, 12 .5dBm

Cursor 1 2459.30: 103.97

Cursor 2 2484.55: 68.11

Delta Freq. 25.25

Delta Amplitude 35.85



Client:	Broadcom Corporation	Job Number:	J72137
Model:	BCM94322HM8L (Dipole C2PC)	T-Log Number:	T72240_DTS
		Account Manager:	Dean Eriksen
Contact:	Anna Liang		
Standard:	FCC	Class:	N/A

**Band Edge Signal Field Strength**

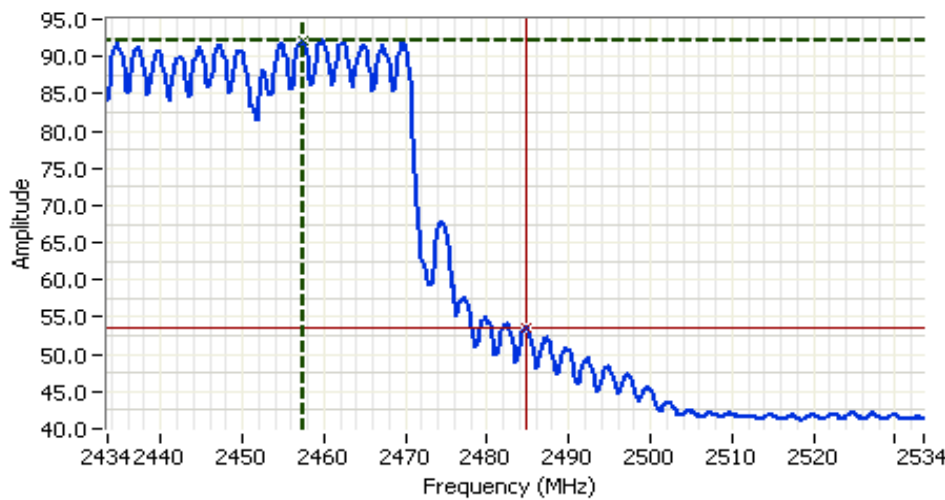
Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2484.352	53.2	V	54.0	-0.8	Avg	37	1.2	
2484.552	68.1	V	74.0	-5.9	Pk	37	1.2	

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

### Run #1e: Channel 9 @ 2452 MHz

Date of Test: 7/28/2008  
 Test Engineer: Rafael Varelas  
 Test Location: FT Chamber #4

Config. Used: -  
 Config Change: -  
 EUT Voltage: -

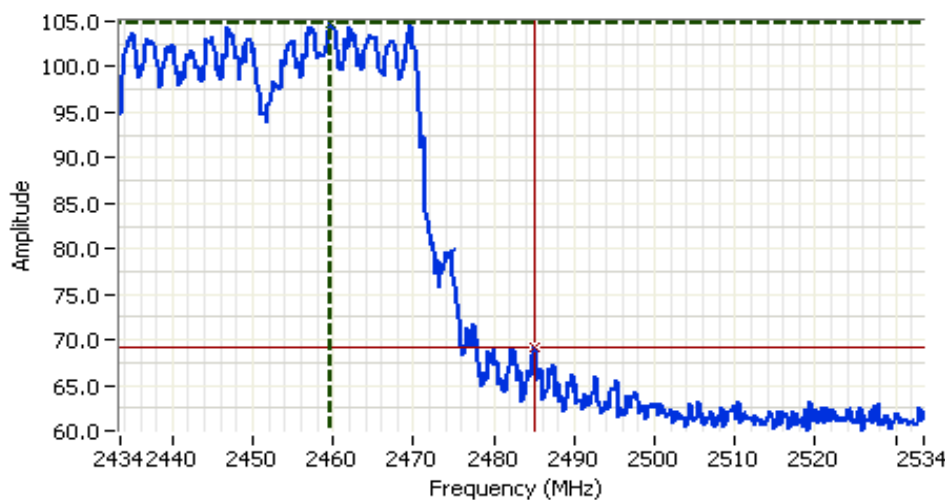


**Analyzer Settings**  
 Rohde&Schwarz,ESI 7  
 CF: 2483.500 MHz  
 SPAN:100.000 MHz  
 RB 1.000 MHz  
 VB 10 Hz  
 Detector POS  
 Att 10  
 RL Offset 32.20  
 Sweep Time 25.0s  
 Ref Lvl:103.20DBUW

**Comments**  
 BE @ 2452MHz  
 802.11n 40MHz  
 Vertical - Avg

Cursor 1 2457.3477 92.24  
 Cursor 2 2484.8025 53.48

Delta Freq. 27.455  
 Delta Amplitude 38.76



**Analyzer Settings**  
 Rohde&Schwarz,ESI 7  
 CF: 2483.500 MHz  
 SPAN:100.000 MHz  
 RB 1.000 MHz  
 VB 1.000 MHz  
 Detector POS  
 Att 20  
 RL Offset 32.20  
 Sweep Time 5.0ms  
 Ref Lvl:106.20DBUW

**Comments**  
 BE @ 2452MHz  
 802.11n 40MHz  
 Vertical - PK

Cursor 1 2459.7524 104.73  
 Cursor 2 2485.0029 69.17

Delta Freq. 25.250  
 Delta Amplitude 35.56



Client:	Broadcom Corporation	Job Number:	J72137
Model:	BCM94322HM8L (Dipole C2PC)	T-Log Number:	T72240_DTS
		Account Manager:	Dean Eriksen
Contact:	Anna Liang		
Standard:	FCC	Class:	N/A

**Band Edge Signal Field Strength**

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2484.352	53.5	V	54.0	-0.5	Avg	37	1.2	
2484.552	69.2	V	74.0	-4.8	Pk	37	1.2	

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

## RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 7/12/2008

Config. Used: 1

Test Engineer: rvarelas

Config Change: None

Test Location: Fremont Chamber #4

EUT Voltage: Powered From Host System

### General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

### Ambient Conditions:

Temperature: 21.8 °C

Rel. Humidity: 43 %

### Summary of Results - Device Operating in the 2400-2483.5 MHz Band

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11b	1	-	-	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247 (c)	53.8dBµV/m @ 4824.09MHz (-0.2dB)
1b	802.11b	6	-	-	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247 (c)	51.9dBµV/m @ 4874.0MHz (-2.1dB)
1c	802.11b	11	-	-	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247 (c)	46.5dBµV/m @ 1500.2MHz (-7.5dB)

### Modifications Made During Testing

No modifications were made to the EUT during testing

### Deviations From The Standard

No deviations were made from the requirements of the standard.

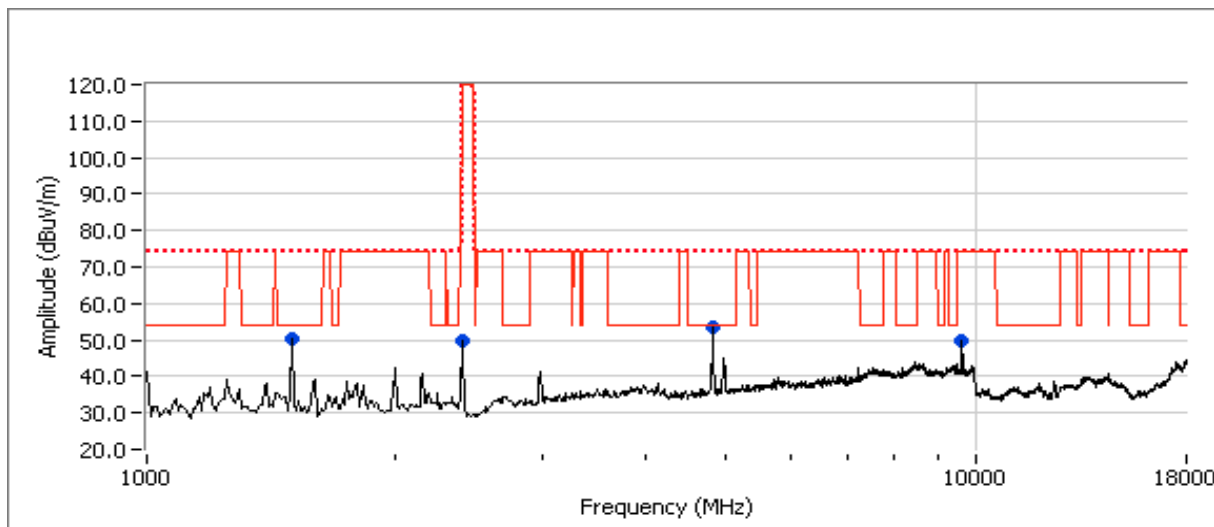
Note: Preliminary testing showed no emissions below 1 GHz and above 18 GHz related to the radio.

