



# A Test Lab Techno Corp.

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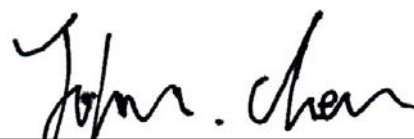
## Part 15 C Measurement Report



<b>Report No.</b>	: 0911FR12-01
<b>Applicant</b>	: Acer Incorporated
<b>Product Type</b>	: WLAN Module
<b>Trade Name</b>	: acer
<b>Model No.</b>	: 112BNHMW
<b>FCC ID</b>	: HLZ112BNH
<b>IC ID</b>	: 1754F-112BNH
<b>Serial No.</b>	: ZE90SK01C19391A23B2500
<b>Dates of Test</b>	: Nov. 03 ~ 05, 2009
<b>Test Specification</b>	: FCC CFR Title 47 Part 15 Subpart C (15.247) (2008-10) Canada RSS-210 Issue 7(June 2007) Canada RSS-Gen Issue 2(June 2007) ANSI C63.4-2003
<b>Location of Test Lab.</b>	: Chang-an Lab.

1. The test operations have to be performed with cautious behavior, the test results are as attached.
2. The test results are under chamber environment of A Test Lab Techno Corp. A Test Lab Techno Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples.
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4. This document may be altered or revised by A Test Lab Techno. Corp. personnel only, and shall be noted in the revision section of the document.

  
\_\_\_\_\_  
**Miller Lee**                      20091119  
Approve Signer

  
\_\_\_\_\_  
**John Cheng**                      20091119  
Testing Engineer



# CERTIFICATION

We hereby verify that:

The test data, data evaluation, test procedures and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4:2003. All test were conducted by *A Test Lab Techno Corp. No.140-1, Chang-an St., Bade City, Tao-Yuan County 334, Taiwan (R.O.C.)* Also, we attest to the accuracy of each.

We further submit that the energy emitted by the sample EUT tested as described in the report is in compliance of FCC Rules Part 15 Subpart C (15.247).

Product Type : WLAN Module  
Applicant : Acer Incorporated  
Applicant Address : 8F, 88, Sec.1, Hsin Tai Wu Rd. Hsichih, Taipei Hsien 221 Taiwan, R.O.C.  
Manufacturer : Quanta Computer Inc.  
Manufacturer Address : No.211, Wen Hwa 2nd Rd., Kuei Shan Hsiang, Tao Yuan Shien, Taiwan, R.O.C  
Trade Name : acer  
Model No. : 112BNHMW  
FCC ID : HLZ112BNH  
IC ID : 1754F-112BNH  
Serial No. : ZE90SK01C19391A23B2500  
Host Laptop PC : Trade Name: acer ,Gateway, Packard Bell  
Model Number: ZE8  
EUT Rated Voltage : 100-240Vac, 1A, 50/60Hz  
Test Voltage : 120Vac, 60Hz  
Applicable Standard : FCC CFR Title 47 Part 15 Subpart C (15.247) (2008-10)  
Canada RSS-210 Issue 7 (June 2007)  
Canada RSS-Gen Issue 2 (June 2007)  
ASNI C63.4-2003  
Test Result : Complied

Approved by :   
Miller Lee 2009/11/19

Prepared by :   
John Cheng 2009/11/19

## A Test Lab Techno Corp.

No.140-1, Chang-an St., Bade City, Tao-Yuan County 334, Taiwan (R.O.C.)  
Tel : 03-2710188 / Fax : 03-2710190



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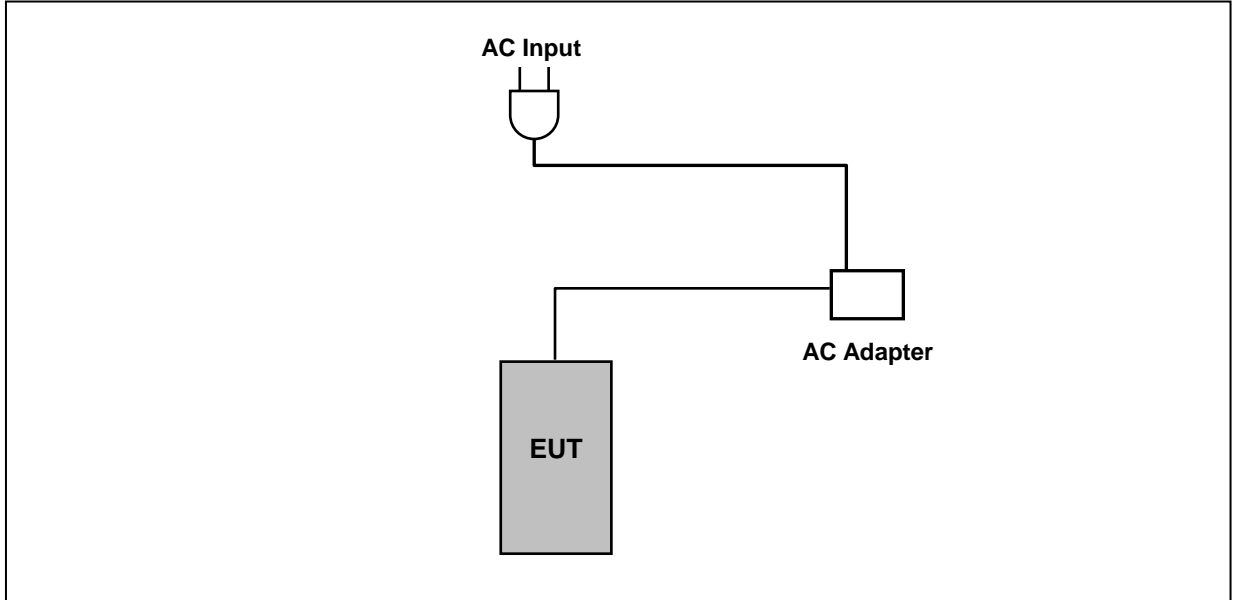


## 1. GENERAL

### 1.1 Description of Equipment under Test (EUT)

<b>Applicant</b>	: Acer Incorporated
<b>Applicant Address</b>	: 8F, 88, Sec.1, Hsin Tai Wu Rd. Hsichih, Taipei Hsien 221 Taiwan, R.O.C
<b>Manufacturer</b>	: Quanta Computer Inc.
<b>Manufacturer Address</b>	: No.211, Wen Hwa 2nd Rd., Kuei Shan Hsiang, Tao Yuan Shien, Taiwan, R.O.C.
<b>Product Type</b>	: WLAN Module
<b>Trade Name</b>	: acer
<b>Model No.</b>	: 112BNHMW
<b>FCC ID</b>	: HLZ112BNH
<b>IC ID</b>	: 1754F-112BNH
<b>Serial No.</b>	: ZE90SK01C19391A23B2500
<b>Frequency Range</b>	: IEEE 802.11b / IEEE 802.11g: 2412MHz~2462MHz draft 802.11n Standard-20MHz: 2412MHz~2462MHz draft 802.11n Wide-40MHz: 2422MHz~2452MHz
<b>Type of Modulation</b>	: IEEE 802.11b:DSSS(CCK, DQPSK, DBPSK) IEEE 802.11g:DSSS(CCK, DQPSK, DBPSK)+ OFDM(QPSK, BPSK, 16-QAM, 64-QAM) draft 802.11n Standard-20MHz channel mode: OFDM(6.5,7.2, 13,14.4, 14.44, 19.5,217,26,28.89,28.9,39.43.3,43.33,52,57.78, 57.8, 58.5, 65.0, 72.2, 78, 86.67,104,115.56,117,130 and 144.44 Mbps) draft 802.11n Wide-40MHz channel mode: OFDM(13.5,15,27,30,40.5,45, 54, 60,81,90,108,120,121.5,135,150,162,180,216,240,243, 270 and 300 Mbps)
<b>Hardware Version</b>	: D2A
<b>Software Version</b>	: V0.2103
<b>Host Laptop PC</b>	Trade Name: acer ,Gateway, Packard Bell Model Number: ZE8
<b>Component</b>	
<b>Power Adapter</b>	: HIPRO , HP-A0301R3 Input:100-240Vac, 50/60Hz, 1A Output: 19Vdc, 1.58A, 30W Cable in: Non-Shielded, 1.46 m Cable out: Non-Shielded, 1.78 m

## 1.2 Configuration of System under Test



**Figure 1. Configuration of System Under Test**

During testing the EUT's Power port was connected to AC Adapter.

## 1.3 Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual
Temperature (°C)	ANSI C63.4 CE	15-35	25
Humidity (%RH)		30-60	50
Barometric pressure (mbar)		860-1060	950-1000
Temperature (°C)	ANSI C63.4 RE	15-35	25
Humidity (%RH)		30-60	50
Barometric pressure (mbar)		860-1060	950-1000

Registration Number : 854525

Designation Number : TW1330

Test Site Name: A Test Lab Techno Corp.

Test Site Location: No. 140 -1, Changan Street, Bade City, Taoyuan County, Taiwan R.O.C.

TEL: 886-3-271-0188 FAX: 886-3-271-0190

The chamber meets the characteristics of ANSI C63.4-2003. This site is on file with the FCC.

## 2. Maximum Conducted Output Power Requirements

### 2.1 Test Procedure

The tests below are run with the EUT's transmitter set at high power in TX mode. The EUT is needed to force selection of output power level and channel number. While testing, EUT was set to transmit continuously. Remove the Subjective device's antenna and connect the RF output port to spectrum analyzer. The maximum peak output power shall not exceed 1 watt.

For antennas with gains of 6 dBi or less, maximum allowed transmitter output is 1 watt (+30 dBm). For antennas with gains greater than 6 dBi, transmitter output level must be decreased by an amount equal to  $(\text{GAIN} - 6)/3$  dBm.

The antenna port of the EUT was connected to the input of a power sensor. Power was read directly and cable loss correction was added to the reading to obtain power at the EUT antenna terminals.

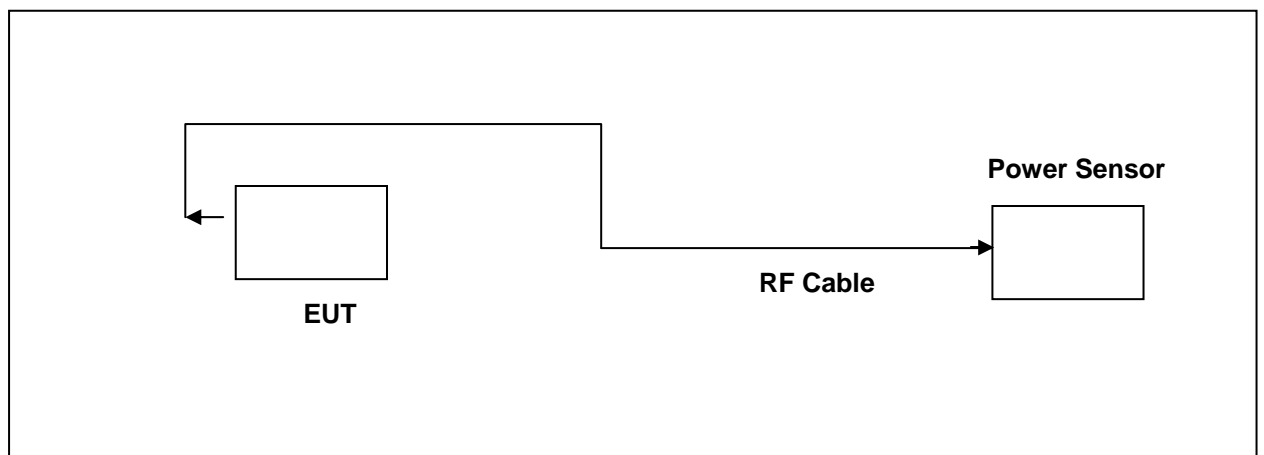
### 2.2 Limits

For systems using digital modulation in the 2400 - 2483.5 MHz bands: 1 Watt.

### 2.3 Test Equipment List

Describe	Manufacturer	Model	Serial Number	Calibration	
				Cal. Date	Due Date
WIDE BAND SENSOR	R&S	NRP-Z81	100017	May 17, 2009	May 17, 2010

### 2.4 Test Instruments Configuration





## 2.5 Test Result

### IEEE 802.11b\_2.4GHz

Frequency (MHz)	Average	
	dBm	W
2412	16.43	0.044
2437	16.47	0.044
2462	16.30	0.043

### IEEE 802.11g\_2.4GHz

Frequency (MHz)	Average	
	dBm	W
2412	12.30	0.017
2437	16.60	0.046
2462	11.30	0.013

### draft 802.11n Standard-20MHz\_2.4GHz

Frequency (MHz)	Average	
	dBm	W
2412	11.80	0.015
2437	16.38	0.043
2462	10.90	0.012

### draft 802.11n Wide-40MHz\_2.4GHz

Frequency (MHz)	Average	
	dBm	W
2422	10.70	0.012
2437	11.95	0.016
2452	9.60	0.009

Note: Average powers measured in above table are derived with a power meter and are ONLY for comparing the average powers measured in original application (Original ID: HLZ112BNH) with a power meter.



### **3. 99% Occupied Bandwidth**

#### **3.1 Test Procedure**

The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector. A fully charged battery was used for the supply voltage. The Bluetooth frequency hopping function of the EUT was enabled. The spectrum analyzer used the following settings:

1. Span = approx. 2 to 3 times the 26dBc bandwidth
2. Set spectrum open 99% Occupied Bandwidth function
3. RBW  $\geq$  1% of the 26dBc span
4. VBW  $\geq$  RBW
5. Sweep = auto
6. Detector function = sample

The trace was allowed to stabilize. The EUT was transmitting at its maximum data rate. The marker-to-peak function was used to set the marker to the peak of the emission. The marker-delta function was used to measure 26dBc down one side of the emission.

#### **3.2 Limits**

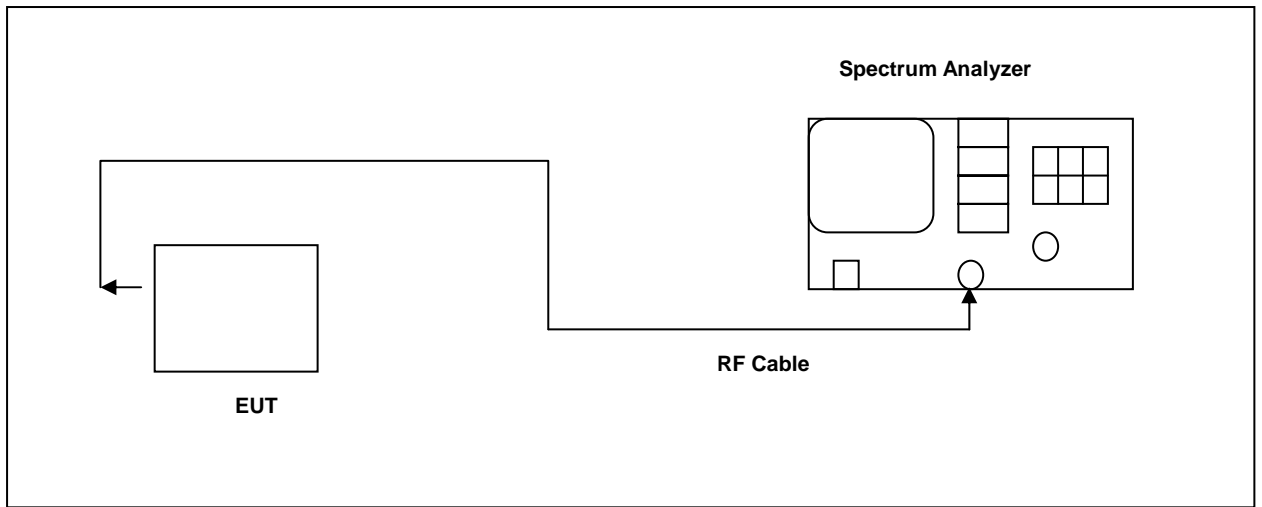
According to RSS-Gen Section 4.6.1, for purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier. Compliance with the emissions limits is based on the use of measurement instrumentation employing a sample detector function with an instrument resolutions bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.