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

Run #1: Radiated Spurious Emissions, 1000 - 26,000 MHz. Operating Mode: 802.11b

Run #1a: Low Channel @ 2412 MHz

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
2412.000	49.6	V	-	-	Peak	198	1.6	Fundamental
4823.960	53.8	H	54.0	-0.2	AVG	89	1.1	
1500.190	47.7	V	54.0	-6.3	AVG	351	1.3	
4823.990	55.2	H	74.0	-18.8	PK	89	1.1	
1500.360	54.8	V	74.0	-19.2	PK	351	1.3	
9650.000	49.9	V	74.0	-24.1	Peak	163	1.0	

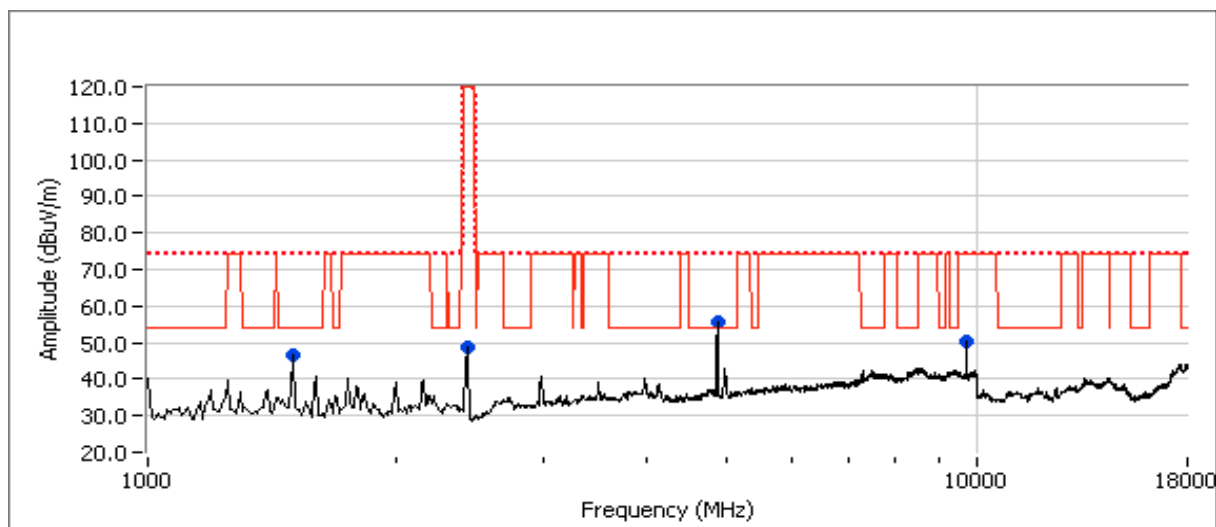




Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

**Run #1b: Center Channel @ 2437 MHz**

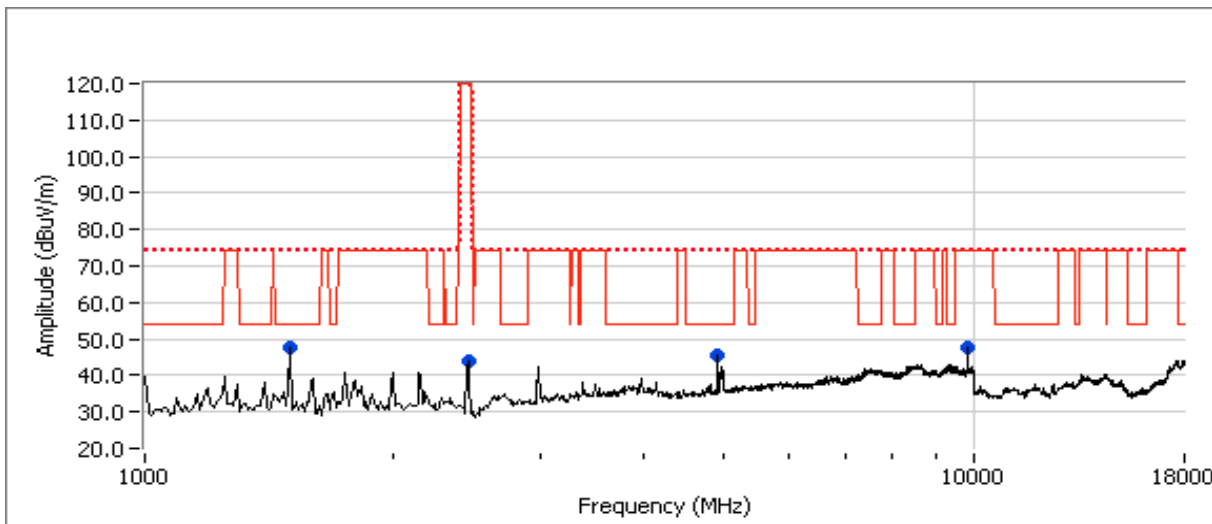
Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
2437.000	48.5	V	-	-	Peak	96	1.6	
4874.030	51.9	H	54.0	-2.1	AVG	109	1.0	
1500.190	47.2	V	54.0	-6.8	AVG	8	1.3	
4874.020	54.3	H	74.0	-19.7	PK	109	1.0	
1499.950	54.2	V	74.0	-19.8	PK	8	1.3	
9749.170	50.4	V	74.0	-23.6	Peak	151	1.6	



Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

### Run #1c: High Channel @ 2462 MHz

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
2462.000	44.0	V	-	-	Peak	144	1.6	Fundamental
1500.180	46.5	V	54.0	-7.5	AVG	10	1.3	
4924.010	45.0	H	54.0	-9.0	AVG	97	1.0	
1499.970	52.6	V	74.0	-21.4	PK	10	1.3	
4924.060	49.6	H	74.0	-24.4	PK	97	1.0	
9848.330	47.4	74.0	-26.6	Peak	90	1.7		



Client:	Broadcom Corporation	Job Number:	J72137
Model:	BCM94322HM8L (Dipole C2PC)	T-Log Number:	T72240_DTS
		Account Manager:	Dean Eriksen
Contact:	Anna Liang		
Standard:	FCC	Class:	N/A

## RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 7/14/2008

Config. Used: 1

Test Engineer: rvarelas

Config Change: None

Test Location: Fremont Chamber #4

EUT Voltage: Powered From Host System

### General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

### Ambient Conditions:

Temperature: 21.3 °C

Rel. Humidity: 41 %

### Summary of Results - Device Operating in the 2400-2483.5 MHz Band

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1b	802.11g	6	-	-	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	42.5dBuV/m @ 1500.6MHz (-11.5dB)
Remeasured at 19dBm on 7/28/08							
2	802.11g	1	-	-	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	43.3dBuV/m @ 1500.7MHz (-10.7dB)
3	802.11g	11	-	-	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	42.3dBuV/m @ 1500.7MHz (-11.7dB)

### Modifications Made During Testing

No modifications were made to the EUT during testing

### Deviations From The Standard

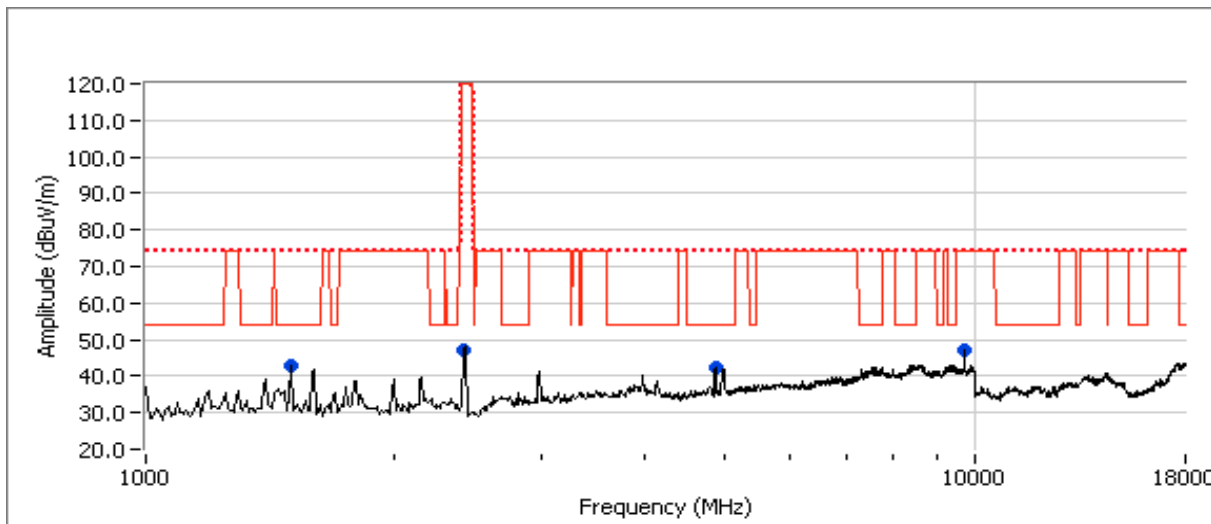
No deviations were made from the requirements of the standard.

Note: Preliminary testing showed no emissions below 1 GHz and above 18 GHz related to the radio.

Client:	Broadcom Corporation	Job Number:	J72137
Model:	BCM94322HM8L (Dipole C2PC)	T-Log Number:	T72240_DTS
Contact:	Anna Liang	Account Manager:	Dean Eriksen
Standard:	FCC	Class:	N/A

Run #1: Radiated Spurious Emissions, 30 - 26,000 MHz. Operating Mode: 802.11g  
 Run #1b: Center Channel @ 2437 MHz

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
2437.060	47.3	V	-	-	Peak	330	1.3	Fundamental
1500.610	42.5	V	54.0	-11.5	AVG	181	1.3	
4874.000	36.5	H	54.0	-17.5	AVG	89	1.3	
4868.500	52.4	H	74.0	-21.6	PK	89	1.3	
1501.130	52.2	V	74.0	-21.8	PK	181	1.3	
9743.330	46.9	V	74.0	-27.1	Peak	53	1.3	



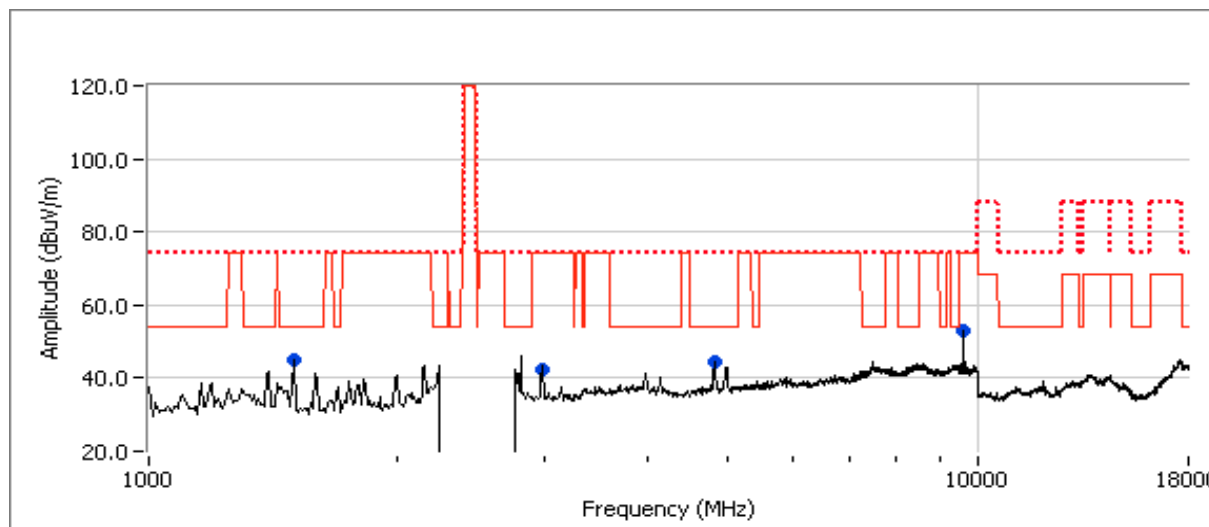
Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

**Run #2: Radiated Spurious Emissions, 30 - 26,000 MHz. Operating Mode: 802.11g**

Date of Test: 7/28/2008      Config. Used: -  
 Test Engineer: Rafael Varelas      Config Change: -  
 Test Location: Fremont Chamber #5      EUT Voltage: -

**Low Channel @ 2412 MHz**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
1500.670	43.3	V	54.0	-10.7	AVG	181	1.3	RB 1.000 MHz; VB: 10 Hz
4823.860	41.2	H	54.0	-12.8	AVG	280	1.0	RB 1.000 MHz; VB: 10 Hz
4823.540	57.9	H	74.0	-16.1	PK	280	1.0	RB 1.000 MHz; VB: 1.000 MHz
1500.690	53.2	V	74.0	-20.8	PK	181	1.3	RB 1.000 MHz; VB: 1.000 MHz
9644.170	52.8	H	74.0	-21.2	Peak	290	1.3	
2980.000	42.6	V	74.0	-31.4	Peak	170	1.0	



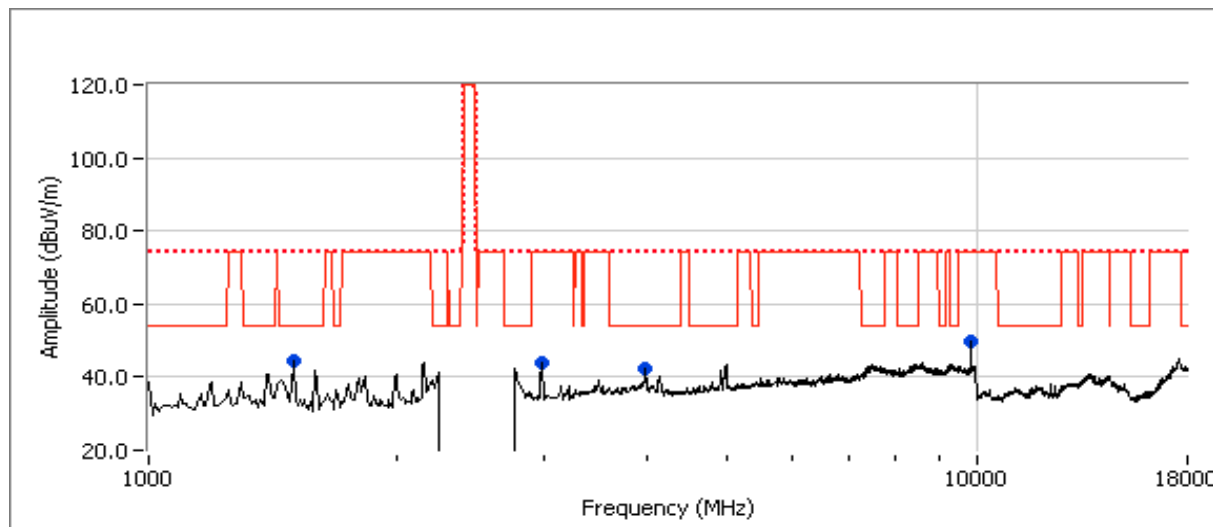
Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

**Run #3: Radiated Spurious Emissions, 30 - 26,000 MHz. Operating Mode: 802.11g**

Date of Test: 7/28/2008                      Config. Used: -  
 Test Engineer: Rafael Varelas                Config Change: -  
 Test Location: Fremont Chamber #5           EUT Voltage: -

**High Channel @ 2462 MHz**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector PK/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
1500.680	42.3	V	54.0	-11.7	AVG	13	1.0	RB 1.000 MHz; VB: 10 Hz
3998.890	34.9	V	54.0	-19.1	AVG	151	1.0	RB 1.000 MHz; VB: 10 Hz
1500.580	54.3	V	74.0	-19.7	PK	13	1.0	RB 1.000 MHz; VB: 1.000 MHz
<i>9848.330</i>	49.9	H	74.0	-24.1	Peak	292	1.6	
4000.860	46.5	V	74.0	-27.5	PK	151	1.0	RB 1.000 MHz; VB: 1.000 MHz
<i>2980.000</i>	43.9	V	74.0	-30.1	Peak	163	1.0	



Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

**RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions**

**Test Specific Details**

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 7/23/2008 17:30 PM  
 Test Engineer: Ben Jing  
 Test Location: Fremont Chamber #4

Config. Used: 1  
 Config Change: None  
 EUT Voltage: Powered From Host System

**General Test Configuration**

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

**Ambient Conditions:** Temperature: 21.3 °C  
 Rel. Humidity: 41 %

**Summary of Results - Device Operating in the 2400-2483.5 MHz Band**

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11n 20MHz	1 2412 MHz		-	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	Pk 44.6 dBuV/m @ 1520.0 MHz
1b	802.11n 20MHz	6 2437 MHz		-	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	Pk 46.2 dBuV/m @ 4880.0 MHz
1c	802.11n 20MHz	11 2462 MHz		-	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	Pk 44.8 dBuV/m @ 1510.0 MHz

**Modifications Made During Testing**

No modifications were made to the EUT during testing

**Deviations From The Standard**

No deviations were made from the requirements of the standard.

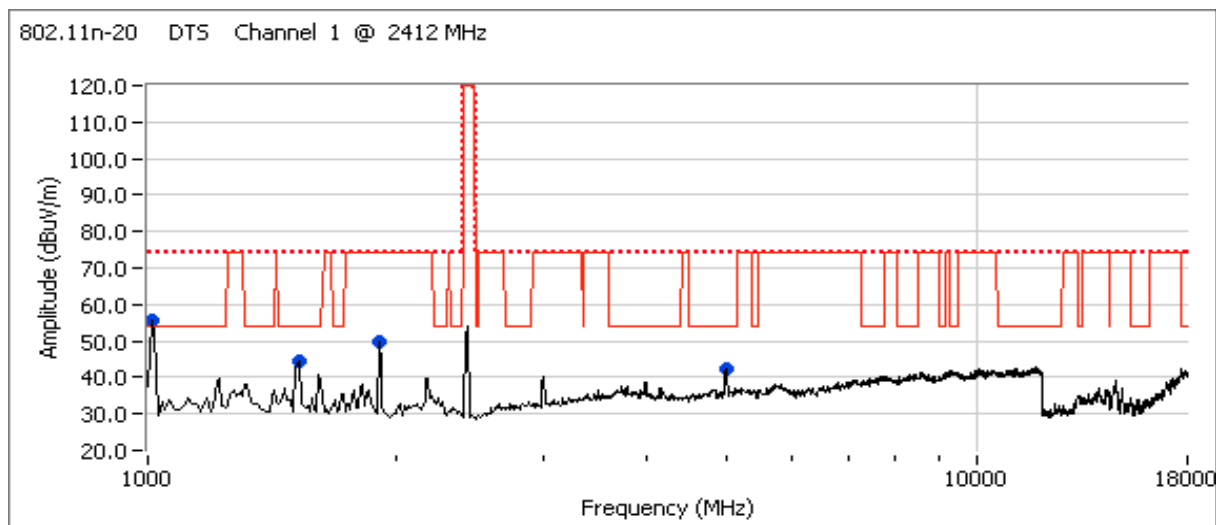
Note: Preliminary testing showed no emissions below 1 GHz and above 18 GHz related to the radio.

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

Run #1: Radiated Spurious Emissions, 30 - 26,000 MHz. Operating Mode: 802.11n 20MHz

Run #1a: Low Channel @ 2412 MHz

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
1520.000	44.6	V	54.0	-9.4	Peak	281	1.0	Pk value vs Avg limit.
4990.000	42.1	V	54.0	-11.9	Peak	192	1.3	Pk value vs Avg limit.
1010.000	53.8	V	74.0	-20.2	Peak	212	1.3	
1900.000	49.8	V	74.0	-24.2	Peak	157	1.3	