### 3.3 Test Equipment List

Describe	Manufacturer	Model	Serial Number	Calibration	
				Cal. Date	Due Date
Spectrum Analyzer	Agilent	E4445A	MY46181986	May 14, 2009	May 14, 2010

### 3.4 Test Instruments Configuration





### 3.5 Test Result

#### IEEE 802.11b\_2.4GHz

Frequency (MHz)	99% Bandwidth (MHz)
2412	12.1224
2437	12.1169
2462	12.0526

#### IEEE 802.11g\_2.4GHz

Frequency (MHz)	99% Bandwidth (MHz)
2412	16.3413
2437	16.4688
2462	16.4919

#### draft 802.11n Standard-20MHz\_2.4GHz

Frequency (MHz)	99% Bandwidth (MHz)
2412	17.6132
2437	17.7073
2462	17.6114

#### draft 802.11n Wide-40MHz\_2.4GHz

Frequency (MHz)	99% Bandwidth (MHz)
2422	35.8927
2437	36.0812
2452	36.0512



### 3.6 Test Plot

99 % Bandwidth

<p>IEEE 802.11b 2412 MHz</p>	<p>Agilent 19:42:06 Nov 4, 2009</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Center Freq 2.41200000 GHz</p> <p>Start Freq 2.38700000 GHz</p> <p>Stop Freq 2.43700000 GHz</p> <p>CF Step 5.00000000 MHz</p> <p>Freq Offset 0.00000000 Hz</p> <p>Occupied Bandwidth 12.1224 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 102.144 kHz</p> <p>x dB Bandwidth 14.773 MHz*</p> <p>Copyright 2000-2005 Agilent Technologies</p>
<p>IEEE 802.11b 2437 MHz</p>	<p>Agilent 20:15:30 Nov 4, 2009</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.41200000 GHz</p> <p>Stop Freq 2.46200000 GHz</p> <p>CF Step 5.00000000 MHz</p> <p>Freq Offset 0.00000000 Hz</p> <p>Occupied Bandwidth 12.1169 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error 48.171 kHz</p> <p>x dB Bandwidth 14.503 MHz*</p> <p>Copyright 2000-2005 Agilent Technologies</p>
<p>IEEE 802.11b 2462 MHz</p>	<p>Agilent 20:14:56 Nov 4, 2009</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Center Freq 2.46200000 GHz</p> <p>Start Freq 2.43700000 GHz</p> <p>Stop Freq 2.48700000 GHz</p> <p>CF Step 5.00000000 MHz</p> <p>Freq Offset 0.00000000 Hz</p> <p>Occupied Bandwidth 12.0526 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -183.669 kHz</p> <p>x dB Bandwidth 14.677 MHz*</p> <p>Copyright 2000-2005 Agilent Technologies</p>



99 % Bandwidth

<p>IEEE 802.11g 2412 MHz</p>	<p>Agilent 19:52:00 Nov 4, 2009</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Center Freq 2.41200000 GHz</p> <p>Start Freq 2.38700000 GHz</p> <p>Stop Freq 2.43700000 GHz</p> <p>CF Step 5.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Occupied Bandwidth 16.3413 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -79.415 kHz x dB Bandwidth 18.526 MHz*</p> <p>Copyright 2000-2005 Agilent Technologies</p>
<p>IEEE 802.11g 2437 MHz</p>	<p>Agilent 20:12:12 Nov 4, 2009</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.41200000 GHz</p> <p>Stop Freq 2.46200000 GHz</p> <p>CF Step 5.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Occupied Bandwidth 16.4688 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -34.700 kHz x dB Bandwidth 18.661 MHz*</p> <p>Copyright 2000-2005 Agilent Technologies</p>
<p>IEEE 802.11g 2462 MHz</p>	<p>Agilent 20:12:54 Nov 4, 2009</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Center Freq 2.46200000 GHz</p> <p>Start Freq 2.43700000 GHz</p> <p>Stop Freq 2.48700000 GHz</p> <p>CF Step 5.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Occupied Bandwidth 16.4919 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -33.823 kHz x dB Bandwidth 19.116 MHz*</p> <p>Copyright 2000-2005 Agilent Technologies</p>



**99 % Bandwidth**

<p><b>draft 802.11n Standard-20 MHz_2.4GHz</b></p> <p><b>2412 MHz</b></p>	<p>Agilent 20:24:22 Nov 4, 2009 R T</p> <p>Ch Freq 2.412 GHz Trig Free</p> <p>Center Freq 2.41200000 GHz</p> <p>Start Freq 2.38700000 GHz</p> <p>Stop Freq 2.43700000 GHz</p> <p>CF Step 5.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Occupied Bandwidth 17.6132 MHz Occ BW % PWR 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error 2.265 kHz x dB Bandwidth 19.599 MHz*</p> <p>Copyright 2000-2005 Agilent Technologies</p>
<p><b>draft 802.11n Standard-20 MHz_2.4GHz</b></p> <p><b>2437 MHz</b></p>	<p>Agilent 20:09:52 Nov 4, 2009 T</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.41200000 GHz</p> <p>Stop Freq 2.46200000 GHz</p> <p>CF Step 5.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Occupied Bandwidth 17.7073 MHz Occ BW % PWR 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -34.272 kHz x dB Bandwidth 19.640 MHz*</p> <p>Copyright 2000-2005 Agilent Technologies</p>
<p><b>draft 802.11n Standard-20 MHz_2.4GHz</b></p> <p><b>2462 MHz</b></p>	<p>Agilent 20:09:17 Nov 4, 2009 T</p> <p>Ch Freq 2.462 GHz Trig Free</p> <p>Center Freq 2.46200000 GHz</p> <p>Start Freq 2.43700000 GHz</p> <p>Stop Freq 2.48700000 GHz</p> <p>CF Step 5.00000000 MHz Auto Man</p> <p>Freq Offset 0.00000000 Hz</p> <p>Signal Track On Off</p> <p>Occupied Bandwidth 17.6114 MHz Occ BW % PWR 99.00 % x dB -26.00 dB</p> <p>Transmit Freq Error -42.758 kHz x dB Bandwidth 19.312 MHz*</p> <p>Copyright 2000-2005 Agilent Technologies</p>



99 % Bandwidth

<p><b>draft 802.11n Wide-40 MHz_2.4GHz</b></p> <p><b>2422 MHz</b></p>	<p>Agilent 19:59:37 Nov 4, 2009</p> <p>Ch Freq 2.422 GHz Trig Free</p> <p>Center Freq 2.42200000 GHz</p> <p>Start Freq 2.39700000 GHz</p> <p>Stop Freq 2.44700000 GHz</p> <p>CF Step 5.00000000 MHz</p> <p>Freq Offset 0.00000000 Hz</p> <p>Occupied Bandwidth 35.8927 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -112.282 kHz</p> <p>x dB Bandwidth 38.225 MHz*</p> <p>Copyright 2000-2005 Agilent Technologies</p>
<p><b>draft 802.11n Wide-40 MHz_2.4GHz</b></p> <p><b>2437 MHz</b></p>	<p>Agilent 20:03:34 Nov 4, 2009</p> <p>Ch Freq 2.437 GHz Trig Free</p> <p>Center Freq 2.43700000 GHz</p> <p>Start Freq 2.41200000 GHz</p> <p>Stop Freq 2.46200000 GHz</p> <p>CF Step 5.00000000 MHz</p> <p>Freq Offset 0.00000000 Hz</p> <p>Occupied Bandwidth 36.0812 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -67.441 kHz</p> <p>x dB Bandwidth 37.467 MHz*</p> <p>Copyright 2000-2005 Agilent Technologies</p>
<p><b>draft 802.11n Wide-40 MHz_2.4GHz</b></p> <p><b>2452 MHz</b></p>	<p>Agilent 20:05:29 Nov 4, 2009</p> <p>Ch Freq 2.452 GHz Trig Free</p> <p>Center Freq 2.45200000 GHz</p> <p>Start Freq 2.42700000 GHz</p> <p>Stop Freq 2.47700000 GHz</p> <p>CF Step 5.00000000 MHz</p> <p>Freq Offset 0.00000000 Hz</p> <p>Occupied Bandwidth 36.0512 MHz</p> <p>Occ BW % Pwr 99.00 %</p> <p>x dB -26.00 dB</p> <p>Transmit Freq Error -58.190 kHz</p> <p>x dB Bandwidth 37.744 MHz*</p> <p>Copyright 2000-2005 Agilent Technologies</p>



## 4. Radiated Emissions Requirements

### 4.1 Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4:2003 on radiated measurement.

The EUT was positioned such that the distance from antenna to the EUT was 3 meters for the frequency under 1GHz and 3 meters for the frequency above 1GHz.

The bandwidth below 1GHz setting on the field strength meter (R&S Test Receiver ESCI) is 120 kHz and above 1GHz is 1MHz.

### 4.2 Radiated Emissions Limits

Frequency range (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009 to 0.490	2400/F(kHz)	300
0.490 to 1.705	24000/F(kHz)	30
1.705 to 30.0	30	30
30 to 88	100**	3
88 to 216	150**	3
216 to 960	200**	3
Above 960	500**	3

\*\*Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54–72 MHz, 76– 88 MHz, 174–216 MHz or 470–806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§15.231 and 15.241.



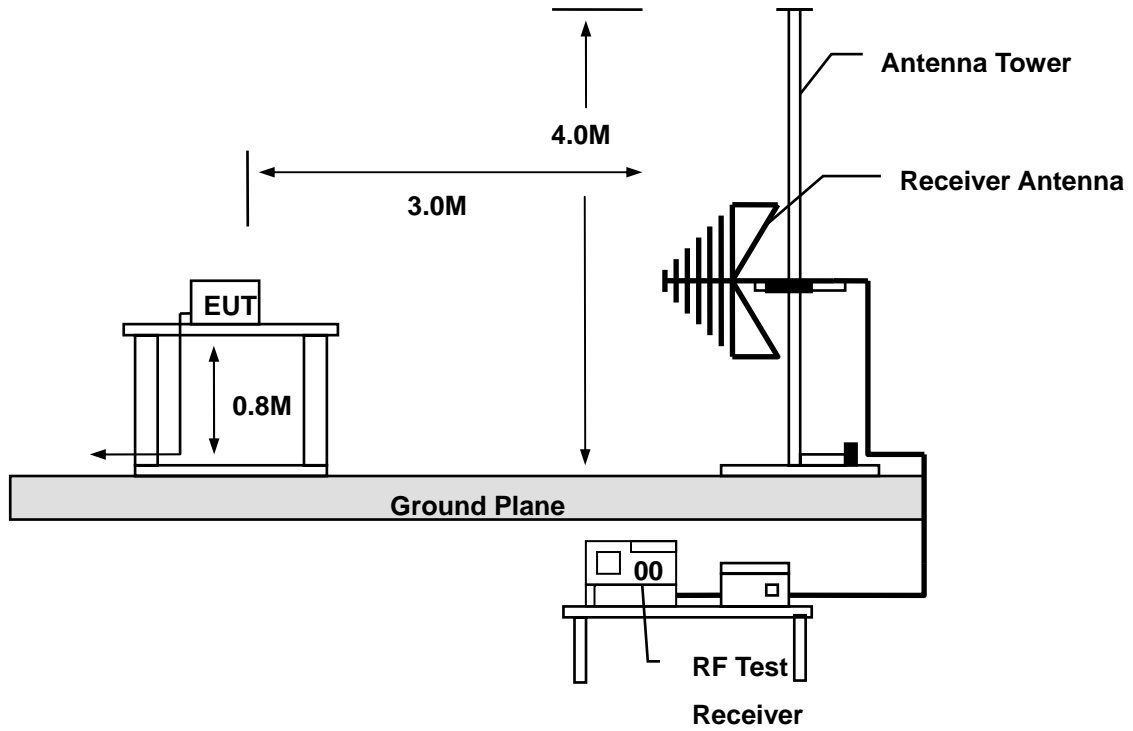
### 4.3 Test Equipment List

Describe	Manufacturer	Model	Serial Number	Calibration	
				Cal. Date	Due Date
Spectrum Analyzer	Agilent	E4408B	MY46181421	Mar. 13, 2009	Mar. 13, 2010
Spectrum Analyzer	Agilent	E4408A	MY46180578	Jan. 20, 2009	Jan. 20, 2010
Pre Amplifier	Agilent	8449B	3008A02457	Mar. 04, 2009	Mar. 04, 2010
Pre Amplifier	Agilent	8447D	2944A11119	Jan. 19, 2009	Jan. 19, 2010
Test Receiver	R&S	ESCI	100367	Jun. 05, 2009	Jun. 05, 2010
Biconilog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	Jun. 23, 2009	Jun. 23, 2010
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	Jul. 01, 2009	Jul. 01, 2010
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	Jun. 30, 2009	Jun. 30, 2010
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120E	0899	Jun. 23, 2009	Jun. 23, 2010

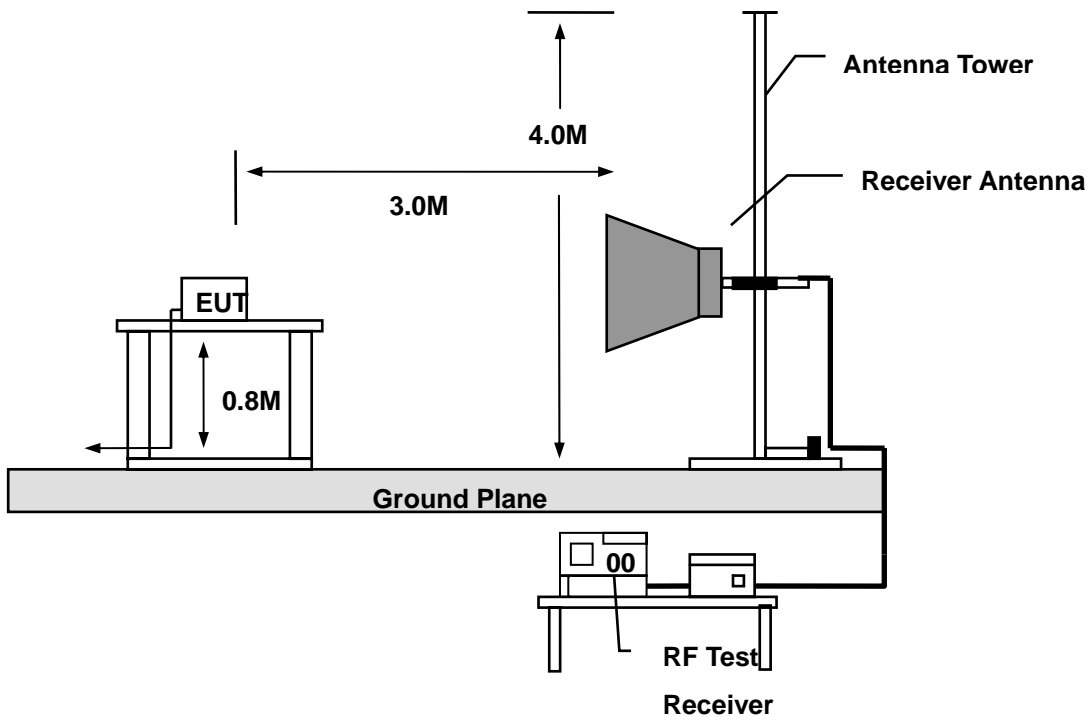


#### 4.4 Test Instruments Configuration

30 MHz ~ 1 GHz



1GHz ~ 26.5 GHz





## 4.5 Test Results

### 4.5.1 Below 1GHz

EUT : WLAN Module  
Model No. : 112BNHMW  
Test Mode : Normal operation  
Test Date : 11/05/2009

Please refer to next page of detail testing data.