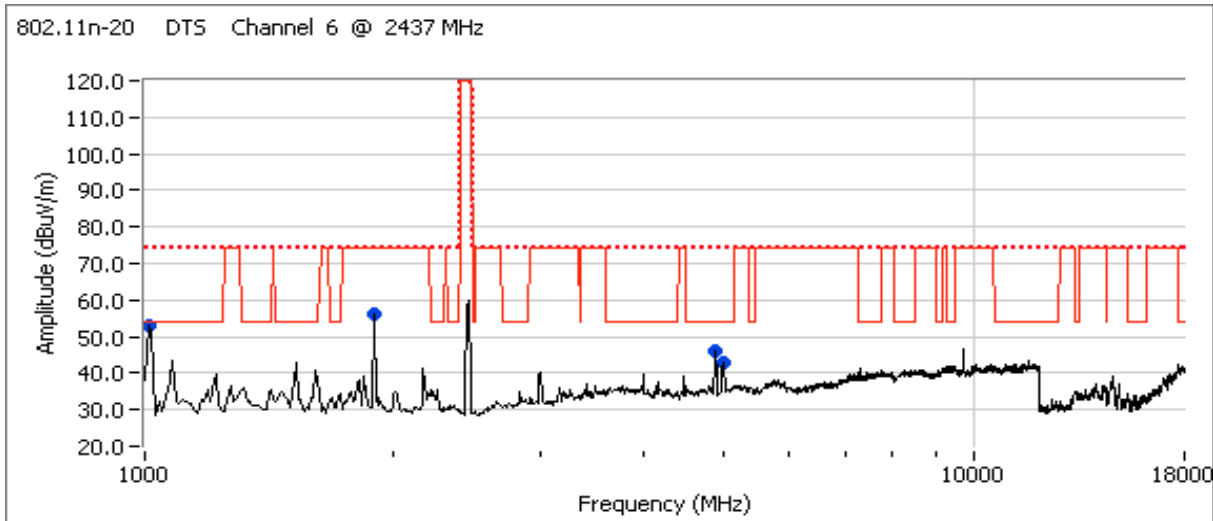




Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

Run #1b: Center Channel @ 2437 MHz

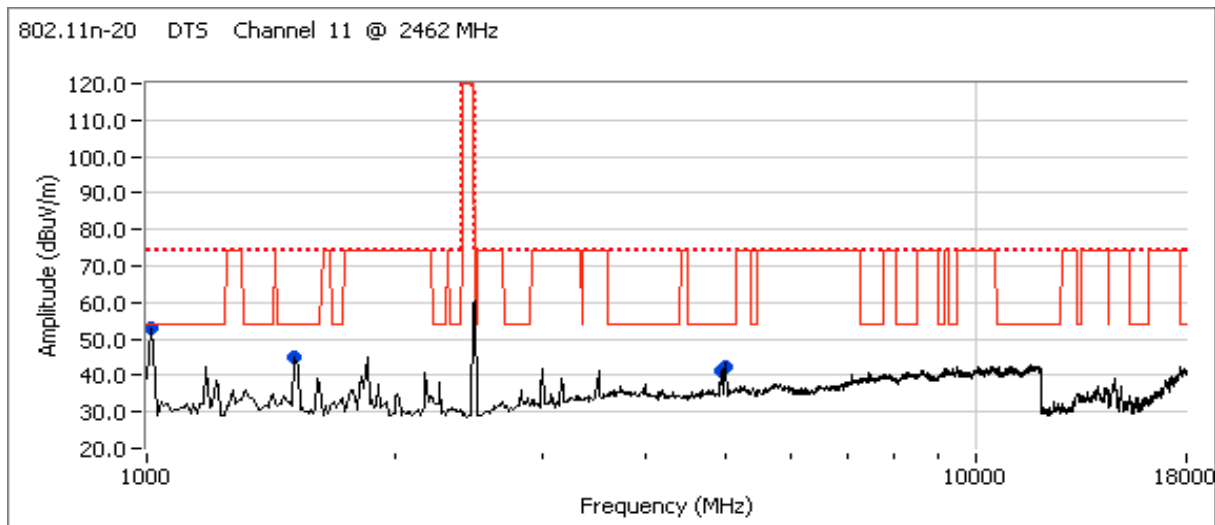
Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
4880.000	46.2	V	54.0	-7.8	Peak	243	1.3	Pk value vs Avg limit.
5010.000	42.7	V	54.0	-11.3	Peak	82	1.6	Pk value vs Avg limit.
1890.000	56.0	V	74.0	-18.0	Peak	101	2.2	
1010.000	53.1	V	74.0	-20.9	Peak	217	1.0	



Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

### Run #1c: High Channel @ 2462 MHz

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
1510.000	44.8	V	54.0	-9.2	Peak	311	1.0	Pk value vs Avg limit.
5010.000	42.6	V	54.0	-11.4	Peak	91	1.6	Pk value vs Avg limit.
4940.000	41.1	V	54.0	-12.9	Peak	206	1.0	Pk value vs Avg limit.
1010.000	52.8	V	74.0	-21.2	Peak	326	1.3	



Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

## RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 7/14/2008

Config. Used: 1

Test Engineer: rvarelas

Config Change: None

Test Location: Fremont Chamber #4

EUT Voltage: Powered From Host System

### General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

### Ambient Conditions:

Temperature: 21.3 °C

Rel. Humidity: 41 %

### Summary of Results - Device Operating in the 2400-2483.5 MHz Band

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11n 40MHz	3	-	-	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247 (c)	41.7dBuV/m @ 1500.5MHz (-12.3dB)
1b	802.11n 40MHz	6	-	-	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247 (c)	41.3dBuV/m @ 1500.7MHz (-12.7dB)
1	802.11n 40MHz	9 2452 MHz	-	-	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247 (c)	48.0dBμV/m @ 4920.0MHz (-6.0dB)

### Modifications Made During Testing

No modifications were made to the EUT during testing

### Deviations From The Standard

No deviations were made from the requirements of the standard.

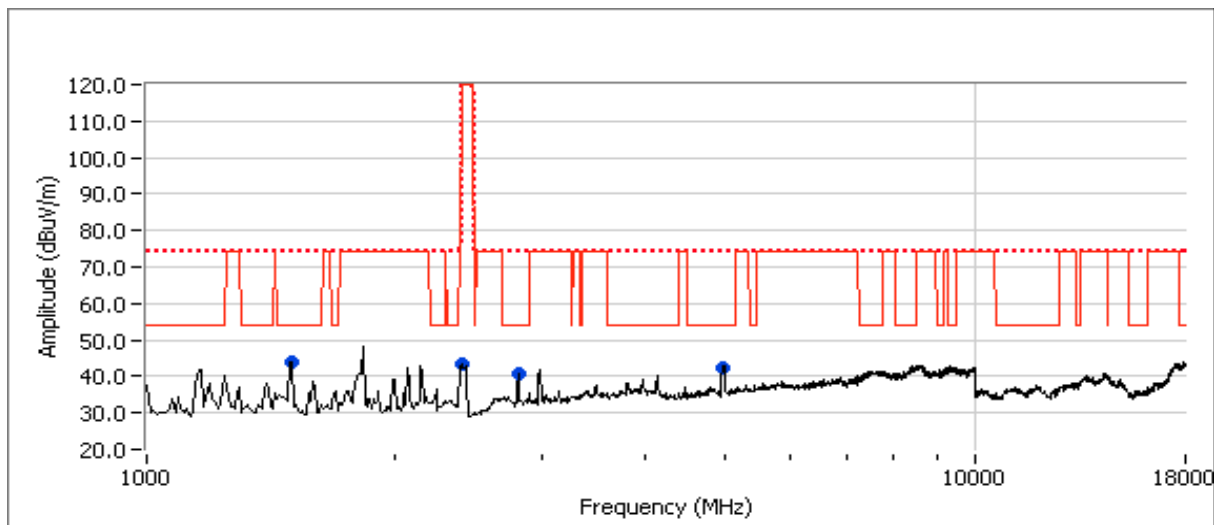
Note: Preliminary testing showed no emissions below 1 GHz and above 18 GHz related to the radio.

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

Run #1: Radiated Spurious Emissions, 30 - 26,000 MHz. Operating Mode: 802.11n 40MHz

Run #1a: Low Channel @ 2422 MHz

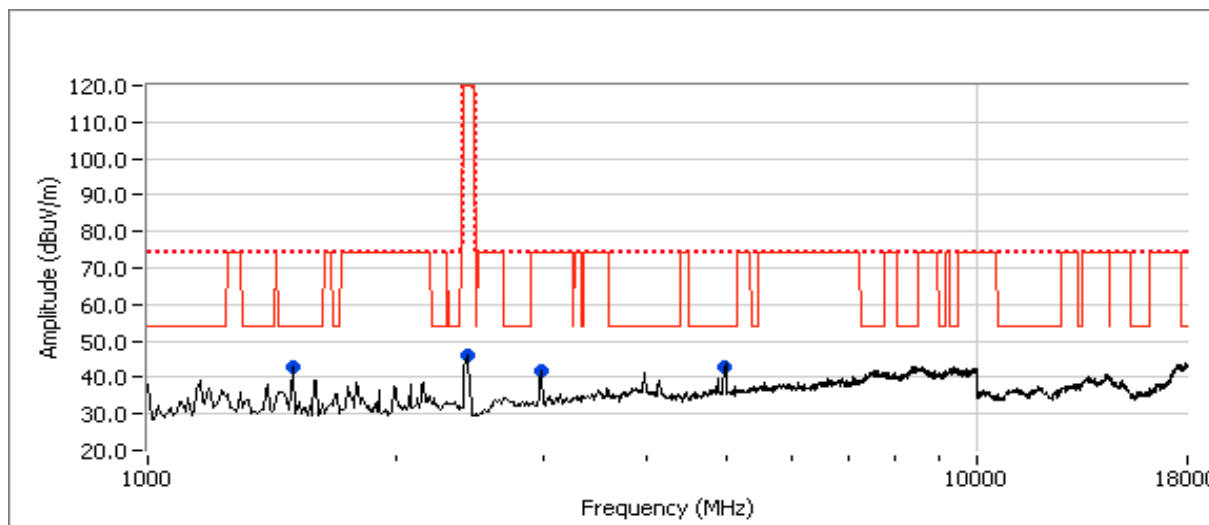
Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
2412.000	43.4	V	-	-	Peak	0	1.6	
1500.540	41.7	V	54.0	-12.3	AVG	182	1.3	
2814.510	40.7	V	54.0	-13.3	Peak	344	1.3	
4982.120	40.0	V	54.0	-14.0	AVG	159	1.0	
4982.760	53.1	V	74.0	-20.9	PK	159	1.0	
1501.070	52.8	V	74.0	-21.2	PK	182	1.3	



Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

### Run #1b: Center Channel @ 2437 MHz

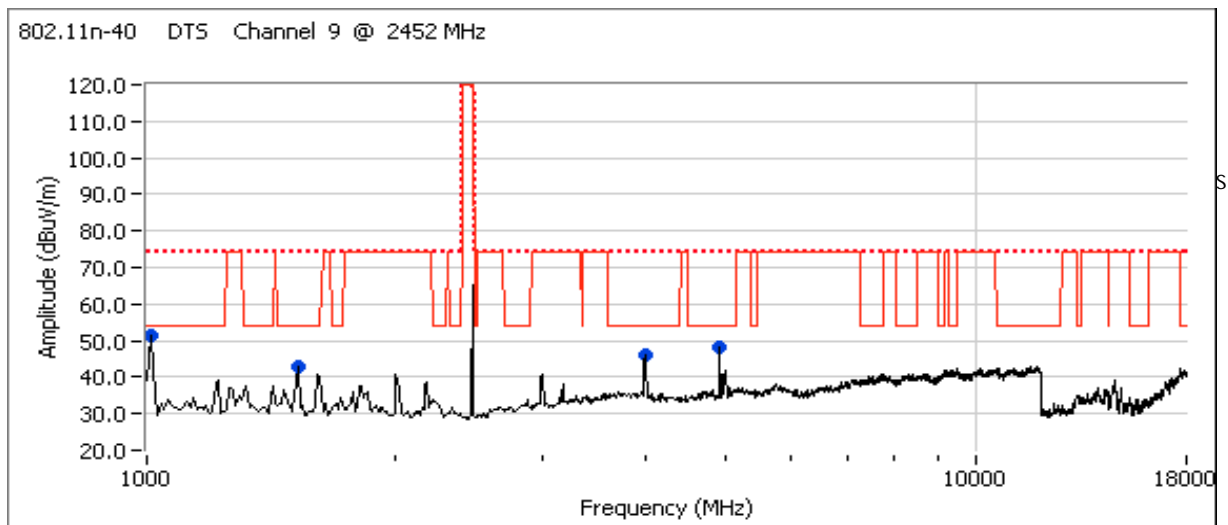
Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
2437.000	46.0	V	-	-	Peak	356	1.3	Fundamental
1500.710	41.3	V	54.0	-12.7	AVG	176	1.3	
4981.820	39.3	V	54.0	-14.7	AVG	160	1.0	
1500.930	53.0	V	74.0	-21.0	PK	176	1.3	
4982.970	52.9	V	74.0	-21.1	PK	160	1.0	
2980.000	41.9	V	74.0	-32.1	Peak	155	1.3	



Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

**Run #1c: High Channel @ 2452 MHz**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
4920.000	48.0	V	54.0	-6.0	Peak	182	1.0	Pk value vs Avg limit.
4000.000	46.3	V	54.0	-7.7	Peak	187	1.3	Pk value vs Avg limit.
1520.000	43.1	V	54.0	-10.9	Peak	32	1.0	Pk value vs Avg limit.
1010.000	51.5	V	74.0	-22.5	Peak	196	1.0	



Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

## RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 7/16/2008

Config. Used: 1

Test Engineer: Ben Jing

Config Change: None

Test Location: Fremont Chamber #4

EUT Voltage: Powered From Host System

### General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

### Ambient Conditions:

Temperature: 21.3 °C

Rel. Humidity: 41 %

### Summary of Results - Device Operating in the 2400-2483.5 MHz Band

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11a	149 5745 MHz	-	-	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	42.1dBµV/m @ 1500.3MHz (-11.9dB)
1b	802.11a	157 5785 MHz	-	-	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	42.6dBµV/m @ 1500.4MHz (-11.4dB)
1c	802.11a	165 5825 MHz	-	-	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	44.3dBµV/m @ 1500.6MHz (-9.7dB)

### Modifications Made During Testing

No modifications were made to the EUT during testing

### Deviations From The Standard

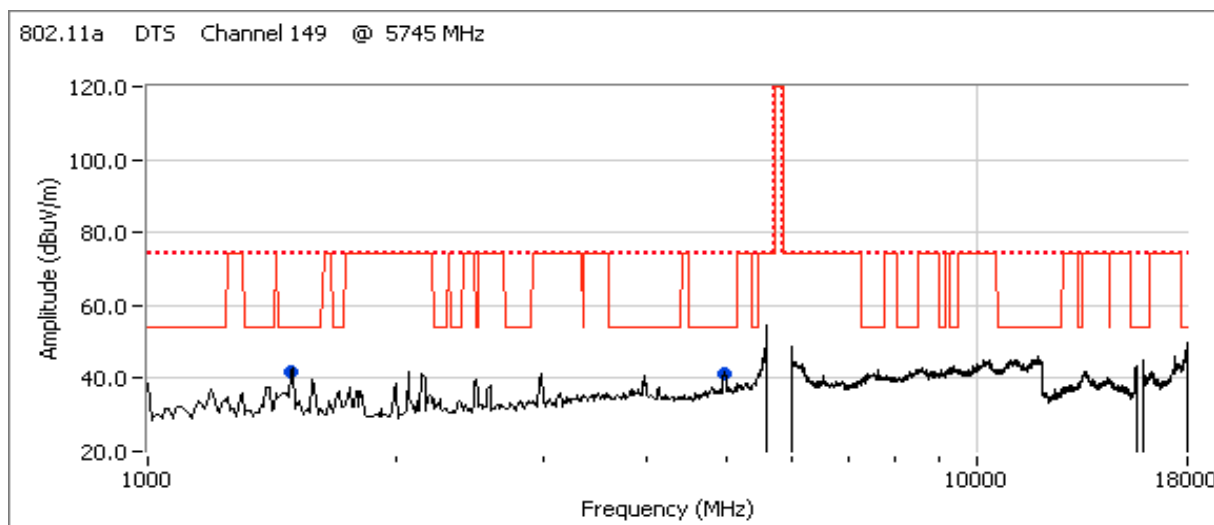
No deviations were made from the requirements of the standard.

Note: Preliminary testing showed no emissions below 1 GHz and above 18 GHz related to the radio.

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

Run #1: Radiated Spurious Emissions, 30 - 26,000 MHz. Operating Mode: 802.11a

Run #1a: Channel 149 @ 5745 MHz

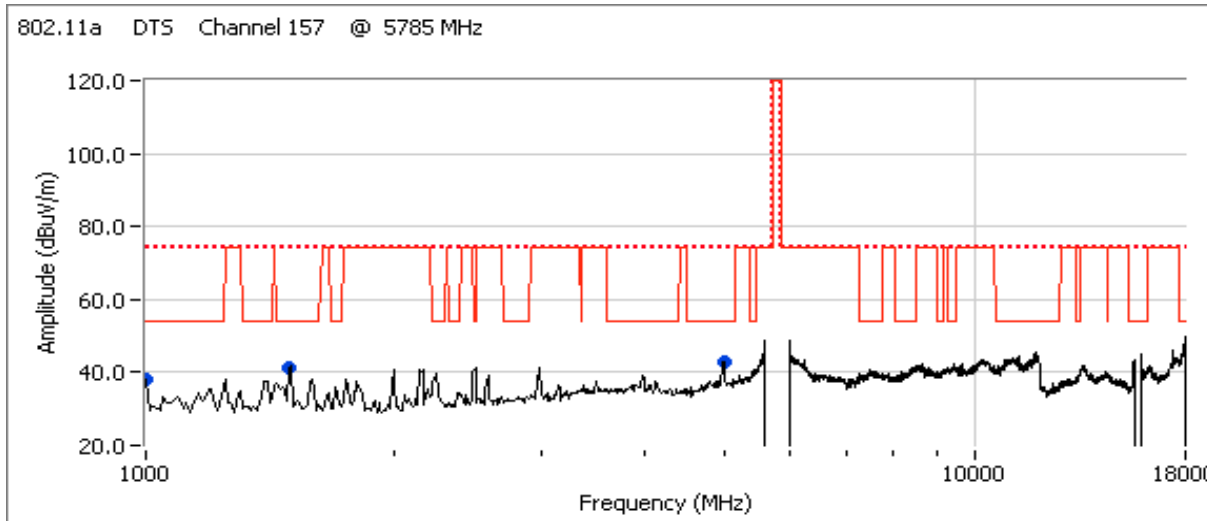


Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1500.250	42.1	V	54.0	-11.9	AVG	187	1.6	RB 1.000 MHz; VB: 10 Hz
4977.150	37.4	V	54.0	-16.6	AVG	233	1.3	RB 1.000 MHz; VB: 10 Hz
1500.240	54.2	V	74.0	-19.8	PK	187	1.6	RB 1.000 MHz; VB: 1.000 MHz
4977.430	51.4	V	74.0	-22.6	PK	233	1.3	RB 1.000 MHz; VB: 1.000 MHz



Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

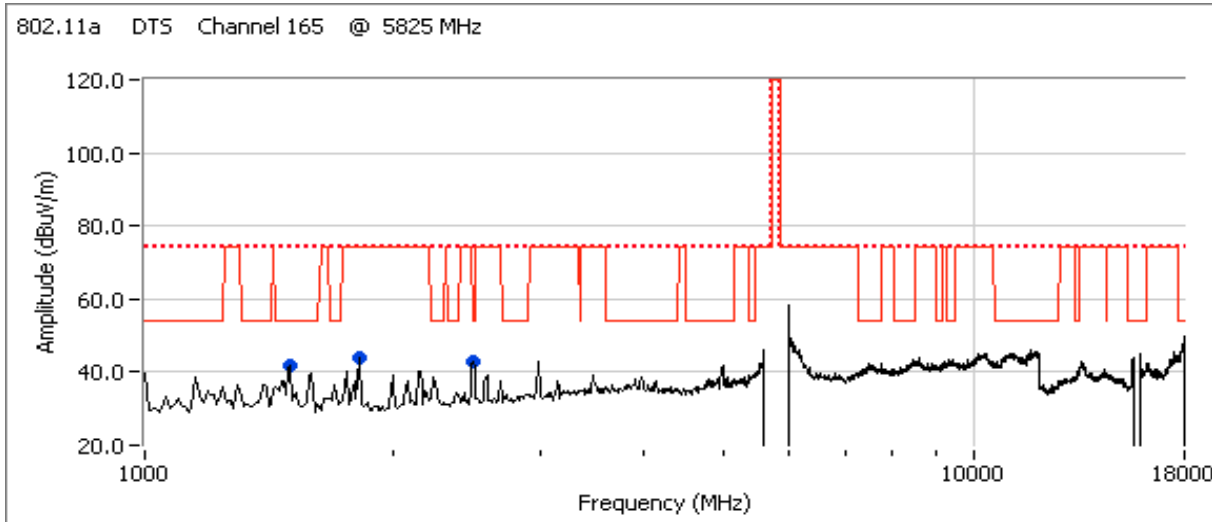
Run #1b: Channel 157 @ 5785 MHz



Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1500.440	42.6	V	54.0	-11.4	AVG	183	1.7	RB 1.000 MHz; VB: 10 Hz
4978.500	36.9	V	54.0	-17.1	AVG	215	1.2	RB 1.000 MHz; VB: 10 Hz
1000.004	36.2	V	54.0	-17.8	AVG	217	1.9	RB 1.000 MHz; VB: 10 Hz
1500.070	54.3	V	74.0	-19.7	PK	183	1.7	RB 1.000 MHz; VB: 1.000 MHz
4979.120	50.7	V	74.0	-23.3	PK	215	1.2	RB 1.000 MHz; VB: 1.000 MHz
1000.025	49.1	V	74.0	-24.9	PK	217	1.9	RB 1.000 MHz; VB: 1.000 MHz