Notes:

1. Margin= Amplitude - Limits
2. Distance of Measurement: 3 Meter (30MHz-40GHz)
3. Height of table for EUT placed: 0.8 Meter.
4. ANT= Antenna height.
5. Amplitude= Reading Amplitude – Amplifier gain + Cable loss + Antenna factor  
(Auto calculate in spectrum analyzer)
6. All frequencies from 30MHz to 40GHz have been tested



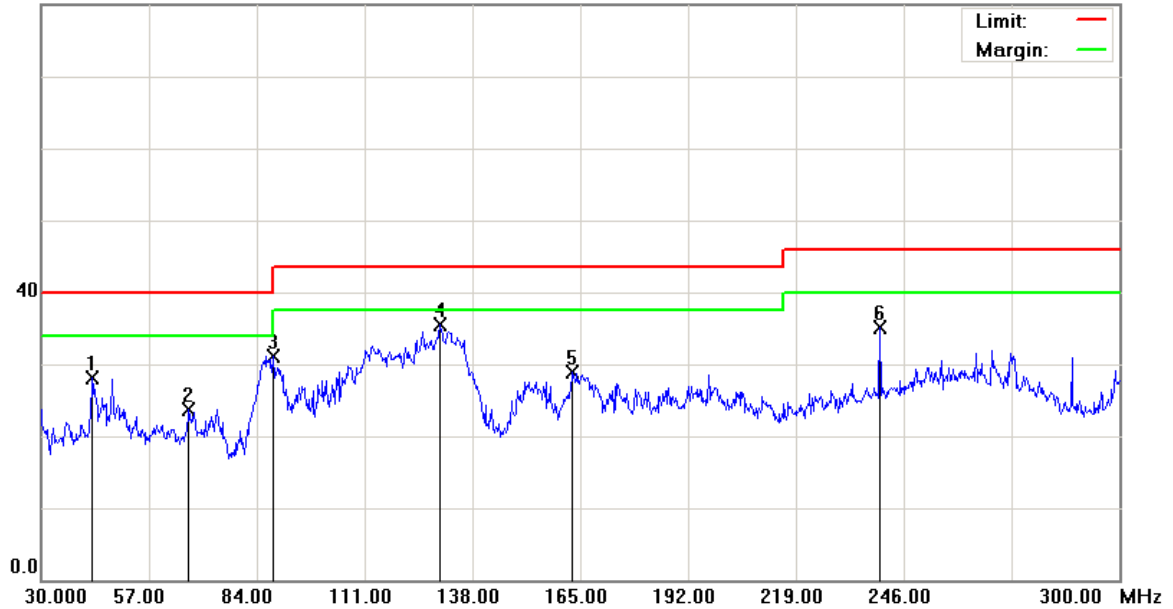
File :ZE8(SAR NB)

Data :#1

Date: 2009/11/5

Time:

80.0 dBuV/m



Site: 966 Chamber  
 Limit: FCC Class B 3M Radiation  
 EUT:  
 M/N: 09-0275-SE  
 Mode: Normal operation  
 Note: SAR NB

Polarization: **Vertical**  
 Power:  
 Distance: 3m

Temperature: 22 °C  
 Humidity: 60 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Antenna Height cm	Table Degree degree	Detector	Comment
1		42.6900	40.06	-11.86	28.20	40.00	-11.80			peak	
2		66.9900	39.03	-15.24	23.79	40.00	-16.21			peak	
3		88.0500	44.81	-13.78	31.03	43.50	-12.47			peak	
4	*	129.9000	51.19	-15.62	35.57	43.50	-7.93			peak	
5		163.1100	44.23	-15.38	28.85	43.50	-14.65			peak	
6		240.0600	46.61	-11.43	35.18	46.00	-10.82			peak	

\*:Maximum data x:Over limit !:over margin



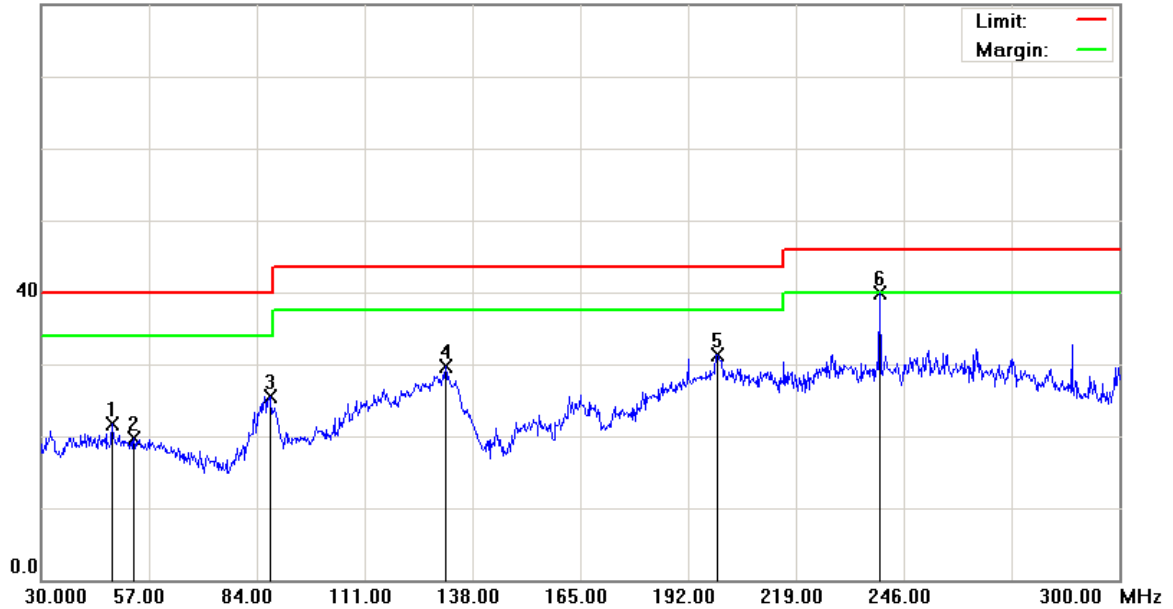
File :ZE8(SAR NB)

Data :#3

Date: 2009/11/5

Time:

80.0 dBuV/m



Site: 966 Chamber  
 Limit: FCC Class B 3M Radiation  
 EUT:  
 M/N: 09-0275-SE  
 Mode: Normal operation  
 Note: SAR NB

Polarization: **Horizontal**  
 Power:  
 Distance: 3m

Temperature: 22 °C  
 Humidity: 60 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Antenna Height cm	Table Degree degree	Detector	Comment
1		47.8200	33.63	-12.02	21.61	40.00	-18.39			peak	
2		53.2200	31.89	-12.19	19.70	40.00	-20.30			peak	
3		87.2400	39.61	-14.04	25.57	40.00	-14.43			peak	
4		131.2500	45.51	-15.72	29.79	43.50	-13.71			peak	
5		199.2900	44.55	-13.17	31.38	43.50	-12.12			peak	
6	*	240.0600	51.26	-11.43	39.83	46.00	-6.17			peak	

!:Maximum data x:Over limit !:over margin



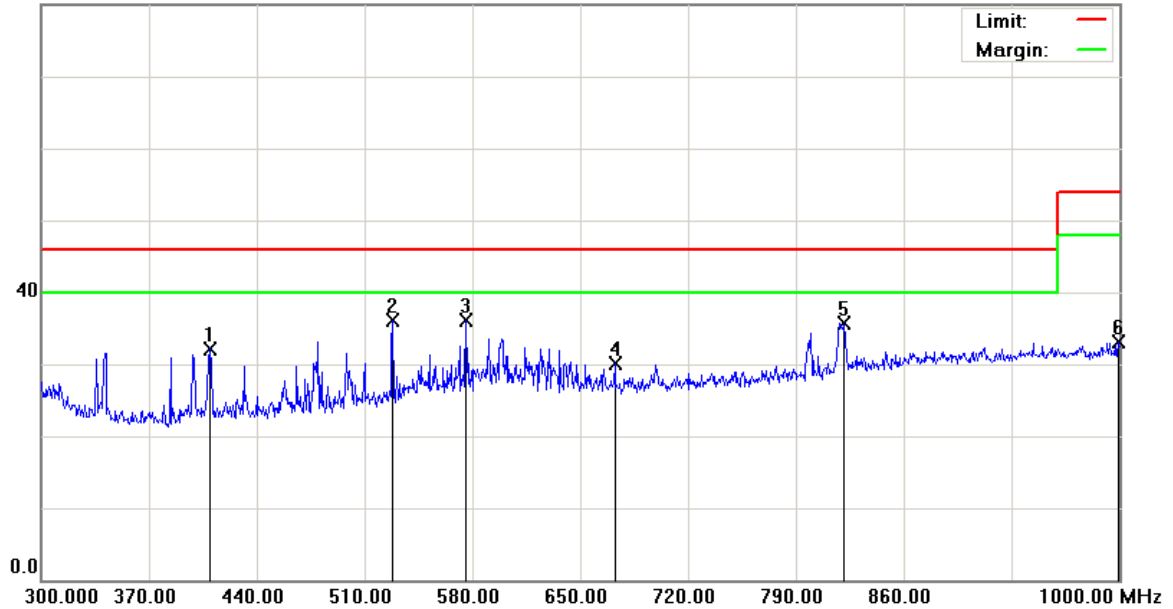
File :ZE8(SAR NB)

Data :#2

Date: 2009/11/5

Time:

80.0 dBuV/m



Site: 966 Chamber  
 Limit: FCC Class B 3M Radiation  
 EUT:  
 M/N: 09-0275-SE  
 Mode: Normal operation  
 Note: SAR NB

Polarization: **Vertical**  
 Power:  
 Distance: 3m

Temperature: 22 °C  
 Humidity: 60 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Antenna Height cm	Table Degree degree	Detector	Comment
1		409.9000	40.46	-8.26	32.20	46.00	-13.80			peak	
2		528.2000	42.38	-6.34	36.04	46.00	-9.96			peak	
3	*	575.8000	41.48	-5.34	36.14	46.00	-9.86			peak	
4		672.4000	34.34	-4.28	30.06	46.00	-15.94			peak	
5		821.5000	37.43	-1.71	35.72	46.00	-10.28			peak	
6		999.3000	32.47	0.65	33.12	54.00	-20.88			peak	

\*:Maximum data x:Over limit !:over margin



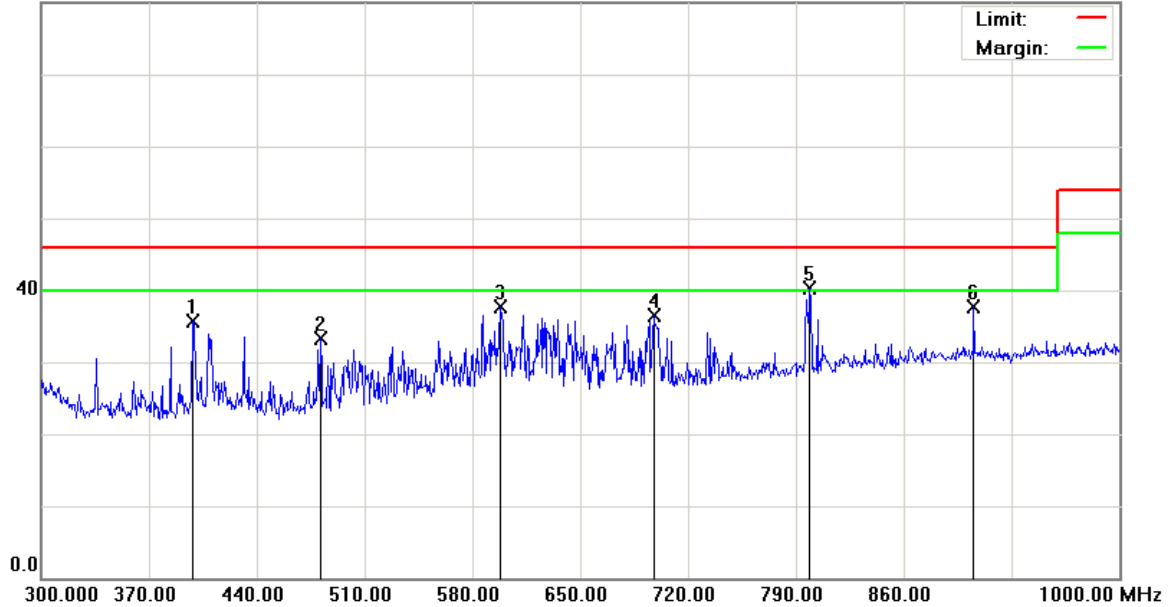
File :ZE8(SAR NB)

Data :#4

Date: 2009/11/5

Time:

80.0 dBuV/m



Site: 966 Chamber  
 Limit: FCC Class B 3M Radiation  
 EUT:  
 M/N: 09-0275-SE  
 Mode: Normal operation  
 Note: SAR NB

Polarization: **Horizontal**  
 Power:  
 Distance: 3m

Temperature: 22 °C  
 Humidity: 60 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Antenna Height cm	Table Degree degree	Degree	Comment
1		398.0000	44.08	-8.39	35.69	46.00	-10.31	peak			
2		481.3000	40.73	-7.51	33.22	46.00	-12.78	peak			
3		598.2000	42.62	-4.89	37.73	46.00	-8.27	peak			
4		697.6000	40.27	-3.86	36.41	46.00	-9.59	peak			
5	*	799.1000	42.65	-2.32	40.33	46.00	-5.67	peak			
6		905.5000	37.97	-0.22	37.75	46.00	-8.25	peak			

\*:Maximum data x:Over limit !:over margin



**4.5.2 Above 1GHz**

Test Mode: RX Mode							
Model No: 112BNHMW							
Test Date: 11/05/2009							
Tested by: John Cheng							
Freq	Polarization (V/H)	Rd_level(dBuV)	Factor	Level(dBuV)	Limit(dBuV)	Over	detector
2004.40	V	51.10	-1.60	49.50	74.00	-24.50	peak
2700.00	V	40.17	22.58	62.75	74.00	-11.25	peak
2700.00	V	21.32	22.58	43.90	54.00	-10.10	AVG
3207.50	V	51.99	2.68	54.67	74.00	-19.33	peak
3207.50	V	30.40	2.68	33.08	54.00	-20.92	AVG
9940.00	V	37.79	17.78	55.57	74.00	-18.43	peak
9940.00	V	27.68	17.78	45.46	54.00	-8.54	AVG
14225.00	V	28.64	28.40	57.04	74.00	-16.96	peak
14225.00	V	18.27	28.40	46.67	54.00	-7.33	AVG
18000.00	V	28.29	35.11	63.40	74.00	-10.60	peak
18000.00	V	7.47	35.11	42.58	54.00	-11.42	AVG
18908.25	V	37.03	23.15	60.18	74.00	-13.82	peak
18908.25	V	17.89	23.15	41.04	54.00	-12.96	AVG
21940.00	V	36.92	21.16	58.08	74.00	-15.92	peak
21940.00	V	18.87	21.16	40.03	54.00	-13.97	AVG
25765.00	V	39.66	18.79	58.45	74.00	-15.55	peak
25765.00	V	20.30	18.79	39.09	54.00	-14.91	AVG
1997.40	H	46.86	-1.77	45.09	74.00	-28.91	peak
2700.00	H	39.87	22.58	62.45	74.00	-11.55	peak
2700.00	H	21.38	22.58	43.96	54.00	-10.04	AVG
9321.25	H	39.78	16.89	56.67	74.00	-17.33	peak
9321.25	H	27.66	16.89	44.55	54.00	-9.45	AVG
14255.00	H	29.37	28.25	57.62	74.00	-16.38	peak
14255.00	H	17.93	28.25	46.18	54.00	-7.82	AVG
18000.00	H	28.15	35.11	63.26	74.00	-10.74	peak
18000.00	H	7.44	35.11	42.55	54.00	-11.45	AVG
18355.75	H	38.04	23.19	61.23	74.00	-12.77	peak
18355.75	H	20.62	23.19	43.81	54.00	-10.19	AVG
21906.00	H	37.93	21.18	59.11	74.00	-14.89	peak
21906.00	H	20.44	21.18	41.62	54.00	-12.38	AVG
25637.50	H	39.87	18.90	58.77	74.00	-15.23	peak
25637.50	H	21.32	18.90	40.22	54.00	-13.78	AVG



Test Mode: IEEE 802.11b _ TX Mode _ CH2412							
Model No: 112BNHMW							
Test Date: 11/05/2009							
Tested by: John Cheng							
Freq	Polarization (V/H)	Rd_level(dBuV)	Factor	Level(dBuV)	Limit(dBuV)	Over	detector
2276.70	V	54.53	0.45	54.98	74.00	-19.02	peak
2276.70	V	37.84	0.45	38.29	54.00	-15.71	AVG
2700.00	V	41.45	22.58	64.03	74.00	-9.97	peak
2700.00	V	21.48	22.58	44.06	54.00	-9.94	AVG
4824.00	V	39.27	7.48	46.75	74.00	-27.25	peak
9343.00	V	39.90	16.93	56.83	74.00	-17.17	peak
9343.00	V	27.69	16.93	44.62	54.00	-9.38	AVG
14240.00	V	38.87	18.71	57.58	74.00	-16.42	peak
14240.00	V	27.48	18.71	46.19	54.00	-7.81	AVG
17980.00	V	37.70	25.21	62.91	74.00	-11.09	peak
17980.00	V	17.11	25.21	42.32	54.00	-11.68	AVG
18658.75	V	38.34	23.09	61.43	74.00	-12.57	peak
18658.75	V	19.33	23.09	42.42	54.00	-11.58	AVG
21910.00	V	38.27	21.16	59.43	74.00	-14.57	peak
21910.00	V	19.72	21.16	40.88	54.00	-13.12	AVG
25841.25	V	40.28	18.69	58.97	74.00	-15.03	peak
25841.25	V	22.26	18.69	40.95	54.00	-13.05	AVG
2198.50	H	53.20	0.52	53.72	74.00	-20.28	peak
2198.50	H	37.23	0.52	37.75	54.00	-16.25	AVG
2700.00	H	41.61	22.58	64.19	74.00	-9.81	peak
2700.00	H	21.41	22.58	43.99	54.00	-10.01	AVG
4824.00	H	38.69	7.48	46.17	74.00	-27.83	peak
9616.75	H	39.06	17.25	56.31	74.00	-17.69	peak
9616.75	H	27.55	17.25	44.80	54.00	-9.20	AVG
14240.00	H	38.37	18.71	57.08	74.00	-16.92	peak
14240.00	H	27.48	18.71	46.19	54.00	-7.81	AVG
18000.00	H	37.87	25.57	63.44	74.00	-10.56	peak
18000.00	H	17.23	25.57	42.80	54.00	-11.20	AVG
18765.00	H	38.63	23.13	61.76	74.00	-12.24	peak
18765.00	H	19.35	23.13	42.48	54.00	-11.52	AVG
22080.00	H	38.13	21.07	59.20	74.00	-14.80	peak
22080.00	H	19.37	21.07	40.44	54.00	-13.56	AVG
24757.50	H	40.16	19.55	59.71	74.00	-14.29	peak
24757.50	H	20.24	19.55	39.79	54.00	-14.21	AVG