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

Run #1c: Channel 165 @ 5825 MHz



Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1500.560	44.3	V	54.0	-9.7	AVG	188	1.2	RB 1.000 MHz; VB: 10 Hz
1500.590	55.2	V	74.0	-18.8	PK	188	1.2	RB 1.000 MHz; VB: 1.000 MHz
2488.310	34.7	H	54.0	-19.3	AVG	273	1.6	RB 1.000 MHz; VB: 10 Hz
2488.290	50.9	H	74.0	-23.1	PK	273	1.6	RB 1.000 MHz; VB: 1.000 MHz
1792.030	43.6	V	74.0	-30.4	PK	222	1.0	RB 1.000 MHz; VB: 1.000 MHz
1792.650	29.7	V	74.0	-44.3	AVG	222	1.0	RB 1.000 MHz; VB: 10 Hz

Client:	Broadcom Corporation	Job Number:	J72137
Model:	BCM94322HM8L (Dipole C2PC)	T-Log Number:	T72240_DTS
		Account Manager:	Dean Eriksen
Contact:	Anna Liang		
Standard:	FCC	Class:	N/A

## RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 7/18/2008	Config. Used: 1
Test Engineer: Suhaila Khushzad	Config Change: None
Test Location: Fremont Chamber # 5	EUT Voltage: Powered From Host System

### General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

**Ambient Conditions:**

Temperature:	22 °C
Rel. Humidity:	46 %

### Summary of Results - Device Operating in the 5725 - 5850 MHz Band

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11n20	149 5745 MHz	-	-	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247 (c)	67.1dBμV/m @ 5581.7MHz (-6.9dB)
1b	802.11n20	157 5785 MHz	-	-	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247 (c)	45.0dBμV/m @ 1500.8MHz (-9.0dB)
1c	802.11n20	165 5825 MHz	-	-	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247 (c)	68.9dBμV/m @ 5985.2MHz (-5.1dB)

### Modifications Made During Testing

No modifications were made to the EUT during testing

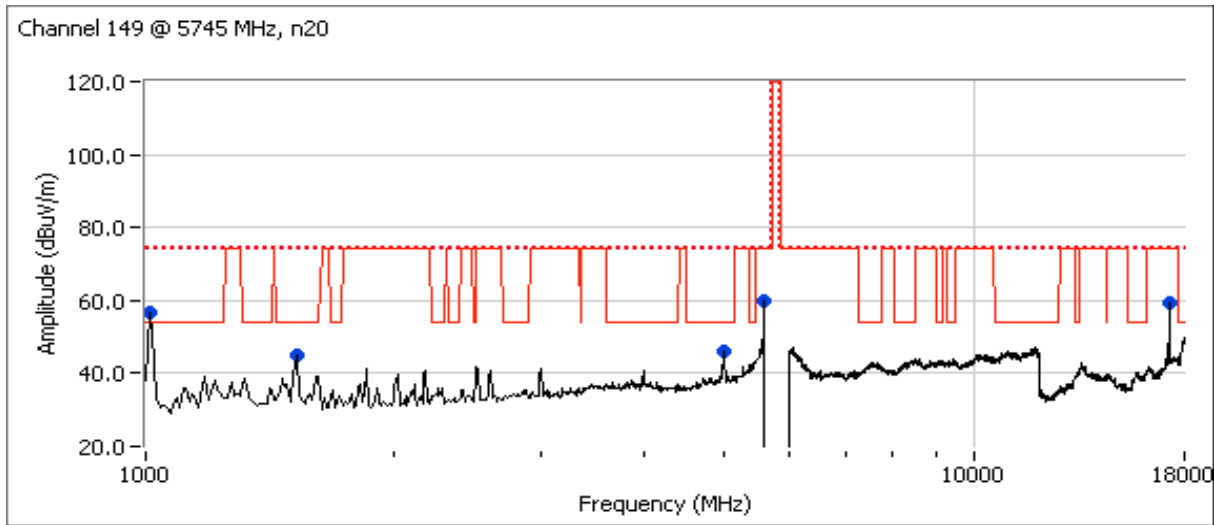
### Deviations From The Standard

No deviations were made from the requirements of the standard.

Note: Preliminary testing showed no emissions below 1 GHz and above 18 GHz related to the radio.

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

Run #1: Radiated Spurious Emissions, 30 - 26,000 MHz. Operating Mode: 802.11n20  
 Run #1a: Channel 149 @ 5745 MHz

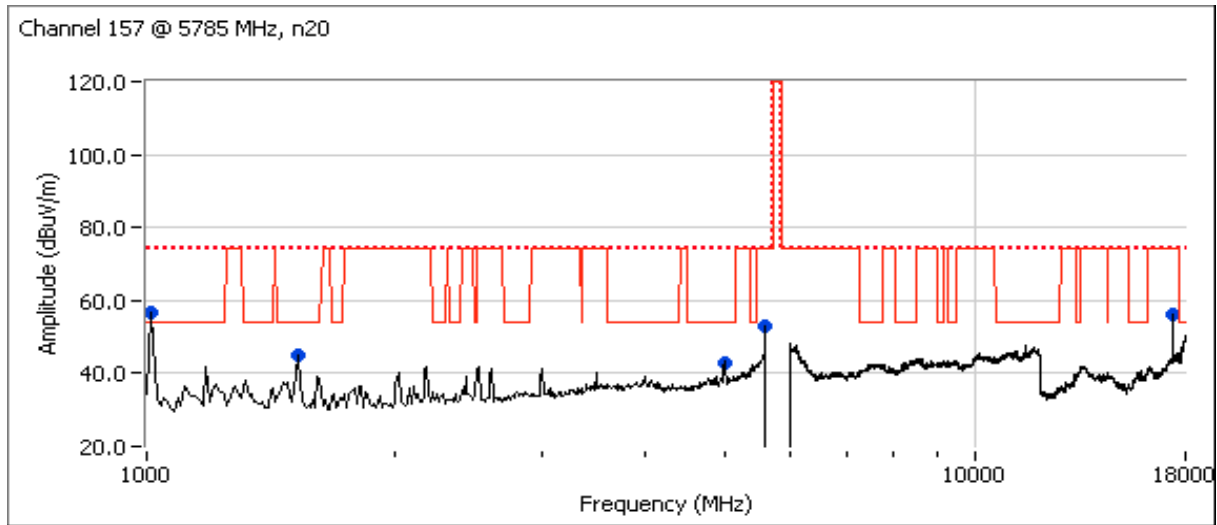


**Spurious Radiated Emissions:**

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5581.740	67.1	V	74.0	-6.9	PK	159	1.3	RB 1.000 MHz; VB: 1.000 MHz
17226.720	66.0	V	74.0	-8.0	PK	256	1.0	RB 1.000 MHz; VB: 1.000 MHz
1500.700	44.7	V	54.0	-9.3	AVG	96	1.0	RB 1.000 MHz; VB: 10 Hz
4977.440	39.5	V	54.0	-14.5	AVG	0	1.3	RB 1.000 MHz; VB: 10 Hz
5581.940	57.7	V	74.0	-16.3	AVG	159	1.3	RB 1.000 MHz; VB: 10 Hz
17233.720	54.6	V	74.0	-19.4	AVG	256	1.0	RB 1.000 MHz; VB: 10 Hz
4981.550	54.2	V	74.0	-19.8	PK	0	1.3	RB 1.000 MHz; VB: 1.000 MHz
1498.630	53.0	V	74.0	-21.0	PK	96	1.0	RB 1.000 MHz; VB: 1.000 MHz
999.941	26.3	V	54.0	-27.7	AVG	64	1.2	RB 100 kHz; VB: 10 Hz
999.841	35.8	V	74.0	-38.2	PK	64	1.2	RB 100 kHz; VB: 100 kHz

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

Run #1: Radiated Spurious Emissions, 30 - 26,000 MHz. Operating Mode: 802.11n20  
 Run #1b: Channel 157 @ 5785 MHz