Test Mode: IEEE 802.11b _ TX Mode _ CH2437							
Model No: 112BNHMW							
Test Date: 11/05/2009							
Tested by: John Cheng							
Freq	Polarization (V/H)	Rd_level(dBuV)	Factor	Level(dBuV)	Limit(dBuV)	Over	detector
1248.20	V	55.92	-4.22	51.70	74.00	-22.30	peak
1248.20	V	46.73	-4.22	42.51	54.00	-11.49	AVG
1996.20	V	54.14	-1.66	52.48	74.00	-21.52	peak
1996.20	V	47.46	-1.66	45.80	54.00	-8.20	AVG
2700.00	V	41.65	22.58	64.23	74.00	-9.77	peak
2700.00	V	21.45	22.58	44.03	54.00	-9.97	AVG
4874.00	V	38.66	7.72	46.38	74.00	-27.62	peak
10000.00	V	38.72	17.94	56.66	74.00	-17.34	peak
10000.00	V	27.63	17.94	45.57	54.00	-8.43	AVG
13980.00	V	38.46	18.62	57.08	74.00	-16.92	peak
13980.00	V	27.58	18.62	46.20	54.00	-7.80	AVG
17980.00	V	37.72	25.21	62.93	74.00	-11.07	peak
17980.00	V	17.18	25.21	42.39	54.00	-11.61	AVG
19572.50	V	39.16	22.63	61.79	74.00	-12.21	peak
19572.50	V	19.69	22.63	42.32	54.00	-11.68	AVG
21633.75	V	38.20	21.28	59.48	74.00	-14.52	peak
21633.75	V	19.58	21.28	40.86	54.00	-13.14	AVG
25990.00	V	40.48	18.56	59.04	74.00	-14.96	peak
25990.00	V	21.87	18.56	40.43	54.00	-13.57	AVG
2295.40	H	54.76	0.48	55.24	74.00	-18.76	peak
2295.40	H	38.34	0.48	38.82	54.00	-15.18	AVG
2700.00	H	42.73	22.58	65.31	74.00	-8.69	peak
2700.00	H	21.38	22.58	43.96	54.00	-10.04	AVG
4874.00	H	38.98	7.72	46.70	74.00	-27.3	peak
9945.25	H	38.49	17.78	56.27	74.00	-17.73	peak
9945.25	H	27.41	17.78	45.19	54.00	-8.81	AVG
14060.00	H	38.66	18.72	57.38	74.00	-16.62	peak
14060.00	H	27.46	18.72	46.18	54.00	-7.82	AVG
18000.00	H	37.60	25.57	63.17	74.00	-10.83	peak
18000.00	H	21.21	25.57	46.78	54.00	-7.22	AVG
18828.75	H	38.19	23.15	61.34	74.00	-12.66	peak
18828.75	H	18.90	23.15	42.05	54.00	-11.95	AVG
21676.25	H	37.90	21.25	59.15	74.00	-14.85	peak
21676.25	H	19.20	21.25	40.45	54.00	-13.55	AVG
25820.00	H	40.74	18.71	59.45	74.00	-14.55	peak
25820.00	H	21.22	18.71	39.93	54.00	-14.07	AVG



Test Mode: IEEE 802.11b _ TX Mode _ CH2462							
Model No: 112BNHMW							
Test Date: 11/05/2009							
Tested by: John Cheng							
Freq	Polarization (V/H)	Rd_level(dBuV)	Factor	Level(dBuV)	Limit(dBuV)	Over	detector
1198.90	V	56.65	-4.91	51.74	74.00	-22.26	peak
1198.90	V	36.36	-4.91	31.45	54.00	-22.55	AVG
1997.90	V	53.44	-1.60	51.84	74.00	-22.16	peak
1997.90	V	36.89	-1.60	35.29	54.00	-18.71	AVG
2700.00	V	41.23	22.58	63.81	74.00	-10.19	peak
2700.00	V	21.43	22.58	44.01	54.00	-9.99	AVG
4924.00	V	38.27	7.65	45.92	74.00	-28.08	peak
9361.25	V	40.54	16.98	57.52	74.00	-16.48	peak
9361.25	V	27.62	16.98	44.60	54.00	-9.40	AVG
14160.00	V	38.13	18.83	56.96	74.00	-17.04	peak
14160.00	V	27.81	18.83	46.64	54.00	-7.36	AVG
17980.00	V	37.88	25.21	63.09	74.00	-10.91	peak
17980.00	V	17.62	25.21	42.83	54.00	-11.17	AVG
18340.00	V	38.30	23.18	61.48	74.00	-12.52	peak
18340.00	V	20.04	23.18	43.22	54.00	-10.78	AVG
21548.75	V	38.10	21.33	59.43	74.00	-14.57	peak
21548.75	V	19.90	21.33	41.23	54.00	-12.77	AVG
1355.30	H	52.72	-3.65	49.07	74.00	-24.93	peak
2700.00	H	40.95	22.58	63.53	74.00	-10.47	peak
2700.00	H	21.63	22.58	44.21	54.00	-9.79	AVG
4924.00	H	38.28	7.65	45.93	74.00	-28.07	peak
9908.75	H	38.43	17.78	56.21	74.00	-17.79	peak
9908.75	H	27.59	17.78	45.37	54.00	-8.63	AVG
14300.00	H	38.55	18.61	57.16	74.00	-16.84	peak
14300.00	H	27.15	18.61	45.76	54.00	-8.24	AVG
18000.00	H	37.72	25.57	63.29	74.00	-10.71	peak
18000.00	H	21.38	25.57	46.95	54.00	-7.05	AVG
18148.75	H	38.53	23.22	61.75	74.00	-12.25	peak
18148.75	H	20.60	23.22	43.82	54.00	-10.18	AVG
21803.75	H	38.07	21.21	59.28	74.00	-14.72	peak
21803.75	H	19.54	21.21	40.75	54.00	-13.25	AVG
25990.00	H	40.40	18.56	58.96	74.00	-15.04	peak
25990.00	H	22.27	18.56	40.83	54.00	-13.17	AVG



Test Mode: IEEE 802.11g _ TX Mode _ CH2412							
Model No: 112BNHMW							
Test Date: 11/05/2009							
Tested by: John Cheng							
Freq	Polarization (V/H)	Rd_level(dBuV)	Factor	Level(dBuV)	Limit(dBuV)	Over	detector
1195.50	V	55.61	-4.99	50.62	74.00	-23.38	peak
1195.50	V	36.03	-4.99	31.04	54.00	-22.96	AVG
2700.00	V	41.88	22.58	64.46	74.00	-9.54	peak
2700.00	V	21.43	22.58	44.01	54.00	-9.99	AVG
4824.00	V	38.80	7.48	46.28	74.00	-27.72	peak
9324.75	V	40.11	16.91	57.02	74.00	-16.98	peak
9324.75	V	27.43	16.91	44.34	54.00	-9.66	AVG
14320.00	V	38.41	18.57	56.98	74.00	-17.02	peak
14320.00	V	27.48	18.57	46.05	54.00	-7.95	AVG
17920.00	V	38.75	24.84	63.59	74.00	-10.41	peak
17920.00	V	21.28	24.84	46.12	54.00	-7.88	AVG
18510.00	V	38.71	23.10	61.81	74.00	-12.19	peak
18510.00	V	19.01	23.10	42.11	54.00	-11.89	AVG
21846.25	V	38.75	21.20	59.95	74.00	-14.05	peak
21846.25	V	19.85	21.20	41.05	54.00	-12.95	AVG
25288.75	V	40.33	19.11	59.44	74.00	-14.56	peak
25288.75	V	21.09	19.11	40.20	54.00	-13.80	AVG
2329.40	H	58.30	0.29	58.59	74.00	-15.41	peak
2329.40	H	45.12	0.29	45.41	54.00	-8.59	AVG
2700.00	H	41.60	22.58	64.18	74.00	-9.82	peak
2700.00	H	21.38	22.58	43.96	54.00	-10.04	AVG
4824.00	H	39.01	7.48	46.49	74.00	-27.51	peak
9361.25	H	39.20	16.98	56.18	74.00	-17.82	peak
9361.25	H	27.43	16.98	44.41	54.00	-9.59	AVG
14200.00	H	38.41	18.86	57.27	74.00	-16.73	peak
14200.00	H	27.21	18.86	46.07	54.00	-7.93	AVG
18000.00	H	37.41	25.57	62.98	74.00	-11.02	peak
18000.00	H	17.32	25.57	42.89	54.00	-11.11	AVG
18892.50	H	38.82	23.15	61.97	74.00	-12.03	peak
18892.50	H	19.24	23.15	42.39	54.00	-11.61	AVG
21825.00	H	38.03	21.20	59.23	74.00	-14.77	peak
21825.00	H	19.90	21.20	41.10	54.00	-12.90	AVG
25798.75	H	40.47	18.72	59.19	74.00	-14.81	peak
25798.75	H	21.70	18.72	40.42	54.00	-13.58	AVG



Test Mode: IEEE 802.11g _ TX Mode _ CH2437							
Model No: 112BNHMW							
Test Date: 11/05/2009							
Tested by: John Cheng							
Freq	Polarization (V/H)	Rd_level(dBuV)	Factor	Level(dBuV)	Limit(dBuV)	Over	detector
1193.80	V	57.98	-5.02	52.96	74.00	-21.04	peak
1193.80	V	36.30	-5.02	31.28	54.00	-22.72	AVG
1992.80	V	54.39	-1.77	52.62	74.00	-21.38	peak
1992.80	V	36.98	-1.77	35.21	54.00	-18.79	AVG
2700.00	V	41.18	22.58	63.76	74.00	-10.24	peak
2700.00	V	21.51	22.58	44.09	54.00	-9.91	AVG
4874.00	V	38.57	7.72	46.29	74.00	-27.71	peak
9963.50	V	38.56	17.82	56.38	74.00	-17.62	peak
9963.50	V	27.39	17.82	45.21	54.00	-8.79	AVG
14120.00	V	38.09	18.87	56.96	74.00	-17.04	peak
14120.00	V	27.41	18.87	46.28	54.00	-7.72	AVG
18000.00	V	37.61	25.57	63.18	74.00	-10.82	peak
18000.00	V	17.25	25.57	42.82	54.00	-11.18	AVG
18637.50	V	38.55	23.08	61.63	74.00	-12.37	peak
18637.50	V	20.24	23.08	43.32	54.00	-10.68	AVG
21506.25	V	38.02	21.35	59.37	74.00	-14.63	peak
21506.25	V	19.87	21.35	41.22	54.00	-12.78	AVG
24396.25	V	39.84	19.72	59.56	74.00	-14.44	peak
24396.25	V	20.96	19.72	40.68	54.00	-13.32	AVG
2326.00	H	56.24	0.28	56.52	74.00	-17.48	peak
2326.00	H	43.84	0.28	44.12	54.00	-9.88	AVG
2700.00	H	41.51	22.58	64.09	74.00	-9.91	peak
2700.00	H	21.55	22.58	44.13	54.00	-9.87	AVG
4874.00	H	38.34	7.72	46.06	74.00	-27.94	peak
9872.25	H	38.13	17.84	55.97	74.00	-18.03	peak
9872.25	H	27.58	17.84	45.42	54.00	-8.58	AVG
14340.00	H	38.81	18.54	57.35	74.00	-16.65	peak
14340.00	H	27.52	18.54	46.06	54.00	-7.94	AVG
18000.00	H	37.60	25.57	63.17	74.00	-10.83	peak
18000.00	H	17.32	25.57	42.89	54.00	-11.11	AVG
18446.25	H	38.14	23.13	61.27	74.00	-12.73	peak
18446.25	H	19.70	23.13	42.83	54.00	-11.17	AVG
22143.75	H	38.81	21.04	59.85	74.00	-14.15	peak
22143.75	H	19.74	21.04	40.78	54.00	-13.22	AVG
25543.75	H	40.02	18.95	58.97	74.00	-15.03	peak
25543.75	H	21.66	18.95	40.61	54.00	-13.39	AVG



Test Mode: IEEE 802.11g _ TX Mode _ CH2462							
Model No: 112BNHMW							
Test Date: 11/05/2009							
Tested by: John Cheng							
Freq	Polarization (V/H)	Rd_level(dBuV)	Factor	Level(dBuV)	Limit(dBuV)	Over	detector
1246.50	V	60.45	-4.24	56.21	74.00	-17.79	peak
1246.50	V	35.24	-4.24	31.00	54.00	-23.00	AVG
2327.70	V	56.99	0.29	57.28	74.00	-16.72	peak
2327.70	V	43.74	0.29	44.03	54.00	-9.97	AVG
2700.00	V	40.87	22.58	63.45	74.00	-10.55	peak
2700.00	V	21.42	22.58	44.00	54.00	-10.00	AVG
4924.00	V	38.20	7.65	45.85	74.00	-28.15	peak
9835.75	V	38.62	17.83	56.45	74.00	-17.55	peak
9835.75	V	27.48	17.83	45.31	54.00	-8.69	AVG
13900.00	V	38.51	18.53	57.04	74.00	-16.96	peak
13900.00	V	27.52	18.53	46.05	54.00	-7.95	AVG
18000.00	V	37.64	25.57	63.21	74.00	-10.79	peak
18000.00	V	17.32	25.57	42.89	54.00	-11.11	AVG
19360.00	V	38.69	22.84	61.53	74.00	-12.47	peak
19360.00	V	19.67	22.84	42.51	54.00	-11.49	AVG
21846.25	V	38.26	21.20	59.46	74.00	-14.54	peak
21846.25	V	20.09	21.20	41.29	54.00	-12.71	AVG
25926.25	V	40.50	18.62	59.12	74.00	-14.88	peak
25926.25	V	21.29	18.62	39.91	54.00	-14.09	AVG
1246.50	H	57.04	-4.24	52.80	74.00	-21.20	peak
1246.50	H	35.20	-4.24	30.96	54.00	-23.04	AVG
2329.40	H	56.77	0.29	57.06	74.00	-16.94	peak
2329.40	H	43.51	0.29	43.80	54.00	-10.20	AVG
2700.00	H	41.13	22.58	63.71	74.00	-10.29	peak
2700.00	H	21.37	22.58	43.95	54.00	-10.05	AVG
4924.00	H	38.60	7.65	46.25	74.00	-27.75	peak
9762.75	H	38.53	17.70	56.23	74.00	-17.77	peak
9762.75	H	27.34	17.70	45.04	54.00	-8.96	AVG
14260.00	H	38.91	18.66	57.57	74.00	-16.43	peak
14260.00	H	27.32	18.66	45.98	54.00	-8.02	AVG
18000.00	H	38.14	25.57	63.71	74.00	-10.29	peak
18000.00	H	17.18	25.57	42.75	54.00	-11.25	AVG
18446.25	H	38.28	23.13	61.41	74.00	-12.59	peak
18446.25	H	19.69	23.13	42.82	54.00	-11.18	AVG
21782.50	H	38.73	21.22	59.95	74.00	-14.05	peak
21782.50	H	19.43	21.22	40.65	54.00	-13.35	AVG
25118.75	H	40.72	19.27	59.99	74.00	-14.01	peak
25118.75	H	20.82	19.27	40.09	54.00	-13.91	AVG



Test Mode: draft 802.11n Standard-20MHz _ TX Mode _ CH2412							
Model No: 112BNHMW							
Test Date: 11/05/2009							
Tested by: John Cheng							
Freq	Polarization (V/H)	Rd_level(dBuV)	Factor	Level(dBuV)	Limit(dBuV)	Over	detector
1246.50	V	59.09	-4.24	54.85	74.00	-19.15	peak
1246.50	V	35.42	-4.24	31.18	54.00	-22.82	AVG
1994.50	V	54.45	-1.71	52.74	74.00	-21.26	peak
1994.50	V	36.65	-1.71	34.94	54.00	-19.06	AVG
2700.00	V	41.42	22.58	64.00	74.00	-10.00	peak
2700.00	V	21.90	22.58	44.48	54.00	-9.52	AVG
4824.00	V	38.44	7.48	45.92	74.00	-28.08	peak
9324.75	V	39.55	16.91	56.46	74.00	-17.54	peak
9324.75	V	27.61	16.91	44.52	54.00	-9.48	AVG
14200.00	V	38.40	18.86	57.26	74.00	-16.74	peak
14200.00	V	27.41	18.86	46.27	54.00	-7.73	AVG
17980.00	V	37.72	25.21	62.93	74.00	-11.07	peak
17980.00	V	17.36	25.21	42.57	54.00	-11.43	AVG
18233.75	V	38.24	23.21	61.45	74.00	-12.55	peak
18233.75	V	20.35	23.21	43.56	54.00	-10.44	AVG
21867.50	V	38.37	21.19	59.56	74.00	-14.44	peak
21867.50	V	19.75	21.19	40.94	54.00	-13.06	AVG
25990.00	V	40.33	18.56	58.89	74.00	-15.11	peak
25990.00	V	21.74	18.56	40.30	54.00	-13.70	AVG
1244.80	H	58.57	-4.26	54.31	74.00	-19.69	peak
1244.80	H	35.19	-4.26	30.93	54.00	-23.07	AVG
2184.90	H	56.16	0.33	56.49	74.00	-17.51	peak
2184.90	H	42.02	0.33	42.35	54.00	-11.65	AVG
2700.00	H	41.17	22.58	63.75	74.00	-10.25	peak
2700.00	H	21.35	22.58	43.93	54.00	-10.07	AVG
4824.00	H	39.40	7.48	46.88	74.00	-27.12	peak
9981.75	H	38.46	17.88	56.34	74.00	-17.66	peak
9981.75	H	27.49	17.88	45.37	54.00	-8.63	AVG
14200.00	H	39.21	18.86	58.07	74.00	-15.93	peak
14200.00	H	27.42	18.86	46.28	54.00	-7.72	AVG
18000.00	H	37.51	25.57	63.08	74.00	-10.92	peak
18000.00	H	17.14	25.57	42.71	54.00	-11.29	AVG
18255.00	H	38.94	23.20	62.14	74.00	-11.86	peak
18255.00	H	20.20	23.20	43.40	54.00	-10.60	AVG
21910.00	H	38.02	21.16	59.18	74.00	-14.82	peak
21910.00	H	19.58	21.16	40.74	54.00	-13.26	AVG
25182.50	H	40.13	19.20	59.33	74.00	-14.67	peak
25182.50	H	21.09	19.20	40.29	54.00	-13.71	AVG



Test Mode: draft 802.11n Standard-20MHz _ TX Mode _ CH2437							
Model No: 112BNHMW							
Test Date: 11/05/2009							
Tested by: John Cheng							
Freq	Polarization (V/H)	Rd_level(dBuV)	Factor	Level(dBuV)	Limit(dBuV)	Over	detector
1246.50	V	55.75	-4.24	51.51	74.00	-22.49	peak
1246.50	V	35.34	-4.24	31.10	54.00	-22.90	AVG
1994.50	V	53.99	-1.71	52.28	74.00	-21.72	peak
1994.50	V	37.18	-1.71	35.47	54.00	-18.53	AVG
2700.00	V	40.98	22.58	63.56	74.00	-10.44	peak
2700.00	V	21.52	22.58	44.10	54.00	-9.90	AVG
4874.00	V	38.90	7.72	46.62	74.00	-27.38	peak
9306.50	V	39.54	16.89	56.43	74.00	-17.57	peak
9306.50	V	27.64	16.89	44.53	54.00	-9.47	AVG
14200.00	V	38.44	18.86	57.30	74.00	-16.70	peak
14200.00	V	27.31	18.86	46.17	54.00	-7.83	AVG
18000.00	V	37.39	25.57	62.96	74.00	-11.04	peak
18000.00	V	17.42	25.57	42.99	54.00	-11.01	AVG
19572.50	V	38.83	22.63	61.46	74.00	-12.54	peak
19572.50	V	20.01	22.63	42.64	54.00	-11.36	AVG
21825.00	V	38.00	21.20	59.20	74.00	-14.80	peak
21825.00	V	19.49	21.20	40.69	54.00	-13.31	AVG
25777.50	V	40.93	18.74	59.67	74.00	-14.33	peak
25777.50	V	21.22	18.74	39.96	54.00	-14.04	AVG
1244.80	H	60.45	-4.26	56.19	74.00	-17.81	peak
1244.80	H	35.17	-4.26	30.91	54.00	-23.09	AVG
2700.00	H	41.33	22.58	63.91	74.00	-10.09	peak
2700.00	H	21.41	22.58	43.99	54.00	-10.01	AVG
4874.00	H	38.08	7.72	45.80	74.00	-28.20	peak
9908.75	H	38.86	17.78	56.64	74.00	-17.36	peak
9908.75	H	27.68	17.78	45.46	54.00	-8.54	AVG
14260.00	H	38.67	18.66	57.33	74.00	-16.67	peak
14260.00	H	27.18	18.66	45.84	54.00	-8.16	AVG
17980.00	H	38.09	25.21	63.30	74.00	-10.70	peak
17980.00	H	17.11	25.21	42.32	54.00	-11.68	AVG
18403.75	H	39.22	23.15	62.37	74.00	-11.63	peak
18403.75	H	20.01	23.15	43.16	54.00	-10.84	AVG
21888.75	H	38.12	21.18	59.30	74.00	-14.70	peak
21888.75	H	19.78	21.18	40.96	54.00	-13.04	AVG
24396.25	H	39.74	19.72	59.46	74.00	-14.54	peak
24396.25	H	20.81	19.72	40.53	54.00	-13.47	AVG



Test Mode: draft 802.11n Standard-20MHz _ TX Mode _ CH2462							
Model No: 112BNHMW							
Test Date: 11/05/2009							
Tested by: John Cheng							
Freq	Polarization (V/H)	Rd_level(dBuV)	Factor	Level(dBuV)	Limit(dBuV)	Over	detector
1244.80	V	59.98	-4.26	55.72	74.00	-18.28	peak
1244.80	V	35.45	-4.26	31.19	54.00	-22.81	AVG
1999.60	V	55.49	-1.53	53.96	74.00	-20.04	peak
1999.60	V	35.82	-1.53	34.29	54.00	-19.71	AVG
2332.80	V	55.89	0.28	56.17	74.00	-17.83	peak
2332.80	V	43.78	0.28	44.06	54.00	-9.94	AVG
2700.00	V	41.02	22.58	63.60	74.00	-10.40	peak
2700.00	V	21.38	22.58	43.96	54.00	-10.04	AVG
4924.00	V	38.82	7.65	46.47	74.00	-27.53	peak
9324.75	V	39.58	16.91	56.49	74.00	-17.51	peak
9324.75	V	27.48	16.91	44.39	54.00	-9.61	AVG
14120.00	V	37.96	18.87	56.83	74.00	-17.17	peak
14120.00	V	27.63	18.87	46.50	54.00	-7.50	AVG
18000.00	V	37.28	25.57	62.85	74.00	-11.15	peak
18000.00	V	17.42	25.57	42.99	54.00	-11.01	AVG
18063.75	V	38.18	23.26	61.44	74.00	-12.56	peak
18063.75	V	20.46	23.26	43.72	54.00	-10.28	AVG
21867.50	V	38.56	21.19	59.75	74.00	-14.25	peak
21867.50	V	20.02	21.19	41.21	54.00	-12.79	AVG
24970.00	V	40.15	19.41	59.56	74.00	-14.44	peak
24970.00	V	20.29	19.41	39.70	54.00	-14.30	AVG
1244.80	H	60.13	-4.26	55.87	74.00	-18.13	peak
1244.80	H	35.19	-4.26	30.93	54.00	-23.07	AVG
2305.60	H	56.42	0.46	56.88	74.00	-17.12	peak
2305.60	H	44.08	0.46	44.54	54.00	-9.46	AVG
2700.00	H	41.34	22.58	63.92	74.00	-10.08	peak
2700.00	H	21.41	22.58	43.99	54.00	-10.01	AVG
4924.00	H	38.88	7.65	46.53	74.00	-27.47	peak
9306.50	H	39.21	16.89	56.10	74.00	-17.90	peak
9306.50	H	27.62	16.89	44.51	54.00	-9.49	AVG
14120.00	H	38.47	18.87	57.34	74.00	-16.66	peak
14120.00	H	27.35	18.87	46.22	54.00	-7.78	AVG
17900.00	H	38.16	24.96	63.12	74.00	-10.88	peak
17900.00	H	17.31	24.96	42.27	54.00	-11.73	AVG
18743.75	H	38.38	23.13	61.51	74.00	-12.49	peak
18743.75	H	19.32	23.13	42.45	54.00	-11.55	AVG
22016.25	H	38.16	21.10	59.26	74.00	-14.74	peak
22016.25	H	19.37	21.10	40.47	54.00	-13.53	AVG
23567.50	H	38.76	20.50	59.26	74.00	-14.74	peak
23567.50	H	19.64	20.50	40.14	54.00	-13.86	AVG





Test Mode: draft 802.11n Wide-40MHz _ TX Mode _ CH2422							
Model No: 112BNHMW							
Test Date: 11/05/2009							
Tested by: John Cheng							
Freq	Polarization (V/H)	Rd_level(dBuV)	Factor	Level(dBuV)	Limit(dBuV)	Over	detector
2244.40	V	52.29	0.46	52.75	74.00	-21.25	peak
2244.40	V	37.44	0.46	37.90	54.00	-16.10	AVG
2700.00	V	40.72	22.58	63.30	74.00	-10.70	peak
2700.00	V	21.61	22.58	44.19	54.00	-9.81	AVG
4844.00	V	38.15	7.67	45.82	74.00	-28.18	peak
9324.75	V	39.77	16.91	56.68	74.00	-17.32	peak
9324.75	V	27.41	16.91	44.32	54.00	-9.68	AVG
14100.00	V	38.77	18.90	57.67	74.00	-16.33	peak
14100.00	V	26.97	18.90	45.87	54.00	-8.13	AVG
17900.00	V	37.75	24.96	62.71	74.00	-11.29	peak
17900.00	V	17.89	24.96	42.85	54.00	-11.15	AVG
18340.00	V	38.18	23.18	61.36	74.00	-12.64	peak
18340.00	V	20.27	23.18	43.45	54.00	-10.55	AVG
21888.75	V	38.51	21.18	59.69	74.00	-14.31	peak
21888.75	V	19.82	21.18	41.00	54.00	-13.00	AVG
24375.00	V	39.59	19.74	59.33	74.00	-14.67	peak
24375.00	V	20.56	19.74	40.30	54.00	-13.70	AVG
2241.00	H	51.68	0.44	52.12	74.00	-21.88	peak
2241.00	H	37.74	0.44	38.18	74.00	-35.82	peak
2700.00	H	41.54	22.58	64.12	74.00	-9.88	peak
2700.00	H	21.48	22.58	44.06	54.00	-9.94	AVG
4844.00	H	38.50	7.67	46.17	74.00	-27.83	peak
9835.75	H	38.41	17.83	56.24	74.00	-17.76	peak
9835.75	H	27.53	17.83	45.36	54.00	-8.64	AVG
14280.00	H	38.63	18.63	57.26	74.00	-16.74	peak
14280.00	H	27.35	18.63	45.98	54.00	-8.02	AVG
18000.00	H	37.58	25.57	63.15	74.00	-10.85	peak
18000.00	H	17.23	25.57	42.80	54.00	-11.20	AVG
18722.50	H	38.29	23.12	61.41	74.00	-12.59	peak
18722.50	H	19.59	23.12	42.71	54.00	-11.29	AVG
21655.00	H	38.39	21.27	59.66	74.00	-14.34	peak
21655.00	H	20.04	21.27	41.31	54.00	-12.69	AVG
25990.00	H	41.16	18.56	59.72	74.00	-14.28	peak
25990.00	H	21.93	18.56	40.49	54.00	-13.51	AVG



Test Mode: draft 802.11n Wide-40MHz _ TX Mode _ CH2437							
Model No: 112BNHMW							
Test Date: 11/05/2009							
Tested by: John Cheng							
Freq	Polarization (V/H)	Rd_level(dBuV)	Factor	Level(dBuV)	Limit(dBuV)	Over	detector
2237.60	V	51.28	0.44	51.72	74.00	-22.28	peak
2237.60	V	37.84	0.44	38.28	54.00	-15.72	AVG
2700.00	V	40.69	22.58	63.27	74.00	-10.73	peak
2700.00	V	21.34	22.58	43.92	54.00	-10.08	AVG
4874.00	V	38.46	7.72	46.18	74.00	-27.82	peak
9434.25	V	39.29	17.03	56.32	74.00	-17.68	peak
9434.25	V	27.48	17.03	44.51	54.00	-9.49	AVG
14260.00	V	38.47	18.66	57.13	74.00	-16.87	peak
14260.00	V	27.43	18.66	46.09	54.00	-7.91	AVG
17980.00	V	38.34	25.21	63.55	74.00	-10.45	peak
17980.00	V	21.41	25.21	46.62	54.00	-7.38	AVG
18148.75	V	38.45	23.22	61.67	74.00	-12.33	peak
18148.75	V	20.56	23.22	43.78	54.00	-10.22	AVG
21846.25	V	38.91	21.20	60.11	74.00	-13.89	peak
21846.25	V	19.88	21.20	41.08	54.00	-12.92	AVG
24396.25	V	40.22	19.72	59.94	74.00	-14.06	peak
24396.25	V	21.01	19.72	40.73	54.00	-13.27	AVG
2247.80	H	50.81	0.48	51.29	74.00	-22.71	peak
2247.80	H	37.09	0.48	37.57	54.00	-16.43	AVG
2700.00	H	41.45	22.58	64.03	74.00	-9.97	peak
2700.00	H	21.42	22.58	44.00	54.00	-10.00	AVG
4874.00	H	38.64	7.72	46.36	74.00	-27.64	peak
9124.00	H	40.16	16.22	56.38	74.00	-17.62	peak
9124.00	H	27.56	16.22	43.78	54.00	-10.22	AVG
14020.00	H	38.56	18.67	57.23	74.00	-16.77	peak
14020.00	H	27.43	18.67	46.10	54.00	-7.90	AVG
18000.00	H	38.49	25.57	64.06	74.00	-9.94	peak
18000.00	H	17.35	25.57	42.92	54.00	-11.08	AVG
18722.50	H	38.92	23.12	62.04	74.00	-11.96	peak
18722.50	H	19.33	23.12	42.45	54.00	-11.55	AVG
21676.25	H	38.13	21.25	59.38	74.00	-14.62	peak
21676.25	H	19.43	21.25	40.68	54.00	-13.32	AVG
25331.25	H	40.55	19.09	59.64	74.00	-14.36	peak
25331.25	H	21.36	19.09	40.45	54.00	-13.55	AVG



Test Mode: draft 802.11n Wide-40MHz _ TX Mode _ CH2452							
Model No: 112BNHMW							
Test Date: 11/05/2009							
Tested by: John Cheng							
Freq	Polarization (V/H)	Rd_level(dBuV)	Factor	Level(dBuV)	Limit(dBuV)	Over	detector
1997.90	V	53.88	-1.60	52.28	74.00	-21.72	peak
1997.90	V	35.79	-1.60	34.19	54.00	-19.81	AVG
2700.00	V	40.60	22.58	63.18	74.00	-10.82	peak
2700.00	V	21.46	22.58	44.04	54.00	-9.96	AVG
4904.00	V	38.10	7.71	45.81	74.00	-28.19	peak
9854.00	V	38.39	17.89	56.28	74.00	-17.72	peak
9854.00	V	27.48	17.89	45.37	54.00	-8.63	AVG
14320.00	V	38.39	18.57	56.96	74.00	-17.04	peak
14320.00	V	27.52	18.57	46.09	54.00	-7.91	AVG
17920.00	V	38.20	24.84	63.04	74.00	-10.96	peak
17920.00	V	21.42	24.84	46.26	54.00	-7.74	AVG
18488.75	V	38.56	23.12	61.68	74.00	-12.32	peak
18488.75	V	19.62	23.12	42.74	54.00	-11.26	AVG
21527.50	V	37.94	21.35	59.29	74.00	-14.71	peak
21527.50	V	19.89	21.35	41.24	54.00	-12.76	AVG
25777.50	V	40.68	18.74	59.42	74.00	-14.58	peak
25777.50	V	21.70	18.74	40.44	54.00	-13.56	AVG
2252.90	H	51.37	0.48	51.85	74.00	-22.15	peak
2252.90	H	37.09	0.48	37.57	54.00	-16.43	AVG
2700.00	H	41.18	22.58	63.76	74.00	-10.24	peak
2700.00	H	21.49	22.58	44.07	54.00	-9.93	AVG
4904.00	H	39.77	7.71	47.48	74.00	-26.52	peak
9361.25	H	39.70	16.98	56.68	74.00	-17.32	peak
9361.25	H	27.61	16.98	44.59	54.00	-9.41	AVG
14200.00	H	38.18	18.86	57.04	74.00	-16.96	peak
14200.00	H	27.21	18.86	46.07	54.00	-7.93	AVG
18000.00	H	37.76	25.57	63.33	74.00	-10.67	peak
18000.00	H	17.32	25.57	42.89	54.00	-11.11	AVG
18616.25	H	38.56	23.07	61.63	74.00	-12.37	peak
18616.25	H	19.49	23.07	42.56	54.00	-11.44	AVG
21676.25	H	38.13	21.25	59.38	74.00	-14.62	peak
21676.25	H	19.98	21.25	41.23	54.00	-12.77	AVG
24077.50	H	39.55	19.94	59.49	74.00	-14.51	peak
24077.50	H	20.32	19.94	40.26	54.00	-13.74	AVG



## 5. Band Edges Requirements

### 5.1 Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The emissions on the harmonics frequencies, the limits, and the margin of compliance are presented. These tests were made when the transmitter was in full radiated power. The additional test was performed to show compliance with the requirement at the lower and upper band-edges of the emission.

EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission and PEAK set RBW=VBW=1MHz and AVERAGE set RBW=1MHz / VBW=10Hz

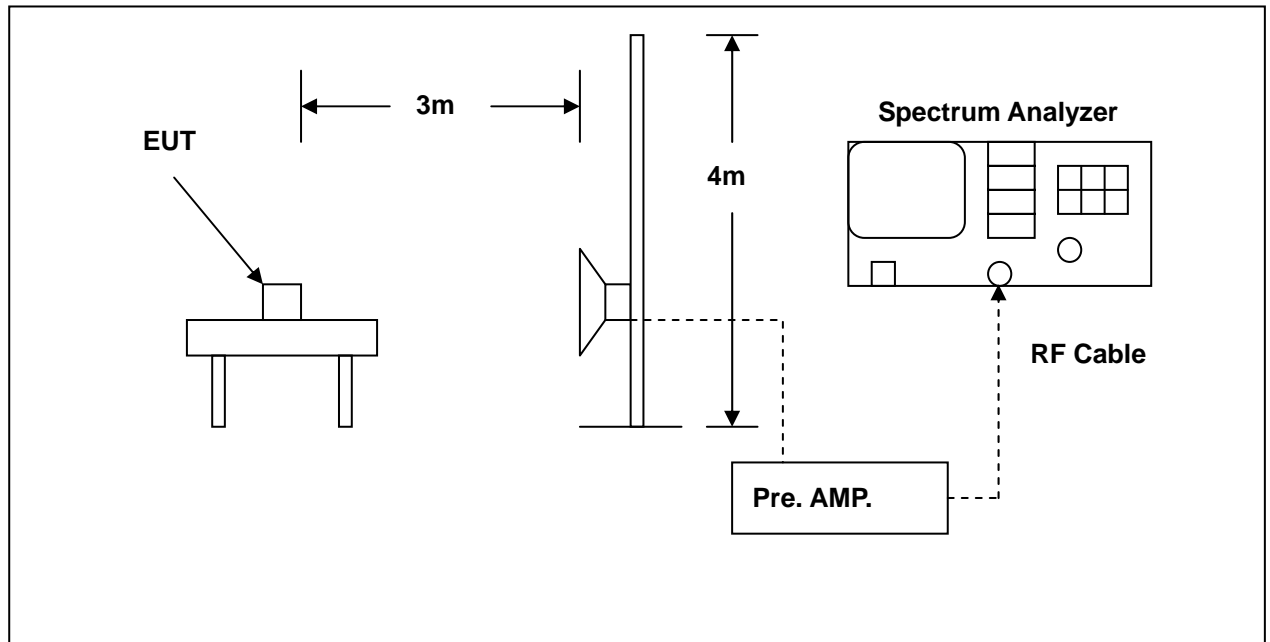
### 5.2 Limits

The provisions of Section 15.205 of this part apply to intentional radiators operating under this section. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.

### 5.3 Test Equipment List

Describe	Manufacturer	Model	Serial Number	Calibration	
				Cal. Date	Due Date
Spectrum Analyzer	Agilent	E4408B	MY45107753	Jun. 08, 2009	Jun. 08, 2010
Spectrum Analyzer	Agilent	E4408A	MY46180578	Jan. 20, 2009	Jan. 20, 2010
Pre Amplifier	Agilent	8449B	3008A02237	Jun. 08, 2009	Jun. 08, 2010
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	Jul. 01, 2009	Jul. 01, 2010

## 5.4 Test Instruments Configuration



## 5.5 Test Result

EUT : WLAN Module  
 Model No. : 112BNHMW  
 Test Mode : IEEE 802.11b\_2.4GHz Link Mode Low CH & High CH  
 Test Date : 11/03/2009

Please refer to next page of detail testing data.

Notes:

1. Margin= Amplitude - Limits
2. Height of table for EUT placed: 0.8 Meter.
3. ANT= Antenna height.
4. Duty= Duty cycle correction factor.
5. Dis= Distance extrapolation factor.
6. Amplitude= Reading Amplitude – Amplifier gain + Cable loss + Antenna factor  
 (Auto calculate in spectrum analyzer)
7. Actual Amp= Amplitude – Duty – Dis.



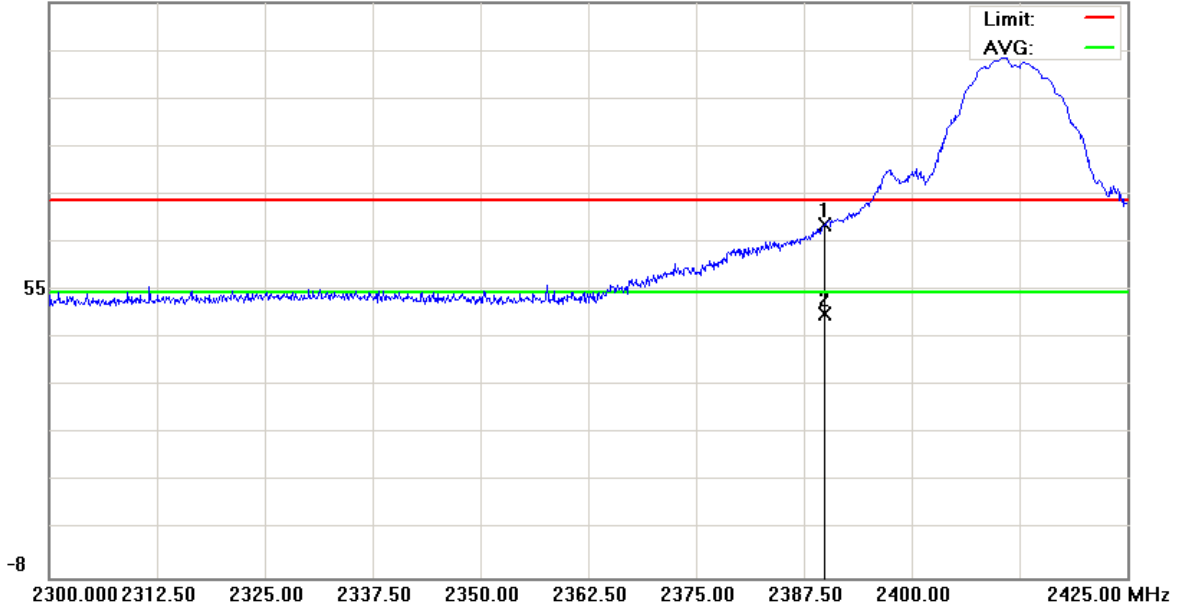
File :ZE8(BAND EDGE)

Data :#1

Date: 2009/11/3

Time:

117.0 dBuV/m



Site: 966 Chamber	Polarization: <b>Vertical</b>	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power: -	Humidity: 60 %
EUT:	Distance: 3m	RBW: 1000KHz VBW: 1000KHz
M/N: 09-0275-SE		
Mode: IEEE 802.11b_2.4GHz Link Mode		
Note: 2412MHz		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Antenna Height cm	Table Degree degree	Detector	Comment
1		2389.800	68.67	0.16	68.83	74.00	-5.17			peak	
2	*	2389.800	49.28	0.16	49.44	54.00	-4.56			AVG	

\*:Maximum data x:Over limit !:over margin



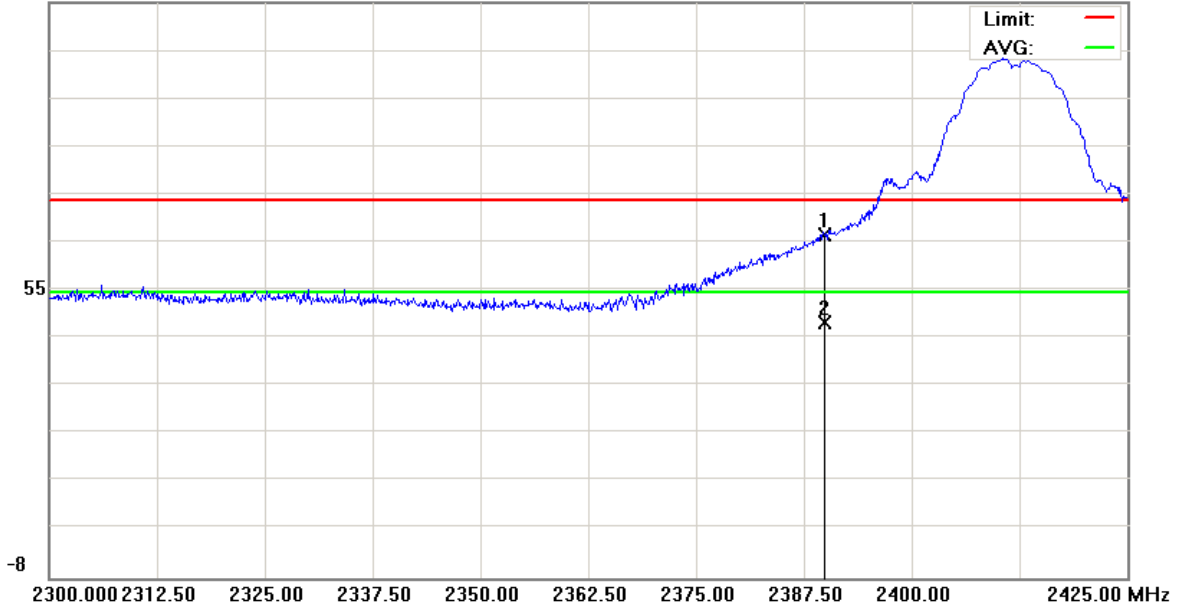
File :ZE8(BAND EDGE)

Data :#5

Date: 2009/11/3

Time:

117.0 dBuV/m



Site: 966 Chamber	Polarization: <b>Horizontal</b>	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power: -	Humidity: 60 %
EUT:	Distance: 3m	RBW: 1000KHz VBW: 1000KHz
M/N: 09-0275-SE		
Mode: IEEE 802.11b_2.4GHz Link Mode		
Note: 2412MHz		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Antenna Height cm	Table Degree degree	Detector	Comment
1		2389.800	66.52	0.16	66.68	74.00	-7.32			peak	
2	*	2389.800	47.41	0.16	47.57	54.00	-6.43			AVG	

\*:Maximum data x:Over limit !:over margin



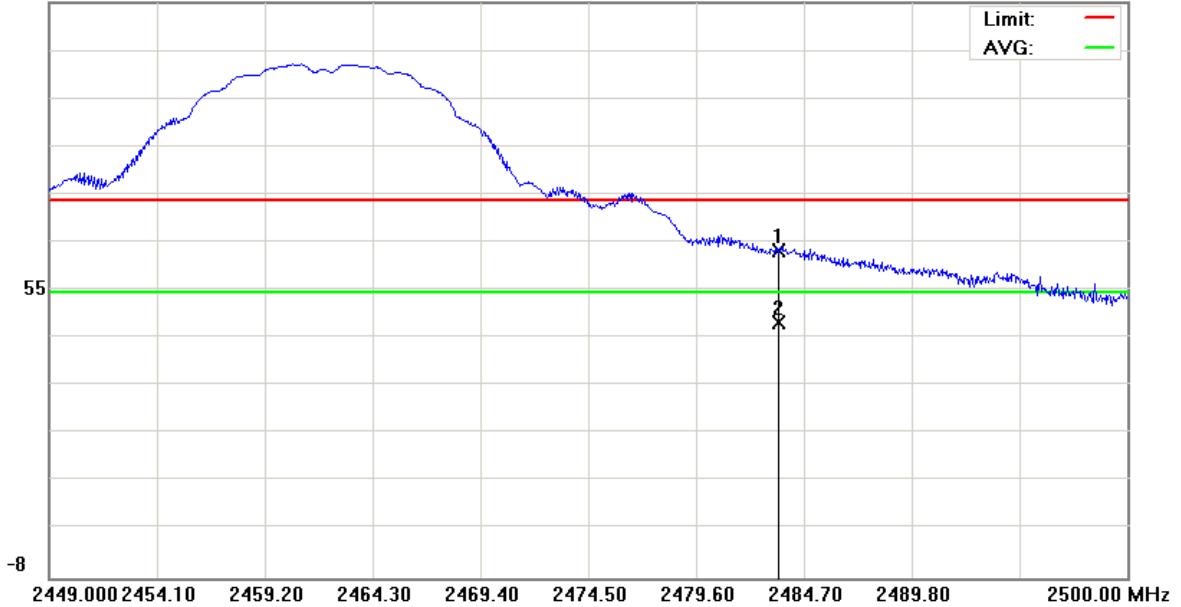
File :ZE8(BAND EDGE)

Data :#3

Date: 2009/11/3

Time:

117.0 dBuV/m



Site: 966 Chamber	Polarization: <b>Vertical</b>	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power: -	Humidity: 60 %
EUT:	Distance: 3m	RBW: 1000KHz VBW: 1000KHz
M/N: 09-0275-SE		
Mode: IEEE 802.11b_2.4GHz Link Mode		
Note: 2462MHz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		2483.510	62.69	0.25	62.94	74.00	-11.06			peak
2	*	2483.510	47.35	0.25	47.60	54.00	-6.40			AVG

\*:Maximum data x:Over limit !:over margin





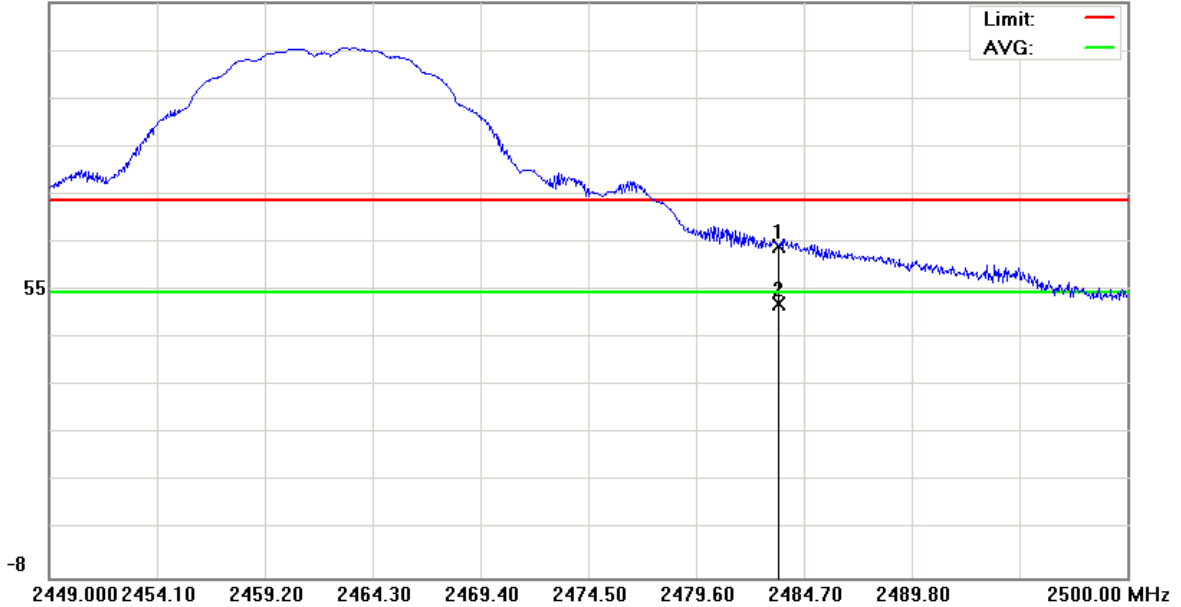
File :ZE8(BAND EDGE)

Data :#7

Date: 2009/11/3

Time:

117.0 dBuV/m



Site: 966 Chamber      Polarization: **Horizontal**      Temperature: 22 °C  
 Limit: FCC part 15 (PK)      Power: -      Humidity: 60 %  
 EUT:      Distance: 3m      RBW: 1000KHz VBW: 1000KHz  
 M/N: 09-0275-SE  
 Mode: IEEE 802.11b\_2.4GHz Link Mode  
 Note: 2462MHz

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Antenna Height cm	Table Degree degree	Comment
1		2483.510	63.64	0.25	63.89	74.00	-10.11	peak		
2	*	2483.510	51.25	0.25	51.50	54.00	-2.50	AVG		

\*:Maximum data    x:Over limit    !:over margin



EUT : WLAN Module  
Model No. : 112BNHMW  
Test Mode : IEEE 802.11g \_2.4GHz Link Mode Low CH & High CH  
Test Date : 11/03~04/2009

Please refer to next page of detail testing data.

Notes:

1. Margin= Amplitude - Limits
2. Height of table for EUT placed: 0.8 Meter.
3. ANT= Antenna height.
4. Duty= Duty cycle correction factor.
5. Dis= Distance extrapolation factor.
6. Amplitude= Reading Amplitude – Amplifier gain + Cable loss + Antenna factor  
(Auto calculate in spectrum analyzer)
7. Actual Amp= Amplitude – Duty – Dis.