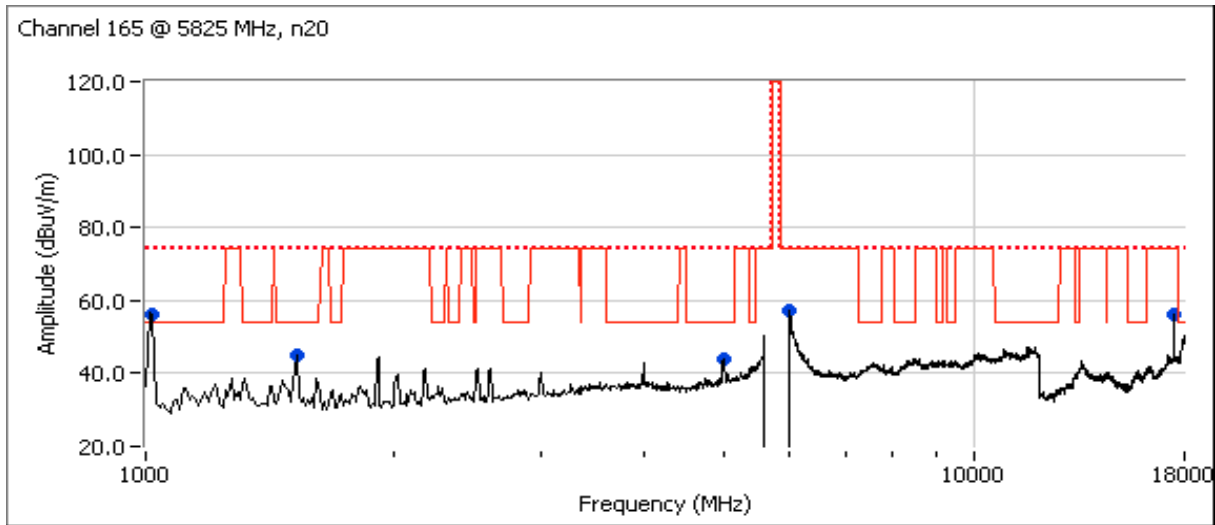


**Spurious Radiated Emissions:**

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1500.750	45.0	V	54.0	-9.0	AVG	96	1.0	RB 1.000 MHz; VB: 10 Hz
17353.820	63.0	H	74.0	-11.0	PK	329	1.0	RB 1.000 MHz; VB: 1.000 MHz
4976.960	40.7	V	54.0	-13.3	AVG	350	1.3	RB 1.000 MHz; VB: 10 Hz
1000.175	40.0	V	54.0	-14.0	AVG	22	1.2	RB 1.000 MHz; VB: 10 Hz
5587.340	59.7	V	74.0	-14.3	PK	151	1.0	RB 1.000 MHz; VB: 1.000 MHz
1500.700	55.8	V	74.0	-18.2	PK	96	1.0	RB 1.000 MHz; VB: 1.000 MHz
4981.630	55.0	V	74.0	-19.0	PK	350	1.3	RB 1.000 MHz; VB: 1.000 MHz
999.600	51.5	V	74.0	-22.5	PK	22	1.2	RB 1.000 MHz; VB: 1.000 MHz
17354.180	51.0	H	74.0	-23.0	AVG	329	1.0	RB 1.000 MHz; VB: 10 Hz
5587.340	48.8	V	74.0	-25.2	AVG	151	1.0	RB 1.000 MHz; VB: 10 Hz

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

Run #1: Radiated Spurious Emissions, 30 - 26,000 MHz. Operating Mode: 802.11n20  
 Run #1c: Channel 165 @ 5825 MHz



**Spurious Radiated Emissions:**

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dB $\mu$ V/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5985.180	68.9	V	74.0	-5.1	PK	152	1.3	RB 1.000 MHz; VB: 1.000 MHz
1500.620	43.9	V	54.0	-10.1	AVG	101	1.0	RB 1.000 MHz; VB: 10 Hz
17476.570	63.8	H	74.0	-10.2	PK	331	1.0	RB 1.000 MHz; VB: 1.000 MHz
5985.020	59.9	V	74.0	-14.1	AVG	152	1.3	RB 1.000 MHz; VB: 10 Hz
4977.240	38.6	V	54.0	-15.4	AVG	350	1.2	RB 1.000 MHz; VB: 10 Hz
4980.730	53.7	V	74.0	-20.3	PK	350	1.2	RB 1.000 MHz; VB: 1.000 MHz
1498.820	52.3	V	74.0	-21.7	PK	101	1.0	RB 1.000 MHz; VB: 1.000 MHz
17473.840	51.3	H	74.0	-22.7	AVG	331	1.0	RB 1.000 MHz; VB: 10 Hz

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

## RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 7/21/2008

Config. Used: 1

Test Engineer: rvarelas

Config Change: None

Test Location: Fremont Chamber #3

EUT Voltage: Powered From Host System

### General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

### Ambient Conditions:

Temperature: 21.2 °C

Rel. Humidity: 41 %

### Summary of Results - Device Operating in the 5725 - 5850 MHz Band

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1a	802.11n40	151 5755 MHz	-	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	45.8dBuV/m @ 1500MHz (-8.2dB)
1b	802.11n20	159 5795 MHz	-	-	Radiated Emissions, 1 - 40GHz	FCC Part 15.209 / 15.247(c)	45.6dBuV/m @ 1500MHz (-8.4dB)

### Modifications Made During Testing

No modifications were made to the EUT during testing

### Deviations From The Standard

No deviations were made from the requirements of the standard.

Note: Preliminary testing showed no emissions below 1 GHz and above 18 GHz related to the radio.

Client:	Broadcom Corporation	Job Number:	J72137
Model:	BCM94322HM8L (Dipole C2PC)	T-Log Number:	T72240_DTS
Contact:	Anna Liang	Account Manager:	Dean Eriksen
Standard:	FCC	Class:	N/A

Run #1: Radiated Spurious Emissions, 30 - 26,000 MHz. Operating Mode: 802.11n 40 MHz

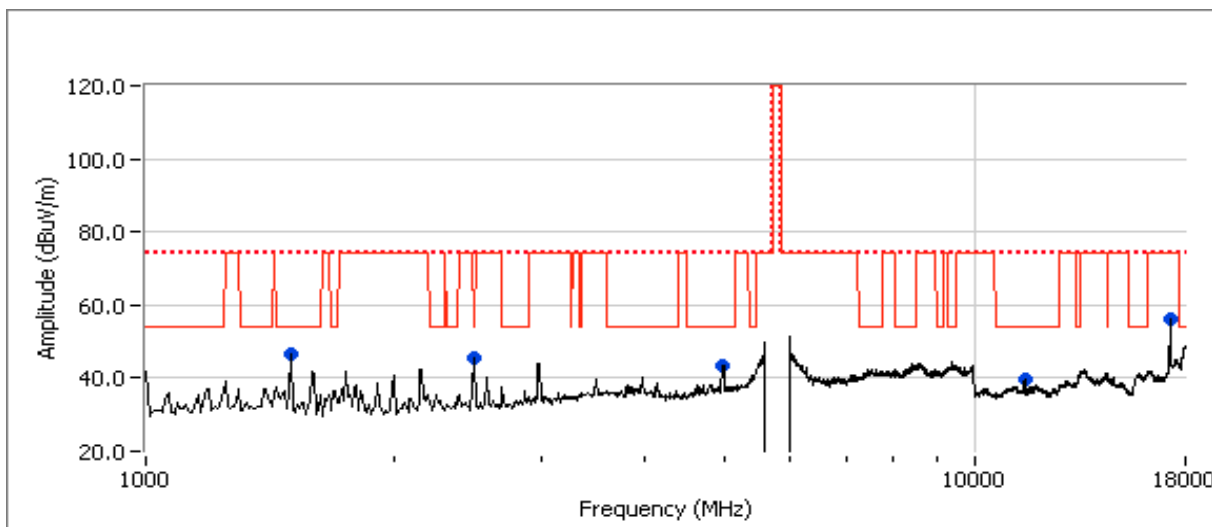
Run #1a: Low Channel @ 5755 MHz

Spurious Radiated Emissions:

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
1500.220	45.8	V	54.0	-8.2	AVG	181	1.6	RB 1.000 MHz; VB: 10 Hz
11506.67	39.7	V	54.0	-14.3	Peak	253	1.0	
2495.960	37.7	V	54.0	-16.3	AVG	92	1.6	RB 1.000 MHz; VB: 10 Hz
4987.320	36.8	V	54.0	-17.2	AVG	181	1.0	RB 1.000 MHz; VB: 10 Hz
17266.67	56.2	H	74.0	-17.8	Peak	89	1.0	
2496.070	53.0	V	74.0	-21.0	PK	92	1.6	RB 1.000 MHz; VB: 1.000 MHz
4987.370	52.3	V	74.0	-21.7	PK	181	1.0	RB 1.000 MHz; VB: 1.000 MHz
1499.790	51.4	V	74.0	-22.6	PK	181	1.6	RB 1.000 MHz; VB: 1.000 MHz

Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.

Note 2: Signal is not in a restricted band but the more stringent restricted band limit was used.





Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

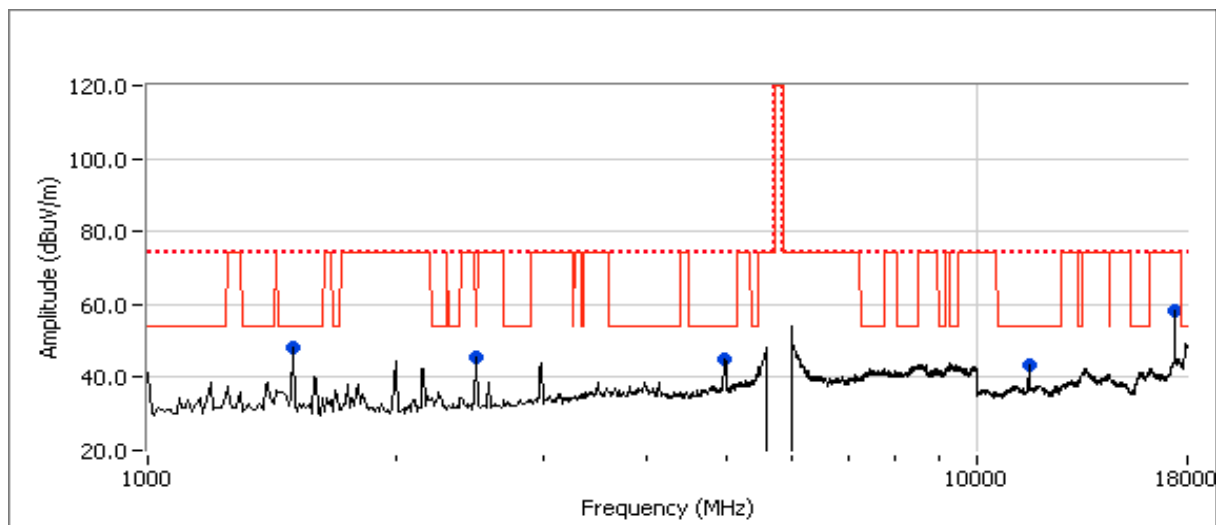
**Run #1b: High Channel @ 5795 MHz**

**Spurious Radiated Emissions:**

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
1500.220	45.6	V	54.0	-8.4	AVG	192	1.6	RB 1.000 MHz; VB: 10 Hz
4987.690	38.7	V	54.0	-15.3	AVG	167	1.0	RB 1.000 MHz; VB: 10 Hz
17386.67	58.5	H	74.0	-15.5	Peak	90	1.0	
2491.290	38.0	V	54.0	-16.0	AVG	102	1.6	RB 1.000 MHz; VB: 10 Hz
11595.760	36.4	H	54.0	-17.6	AVG	53	1.0	RB 1.000 MHz; VB: 10 Hz
1499.820	54.0	V	74.0	-20.0	PK	192	1.6	RB 1.000 MHz; VB: 1.000 MHz
4987.730	53.8	V	74.0	-20.2	PK	167	1.0	RB 1.000 MHz; VB: 1.000 MHz
2490.630	53.5	V	74.0	-20.5	PK	102	1.6	RB 1.000 MHz; VB: 1.000 MHz
11595.400	47.9	H	74.0	-26.1	PK	53	1.0	RB 1.000 MHz; VB: 1.000 MHz

Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 30dB below the level of the fundamental and measured in 100kHz.