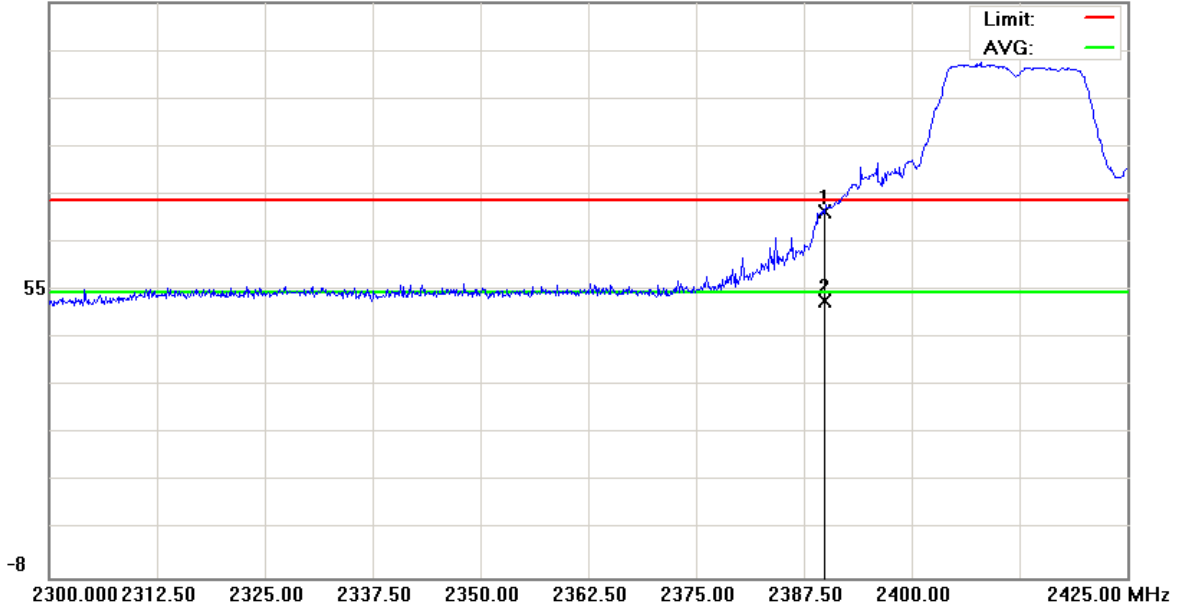
File :ZE8(BAND EDGE)

Data :#1

Date: 2009/11/3

Time:

117.0 dBuV/m



Site: 966 Chamber	Polarization: <b>Vertical</b>	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power: -	Humidity: 60 %
EUT:	Distance: 3m	RBW: 1000KHz VBW: 1000KHz
M/N: 09-0275-SE		
Mode: IEEE 802.11g_2.4GHz Link Mode		
Note: 2412MHz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		2389.800	71.22	0.16	71.38	74.00	-2.62			peak
2	*	2389.800	52.13	0.16	52.29	54.00	-1.71			AVG

\*:Maximum data x:Over limit !:over margin



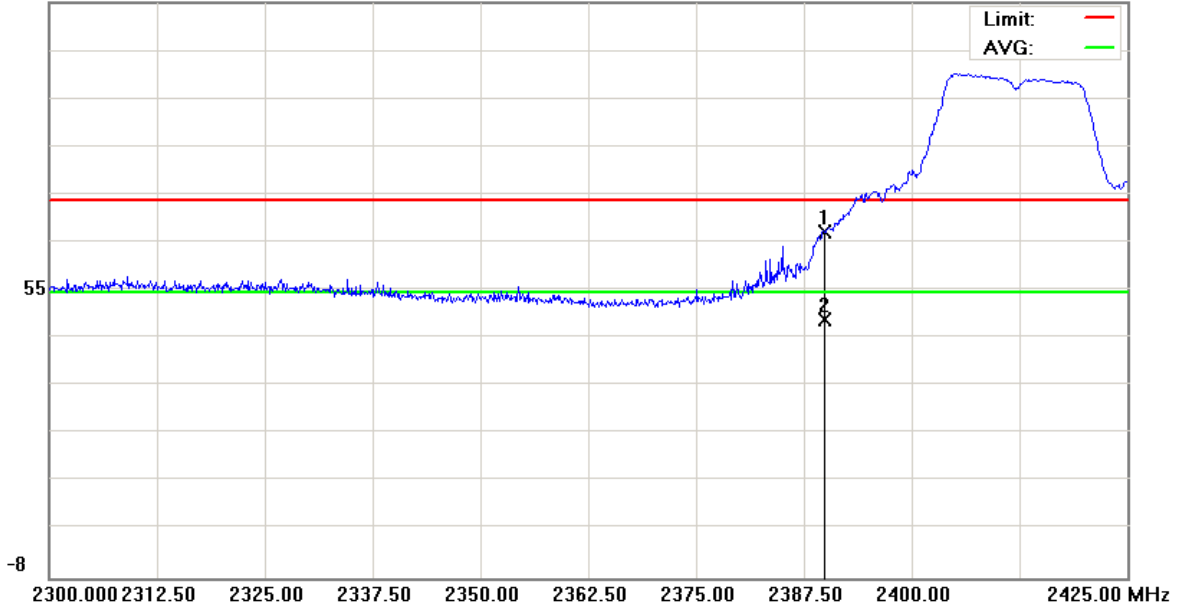
File :ZE8(BAND EDGE)

Data :#5

Date: 2009/11/3

Time:

117.0 dBuV/m



Site: 966 Chamber	Polarization: <b>Horizontal</b>	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power: -	Humidity: 60 %
EUT:	Distance: 3m	RBW: 1000KHz VBW: 1000KHz
M/N: 09-0275-SE		
Mode: IEEE 802.11g_2.4GHz Link Mode		
Note: 2412MHz		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Antenna Height cm	Table Degree degree	Comment
1		2389.800	66.85	0.16	67.01	74.00	-6.99	peak		
2	*	2389.800	48.08	0.16	48.24	54.00	-5.76	AVG		

\*:Maximum data x:Over limit !:over margin



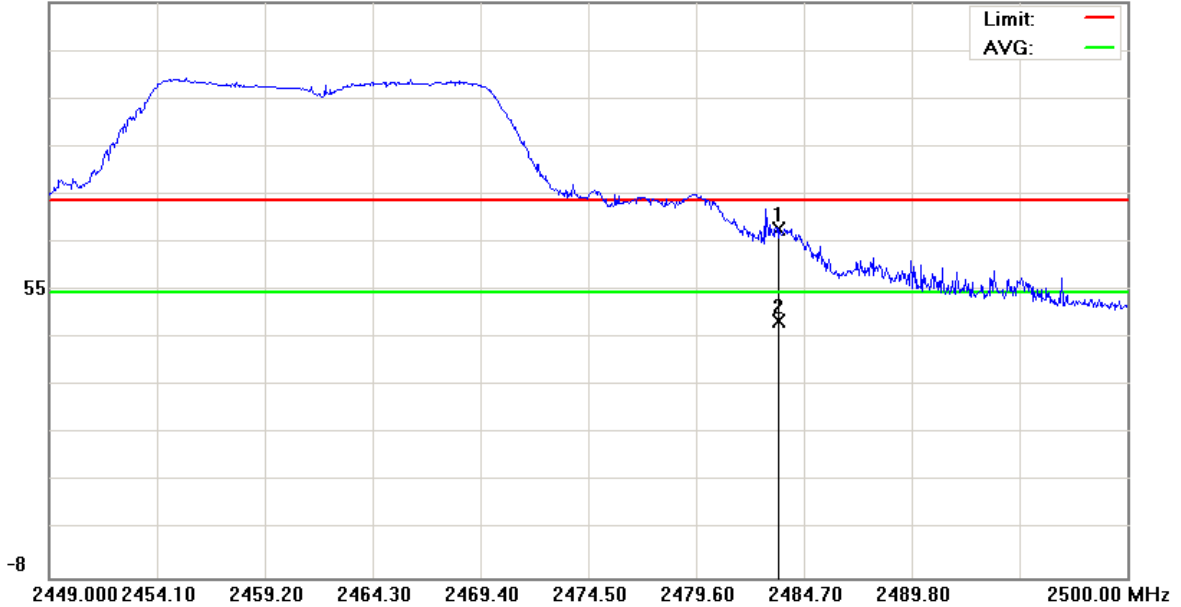
File :ZE8(BAND EDGE)

Data :#3

Date: 2009/11/4

Time:

117.0 dBuV/m



Site: 966 Chamber	Polarization: <b>Vertical</b>	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power: -	Humidity: 60 %
EUT:	Distance: 3m	RBW: 1000KHz VBW: 1000KHz
M/N: 09-0275-SE		
Mode: IEEE 802.11g _2.4GHz Link Mode		
Note: 2462MHz		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Antenna Height cm	Table Degree degree	Comment
1		2483.510	67.46	0.25	67.71	74.00	-6.29	peak		
2	*	2483.510	47.52	0.25	47.77	54.00	-6.23	AVG		

\*:Maximum data x:Over limit !:over margin



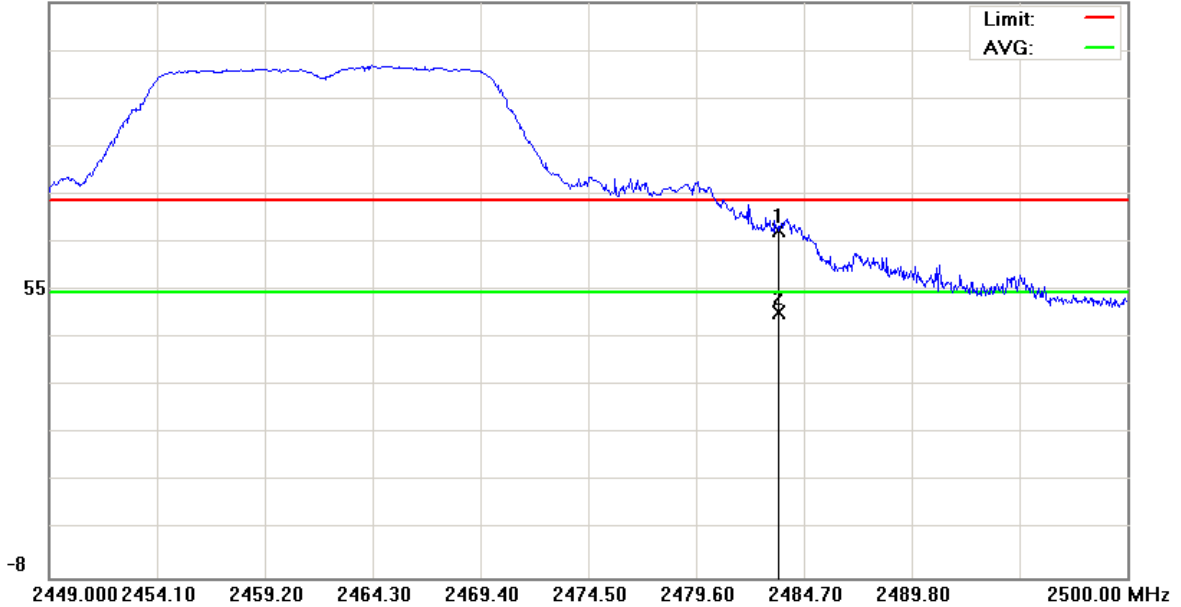
File :ZE8(BAND EDGE)

Data :#7

Date: 2009/11/4

Time:

117.0 dBuV/m



Site: 966 Chamber	Polarization: <b>Horizontal</b>	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power: -	Humidity: 60 %
EUT:	Distance: 3m	RBW: 1000KHz VBW: 1000KHz
M/N: 09-0275-SE		
Mode: IEEE 802.11g _2.4GHz Link Mode		
Note: 2462MHz		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Antenna Height cm	Table Degree degree	Comment
1		2483.510	67.11	0.25	67.36	74.00	-6.64	peak		
2	*	2483.510	49.55	0.25	49.80	54.00	-4.20	AVG		

\*:Maximum data x:Over limit !:over margin



EUT : WLAN Module  
Model No. : 112BNHMW  
Test Mode : draft 802.11n Standard-20MHz\_2.4GHz Link Mode Low CH & High CH  
Test Date : 11/04/2009

Please refer to next page of detail testing data.

Notes:

1. Margin= Amplitude - Limits
2. Height of table for EUT placed: 0.8 Meter.
3. ANT= Antenna height.
4. Duty= Duty cycle correction factor.
5. Dis= Distance extrapolation factor.
6. Amplitude= Reading Amplitude – Amplifier gain + Cable loss + Antenna factor  
(Auto calculate in spectrum analyzer)
7. Actual Amp= Amplitude – Duty – Dis.



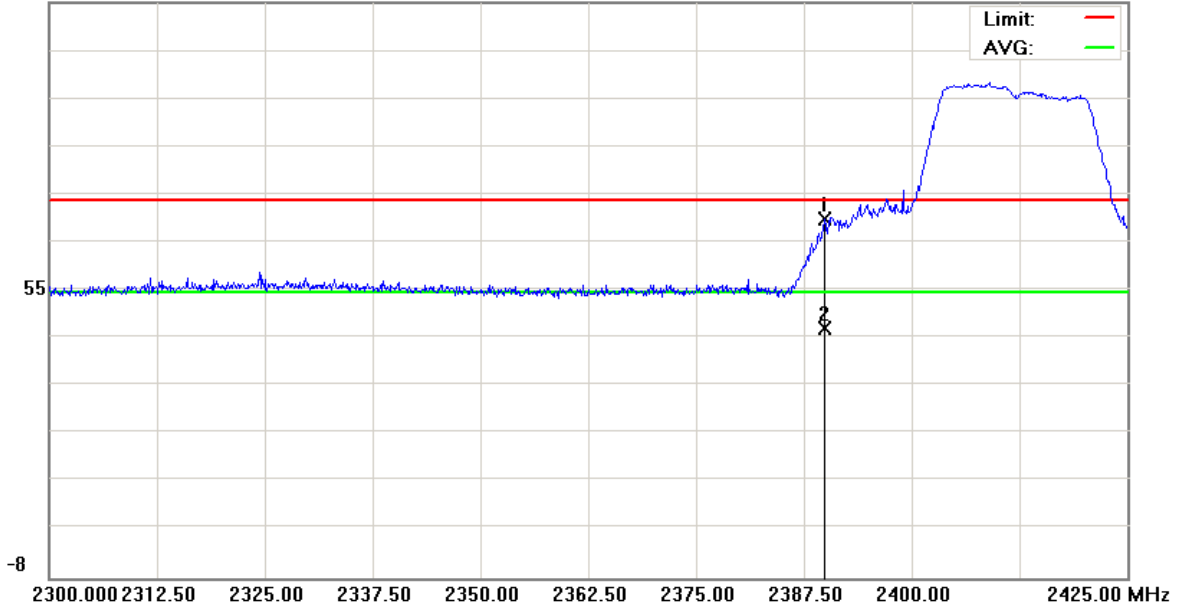
File :ZE8(BAND EDGE)

Data :#1

Date: 2009/11/4

Time:

117.0 dBuV/m



Site: 966 Chamber	Polarization: <b>Vertical</b>	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power: -	Humidity: 60 %
EUT:	Distance: 3m	RBW: 1000KHz VBW: 1000KHz
M/N: 09-0275-SE		
Mode: draft 802.11n Standard-20MHz_2.4GHz Link Mode		
Note: 2412MHz		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Antenna Height cm	Table Degree degree	Comment
1	*	2389.800	69.74	0.16	69.90	74.00	-4.10	peak		
2		2389.800	46.18	0.16	46.34	54.00	-7.66	AVG		

\*:Maximum data x:Over limit !:over margin





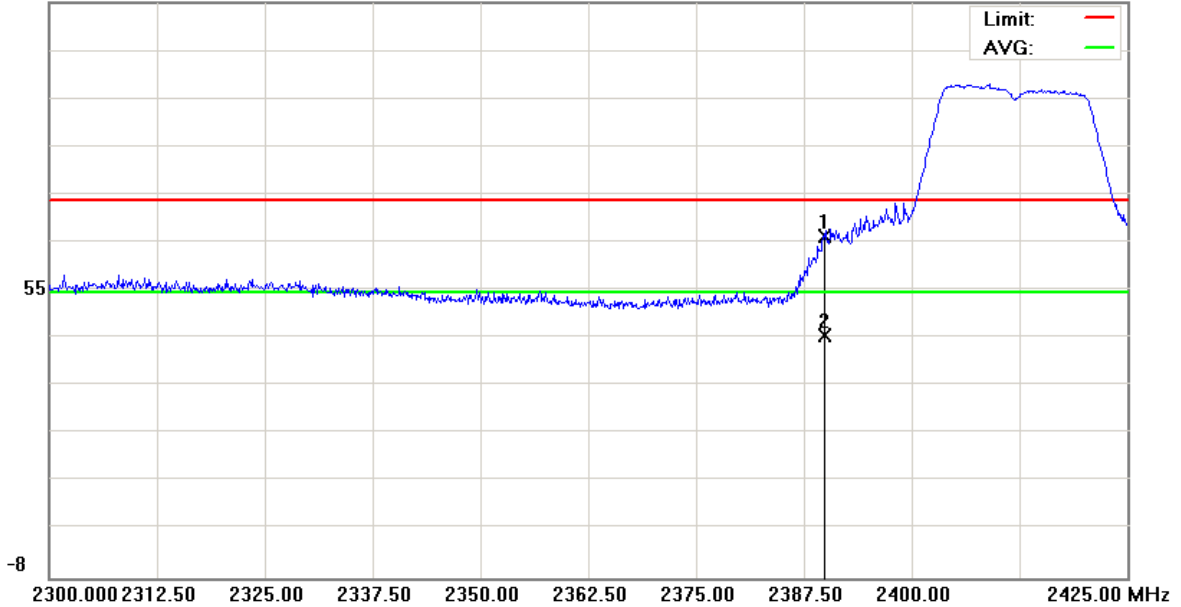
File :ZE8(BAND EDGE)

Data :#5

Date: 2009/11/4

Time:

117.0 dBuV/m



Site: 966 Chamber	Polarization: <b>Horizontal</b>	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power: -	Humidity: 60 %
EUT:	Distance: 3m	RBW: 1000KHz VBW: 1000KHz
M/N: 09-0275-SE		
Mode: draft 802.11n Standard-20MHz_2.4GHz Link Mode		
Note: 2412MHz		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Antenna Height cm	Table Degree degree	Comment
1	*	2389.800	66.09	0.16	66.25	74.00	-7.75	peak		
2		2389.800	44.46	0.16	44.62	54.00	-9.38	AVG		

\*:Maximum data x:Over limit !:over margin



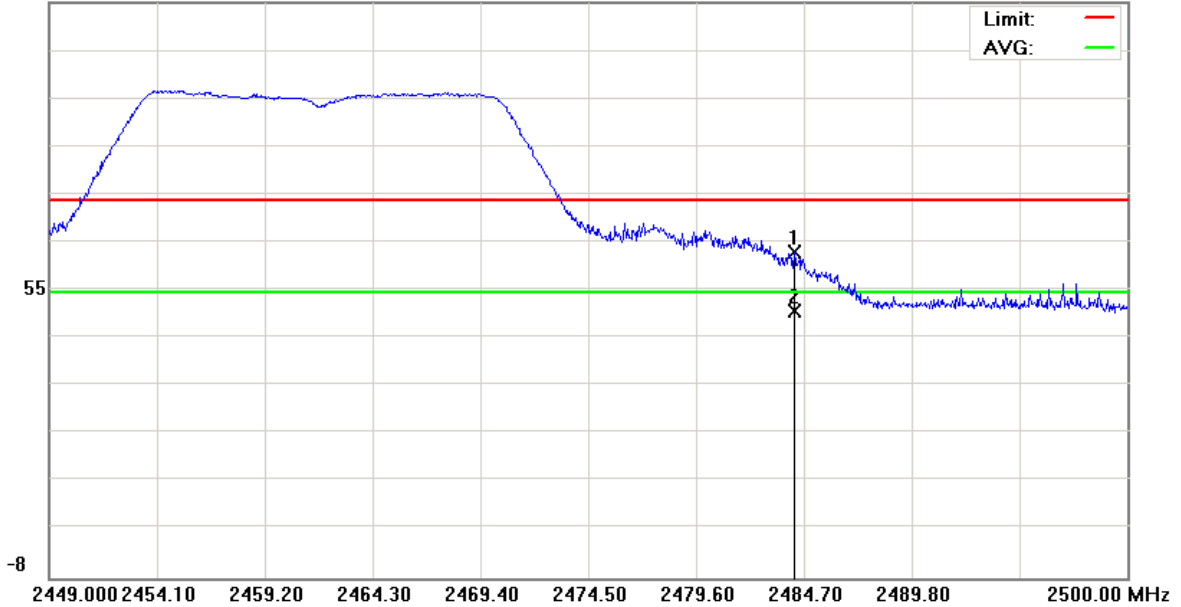
File :ZE8(BAND EDGE)

Data :#3

Date: 2009/11/4

Time:

117.0 dBuV/m



Site: 966 Chamber	Polarization: <b>Vertical</b>	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power: -	Humidity: 60 %
EUT:	Distance: 3m	RBW: 1000KHz VBW: 1000KHz
M/N: 09-0275-SE		
Mode: draft 802.11n Standard-20MHz_2.4GHz Link Mode		
Note: 2462MHz		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Antenna Height cm	Table Degree degree	Comment
1		2484.241	62.62	0.25	62.87	74.00	-11.13	peak		
2	*	2484.241	49.63	0.25	49.88	54.00	-4.12	AVG		

\*:Maximum data x:Over limit !:over margin



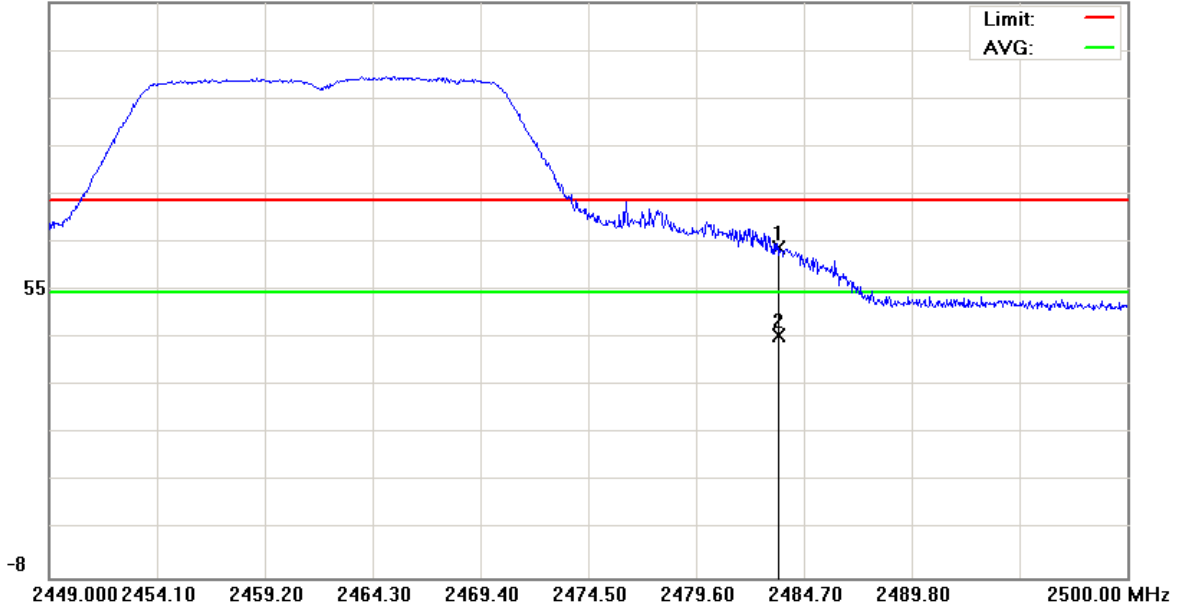
File :ZE8(BAND EDGE)

Data :#7

Date: 2009/11/4

Time:

117.0 dBuV/m



Site: 966 Chamber      Polarization: **Horizontal**      Temperature: 22 °C  
 Limit: FCC part 15 (PK)      Power: -      Humidity: 60 %  
 EUT:      Distance: 3m      RBW: 1000KHz VBW: 1000KHz  
 M/N: 09-0275-SE  
 Mode: draft 802.11n Standard-20MHz\_2.4GHz Link Mode  
 Note: 2462MHz

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Antenna Height cm	Table Degree degree	Comment
1		2483.510	63.36	0.25	63.61	74.00	-10.39	peak		
2	*	2483.510	44.45	0.25	44.70	54.00	-9.30	AVG		

\*:Maximum data    x:Over limit    !:over margin



EUT : WLAN Module  
Model No. : 112BNHMW  
Test Mode : draft 802.11n Wide-40MHz\_2.4GHz Link Mode Low CH & High CH  
Test Date : 11/04/2009

Please refer to next page of detail testing data.

Notes:

1. Margin= Amplitude - Limits
2. Height of table for EUT placed: 0.8 Meter.
3. ANT= Antenna height.
4. Duty= Duty cycle correction factor.
5. Dis= Distance extrapolation factor.
6. Amplitude= Reading Amplitude – Amplifier gain + Cable loss + Antenna factor  
(Auto calculate in spectrum analyzer)
7. Actual Amp= Amplitude – Duty – Dis.



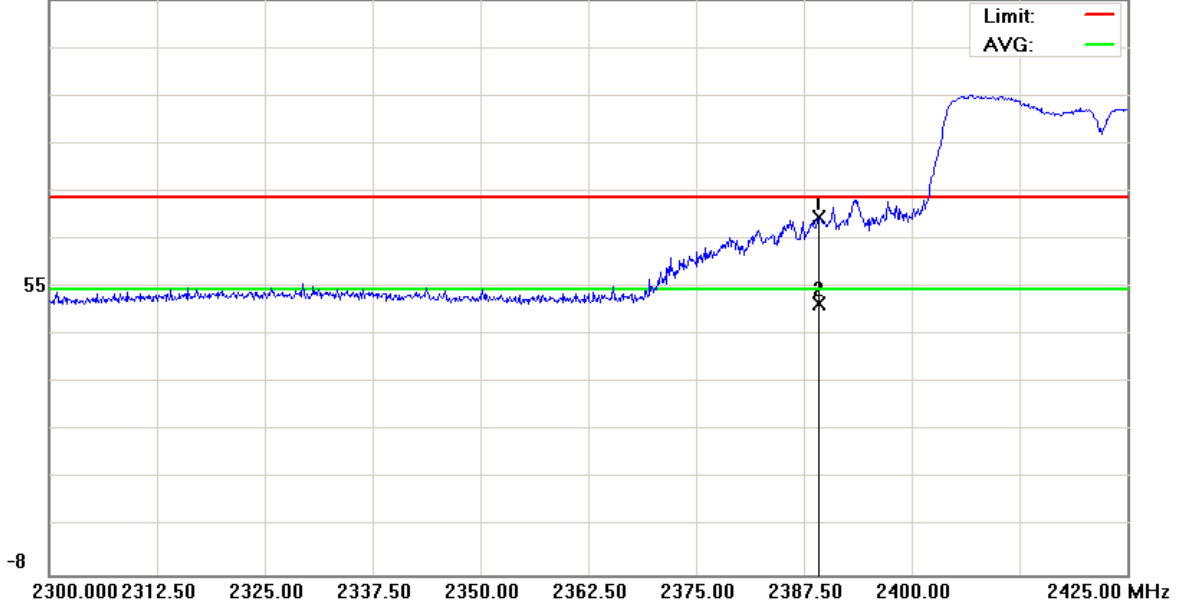
File :ZE8(BAND EDGE)-10

Data :#1

Date: 2009/11/4

Time:

117.0 dBuV/m



Site: 966 Chamber	Polarization: <b>Vertical</b>	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power:	Humidity: 60 %
EUT:	Distance: 3m	RBW: 1000KHz VBW: 1000KHz
M/N: 09-0275-SE		
Mode: draft 802.11n Wide-40MHz_2.4GHz Link Mode		
Note: 2422MHz		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Antenna Height cm	Table Degree degree	Comment
1		2389.250	69.35	0.16	69.51	74.00	-4.49	peak		
2	*	2389.250	50.86	0.16	51.02	54.00	-2.98	AVG		

\*:Maximum data x:Over limit !:over margin



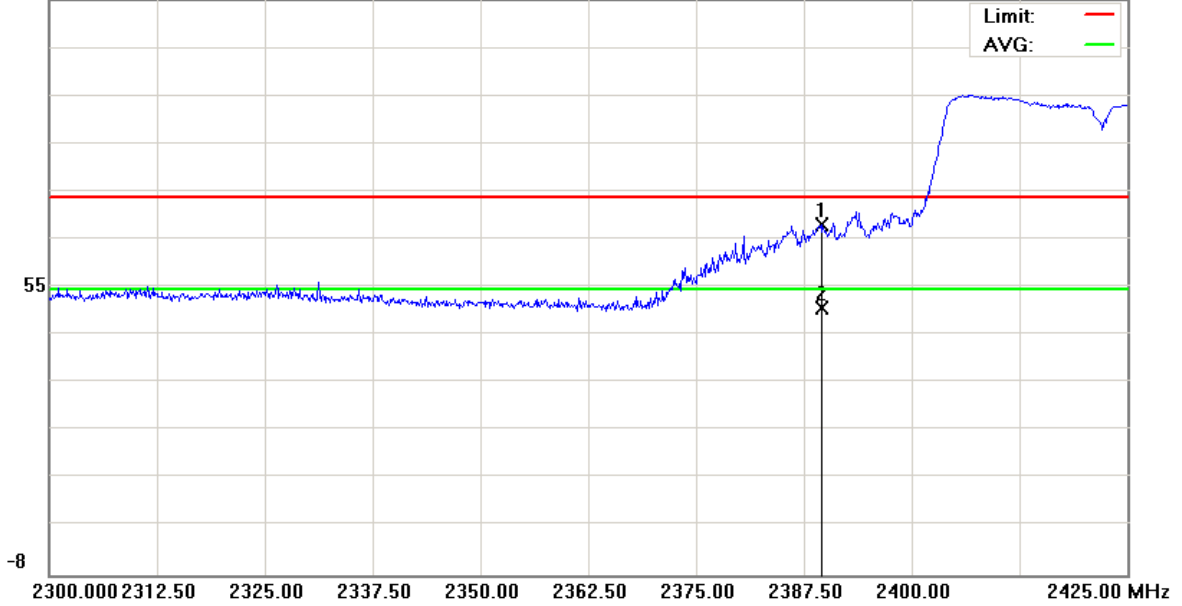
File :ZE8(BAND EDGE)-10

Data :#3

Date: 2009/11/4

Time:

117.0 dBuV/m



Site: 966 Chamber	Polarization: <b>Horizontal</b>	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power:	Humidity: 60 %
EUT:	Distance: 3m	RBW: 1000KHz VBW: 1000KHz
M/N: 09-0275-SE		
Mode: draft 802.11n Wide-40MHz_2.4GHz Link Mode		
Note: 2422MHz		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Antenna Height cm	Table Degree degree	Comment
1		2389.500	67.91	0.16	68.07	74.00	-5.93	peak		
2	*	2389.500	49.69	0.16	49.85	54.00	-4.15	AVG		

\*:Maximum data x:Over limit !:over margin





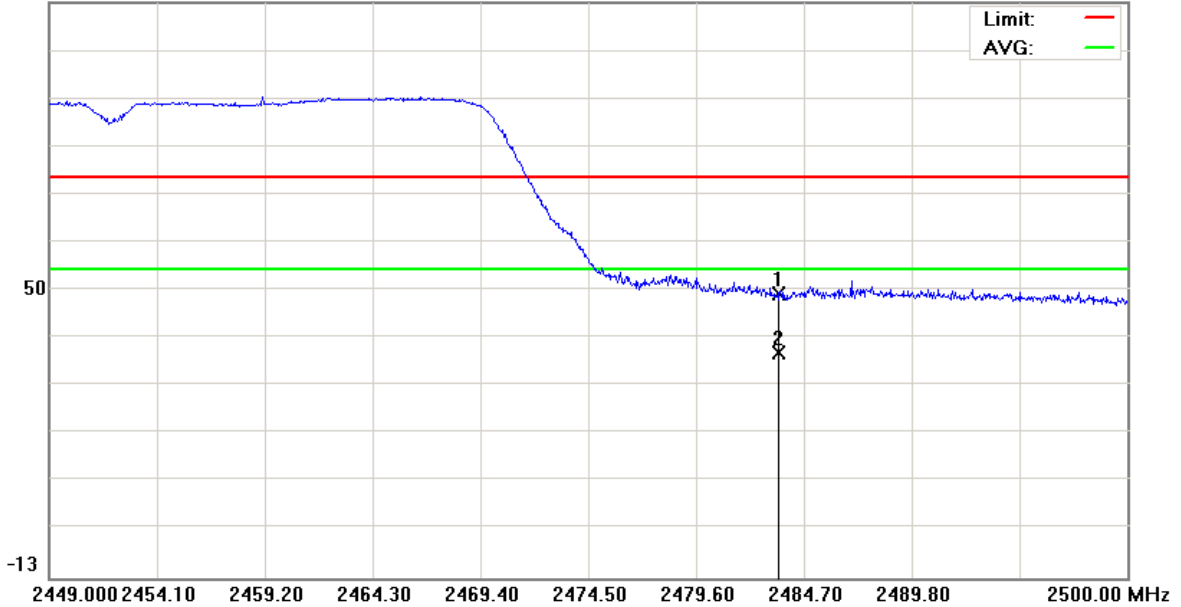
File :ZE8(BAND EDGE)-10

Data :#7

Date: 2009/11/4

Time:

112.0 dBuV/m



Site: 966 Chamber	Polarization: <b>Horizontal</b>	Temperature: 22 °C
Limit: FCC part 15 (PK)	Power:	Humidity: 60 %
EUT:	Distance: 3m	RBW: 1000KHz VBW: 1000KHz
M/N: 09-0275-SE		
Mode: draft 802.11n Wide-40MHz_2.4GHz Link Mode		
Note: 2422MHz		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Antenna Height cm	Table Degree degree	Detector	Comment
1		2483.500	48.33	0.25	48.58	74.00	-25.42			peak	
2	*	2483.500	35.71	0.25	35.96	54.00	-18.04			AVG	

\*:Maximum data x:Over limit !:over margin





## **6. Antenna Requirements**

### **6.1 Standard Applicable**

For intentional device, according to 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And According to 15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### **6.2 Antenna Connector Construction**

The antenna used in this product is **PIFA Antenna**. And the maximum Gain of this antenna is only **-1.77** dBi.