Note 2: Signal is not in a restricted band but the more stringent restricted band limit was used.



Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

## RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions

### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 7/21/2008	Config. Used: 1
Test Engineer: Ben Jing	Config Change: None
Test Location: Fremont Chamber #3	EUT Voltage: Powered From Host System

### General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

**Ambient Conditions:**                      Temperature:            21.2 °C  
    Rel. Humidity:            41 %

### Summary of Results - Device Operating in the 2400-2483.5 MHz Band

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1	802.11a RX	157 5785 MHz	-	-	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	48.0dBµV/m @ 1500.2MHz (-6.0dB)

### Modifications Made During Testing

No modifications were made to the EUT during testing

### Deviations From The Standard

No deviations were made from the requirements of the standard.

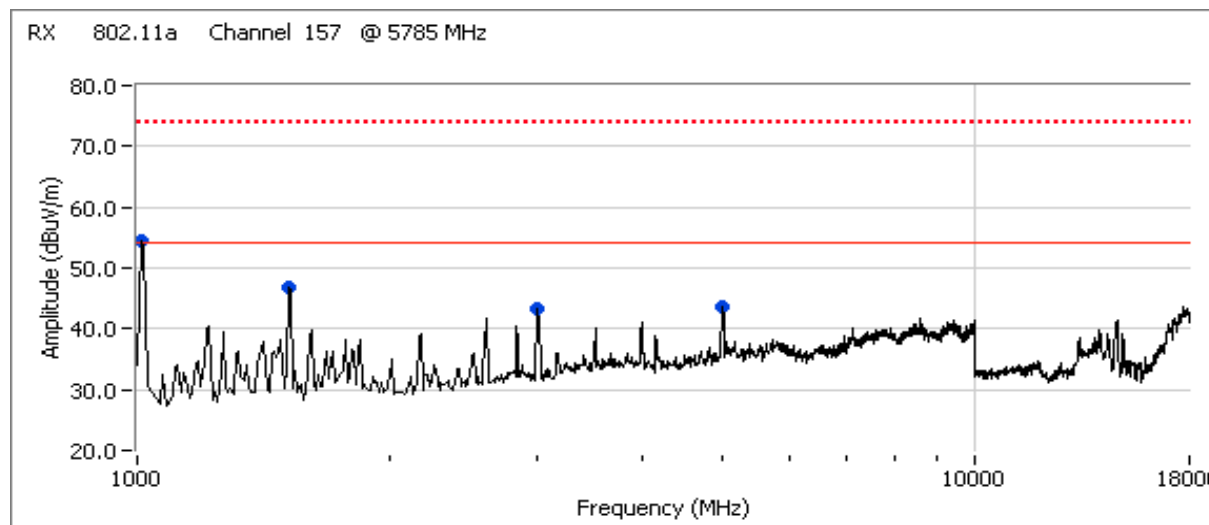
Note: Preliminary testing showed no emissions below 1 GHz and above 18 GHz related to the radio.

Client:	Broadcom Corporation	Job Number:	J72137
Model:	BCM94322HM8L (Dipole C2PC)	T-Log Number:	T72240_DTS
Contact:	Anna Liang	Account Manager:	Dean Eriksen
Standard:	FCC	Class:	N/A

Run #1: Radiated Spurious Emissions, 30 - 26,000 MHz. Receiver Mode: 802.11a

Channel 157 @ 5785 MHz

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
1500.160	48.0	V	54.0	-6.0	AVG	190	1.7	
1000.091	42.1	V	54.0	-11.9	AVG	159	1.1	
4972.510	38.6	V	54.0	-15.4	AVG	168	1.1	
2989.720	36.3	V	54.0	-17.7	AVG	148	1.1	
1500.010	54.9	V	74.0	-19.1	PK	190	1.7	
4972.810	53.8	V	74.0	-20.2	PK	168	1.1	
2990.410	52.2	V	74.0	-21.8	PK	148	1.1	
1000.260	50.8	V	74.0	-23.2	PK	159	1.1	



Client:	Broadcom Corporation	Job Number:	J72137
Model:	BCM94322HM8L (Dipole C2PC)	T-Log Number:	T72240_DTS
		Account Manager:	Dean Eriksen
Contact:	Anna Liang		
Standard:	FCC	Class:	N/A

**RSS 210 and FCC 15.247 (DTS) Radiated Spurious Emissions**

**Test Specific Details**

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 7/21/2008	Config. Used: 1
Test Engineer: rvarelas	Config Change: None
Test Location: Fremont Chamber #3	EUT Voltage: Powered From Host System

**General Test Configuration**

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

**Ambient Conditions:**                      Temperature:            21.2 °C  
    Rel. Humidity:            41 %

**Summary of Results - Device Operating in the 2400-2483.5 MHz Band**

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
1	802.11g	2437 MHz	-	-	Radiated Emissions, 1 - 26 GHz	FCC Part 15.209 / 15.247(c)	48.3dBµV/m @ 1500.2MHz (-5.7dB)

**Modifications Made During Testing**

No modifications were made to the EUT during testing

**Deviations From The Standard**

No deviations were made from the requirements of the standard.

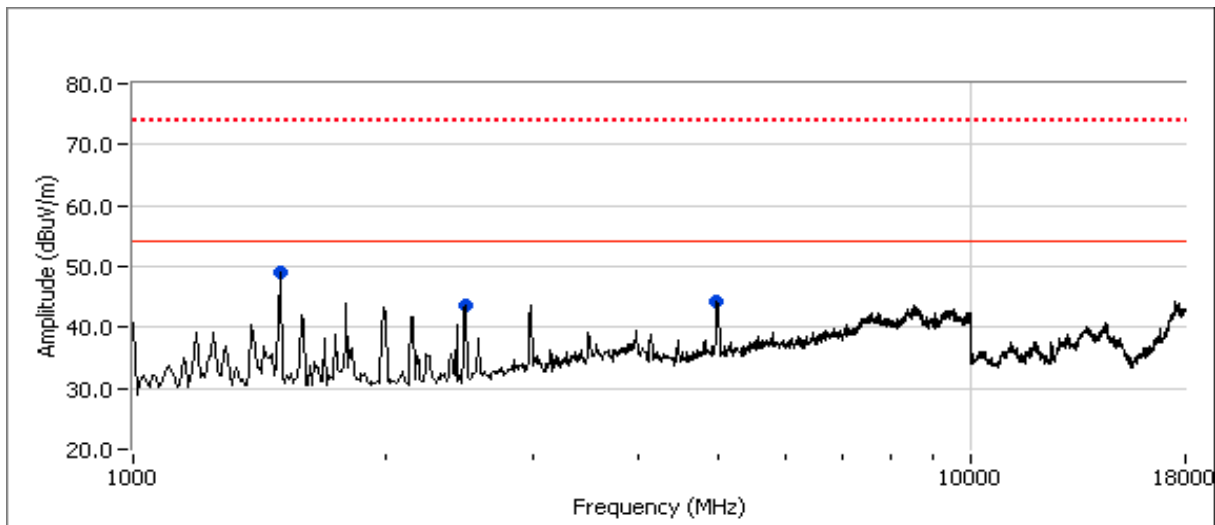
Note: Preliminary testing showed no emissions below 1 GHz and above 18 GHz related to the radio.

Client: Broadcom Corporation	Job Number: J72137
Model: BCM94322HM8L (Dipole C2PC)	T-Log Number: T72240_DTS
	Account Manager: Dean Eriksen
Contact: Anna Liang	
Standard: FCC	Class: N/A

Run #1: Radiated Spurious Emissions, 30 - 26,000 MHz. Operating Mode: 802.11g

Center Channel @ 2437 MHz

Frequency MHz	Level dB $\mu$ V/m	Pol v/h	15.209 / 15.247		Detector Pk/QP/Avg	Azimuth degrees	Height meters	Comments
			Limit	Margin				
1500.210	48.3	H	54.0	-5.7	AVG	78	1.0	RB 1.000 MHz; VB: 10 Hz
4989.020	36.4	V	54.0	-17.6	AVG	161	1.3	RB 1.000 MHz; VB: 10 Hz
2491.980	35.9	V	54.0	-18.1	AVG	145	1.0	RB 1.000 MHz; VB: 10 Hz
1500.190	54.5	H	74.0	-19.5	PK	78	1.0	RB 1.000 MHz; VB: 1.000 MHz
4990.680	52.6	V	74.0	-21.4	PK	161	1.3	RB 1.000 MHz; VB: 1.000 MHz
2490.610	50.4	V	74.0	-23.6	PK	145	1.0	RB 1.000 MHz; VB: 1.000 MHz



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***EXHIBIT 3: Photographs of Test Configurations***

***EXHIBIT 4: RF Exposure Information***